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Subject: Ecological Risk Assessment for Fipronil Uses
Combined 2007 Risk Assessment (RED)

To: Ann Sibold
Insecticides Branch
Reregistration Division (7508P)

From: James Hetrick, Ph.D., Senior Scientist James G Hetrick 2/6/07
Edward Odenkirchen, Ph.D., Senior Biologist
Nancy Andrews, Branch Chief Nancy J Andrews 2/6/07
Thuy Nguyen, RAPL 2/6/07
Environmental Risk Branch I
Environmental Fate and Effects Division (7507P)

Attached is the ecological risk assessment for fipronil to support registration decisions, conditional registrations decisions as well as decisions on pending label changes and new uses. We have not identified a need for any additional data to support the risk assessment at this time. Data evaluation records (DER) will follow under separate cover. We look forward to discussions with you regarding next steps.

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Ecological Risk Assessment for Current and Proposed Residential and Crop Uses of Fipronil (PC Code 129121)

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1. Executive Summary

his ecological risk assessment addresses proposed and current uses of fipronil (PC Code 123802). These uses include fire ants (Chipco®Choice insecticide EPA Reg No. 5549-NC-1, H & G 61743A EPA Reg. No, 432-1224, Chipco Choice ™ insecticide EPA Reg. No. 432-896, CHIPCO® TopChoice™ Insecticide EPA Reg. No. 432-1217, TopChoice™ Insecticide, CHIPCO® brand 61748A End User EPA Reg. No. 432-1218, Over'n Out™ Fire Ant Killer Granulars EPA Reg. No. 7969-212, BES-602 Insecticide), corn (Regent® 4 SC insecticide EPA Reg. 7969-207, REGENT ®TS Insecticide EPA Reg. No. 7969-223), onion seed (ICON® 6.2 FS Insecticide EPA Reg. No. 264-577, REGENT®TS insecticide EPA Reg. No. 7969-223), sweet potato/potato (Regent® 4 SC insecticide EPA Reg. 7969-207), leaf cutter ants (BES 100 Insecticide), pine seedling (BASF PTM insecticide), carpenter and nuisance ants (TERMIDOR® SC, EPA Reg. No. 7969-210), termites (TERMIDOR® 80 WG EPA Reg. No. 7969-209),and fruit fly stations (AMULET™C-L Fruit Fly Stations EPA Reg. No. 7969-XXX).

1.1 Nature of Stressor

Fipronil is a chiral phenylpyrazole insecticide. The chiral center is associated with the sulfur in parent fipronil. The proposed and current registrations are only for the racemic mixture of stereoisomers (50% R: 50% S). Proposed and current fipronil uses are for broadcast treatment for control of fire ants, carpenter ants, and nuisance ants; in-furrow treatment for control of corn root worm on corn and wire worms on sweet potatoes/potatoes; seed treatments for corn and onions; soil injection for control of termites; and bait treatments for fire ants, fruit flies, and Texas leaf-cutter ants.

Fipronil affects the gamma-aminobutyric acid neurotransmission system by interfering with the passage of chloride. In addition, research data indicate that fipronil displays a higher potency in the insect GABA chloride channel than in the vertebrate GABA chloride channel, which may indicate selective toxicity (Hainzl and Casida, 1996). Additionally, there are open-literature data showing enantioselective biodegradation of fipronil in rainbow trout (Konwick et al, 2006).

Fipronil is moderately persistent to persistent ($t_{1/2}$= 128 to 300 days) and relatively immobile (mean K_{oc} 727 mL/g) in terrestrial environments. Major routes of dissipation appear to be dependant on photodegradation in water, microbially-mediated degradation, and soil binding. Fipronil degrades to form MB46136 and RPA 200766 in aerobic soil metabolism studies. MB46513 is the major degradate in photolysis studies. MB45950 appears to be predominantly formed under low oxygen conditions from microbial-mediated processes. These degradates are persistent and relatively immobile in terrestrial and aquatic environments. Field dissipation studies confirm the persistence and relative immobility of fipronil and its degradation products.

Structural representations of fipronil and degradates can be found in Appendix A.

1.2 Potential Risk to Nontarget Organisms

1.2.1 Terrestrial Plants

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The risk assessment found no direct effects risks of concern for any uses related to terrestrial plants. However, as indicated in the analysis for listed species, the effects of fipronil on other taxa could pose concerns for indirect effects to terrestrial plants.

1.2.2 Terrestrial invertebrates

Fipronil is an insecticide with demonstrable effects on target insects. Although the current Agency pesticide risk assessment process does not include methods for quantitative terrestrial invertebrate risk assessment, the nature of the pesticide and available toxicity data suggest that fipronil may produce adverse effects in terrestrial invertebrates.

1.2.3 Terrestrial Vertebrates

Three uses for fipronil are not considered to present any acute or chronic risk concerns. These are the use of fipronil as a soil injection for pine seedlings, the use in bait tags for fruit fly control, and the use as a treatment for onion sets (onion seed use). Pine seedling injection into the root ball of pine seedlings is assumed to place fipronil in an area beyond bioavailability to terrestrial wildlife. Similarly, it is not expected that fruit fly bait tags are an attractive food source for wildlife, preventing significant exposure. Finally onion sets are not expected to be an attractive wildlife food source, obviating concerns for exposure to terrestrial vertebrates and available mass per unit area exposure estimates. Even assuming 100 percent bioavailability for this use did not trigger concerns.

The risk assessment approached the evaluation for terrestrial vertebrates using three methods of assessment:

- Seed Treatment, granules, and baits (mass per unit area of exposure)
- In-furrow and over the top applications (Dietary exposure)
- Baits and Seeds (direct consumption exposure)

The first method applied was an evaluation of mass per unit area of pesticide loading and a comparison with available acute toxicity endpoints. This method was applied to seed treatments, granules, and baits. The following table summarizes those results. As can be seen from this table the seed corn treatment, onion seed treatment, and Over 'n Out broadcast fire ant treatments are without risk concerns. In contrast, leaf cutter ant bait, house perimeter treatment with BES 1000 granules; and the broadcast treatments with Chipco 61748A, TopChoice Select, and Chipco Choice present acute and chronic risks above Agency levels of concern for birds and, in some instances mammals. Consideration of the mass of pesticide on a granule suggests that for smaller birds, the consumption of granules may be high enough to constitute an acute risk. However, for larger birds and mammals, granule consumption would have to reach such high daily proportions of body weight as to be an impractical exposure assumption. It is important to note that perimeter uses of fipronil involve very small treatment areas immediately adjacent to structures. While these areas may present acute risks to a small number of animals feeding in such environs, the likelihood that they also represent a chronic risk, given all other available habitat within proximity to the application site is small. Similarly, while leafcutter ant use of fipronil may present an acute risk to terrestrial vertebrates, the high degree of efficiency with which baits may

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be expected to be removed from the soil surface by the target ant colonies would suggest that chronic risks associated with this use may be overestimated.

Terrestrial Vertebrate Acute Risk Quotients for Fipronil Use Based on LD50/ft^2			
Chemical	**Animal Type**	**Body Weight g**	**LOC Exceeded**
Seed Corn Treatment 0.02 kg/ha (0.0178 lb/acre) assume only 1% available (0.000178 lb/acre)			
No RQ in excess of any acute LOC for birds or mammals			
Icon 6.2 Onion Seed treatment 0.112 kg/ha (0.11 lb/acre) assume only 1% available (0.0011 lb/acre)			
No RQ in excess of any acute LOC for birds or mammals			
BES 100 Texas Leafcutter Ant Bait 0.255 kg/ha (0.228 lb/acre) assume 100% available			
Fipronil	Bird	20	A,RU,LS
		100	A,RU,LS
		1000	LS
	Mammal	15	A,RU,LS
		35	RU,LS
MB46136	Bird	20	A,RU,LS
		100	RU,LS
MB45950	Bird	20	RU,LS
BES 1000 House Perimeter Granule 0.357 lb/acre within the perimeter treatment zone) assume 100% available			
Fipronil	Bird	20	A,RU,LS
		100	A,RU,LS
		1000	RU,LS
	Mammal	15	A,RU,LS
		35	A,RU,LS
MB46136	Bird	20	A,RU,LS
		100	RU,LS
	Mammal	15	LS
MB45950	Bird	20	RU,LS
Chipco 61748A Broadcast Fire ant 0.014 kg/ha (0.125 lb/acre) assume 100% available **TopChoice Select Broadcast Fire ant** **Chipco Choice Broadcast Fire ant**			
Fipronil	Bird	20	A,RU,LS
		100	LS
MB46136	Bird	20	LS
Over'N Out Broadcast Fire ant 0.01 kg/ha (0.009 lb/acre) assume 100% available			
No RQ in excess of any acute LOC for birds or mammals			

A= acute risk to listed and non-listed species (RQ≥0.5)
RU= restricted use (RQ≥0.2)
LS= acute risk for federally listed threatened and endangered species (RQ≥0.1)

The assessment also employed an evaluation of dietary exposure estimates against acute and chronic endpoints. This approach was applied to spray applications, both in furrow and over the top uses of the pesticide. In some instances (in-furrow sprays) the types of food items were limited to a subset of the wildlife items commonly modeled to represent the expected food items potentially available to wildlife forging in and around furrows immediately after pesticide application. The following table presents the results of this approach. In contrast to the mass per unit area approach, residues in seeds and insects reach levels high enough to trigger concerns for the in-furrow use of fipronil. However, concerns for this use are limited to small federally listed birds consuming small insects. Given the defined use site, potatoes and sweet potatoes, additional analysis for collocation of birds meeting these size and behavior parameters with the use site may eliminate further concern for birds and this use. Owing to the higher use rate, the in-furrow corn results suggest concerns for granivore and insectivore birds in all three assessed size categories and for acute and chronic risks. Chronic risks may be overestimated for in-furrow sprays given that the food sources are most likely available only immediately after furrow

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treatment. By far the two spray uses with the greatest predicted concerns are the perimeter uses Termidor SC and HG 61743 AE. These uses trigger concerns for both acute and chronic concerns in birds and mammals of a variety of sizes and food preferences. It is again important to note that perimeter uses of fipronil involve very small treatment areas immediately adjacent to structures. While these areas may present acute risks to a small number of animals feeding in such environs, the likelihood that they also represent a chronic risk, given all other available habitat within proximity to the application site is small.

Terrestrial Vertebrate Risk Results for Fipronil Use Based on Dietary Residues				
Chemical	**Animal Type**	**Body Weight (g)**	**Food Item**	**LOC Exceeded**
Potato/Sweet Potato In-Furrow Spray With Regent 4 SC 0.0112 kg/ha (0.112 lb/acre) assumes only seeds and insects available at time of planting				
Fipronil	Bird	20	Small insects	LS
Corn In-Furrow Spray With Regent 4 SC 0.1456 kg/ha (0.130 lb/acre) assumes only seeds and insects available at time of planting				
Fipronil	Bird	20	Small insects	A,RU,LS,C
			Seeds/large insects	RU,LS
		100	Small insects	A,RU,LS,C
		1000	Small insects	RU,LS,C
MB46136	Bird	20	Small insects	RU,LS
		100	Seeds/large insects	LS
House Perimeter Treatment Spray With Termidor SC 0.325 lb/acre all food items considered within 1 foot treatment zone				
Fipronil	Bird	20	Short grass	A,RU,LS,C
			Tall grass	A,RU,LS,C
			Broadleaf foliage/small insects	A,RU,LS,C
			Fruits/pods/seeds/large insects	A,RU,LS
		100	Short grass	A,RU,LS,C
			Tall grass	A,RU,LS,C
			Broadleaf foliage/small insects	A,RU,LS,C
			Fruits/pods/seeds/large insects	RU,LS
		1000	Short grass	A,RU,LS,C
			Tall grass	A,RU,LS,C
			Broadleaf foliage/small insects	A,RU,LS,C
			Fruits/pods/seeds/large insects	LS
	Mammal	15	Short grass	A,RU,LS,C
			Tall grass	LS,C
			Broadleaf foliage/small insects	RU,LS,C
		35	Short grass	RU,LS,C
			Tall grass	LS,C
			Broadleaf foliage/small insects	LS,C
		1000	Short grass	LS,C
			Tall grass	C
			Broadleaf foliage/small insects	C
MB46136	Bird	20	Short grass	A,RU,LS,C
			Tall grass	A,RU,LS
			Broadleaf foliage/small insects	A,RU,LS,C
		100	Short grass	A,RU,LS,C
			Tall grass	RU,LS

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Terrestrial Vertebrate Risk Results for Fipronil Use Based on Dietary Residues				
Chemical	**Animal Type**	**Body Weight (g)**	**Food Item**	**LOC Exceeded**
			Broadleaf foliage/small insects	RU,LS,C
		1000	Short grass	RU,LS,C
			Tall grass	LS
			Broadleaf foliage/small insects	LS.C
	Mammal	15	Short grass	C
			Tall grass	C
			Broadleaf foliage/small insects	C
		35	Short grass	C
			Tall grass	C
			Broadleaf foliage/small insects	C
		1000	Short grass	C
MB45950	Bird	20	Short grass	RU,LS
			Tall grass	LS
			Broadleaf foliage/small insects	LS
		100	Short grass	LS
MB46513	Bird	20	Short grass	A,RU,LS,C
			Tall grass	A,RU,LS,C
			Broadleaf foliage/small insects	A,RU,LS,C
			Fruits/pods/seeds/large insects	A,RU,LS
		100	Short grass	
			Tall grass	A,RU,LS,C
			Broadleaf foliage/small insects	A,RU,LS,C
			Fruits/pods/seeds/large insects	RU,LS
		1000	Short grass	A,RU,LS,C
			Tall grass	A,RU,LS,C
			Broadleaf foliage/small insects	A,RU,LS,C
			Fruits/pods/seeds/large insects	LS
	Mammal	15	Short grass	A,RU,LS,C
			Tall grass	RU,LS,C
			Broadleaf foliage/small insects	A,RU,LS,C
		35	Short grass	A,RU,LS,C
			Tall grass	RU,LS,C
			Broadleaf foliage/small insects	RU,LS,C
		1000	Short grass	RU,LS,C
			Tall grass	RU,LS,C
			Broadleaf foliage/small insects	RU,LS,C
Broadcast Fire Ant Treatment Spray With HG 61743 AE 0.1089 lb/acre all food items considered within 1 foot treatment zone				
Fipronil	Bird	20	Short grass	A,RU,LS,C
			Tall grass	A,RU,LS,C
			Broadleaf foliage/small insects	A,RU,LS,C
			Fruits/pods/seeds/large insects	RU,LS
		100	Short grass	A,RU,LS,C
			Tall grass	A,RU,LS,C

Terrestrial Vertebrate Risk Results for Fipronil Use Based on Dietary Residues				
Chemical	**Animal Type**	**Body Weight (g)**	**Food Item**	**LOC Exceeded**
			Broadleaf foliage/small insects	A,RU,LS,C
			Fruits/pods/seeds/large insects	LS
		1000	Short grass	A,RU,LS,C
			Tall grass	RU,LS,C
			Broadleaf foliage/small insects	RU,LS,C
	Mammal	15	Short grass	LS,C
			Tall grass	C
			Broadleaf foliage/small insects	C
		35	Short grass	LS,C
			Tall grass	C
			Broadleaf foliage/small insects	C
		1000	Short grass	C
			Tall grass	C
			Broadleaf foliage/small insects	C
MB46136	Bird	20	Short grass	A,RU,LS
			Tall grass	RU,LS
			Broadleaf foliage/small insects	RU,LS
		100	Short grass	RU,LS
			Tall grass	LS
			Broadleaf foliage/small insects	LS
	Mammal	15	Short grass	C
MB46513	Bird	20	Short grass	A,RU,LS,C
			Tall grass	A,RU,LS
			Broadleaf foliage/small insects	A,RU,LS
			Fruits/pods/seeds/large insects	RU,LS
		100	Short grass	A,RU,LS,C
			Tall grass	A,RU,LS
			Broadleaf foliage/small insects	A,RU,LS
			Fruits/pods/seeds/large insects	LS
		1000	Short grass	A,RU,LS,C
			Tall grass	RU,LS
			Broadleaf foliage/small insects	RU,LS
	Mammal	15	Short grass	RU,LS,C
			Tall grass	LS
			Broadleaf foliage/small insects	LS,C
		35	Short grass	RU,LS,C
			Tall grass	LS
			Broadleaf foliage/small insects	LS
		1000	Short grass	LS

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC, C = Chronic LOC, -- no LOC exceeded

The last method of assessment employed in the risk assessment for terrestrial vertebrates involved using treated bait or seed concentrations of fipronil as a basis for exposure if baits or seeds are directly consumed by terrestrial wildlife. As stated earlier in this section, the onion

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seed treatment and the fruit fly bait uses for fipronil were not evaluated in this manner as it was felt that the uses posed no significant route of exposure to wildlife. For both corn seed treatment and on leafcutter ant bait, fipronil presents acute and chronic concerns. The degree to which the corn seed concern presents an acute risk to birds is limited by the availability of unincorporated seed and the potential for birds to probe the soil for treated seed. However, further analysis of the mass on fipronil on treated seed suggests that it is a plausible argument that birds could consume enough treated seed in a day to reach acutely toxic amounts. Chronic risks may be somewhat overestimated as it can be expected that fipronil-treated seed will germinate and thereby not be available on treated fields for prolonged periods of time.

Terrestrial Vertebrate Risk Results for Fipronil Use Based on Residues In/On Treated Seeds and Baits				
Chemical	**Animal Type**	**Body Weight g**	**Food Item**	**LOC Exceeded**
Seed Corn Treatment 0.1 lb ai/100 lb seed (1000 mg/kg seed)				
Fipronil	Bird	20	Treated seed (1000 mg/kg)	A,RU,LS,C
		100		A,RU,LS,C
		1000		A,RU,LS,C
	Mammal (granivore)	15		A,RU,LS,C
		35		A,RU,LS,C
		1000		RU,LS,C
Onion Seed Treatment (not evaluated because onion seed is a set treatment assumed unattractive to wildlife)				
Broadcast Texas Leafcutter Ant Bait BES 100 0.003% (30 mg/kg-bait)				
Fipronil	Bird	20	Treated bait as a seed (30 mg/kg)	A,RU,LS,C
		100		A,RU,LS,C
		1000		A,RU,LS,C
	Mammal (granivore)	15		C
		35		C
		1000		C
Amulet Fruit Fly Station Bait (not evaluated because exposure not expected for wildlife)				

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC, Chronic LOC, -- no LOC exceeded

1.2.4 Aquatic Plants

The risk assessment found no risks of concern for any uses related to aquatic plants.

1.2.5 Freshwater Fish and Amphibians

The risk assessment identified no concerns for direct effects of fipronil on freshwater fish or amphibians. However, concerns for effects on aquatic invertebrates may translate out to indirect effects upon fish as aquatic invertebrates and emergent aquatic insects are critical food sources for a variety of fish and amphibians

1.2.6 Freshwater Invertebrates

The following table presents the screening risk assessment process risk conclusions regarding acute and chronic effects to freshwater invertebrates. The screening risk assessment process

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identified no acute or chronic freshwater invertebrate risk concerns for potato/sweet potato, corn seed treatment, fruit fly bait, pine seedling treatment, house perimeter and sod farm uses of Termidor SC/WG, and broadcast fire ant use with HG 61743 AE. The results for the remaining uses identified acute and chronic risks to these organisms originating from exposure predominantly to parent fipronil or the aerobic degradate MB46136.

Freshwater Invertebrate Risk concerns		
Chemical	**Acute LOC Exceeded?**	**Chronic LOC Exceeded?**
Potato/Sweet Potato In-Furrow Spray (No RQs Exceed LOCs)		
Corn In-Furrow Spray		
Fipronil	A,RU,LS	yes
MB 46136	LS	yes
Corn Seed Treatment (No RQs Exceed LOCs)		
Onion Seed Treatment (Maximum Application Rate)		
Fipronil	A,RU,LS	yes
MB 46136	A,RU,LS	yes
MB 45950	LS	no
Onion Seed Treatment (Typical Application Rate)		
Fipronil	A,RU,LS	yes
MB 46136	RU,LS	yes
Broadcast Bait Texas Leafcutter Ants		
Fipronil	A,RU,LS	yes
MB 46136	A,RU,LS	yes
Fruit Fly Station (No RQs Exceed LOCs)		
Pine Seedling Root Injection (No RQs Exceed LOCs)		
House Perimeter Residential BES100		
Fipronil	RU,LS	yes
House Perimeter Sod Farm BES100		
Fipronil	RU,LS	yes
House Perimeter Residential Termidor SC/WG (No RQs Exceed LOCs)		
House Perimeter Sod Farm Termidor SC/WG (No RQs Exceed LOCs)		
Broadcast Fire Ant Residential HG 61743AE (No RQs Exceed LOCs)		
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select		
Fipronil	RU,LS	yes
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select		
Fipronil	RU,LS	yes
Broadcast Fire Ant Residential Over'N Out		
Fipronil	RU,LS	yes

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC, -- no LOC exceeded

The risk assessment considered the effects of runoff buffer removal of fipronil using registrant submitted minimum (33%) and maximum (75%) removal efficiencies. The 33% efficient assumption resulted in no changes to the risk conclusions based on zero buffer influence. However, the 75% loading reduction resulted in the elimination of concerns for House Perimeter Residential BES100 use and eliminated chronic concerns for house perimeter sod farm BES100 and the broadcast fire ant sod farm Chipco TopChoice, Chipco 61748A, Topchoice Select uses.

Further evaluation of uses triggering acute and chronic concerns was conducted using alternative effects endpoints (less conservative than the lowest organism tested). In all cases where the acute non-listed species level of concern was exceeded in the screening assessment (corn in-furrow spray, onion seed treatment, and broadcast bait for Texas leafcutter ants), the next eleven acute effects endpoints would have also triggered the acute effects concern. This suggests

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increased confidence in the acute risk concerns for non-listed freshwater invertebrate species risks associated with these uses.

Additional analysis was also conducted to ascertain if available monitoring data, when available, supported peak surface water exposure estimates and whether the risk conclusions for uses supported by monitoring data would be different than those based on modeling alone. Registrant-generated monitoring data are available for corn uses and broadcast fire ant uses. Comparison of the monitoring data with peak values from modeling efforts reveals that modeling values are largely bracketed by available monitoring data. Moreover, in all but two monitoring sites (8 of 10) acute listed species concerns would be triggered, and non-listed species concerns for acute effects would be triggered in 6 out of 10 monitored sites.

Additional consideration was given to the time series associated with each surface water model run that triggered concerns for acute or chronic risks to freshwater invertebrates. This analysis showed that in all cases for predicted acute risks to non-listed species, the incident was not an isolated single event. Rather, multiple daily peak values triggered acute non-listed species risk concerns from 11 to over 2,488 days over the course of three decades of modeling. These frequencies increase for evaluation of daily values triggering acute non-listed species concerns. Moreover, analysis of time series for running averages of 21-days for invertebrate chronic risks showed that in these cases 20 to over 7,000 21-day intervals averaged concentrations that would trigger chronic concerns.

Finally, the predictions of freshwater invertebrate risks were compared to the results of registrant's mesocosm study ponds. In these ponds there were a variety of declines in aquatic invertebrates following an initial introduction of 0.4 ug/l (equivalent to 0.4 parts-per-billion) fipronil. Therefore, initial water concentrations in mesocosms produce adverse effects in aquatic organisms at concentrations consistent with acute toxic effects observed in single species laboratory tests. Water column abundances of arthropods were lower in fipronil treatment for the first 14 days of mesocosm exposure. This coincided with an estimated time weighted average concentration of 0.24 ug/L during this period. Again these values are consistent with acute toxicity endpoints for single species in the laboratory. The effects to arthropods in the mesocosms were transient and as daily concentrations of fipronil were reduced to below 0.018 ug/l in the water column, arthropods recovered. It is interesting to note that chronic effects endpoints for freshwater invertebrates used in the quotient calculations are also close to this value. Artificial substrate samples for a number of aquatic invertebrates, including aquatic fly larvae, dragonflies, and mayflies showed reductions in overall abundance over the course of exposure. This is consistent with laboratory observations that these are among the most sensitive species tested with fipronil. For flies, mesocosm abundance reductions, though still evident, were not statistically significant after fipronil had reached concentrations below 0.018 ug/L, again consistent with chronic effects thresholds employed in quotient calculations. However, mayflies remained depressed throughout the study, out to 56 days, a point where fipronil was no longer detectable in the mesocosms. Because of the long intergenerational, times for mayflies (typically one to 2 years), it is not surprising that recovery was not evident over the course of the study for these organisms.

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1.2.7 Freshwater Sediment Organisms

Invertebrates dwelling in the sediment may be affected from certain fipronil uses. When sediment pore water concentrations are used in RQ-LOC comparisons only risk quotients calculated for the onion seed treatment (maximum application rate) and the Texas leafcutter ant bait treatment exceed Agency acute levels of concern for non-listed species. For listed species these two uses as well as in-furrow corn and the broadcast fire ant sod farm uses of Chipco TopChoice, Chipco 61748A and TopChoice Select exceed the acute level of concern. While the other uses appear to offer little risk of concern for benthic in-fauna, caution should be exercised in reaching this conclusion. Basing RQ calculations on pore water concentration alone assumes that sediment resident species have no exposure to overlying water concentrations which can be higher than pore water concentrations. The potential lack of conservatism in the sediment organism risk assessment to address possible risks to epibenthic invertebrates (those organisms found at the sediment-water interface) is supported by the results of the registrant-supplied mesocosm study in which initial water concentrations of fipronil were well within peak and longer-term averages of the parent pesticide in all but the potato/sweet potato, in-furrow corn, and pine seedling use scenarios (MRID 46733901). As discussed in the effects section, this study showed that a number of macroinvertebrate taxa samples from substrates at the sediment water column interface were reduced in abundance for one or more weeks following introduction of environmentally realistic concentrations of fipronil to the system. Pore water measurements were not made in those studies, but introduction of fipronil in the aquatic phase and associated partitioning of the material between water column and sediment compartments did produce significant reductions in mayfly juveniles ($p<0.05$) at days 8, 14, 28, and 56 of the study. Juvenile chironomids were also reduced significantly ($p<0.05$) by fipronil at day 8, though these effects were largely reversed by day 56 of the study. And while the numbers of emergent insects were too small in the study to make definitive statistically supported statements about individual taxonomic groups, the total number of emergent insects was lower in the fipronil treatment than in the control for all sampling days of the study.

It is anticipated that additional data provided in final reports on sediment recolonization studies preliminarily described in MRID 46936104 will address the uncertainty surrounding the extent of sediment fauna responses to contamination by fipronil and its degradates.

1.2.8 Estuarine/Marine Fish

The following uses trigger **no concerns** for acute or chronic risks to estuarine/marine fish:

- Potato/sweet potato in-furrow spray
- Corn seed treatment
- Pine seedling injection
- Broadcast fire ant residential use with HG 61743AE

Risks to estuarine marine fish are limited to chronic concerns for both fipronil and the degradate MB46136. The following uses are associated with fish chronic RQ values in excess of the agency level of concern:

- Corn in-furrow spray,
- Onion seed treatment typical and maximum application rates, and

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- Broadcast bait for Texas leafcutter ant.

These risk quotients for chronic effects associated with parent fipronil residues are all below 10. While the risk quotients for chronic effects to fish from exposure to MB46136 are higher, it should be noted that chronic effects endpoint for MB46136 is an extrapolation from an extrapolated acute value. **Also, the 1 in 10 year EEC for MB46136 is expected to behighly conservative relative to estuarine and marine environments because of accumulation in the standard pond scenario which has no outlet**. Therefore, there is considerable uncertainty in the resulting chronic risk assessment for MB46136. Additional effects testing, either acute or chronic, involving estuarine/marine fish and this degradate would reduce the current level of uncertainty, though it is not possible to determine, *a priori*, whether results of such testing will change the conclusions of risks to estuarine/marine organisms.

For risks to estuarine/marine fish, consideration of a runoff buffer removal efficiency of 33% results in a removal of concerns for chronic effects associated with typical rate onion seed treatment and corn in-furrow spray. Raising the removal efficiency to the maximum 75% rate eliminates all concerns for all uses except those associated with MB46136 in the Texas leafcutter ant use.

1.2.9 Estuarine/Marine Invertebrates

As for freshwater organisms, the most sensitive and therefore the greatest risk concerns extend to invertebrate species. As can be seen in the following table, these concerns extend to all but four uses of fipronil assessed (potato/sweet potato in-furrow spray, corn seed treatment, pine seedling treatment, broadcast fire ant control with HG61743 AE). Concerns are greatest for corn in-furrow spray, onion seed treatments, and the leafcutter ant bait treatments where acute and chronic concerns are identified and extend beyond parent fipronil to include concerns for more than one degradate.

Estuarine/Marine Invertebrate Risk Quotients		
Chemical	**Acute LOC Exceeded?**	**Chronic LOC Exceeded?**
Potato/Sweet Potato In-Furrow Spray (No RQs Exceed LOCs)		
Corn In-Furrow Spray		
Fipronil	A,RU,LS	Yes
MB 46136	RU,LS	Yes
MB46513	no	No
MB 45950	RU,LS	Yes
Corn Seed Treatment (No RQs Exceed LOCs)		
Onion Seed Treatment (Maximum Application Rate)		
Fipronil	A,RU,LS	Yes
MB 46136	A,RU,LS	Yes
MB46513	no	No
MB 45950	A,RU,LS	Yes
Onion Seed Treatment (Typical Application Rate)		
Fipronil	A,RU,LS	Yes
MB 46136	RU,LS	Yes
MB46513	no	No
MB 45950	A,RU,LS	Yes
Broadcast Bait Texas Leafcutter Ants		
Fipronil	A,RU,LS	Yes

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Estuarine/Marine Invertebrate Risk Quotients		
Chemical	**Acute LOC Exceeded?**	**Chronic LOC Exceeded?**
MB 46136	A,RU,LS	Yes
MB46513	no	No
MB 45950	A,RU,LS	Yes
Fruit Fly Station		
Fipronil	LS	Yes
MB 46136	no	Yes
MB46513	no	No
MB 45950	no	No
Pine Seedling Root Injection (No RQs Exceed LOCs)		
House Perimeter Residential BES100		
Fipronil	RU,LS	Yes
MB 46136	no	Yes
MB46513	no	No
MB 45950	no	No
House Perimeter Sod Farm BES100		
Fipronil	RU,LS	Yes
MB 46136	LS	Yes
MB46513	no	No
MB 45950	LS	Yes
House Perimeter Residential Termidor SC/WG		
Fipronil	no	No
MB 46136	no	Yes
MB46513	no	No
MB 45950	no	No
House Perimeter Sod Farm Termidor SC/WG		
Fipronil	no	No
MB 46136	no	Yes
MB46513	no	No
MB 45950	no	No
Broadcast Fire Ant Residential HG 61743AE (No RQs Exceed LOCs)		
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select		
Fipronil	RU,LS	Yes
MB 46136	no	Yes
MB46513	no	No
MB 45950	no	No
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select		
Fipronil	A,RU,LS	Yes
MB 46136	LS	Yes
MB46513	no	No
MB 45950	no	No
Broadcast Fire Ant Residential Over'N Out		
Fipronil	A,RU,LS	Yes
MB 46136	no	Yes
MB46513	no	No
MB 45950	no	No

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC, -- no LOC exceeded

For estuarine/marine invertebrates the risk picture changes only slightly when the 33% removal efficiency is used for runoff buffers. The following table presents these results. Assuming the maximum removal efficiency of 75% for the runoff buffer only eliminates concerns for fruit fly bait station use and the house perimeter residential use of Termidor SC/WG.

The risk assessment considered an impact of the use of an alternative acute toxicity endpoint on the conclusions of the risk assessment in a manner similar to that conducted for freshwater invertebrates. While the number of species tested is far lower for estuarine/marine invertebrates

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than for freshwater invertebrates, the comparison of exposure estimates with other test species endpoints again indicated that uses triggering acute risk concerns with the most sensitive species endpoint would still trigger concerns if less sensitive organisms were considered instead.

Analysis of available estuarine/marine use site water monitoring data showed that estimated acute exposures were consistent with monitored peaks and that these monitored values would trigger acute concerns if substituted for model estimates in risk calculations.

The entire output of model water concentration time series were compared with acute and chronic effects endpoints modified by the levels of concern. These analyses revealed that predicted excursions of exposure above concern levels were not isolated and the number of daily or 21-day average estimates that trigger concern were as many or more than for the freshwater invertebrate case.

1.3 Assessment of Potential Effects to Federally Listed Threatened and Endangered Species

The following table summarizes the risk assessment conclusions concerning potential direct and indirect effects to federally listed threatened and endangered species (listed species). These same direct and indirect effects considerations can be used to evaluate the effects to designated critical habitat for listed species where attributes of the habitat are either represented by the taxonomic groups potentially affected or are mediated by potentially affected taxa.

Potential Effects to Federally Listed Taxa				
Listed Taxon	**Direct Effects**	**Uses of Concern**	**Indirect Effects**	**Uses of Concern**
Terrestrial and semi-aquatic plants - monocots	No		Yes[1,2]	all
Terrestrial and semi-aquatic plants - dicots	No		Yes[1,2]	all
Terrestrial invertebrates	Yes	all	No	
Birds	Yes	a,b,c,d,e,f,i,j,k,l,m,n,o	Yes[1,2,3]	all
Terrestrial phase amphibians	Yes	a,b,c,d,e,f,i,j,k,l,m,n,o	Yes[1,2,3]	all
Reptiles	Yes	a,b,c,d,e,f,i,j,k,l,m,n,o	Yes[1,2,3]	all
Mammals	Yes	c,f,i,j,k,l,m	Yes[1,2,3]	all
Aquatic vascular plants	No		No	
Freshwater fish	No		Yes[3]	b,d,e,f,g,i,j,n,o,p
Aquatic phase amphibians	No		Yes[3]	b,d,e,f,g,i,j,n,o,p
Freshwater crustaceans	Yes	b,d,e,f,g,i,j,n,o,p	No	
Mollusks	Yes(may be subject to further evaluation)	b,d,e,f,g,i,j,n,o,p	No	
Marine/estuarine fish	Yes	b,d,e,f	Yes[4]	b,d,e,f,g,i,j,k,l,m,n,o,p
Marine/estuarine invertebrates	Yes	b,d,e,f,g,i,j,k,l,m,n,o,p	No	

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[1] direct effects on insects
[2] direct effects on terrestrial vertebrates
[3] direct effects on aquatic invertebrates
[4] direct effects on estuarine/marine invertebrates
a Potato/Sweet Potato In-Furrow Spray
b Corn In-Furrow Spray
c Corn Seed Treatment
d Onion Seed Treatment (Maximum Application Rate)
e Onion Seed Treatment (Typical Application Rate)
f Broadcast Bait Texas Leafcutter Ants
g Fruit Fly Station
h Pine Seedling Root Injection
i House Perimeter Residential BES1000
j House Perimeter Sod Farm BES1000
k House Perimeter Residential Termidor SC/WG
l House Perimeter Sod Farm Termidor SC/WG
m Broadcast Fire Ant Residential HG 61743AE
n Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select
o Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select
p Broadcast Fire Ant Residential Over'N Out

Appendix I presents the results of Locates v 2.10.3 collocation analysis of listed species with use sites.

2. Problem Formulation

Problem formulation provides a strategic framework for the risk assessment. By identifying the important components of the problem, it focuses the assessment on the most relevant chemical properties, exposure routes, and endpoints.

2.1 Stressor Source and Distribution

The current and proposed new uses for fipronil are in-furrow treatments, broadcast treatments, seed treatments, and bait stations for control of insect pests. The use pattern includes residential uses for control of termites, fire ants, carpenter/nuisance ants, leaf cutter ants and crop uses on corn, onion seed, corn seed, sweet potato, potato, pine seedlings, and fruit flies. Fipronil use for control fire ant is limited to the USDA 12 state fire ant quarantine area. Distributions of the crops were determined based on 1997 AgCensus data and 70 Code of Federal Regulation, 1996. Maps showing these distributions are shown in the Use Characterization section. Because fipronil degradation products are persistent in soil (soil degradation $t_{1/2}$ ~ 700 day), they are expected to accumulate in soil from successive use of fipronil (MRID 46477001). The persistence of fipronil degradation products is expected to prolong ecological exposure.

2.2 Environmental Fate Summary

Structural representations of fipronil and degradates may be found in Appendix A.

Fipronil dissipation appears to be dependent on photodegradation in water, microbially mediated degradation, and soil binding. Data indicate that fipronil is relatively persistent and immobile in terrestrial environments. In aquatic environments, a determination of the environmental behavior of fipronil is more tentative because soil and aquatic metabolism studies provide contradictory data on fipronil persistence to microbially-mediated degradation processes. Photolysis is expected to be a major factor in controlling fipronil dissipation in aquatic

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environments. Fipronil degrades to form persistent and immobile degradates. These degradates are considered in the HED dietary tolerance expression for fipronil. Because fipronil and its degradates have a moderate to high sorption affinity to organic carbon, it is likely sorption on soil organic matter will limit fipronil residue movement into ground and surface waters. However, fipronil residue may have the potential to move in very vulnerable soils (e.g., coarse-textured soils with low organic matter content) and in erodable soils when bound to particles entrained in runoff. In-furrow fipronil applications are expected to limit runoff potential.

Abiotic Degradation

The chemical degradation of fipronil appears to be dependent predominately on photodegradation in water and, to a lesser extent, on alkaline-catalyzed hydrolysis. Fipronil is stable ($t_{1/2}$ > 30 days) in pH 5 and pH 7 buffer solution and hydrolyzes slowly ($t_{1/2}$=28 days) in pH 9 buffer solution. The major hydrolysis degradate is RPA 200766 (5-amino-3-carbamoyl-1-(2,6-dichloro-4-trifluoromethylphenyl)-4-trifluoro-methanesulfinyl pyrazole. Photodegradation of fipronil is a major route of degradation (photodegradation in water half-life=3.63 hours) in aquatic environment. In contrast, fipronil photodegradation on soil surfaces (dark control corrected half-life=149 days) does not appear to a major degradation pathway. Major photolysis products of fipronil are MB 46513 (5-amino-3-cyano-1-(2,6-dichloro-4-trifluoromethyl-phenyl)-4-trifluoro-methylpyrazole 350, and RPA 104615 (5-amino-3-cyano-1-(2,6-dichloro-4-trifluoro methyl phenyl) pyrazole-4-sulfonic acid).

Biotic Degradation

Fipronil degradation in terrestrial and aquatic systems appears to be controlled by slow microbially-mediated processes. In aerobic mineral soil, fipronil is moderately persistent to persistent ($t_{1/2}$= 128 to 300 days). Major aerobic soil degradates (>10% of applied of fipronil) are RPA 200766 and MB 46136 (5-amino-1-(2,6-dichloro-4-trifluoro methylphenyl)-3-cyano-4-trifluoromethyl-sulphonyl-pyrazole). Minor degradates (<10% of applied fipronil) are MB 45950(5-amino-1-(2,6-dichloro-4-trifluoromethylphenyl)-3-cyano-4-trifluoro-methyl-thio-pyrazole) and MB46513. These degradation products are not unique soil metabolism degradation products. Fipronil degraded ($t_{1/2}$=14.5 days to 35 days) under stratified redox aquatic/sediment systems. Fipronil also is moderately persistent (anaerobic aquatic $t_{1/2}$ = 116-130 days) in anoxic aquatic environments. Major anaerobic aquatic degradates are MB 45950 and RPA 200766. Supplemental aerobic aquatic metabolism data indicate that fipronil degradation ($t_{1/2}$=14 days) is rapid in aquatic environments with stratified redox potentials. These data contradict the longer fipronil persistence reported in anaerobic aquatic and aerobic soil studies.

Mobility

Fipronil has a moderate sorption affinity (K_f=4.19 to 20.69 mL/g; 1/n= 0.938 to 0.969; K_{oc}= 427 to 1248 mL/g) on five non-United States soils. Fipronil sorption appears to be lower (K_f< 5 mL/g) on coarse-textured soils with low organic matter contents. Desorption coefficients for fipronil ranged from 7.25 to 21.51 mL/g. These data suggest that fipronil sorption on soil is not a completely reversible process. Since the fipronil sorption affinity correlates with soil organic

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matter content, fipronil mobility may be adequately described using a K_{oc} partitioning model. Soil column leaching studies confirm the immobility of fipronil.

Terrestrial Field Dissipation

Terrestrial field studies confirm observations of the relative persistence and immobility of fipronil residues in laboratory studies. Fipronil, formulated as a 1% granular, had half-lives of 1.1 to 1.5 months on bare ground in North Carolina (NC) and Florida (FL), 0.4 to 0.5 months on turf in NC and FL, and 3.4 to 7.3 months for in-furrow applications on field corn in California (CA), Nebraska (NE), NC, and Washington (WA). Fipronil, formulated as 80WG and applied foliar spray at 0.3 lbs ai/A, had a field dissipation half-life of 159 days on a cotton site in California, 30.2 days on cotton site in Washington, and 192 days on a potato site in Washington.

The fipronil degradates MB 46136, MB45950, and RPA 200766 were detected in the field studies for in-furrow and turf uses. The degradate MB46513 was detected during field trails with the foliar spray. Fipronil residues were predominately detected in the 0 to 15 cm soil depth at all test sites. However, there was detection of fipronil, MB 45950, MB 46136 and RPA 200766 at a depth of 15 to 45 cm for in-furrow treatments on coarse sandy loam soil in Ephrata, Washington. Although the field dissipation half-life of individual residues was not reported, the half-life of combined fipronil residues (including fipronil, MB 46136, MB 46513, MB 45950, and RPA 200766) ranged from 9 to 16 months.

Long-term field dissipation studies in Nebraska, Illinois, Ohio, Mississippi, Texas, and Washington show fipronil, applied at 0.13 to 0.20 lbs ai/A as a broadcast application with soil incorporation or foliar spray, is moderately persistent ($t_{1/2}$ = 5.1 to 144.4 days) in surface soils. There was no discernable year-to-year accumulation of MB46513. There was year-to-year soil accumulation of MB 45950 and MB 46136. There were no detectable patterns of movement of fipronil residues except for MB46136. MB46136 was detected below 0.15 meter soil layer at all test sites except IL. The major routes of fipronil dissipation were through microbial-mediated oxidation to form MB46136, microbial-mediated reduction to MB45950, and photodegradation to form MB 46513.

Bioconcentration in Fish

The bioconcentration factor for radiolabelled fipronil was 321X in whole fish, 164X in edible tissues, and 575X in non-edible tissues. Accumulated fipronil residues were eliminated (>96%) after a 14-day depuration period. Because fipronil exhibited a high depuration rate, fipronil is not expected to accumulate under flowing water conditions.

Environmental Fate of Fipronil Degradates

Because discernable decline patterns for the fipronil degradates were not observed in laboratory metabolism studies, the degradates are believed to be persistent ($t_{1/2}$•700 days) to microbially mediated degradation in terrestrial and aquatic environments. However, the fipronil degradate, MB46136, rapidly photodegrades ($t_{1/2}$=7 days) in water. Radiolabelled MB 46513, applied at 0.1 µg/g, had an extrapolated half-life of 630 or 693 days in loamy sand soils when incubated

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aerobically in the dark at 250C. The major metabolite of MB 46513 was RPA 105048(5-amino-3-carbamoyl-1-(2,6-dichloro-4-trifluoromethylphenyl)-4-trifluoromethyl sulfonyl pyrazone).

Fipronil degradation products have a relatively low potential mobility because of a moderate to high sorption affinity to soil organic matter. Organic carbon partitioning coefficients for fipronil degradates can range from 1150 to 1498 mL/g for MB 46513, 1619 to 3521 mL/g for MB 45950, and 1448 to 6745 mL/g for MB 46136. The high sorption affinity of fipronil degradation products is expected to limit movement into ground and surface water

2.3 Mode of Action

Fipronil affects the gamma-aminobutyric acid neurotransmission system by interfering with the passage of chloride. In addition, research data indicate that fipronil displays a higher affinity for the insect GABA chloride channel than in the vertebrate GABA chloride channel which may indicate selective toxicity (Hainzl and Casida, 1996). However, the photodegradate MB46513 does exhibit enhanced toxicity to mammals relative to parent fipronil, suggesting that differential affinity among taxa may not hold for all degradates. Parenthetically, this risk assessment has considered the effect of each of the major degradates on the taxonomic groups normally in compliance with the process outlined in compliant with the Overview of Ecological Risk Assessment process in the Office of Pesticide Programs (USEPA 2004).

2.4 Use Characterization

Current and proposed uses of fipronil encompass both residential and crop use patterns. The residential uses are broadcast granular and baits. The crop uses are "at-plant" use as either an in-furrow application or seed treatment. Additionally, there are proposed bait station uses for control of fruit flies. There are no foliar uses of fipronil. Maximum applications rates for the current and proposed fipronil uses are shown in Table 1.

Table 1: Proposed and Conditional Registered Uses of Fipronil

Use Scenario	Label Reference	AppRate (kg/ha)	Number of Apps (Interval)
Potato/Sweet Potato	Regent® 4 SC EPA Reg. No. 7969-207 Spray	0.112	1
In-Furrow Corn Regular (30/15 inch) Row Spacing	REGENT® 4SC EPA Reg No. 7969-207 Spray	0.1456	1
Seed Corn Treatment	REGENT® TS EPA Reg No. 7969-223 0.100 lbs/100 lbs	0.02	1
Onion Seed Treatment	ICON® 6.2 FS EPA Reg pending	0.112	1
	REGENT® TS EPA Reg No. 7969-223	0.054	1
Broadcast Bait Texas Leafcutter	Proposed Label for BES 100	0.255	2 (30 d)

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Table 1: Proposed and Conditional Registered Uses of Fipronil			
Use Scenario	**Label Reference**	**AppRate (kg/ha)**	**Number of Apps (Interval)**
Ants	Insecticide Granular- Bait		
Fruit Fly Stations	AMULET™ C-L EPA Reg. No. 7869-xxx Bait	0.001	**4 (90 d)**
Pine Seedling	BASF PTM SC EPA Reg. No. 7869-xxx Soil Injection	0.1456	1
House Perimeter Treatment for Carpenter/ Nuisance Ants	BES 1000 EPA Reg. No 432-1451 Granular (2 feet @ 0.357 lbs ai/A)	0.013	1(R)/2 (SF)
House Perimeter Treatment for Carpenter/ Nuisance Ants	TERMIDOR® SC, EPA Reg. No. 7969-210 TERMIDOR® WG, EPA Reg. No. 7969-210 Spray (1 feet @ 0.325 lbs ai/A)	0.006	1(R)/2 (SF)
Broadcast Fire Ant	HG 61743Ae EPA Reg. No. 432-1224 Spray (1 feet @ 0.1089 lbs ai/A)	0.002	1
Broadcast Fire Ant	Chipco 61748A 432-1218 Chipco®TopChoice EPA Reg. No. 432-1217 Granular	0.014	1(R)/2 (SF)
Broadcast Fire Ant	Over'N Out EPA Reg. No. 7969-212 Granular	0.01	1
Broadcast Fire Ant	TopChoice Select EPA Reg. No. 432-1420 Granular	0.014	1(R)/2 SF
Broadcast Fire Ant	Chipco®Choice EPA Reg. No. 432-896 Granular	0.014	1(R)/2 (SF)

1- Application rate for the corn seed treatment was determined assuming 0.101 lbs ai/100 lbs of seed and a seeding rate of 18.3 lbs of seed/A.
2- Narrow row spacing from 30 inch rows (normal row spacing) and 15 inch rows (narrow row spacing) will applied at the same application rate.
3- Application rate for the dry bulb onion seed treatment was determined assuming the maximum seeding rate (4 lbs of seed/A) and typical seeding rates (1.9 lbs of seed/A).
4- Application rate reflects the recommended rate in 2 foot perimeter around a 2000 ft^2 house.

A spatial analysis of the fipronil use areas in the United States suggests the predominant fipronil use areas are the Midwestern and Southeastern United States (Figures 1 and 2). These use areas are associated with conditional registrations for in-furrow use of fipronil corn and broadcast/bait fipronil use for fire ant use in residential areas.

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Figure 1: Corn Production Areas in the United States

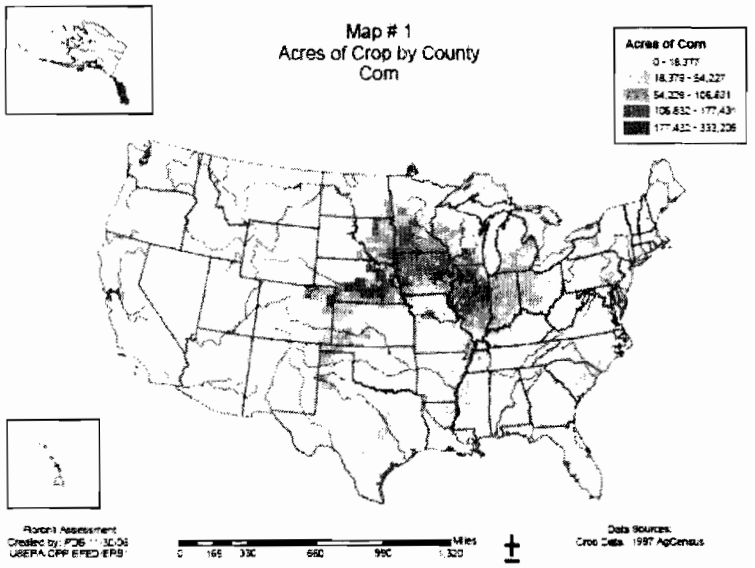
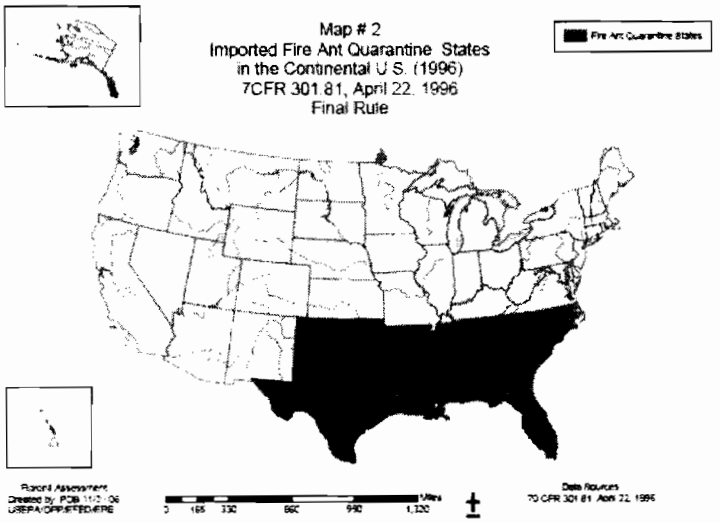


Figure 2: Fire Ant Quarantine Area in the United States



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Proposed uses of fipronil on sweet potato are not expected to extend the use area beyond the fire ant quarantine use areas (Figure 3). However, the use of fipronil on potatoes is expected to extend the fipronil use area into the Northeastern United States (Maine).

Figure 3: Sweet Potato Production Areas in the United States

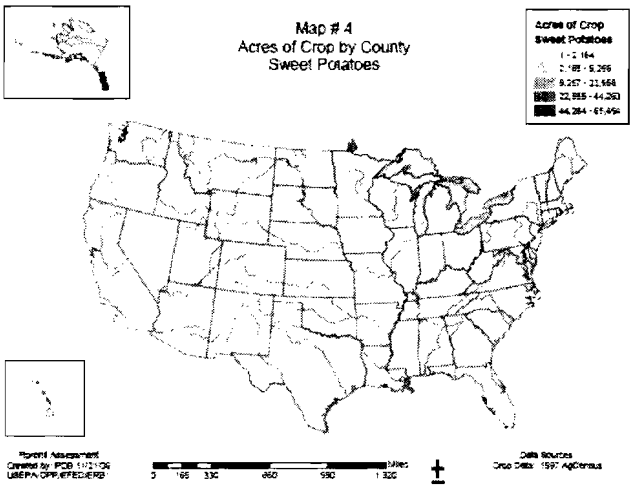
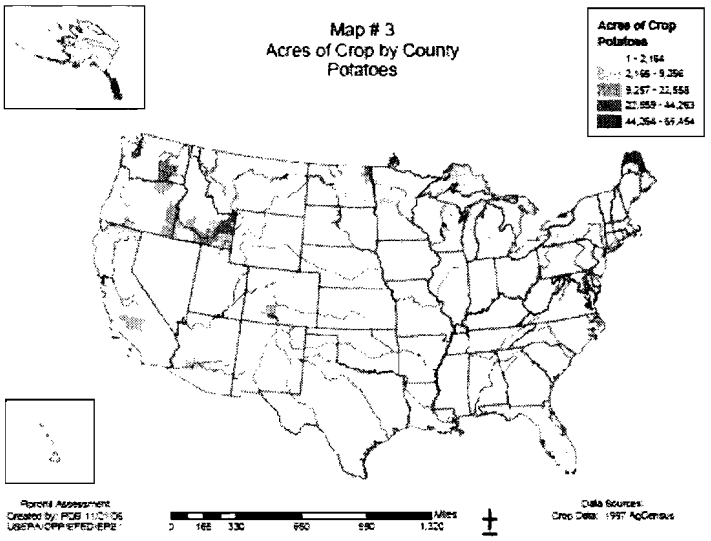


Figure 4: Potato Production Areas in the United States



The proposed pine seedling use for fipronil is expected to be in pine nursery areas for plantations associated with pulp and paper mill production (i.e., Southeastern United States). Although the AMULET™ C-L label for fruit fly bait does not restrict the geographical use, the use area is

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expected to be limited to Hawaii (Personal Communication from Jack Arthur, BASF, 10/5/06). The onion seed treatment use of fipronil is proposed to control onion maggot. The onion maggot has been documented as a serious pest in the Midwest and Northeast onion production areas (http://cat.inist.fr/?aModele=afficheN&cpsidt=1042348, 10/12/06). The proposed perimeter house treatment use of fipronil (TERMIDOR® SC, EPA Reg. No. 7969-210) will be predominately associated with urban and suburban areas. The geographic range of house perimeter use is expected to be correlated with geographic extent of termites.

2.5 Assessment Endpoints

Assessment endpoints are selected based on ecosystems typically at risk from agricultural pesticide applications. Specific ecological effects are evaluated based on toxicity information from guideline tests, and focus on the general categories of survival, growth, and reproduction. EFED currently does not assess behavioral or biochemical endpoints which are not closely linked to the previously stated endpoints.

2.5.1 Ecosystems Potentially at Risk

For typical crop applications, the ecosystem at risk is the field itself, in terms of organisms that might be sprayed during application, organisms affected by accumulation of fipronil residues in the soil; and the adjacent aquatic and terrestrial environments affected due to runoff, spray drift, or groundwater contamination. In water bodies receiving runoff from agricultural fields, pelagic and benthic elements are considered. Terrestrial organisms assessed include non-target plants, insects, amphibians, reptiles, birds, and mammals. Because fipronil is an insecticide, potential effects on non-target aquatic invertebrates have been addressed at length.

2.5.2 Ecological Effects

Evaluation of ecological effects focuses initially on direct effects to the groups of organisms residing in the ecosystems at risk, based on ratios of the estimated environmental concentration (EEC) to a designated toxicity endpoint for a surrogate test organism. If pre-established levels of concern (LOCs) are exceeded for direct effects, indirect effects to endangered species (*e.g.* food chain, decrease in community diversity) are evaluated based on the group of organisms exceeding the LOC.

Direct

Direct effects evaluated are the survival, growth, and reproduction of various taxa of organisms potentially exposed to fipronil and its degradation products. Taxonomic groups evaluated include aquatic plants (algae and vascular), aquatic invertebrates, aquatic vertebrates, terrestrial plants, terrestrial invertebrates, birds, and mammals. Both acute and chronic effects are considered.

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Indirect

When insecticides are applied, indirect effects may include a decline in primary productivity, or change in composition of aquatic communities proximate to the treated area or systems (wetlands and water bodies) receiving runoff from the site. If LOCs are exceeded for any taxa, potential indirect effects to endangered species are assessed.

2.6 Conceptual Model

The conceptual models for current and proposed fipronil use patterns are shown in Figures 1, 2, and 3. The conceptual models illustrate probable dissipation and exposure pathways for parent fipronil. Important fipronil residues in each environmental compartment are listed. Additionally, the high persistence of fipronil degradation products has been shown to lead to fipronil residue accumulation in soil and aquatic environments (MRID 46477001, USGS Rice Document).

It should be noted that wildlife risks are not quantitatively assessed for the fruit fly bait application (Amulet C-L) or for the pine seedling use of BASF PTM SC. In both cases it is qualitatively assumed that exposure to wildlife is negligible. The fruit fly bait stations are non-nutritive cards suspended from trees and so not expected to be attractive to wildlife as a food source. The pine seedling use is an underground injection to seedling root balls and is not expected to be bioavailable to wildlife.

This risk assessment also does not include MB 46513 degradate into the assessment of risks to wildlife as a result of in-furrow sprays and seed treatments.

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Figure 1. In-furrow and Seed Uses of Fipronil

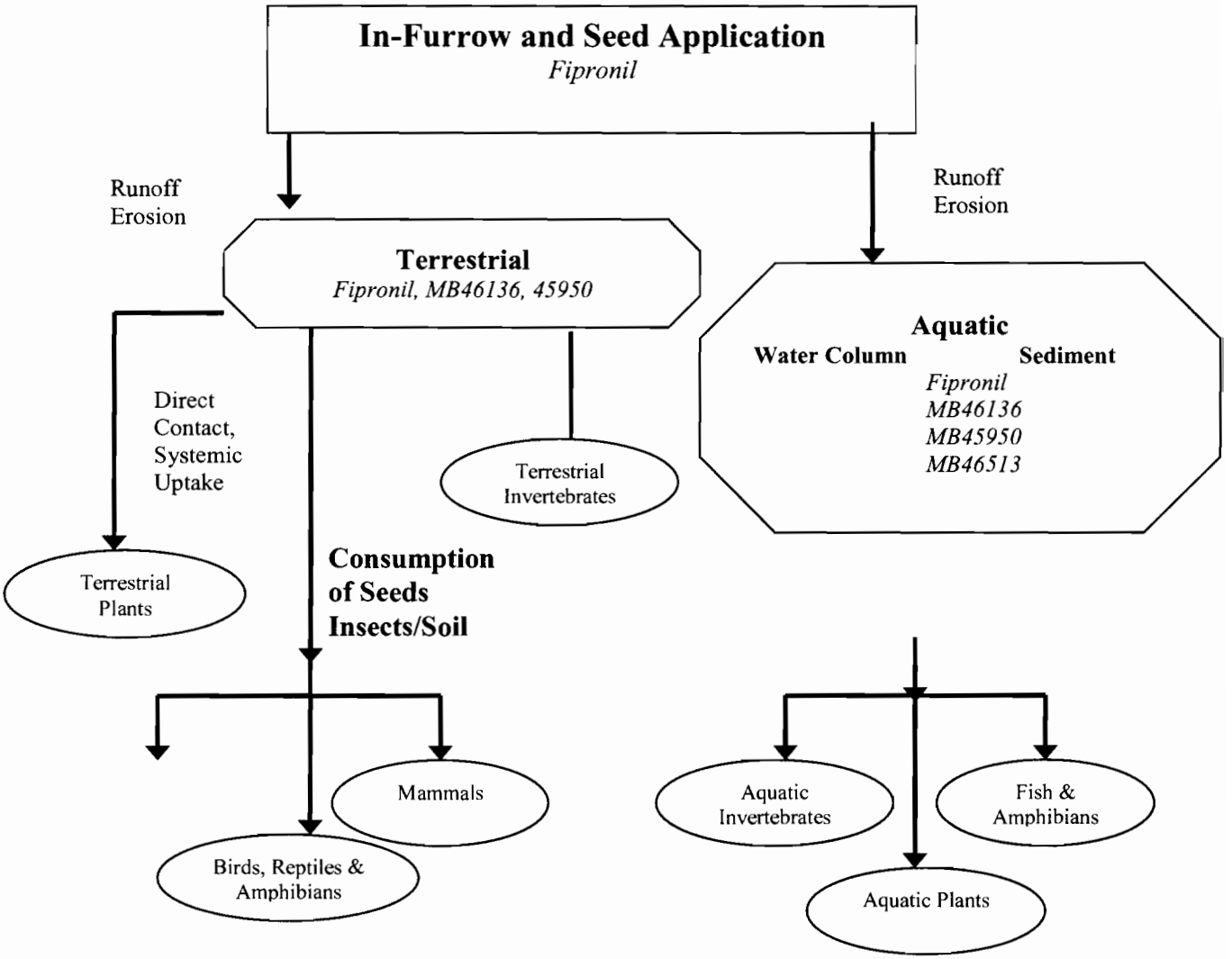

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Figure 2. Broadcast Uses of Fipronil

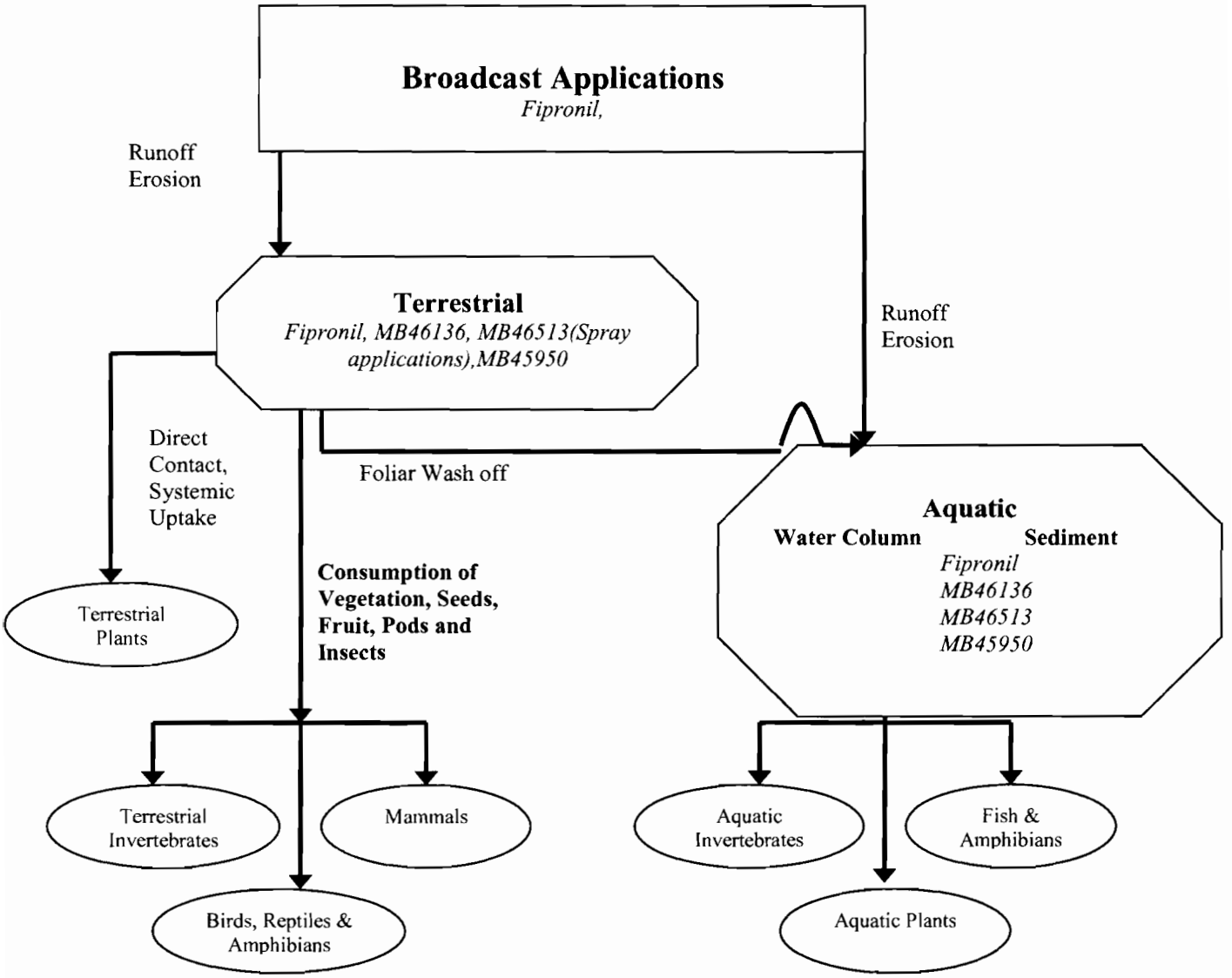

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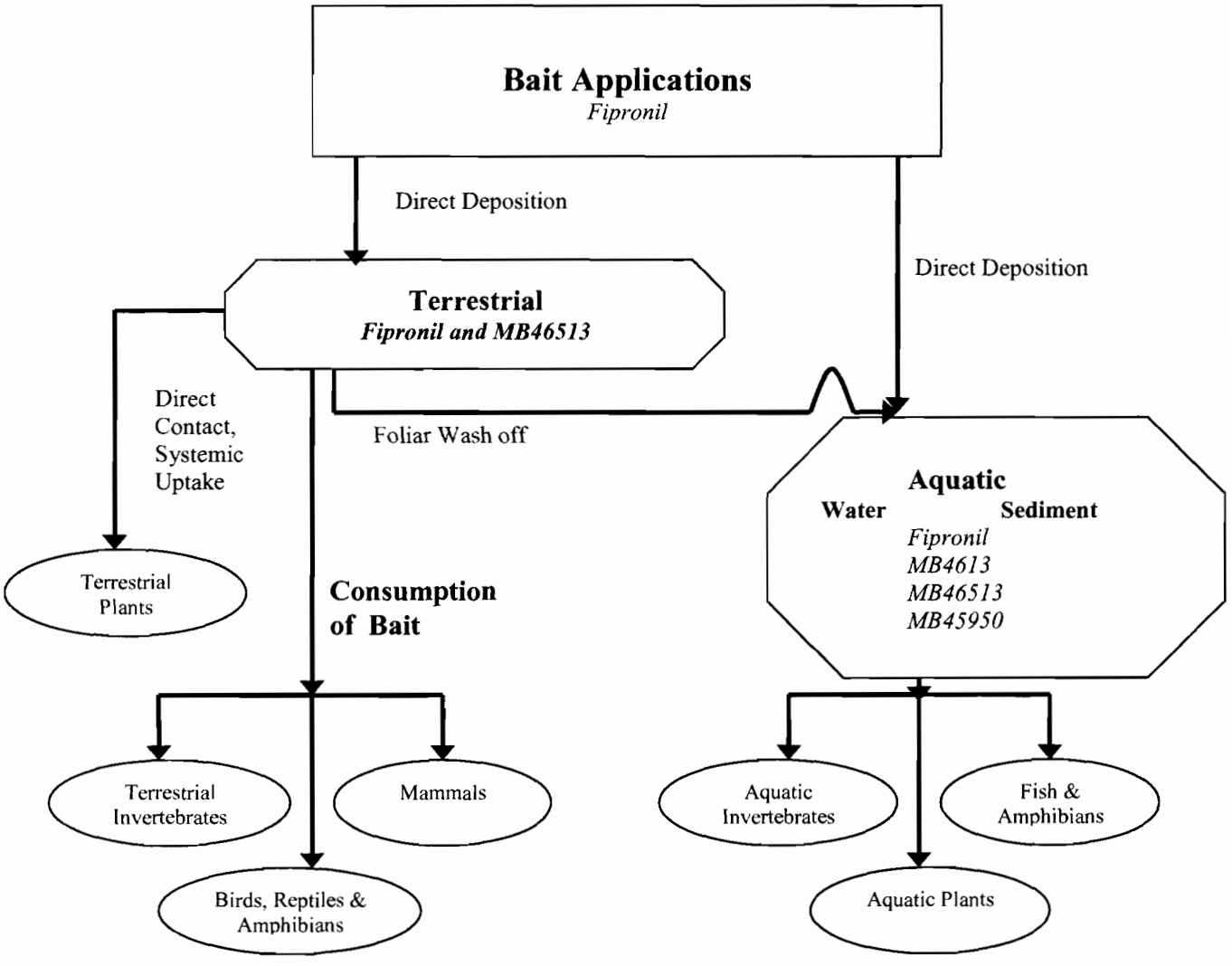
Figure 3. Bait Uses of Fipronil



2.7 Risk Hypotheses

Used in accordance with proposed or existing labels fipronil or its degradates may:

- adversely affect growth, survival, or fecundity of birds and/or small mammals ingesting the incidentally contaminated vegetation, seeds, fruits, or invertebrates or the intentionally treated bait or seed stock,
- adversely affect survival of terrestrial invertebrates through ingestion or contact with fipronil residues in treated areas,
- adversely affect the emergence or growth of terrestrial plants receiving exposure either by drift or surface run-off from treated areas,

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- drift or run-off from treated areas into aquatic and semi-aquatic environments with subsequent adverse affects to individual aquatic plants, water column and epibenthic invertebrates, or fish, and
- drift or run-off from treated areas, accumulate in sediments, and result in adverse effects on benthic organisms.

2.8 Key Uncertainties and Information Gaps

There are no appreciable data gaps regarding laboratory testing for biological effects that would impact the quantitative assessment of risks to the taxa that form the basis of risk assessment process described in the Overview of Ecological Risk Assessment process in the Office of Pesticide Programs (USEPA 2004). Although there are areas where there are missing experimentally-derived effects endpoints for certain taxa, it is the professional judgment of the risk assessment team that extrapolations from the available data allow for the establishment of estimated effects endpoints with adequate scientific confidence.

There are limited insect pollinator laboratory-based effects data for fipronil or the degradates. However, this does not adversely affect the quantitative risk assessment as there is no established procedure for assessing risks for such effects. Consequently, qualitative assumptions about the risk of fipronil and degradates to insects are made, and given the insecticidal nature of fipronil, it is assumed that fipronil poses risks to non-target insects.

With regard to the conduct of the risk assessment for degradates, cumulative assessment of combined risk of biologically active degradates is not possible with existing environmental fate data. While formation and the peak level of formation of degradates are possible to ascertain from existing laboratory fate data, it is not possible to predict for any given time or for any given temporal duration the combined exposure to parent and degradates. Available aquatic monitoring does show that fipronil and biologically active degradates do co-occur, however, these monitoring data are insufficient to establish quantitative patterns of co-occurrence with any confidence. Consequently the risk assessment present individual estimates of risk for each degradate as appropriate. It is likely, therefore that reaching conclusions on the risk of fipronil to non-target organisms is underestimated if conclusions are based on consideration of single chemical assessment results.

3.0 Exposure Assessment

3.1 Terrestrial Exposure Assessment

The terrestrial exposure assessment can be divided into three basic approaches:

- Seed Treatment, granules, and baits (mass per unit area of exposure)
- In-furrow and over the top applications (Dietary exposure)
- Baits and Seeds (direct consumption exposure)

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The first exposure assessment approach involves calculation of the mass of the pesticide applied per unit area of the treated zone. This basic approach is compared to single bird or mammal dose levels and is based on an assumption of bioavailability of the pesticide via one or more exposure routes (e.g. dietary, incidental soil ingestion, dermal contact, drinking water, and inhalation). This approach was employed in the acute risk assessment for seed treatments and granular applications. Seed treatments were assumed to be soil incorporated, leaving 1 percent of the fipronil available on the surface. Broadcast granular and bait applications assumed no soil incorporation and so 100 percent of the applied fipronil was assumed to be bioavailable. Conversion factors for MB46136, MB46513, and MB45950 were assumed to be 24%, 43% and 5%, of applied parent, respectively (maximum fate study detections). Appendix C presents the results of TREX v1.3.1 model output for this exposure assessment method (see table entitled Interim Calculations for each entry in the Appendix C). Many fire ant control granular applications of fipronil can have two applications in a year. The terrestrial exposure assessment for these applications only models a single application. This is because it is assumed that sod farm applications are made first before sod crop is being established and then much later in the season immediately before harvest and thereby removing the sod and pesticide from the field. Similar label allowances are evident for the Texas leafcutter ant use of BES 100. Two applications can be made in a year to the same ant mounds. However, it is assumed that the ants are highly efficient removers of the bait and so availability of the material to wildlife will not carry over to subsequent applications.

The second approach employed is the calculation of pesticide and degradate residues on a variety of wildlife food items within the treated field. This approach uses residue predictions by Fletcher et al. (1994). The peak residue for each application is considered. No accumulation in wildlife food items from fipronil in soils was considered for this risk assessment, an approach not likely to underestimate exposures as there is no evidence of systemic uptake of fipronil or it's degradates in plants. Single applications were considered. The approach was applied to in-furrow spray and broadcast spray uses of fipronil. For in-furrow sprays, which are made at planting time, it was assumed that only in-place seeds and soil insects would directly impinge the spray and be available as a dietary source to wildlife. For broadcast sprays the full suite of wildlife food items (short and tall grasses, broadleaf foliage, fruits, pods, seeds, and insects of various sizes). Conversion factors for MB6136, MB46513, and MB45950 were assumed to be 24%, 43% and 5%, of applied parent, respectively (maximum fate study detections). Appendix D presents the results of TREX v1.3.1 model output for this exposure assessment method (see table entitled Interim Calculations for each entry in the Appendix D). In all cases only a single application of fipronil is assessed.

The third approach was an evaluation of the exposure associated with direct wildlife consumption of bait, granules or treated seeds. The onion treatment was not evaluated as it is not a treated seed but treated sets and so not considered to be an attractive food source for wildlife. The amulet bait station was also not evaluated in this manner as the bait station was not viewed as an attractive food source for terrestrial wildlife. Concentrations of fipronil in each are as indicated on the product labels. Appendix E presents the results of TREX v1.3.1 model output for this exposure assessment method (see table entitled Interim Calculations for each entry in the Appendix E). The following are the exposure assumptions for this third approach:

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Use scenario	Label Information	concentration of granule/seed mg/kg
Seed corn	0.1 lb ai/100 lbs seed	1000 mg/kg
BES 100 (leafcutter ant bait)	0.003% ai	30 mg/kg

For terrestrial plants, although there was little effects information to serve as a basis for comparison, exposures were estimated using the TERRPLANT model v1.3.1. The exposure assessment was conducted on the basis of active ingredient as all available toxicity data is also based on parent fipronil and it is reasoned that any degradates produced over the course of the study are representative of degradate formation in the field as well. Only the highest exposure rate was evaluated based on highest application rate and the results were compared to available effects data. In determining which application rate was highest, the assessment elected to use the application rates for perimeter treatments, adjusted for an application per acre of treated residential yard (See aquatic exposure scenarios below for full explanation of the approach. Because the results of comparison of these exposure values with available effects data suggested no concerns for effects at this rate, no further exposure assessment was assumed for lower rate applications. Inputs for this exposure were as follows:

application rates:	0.228 lb ai./acre (broadcast leafcutter ant bait)
	0.130 lb ai/acre (in-furrow corn spray)
run-off value:	0.01 owing to fipronil solubility <10 mg/L
incorporation:	conservatively assumed in all cases to be zero

The results of this conservative exposure estimation can be seen in Appendix F.

3.2 Aquatic Exposure Assessment

PRZM (3.12 beta) and EXAM (2.97.5) using PE4V01.pl (August 13, 2003) were used to estimate fipronil residue concentrations in surface water. Table 1 provides a summary of the rationale for selection of standard scenarios in the surface water exposure assessment.

Table 1: Rational for Selection of Standard Scenarios

Use Scenario	Selected Scenario	Rationale for Selection of Scenario
Potato/Sweet Potato	NC sweet potato	High runoff scenario
Rutabagas/Turnips	OR snap bean	Regionally similar scenario as use area
In-Furrow Corn	MS corn	High runoff scenario
Seed Corn Treatment	MS corn	High runoff scenario
Onion Seed Treatment	GA onion	High runoff scenario
Broadcast Bait Texas Leafcutter Ants	FL turf	Surrogate scenario for TX turf
Fruit Fly Bait Stations	FL citrus	Surrogate scenario
Pine Seedling	NC Apple	Surrogate scenario for pine seedling

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Table 1: Rational for Selection of Standard Scenarios		
Use Scenario	**Selected Scenario**	**Rationale for Selection of Scenario**
House Perimeter Treatment for Carpenter Ants	FL turf	Surrogate scenario for TX turf
In-slit mole cricket	FL turf	High runoff scenario
Broadcast Fire Ant	FL turf	High runoff scenario

The exposure assessment for house perimeter treatment required a modification in the standard modeling approach to account for the lack of uniform pesticide application in a small watershed such as yard, housing development, etc. The recommended perimeter treatment requires a 2 feet treated area around the perimeter of the house. A residential crop area factor was estimated using a housing density of four 2000 ft^2 (50ft X 40 ft) houses per acre. Each house has a perimeter treatment of 360 ft^2 (180 feet x 2 feet). The estimated treated area per acre is 1440 ft^2 (360 ft^2* 4) which translates into a crop area factor of 3.3% (1440 ft^2/43560 ft^2/acre).

Environmental fate properties for fipronil are shown in Table 2.

Table 2: Environmental Fate Data for Fipronil		
Parameter	**Value**	**Source**
Soil K_{oc}	727 mL/g[1]	MRID 44039003
Aerobic soil half-life	128 days	MRID 42918663
Aqueous Photolysis Half-life	0.16 days	MRID 42918661
Hydrolysis pH 7	Stable	MRID 42194701
Aerobic Aquatic Half-life	33.7 days[2]	MRID 44661301, 44261909
Anaerobic Aquatic Half-life	33.7 days[2]	MRID 44661301, 44261909
Water solubility	2.4 mg/L	EFGWB one-liner

1- Mean Koc value
2-Represents the 90th percentile of the mean

The pesticide application parameters in PRZM for the various fipronil uses are shown in Table 3. Seed treatments application rates were estimated according to the label recommended seed treatment rate and the field seeding rates (lbs of seeds/A).

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Table 3: Fipronil Application Parameters for PRZM: Rate, Application Frequency, PRZM Application Method (CAM), and Depth of Application					
Use Scenario	**Label Reference**	**AppRate (kg/ha)**	**Number of Apps (Interval)**	**CAM**	**App Depth (cm)**
Potato/Sweet Potato	Regent® 4 SC EPA Reg. No. 7969-207 Spray	0.112	1	8	10.16
In-Furrow Corn Regular (30/15 inch) Row Spacing	REGENT® 4SC EPA Reg No. 7969-207 Spray	0.1456	1	5	5
Seed Corn Treatment	REGENT® TS EPA Reg No. 7969-223 0.100 lbs/100 lbs	0.02	1	8	4
Onion Seed Treatment	ICON® 6.2 FS EPA Reg pending	0.112	1	8	0.635
	REGENT® TS EPA Reg No. 7969-223	0.054	1	8	0.635
Broadcast Bait Texas Leafcutter Ants	Proposed Label for BES 100 Insecticide Granular- Bait	0.255	2 (30 d)	1	0.1
Fruit Fly Stations	AMULET™ C-L EPA Reg. No. 7869-xxx Bait	0.001	**4 (90 d)**	1	0.5
Pine Seedling	BASF PTM SC EPA Reg. No. 7869-xxx Soil Injection	0.1456	1	8	7.62
House Perimeter Treatment for Carpenter/ Nuisance Ants	BES 1000 EPA Reg. No 432-1451 Granular (2 feet @ 0.357 lbs ai/A)	0.013	1(R)/2 (SF)	1	0.1
House Perimeter Treatment for Carpenter/ Nuisance Ants	TERMIDOR® SC, EPA Reg. No. 7969-210 TERMIDOR® WG, EPA Reg. No. 7969-210 Spray (1 feet @ 0.325 lbs ai/A)	0.006	1(R)/2 (SF)	1	0.1
Broadcast Fire Ant	HG 61743Ae EPA Reg. No. 432-1224 Spray (1 feet @ 0.1089 lbs ai/A)	0.002	1	1	0.1
Broadcast Fire Ant	Chipco 61748A 432-1218 Chipco®TopChoice EPA Reg. No. 432-1217 Granular	0.014	1(R)/2 (SF)	1	0.1
Broadcast Fire Ant	Over'N Out EPA Reg. No. 7969-212 Granular	0.01	1	1	0.1

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Table 3: Fipronil Application Parameters for PRZM: Rate, Application Frequency, PRZM Application Method (CAM), and Depth of Application					
Use Scenario	**Label Reference**	**AppRate (kg/ha)**	**Number of Apps (Interval)**	**CAM**	**App Depth (cm)**
Broadcast Fire Ant	TopChoice Select EPA Reg. No. 432-1420 Granular	0.014	1(R)/2 SF	1	0.1
Broadcast Fire Ant	Chipco®Choice EPA Reg. No. 432-896 Granular	0.014	1(R)/2 (SF)	1	0.1

1- Application rate for the corn seed treatment was determined assuming 0.101 lbs ai/100 lbs of seed and a seeding rate of 18.3 lbs of seed/A.
2- Narrow row spacing from 30 inch rows (normal row spacing) and 15 inch rows (narrow row spacing) will applied at the same application rate.
3- Application rate for the dry bulb onion seed treatment was determined assuming the maximum seeding rate (4 lbs of seed/A) and typical seeding rates (1.9 lbs of seed/A).
4- Application rate reflects the recommended rate in 2 foot perimeter around a 2000 ft^2 house.

EFED also conducted surface water modeling for the individual degradation products including MB 46513, MB 46136 and MB45950. Environmental fate properties for the fipronil degradates are shown in Table 4. The modeling was conducted using the maximum daily conversion efficiency in the environmental fate laboratory studies. There was correction for molecular weight of fipronil degradation products to account for differences in molecular weight.

Table 4: Environmental Fate Data for Fipronil Degradation Products			
Fate Parameter	**MB 46136**	**MB 46513**	**MB 45950**
Mean Koc	4208 mL/g	1290 mL/g	3911 mL/g
Aerobic Soil Metabolism Half-life	700 days	660 days	700 days
Aqueous Photolysis Half-life	7 days	Stable	Stable
Hydrolysis Half-life	Stable	Stable	Stable
Aquatic Metabolism Half-lives	1400 days	1320 days	1400 days
Water Solubility	0.16 mg/L	0.95 mg/L	0.04 mg/L
% of Fipronil Application Rate	23.9	0.96	4.9
References	**RP# 201555** **ACD/EAS/Im/255** **Theissen 10/97**	MRID 44262831 44262830 **Theissen 10/97**	**RP 201578** **Theissen 10/97** MRID 44537902

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3.2.1 PRZM/EXAMS Simulations

PRZM/EXAMS simulations (Appendix B contains all runs of the model) for fipronil uses show a range of estimated concentrations in surface water (Table 5). The concentration of the degradation products from PRZM/EXAMS output were corrected for molecular weight. The 1 in 10 year concentrations for the fipronil degradation products (***italics***) have no probabilistic meaning of return frequency because there was year-to-year residue accumulation in the water column of the standard water body. This observation is not unexpected due to the high persistence of the fipronil degradation products in the water column. The 1 in 10 year concentrations for fipronil degradation products should be interpreted as a maximum accumulation concentration for a 30 year use period.

The highest concentrations of fipronil and its degradation products are associated with the proposed use for leaf cutter ant and onion seed treatments. The estimated concentrations for the onion seed use are expected to be conservative because the modeling assumed fipronil residue on the seed coat is completely available for runoff, leaching, and degradation.

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Table 5: Estimated Fipronil and Degradation Product Concentrations (ng/L) for the PRZM-EXAMS Standard Farm Pond

Fipronil Uses	1 in 10 year Peak Concentration				1 in 10 year 21-Day Average Concentration				1 in 10 year 60 Day Average Concentration			
	Fipronil	MB136[5]	MB513[6]	MB950[7]	Fipronil	MB136	MB513	MB950	Fipronil	MB136	MB513	MB950
Potato/Sweet Potato	0	0	0	0	0	0	0	0	0	0	0	0
In-Furrow Corn	206.7	*65.3*	*6.0*	*15.1*	131.1	*59.5*	*5.7*	*14.4*	67.1	*56.4*	*5.6*	*13.9*
Seed Corn Treatment	0	0	0	0	0	0	0	0	0	0	0	0
Onion Seed Treatment (Max App Rate)	1294.9	*484.0*	*39.5*	*118.6*	910.28	*433.2*	*38.7*	*109.2*	597.3	*418.4*	*38.2*	*106.3*
Onion Seed Treatment (Typical App Rate)	624.1	*242.0*	*18.0*	*56.1*	438.9	*216.7*	*17.6*	*51.6*	288.0	*209.2*	*17.3*	*50.2*
Broadcast Bait Texas Leafcutter Ants	1549.9	*630.6*	*38.7*	*138.7*	1044.5	*483.5*	*35.5*	*112.9*	595.9	*436.0*	*34.2*	*103.3*
Fruit Fly Stations	10.9	*7.5*	*0.7*	*2.1*	6.4	*6.5*	*0.71*	*2.1*	4.2	*6.0*	*0.7*	*1.7*
Pine Seedling	0	0	0	0	0	0	0	0	0	0	0	0
House Perimeter Residential BES 1000	41.2	*15.4*	*0.9*	*3.2*	26.7	*11.9*	*0.9*	*2.7*	15.2	*10.9*	*0.8*	*2.4*
House Perimeter Sod Farm BES 1000	66.7	*28.8*	*1.9*	*6.2*	41.3	*23.9*	*1.8*	*5.3*	23.5	*21.5*	*1.7*	*4.8*
House Perimeter Residential TERMIDOR SC/WG	1.9	*7.0*	*0.5*	*1.6*	1.2	*5.4*	*0.5*	*1.4*	0.7	*4.9*	*0.5*	*1.3*
House Perimeter Sod Farm TERMIDOR SC/WG	3.1	*13.0*	*1.1*	*2.8*	1.9	*10.7*	*1.1*	*2.5*	1.1	*9.7*	*1.1*	*2.3*
Broadcast Fire Ant Residential HG 61743AE	6.3	*2.5*	*0.2*	*0.5*	4.1	*1.9*	*0.2*	*0.5*	2.3	*1.8*	*0.2*	*0.4*

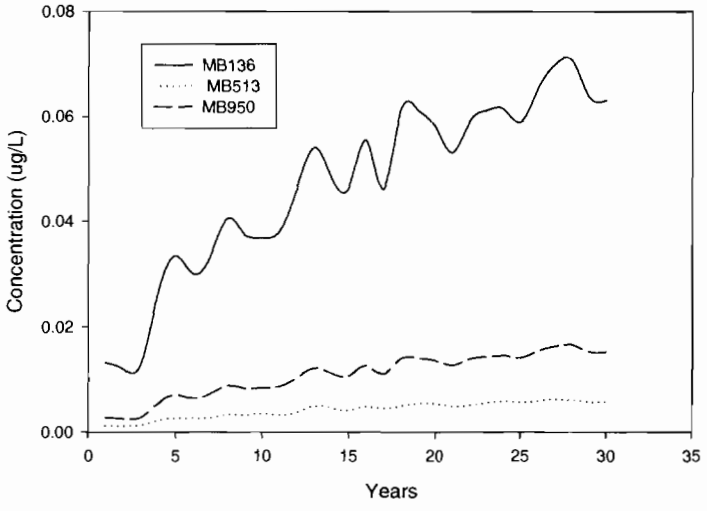
Table 5: Estimated Fipronil and Degradation Product Concentrations (ng/L) for the PRZM-EXAMS Standard Farm Pond

Fipronil Uses	1 in 10 year Peak Concentration				1 in 10 year 21-Day Average Concentration				1 in 10 year 60 Day Average Concentration			
	Fipronil	MB136[5]	MB513[6]	MB950[7]	Fipronil	MB136	MB513	MB950	Fipronil	MB136	MB513	MB950
Broadcast Fire Ant-Residential Chipco TopChoice Chipco 61748A TopChoice Select	44.3	*16.5*	*0.9*	*3.7*	28.7	*12.7*	*0.9*	*3.2*	16.4	*11.6*	*0.8*	*2.9*
Broadcast Fire Ant- Sod Farm Chipco TopChoice Chipco 61748A TopChoice Select	71.8	*30.7*	*1.9*	*0.7*	44.5	*25.4*	*1.8*	*0.6*	25.3	*22.8*	*1.7*	*0.6*
Broadcast Fire Ant-Residential Over'n Out	69.4	*12.0*	*0.09*	*2.6*	40.0	*9.2*	*0.09*	*2.2*	23.8	*8.4*	*0.09*	*2.0*

1- Inconsequential concentrations of fipronil are expected in runoff due to the depth of incorporation in the soil (7.62 cm) –
2- No PCA correction were used for turf uses of fipronil
3- Maximum application seeding rate for onions (4 lbs seed/A)
4- Maximum typical rate for onions (1.938 lbs seed/A)
5- MB950 molecular weight correction factor: 437 g/mole (fipronil)/421 g/mole (MB950) =1.038 so that MB950 concentration= [MB950]/1.038
6-MB513 molecular weight correction factor: 437 g/mole (fipronil)/389 g/mole (MB513) =1.123 so that MB513 concentration= [MB513] /1.123
7-MB136 molecular weight correction factor: 437 g/mole (fipronil)/453 g/mole (MB136) =0.96 so that MB136 concentration= [MB136]/0.96

Because the fipronil degradation products are highly persistent, they are prone to accumulate in aquatic and terrestrial environments. PRZM/EXAMS modeling indicate the potential for accumulation of fipronil degradation products in the water column. The high persistence of the fipronil degradation products in water (estimated @ 1400 days) led to accumulation of residues in the EFED static small water body. Although the model predicted accumulation is likely exaggerated due to the static hydrology (no outflow) of the small water body, the data clearly illustrate fipronil residue accumulation in the water column of the farm pond during 30 year use period (Figure 1). This observation was consistent for all fipronil uses except pine seedling injection, corn treatment, and the sweet potato/potato.

Figure 1: PRZM/EXAMS Accumulation of Peak Concentrations of MB136, MB513, and MB950 from Fipronil Use on In-furrow Corn.



In order to assess the accumulation potential of fipronil degradation products, accumulation curves for peak concentrations of MB136, MB950, and MB513 were modeled using Sigma Plot Regression Wizard (Table 6). The modeling employed a two parameter exponential rise to maximum model [$y=a(1-e^{-bx})$], where a= maximum plateau concentration and b = accumulation rate ($years^{-1}$).

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Table 6: Fipronil Degradation Product Accumulation Curve Models for the Water Column (ug/L) Standard Farm Pond.												
Use Pattern	MB136				MB513				MB950			
	Model	a	b	R^2	Model	a	b	R^2	Model	a	b	R^2
In-furrow Corn	Exp	0.0695	0.0918	0.93	Exp	0.0065	0.0814	0.95	Exp	0.0170	0.0752	0.96
Onion Seed (Max Rate)	Exp	0.4862	0.1558	0.77	Exp	0.0414	0.1445	0.75	Exp	0.1240	0.1239	0.85
Onion Seed (Typical Rate	Exp	0.2431	0.1558	0.77	Exp	0.0188	0.1446	0.75	Exp	0.586	0.1240	0.85
Leaf Cutter Ants	Exp	0.4984	0.4346	0.48	Exp	0.0333	0.3567	0.71	Exp	0.1153	0.3421	0.62
Fruit Fly Stations	Exp	0.0132	0.4063	0.52	Exp	0.0008	0.2979	0.76	Exp	0.0032	0.3158	0.67
House Perimeter BES 1000 Residential	Exp	0.0124	0.4025	0.52	Exp	0.0008	0.2979	0.76	Exp	0.0027	0.3158	0.67
House Perimeter BES 1000 Sod Farm	Exp	0.0252	0.2500	0.54	Exp	0.0018	0.1464	0.82	Exp	0.0056	0.1904	0.66
House Perimeter Termidor SC/WG Residential	Exp	0.0056	0.4064	0.52	Exp	0.0005	0.2979	0.76	Exp	0.0015	0.1479	0.29
House Perimeter Termidor SC/WG Sod Farm	Exp	0.0114	0.2494	0.54	Exp	0.0011	0.1463	0.82	Exp	0.0027	0.1523	0.33
Broadcast Fire Ant HG 61743AE Residential	Exp	0.002	0.4030	0.52	Exp	0.002	0.2984	0.76	Exp	0.0004	0.1987	0.93
Broadcast Fire Ant Chipco Residential	Exp	0.0132	0.4031	0.52	Exp	0.0008	0.2978	0.76	Exp	0.0032	0.3158	0.67
Broadcast Fire Ant Chipco Sod Farm	Exp	0.0268	0.2499	0.54	Exp	0.0018	0.1464	0.82	Exp	0.0065	0.1904	0.66
Broadcast Fire Ant Over'n Out Residential	Exp	0.0096	0.4068	0.52	Exp	0.0001	0.2979	0.76	Exp	0.0023	0.3159	0.67

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3.2.2 Pore Water and Sediment Concentrations

Because fipronil and its degradation products have been detected in sediment from monitoring studies, PRZM/EXAMS modeling was conducted to estimate sediment pore water concentrations. Additionally, pore water concentrations were used to estimate the sediment concentrations using simple equilibrium model equations [Koc*f_{OC}*pore water concentration= ug/kg in sediment and Koc*f_{OC}*pore water concentration/0.04= ug/kg-OC in the sediment] PRZM/EXAMS modeling indicate the potential for accumulation of fipronil degradation products in pore water and sediment (Tables 7 and 8). Therefore, the 1 in 10 year concentrations should be interpreted as a maximum accumulation concentration for a 30 year use period.

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Table 7: Estimated Fipronil and Degradation Product Pore Water Concentrations (ng/L) for the PRZM-EXAMS Standard Farm Pond

Fipronil Uses	1 in 10 year Peak Concentration				1 in 10 year 21-Day Average Concentration				1 in 10 year 60 Day Average Concentration			
	Fipronil	MB136	MB513	MB950	Fipronil	MB136	MB513	MB950	Fipronil	MB136	MB513	MB950
Potato/Sweet Potato	0	0	0	0	0	0	0	0	0	0	0	0
In-Furrow Corn	30.44	*51.5*	*5.3*	*12.7*	29.3	*51.5*	*5.3*	*12.7*	23.9	*51.4*	*5.3*	*12.7*
Seed Corn Treatment	0	0	0	0	0	0	0	0	0	0	0	0
Onion Seed Treatment (Max App Rate)	254.8	*380.9*	*36*	*97.6*	249.8	*380.7*	*36*	*97.6*	237.4	*379.6*	*35.9*	*97.3*
Onion Seed Treatment (Typical App Rate)	122.8	*190.5*	*16.4*	*46.2*	120.5	*190.4*	*16.4*	*46.1*	114.5	*189.9*	*16.3*	*46.1*
Broadcast Bait Texas Leafcutter Ants	237.4	*389.3*	*30.9*	*93.1*	229.5	*389.1*	*30.9*	*92.9*	189.4	*388.3*	*30.8*	*92.5*
Fruit Fly Stations	1.8	*5.5*	*0.6*	*1.6*	1.7	*5.5*	*0.6*	*1.6*	1.5	*5.4*	*0.6*	*1.6*
Pine Seedling	0	0	0	0	0	0	0	0	0	0	0	0
House Perimeter Residential BES 1000	5.6	*9.8*	*0.8*	*2.2*	5.4	*9.8*	*0.8*	*2.2*	4.8	*9.7*	*0.8*	*2.2*
House Perimeter Sod Farm BES 1000	10.7	*19.4*	*1.6*	*4.5*	10.2	*19.4*	*1.6*	*4.4*	9.0	*19.3*	*1.6*	*4.4*
House Perimeter Residential TERMIDOR SC/WG	0.3	*4.4*	*0.4*	*1.3*	0.3	*4.4*	*0.4*	*1.3*	0.2	*4.4*	*0.4*	*1.3*
House Perimeter Sod Farm TERMIDOR SC/WG	0.5	*8.8*	*1.0*	*2.1*	0.5	*8.8*	*1.0*	*2.1*	0.4	*8.8*	*1.0*	*2.1*
Broadcast Fire Ant Residential HG 61743AE	0.9	*1.6*	*0.2*	*0.4*	0.8	*1.6*	*0.2*	*0.4*	0.7	*1.6*	*0.2*	*0.4*

Broadcast Fire Ant-Residential Chipco TopChoice Chipco 61748A TopChoice Select	6.0	***10.4***	***0.8***	***2.6***	5.9	***10.4***	***0.8***	***2.6***	5.2	***10.3***	***0.8***	***2.6***
Broadcast Fire Ant- Sod Farm Chipco TopChoice Chipco 61748A TopChoice Select	11.5	***20.6***	***1.6***	***5.2***	11	***20.6***	***1.6***	***5.2***	9.7	***20.5***	***1.6***	***5.2***
Broadcast Fire Ant-Residential Over'n Out	4.3	***7.6***	***0.08***	***1.8***	4.2	***7.6***	***0.08***	***1.8***	3.7	***7.5***	***0.08***	***1.8***

1- Inconsequential concentrations of fipronil are expected in runoff due to the depth of incorporation in the soil (7.62 cm).
2- No PCA correction were used for turf uses of fipronil
3- Maximum application seeding rate for onions (4 lbs seed/A)
4- Maximum typical rate for onions (1.938 lbs seed/A)
5- MB950 molecular weight correction factor: 437 g/mole (fipronil)/421 g/mole (MB950)=1.038 so that MB950 concentration= [MB950]/1.038
6-MB513 molecular weight correction factor: 437 g/mole (fipronil)/389 g/mole (MB513)=1.123 so that MB513 concentration=[MB513]/1.123
7-MB136 molecular weight correction factor: 437 g/mole (fipronil)/453 g/mole (MB136)=0.96 so that MB136 concentration= [MB136]/0.96

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Table 8: Estimated Fipronil and Degradation Product Concentrations (ug//kg-OC) in Sediment for the PRZM-EXAMS Standard Farm Pond

Fipronil Uses	1 in 10 year Peak Concentration				1 in 10 year 21-Day Average Concentration				1 in 10 year 60 Day Average Concentration			
	Fipronil	MB136	MB513	MB950	Fipronil	MB136	MB513	MB950	Fipronil	MB136	MB513	MB950
Potato/Sweet Potato	0	0	0	0	0	0	0	0	0	0	0	0
In-Furrow Corn	22.130	***216.537***	***6.777***	***49.735***	21.301	***216.537***	***6.777***	***49.735***	17.375	***216.098***	***6.777***	***49.735***
Seed Corn Treatment	0	0	0	0	0	0	0	0	0	0	0	0
Onion Seed Treatment (Max App Rate)	185.240	***1602.985***	***46.408***	***381.680***	181.605	***1602.108***	***46.408***	***381.680***	172.590	***1597.287***	***46.293***	***380.550***
Onion Seed Treatment (Typical App Rate)	89.276	***801.712***	***21.136***	***180.47***	87.822	***801.273***	***21.136***	***180.479***	83.242	***799.082***	***21.021***	***180.102***
Broadcast Bait Texas Leafcutter Ants	172.590	***1638.052***	***39.860***	***363.972***	166.847	***1637.175***	***39.860***	***363.218***	137.694	***1634.107***	***39.745***	***361.711***
Fruit Fly Stations	1.309	***23.232***	***0.804***	***6.405***	1.236	***23.232***	***0.804***	***6.405***	1.091	***22.793***	***0.804***	***6.405***
Pine Seedling	0	0	0	0	0	0	0	0	0	0	0	0
House Perimeter Residential BES 1000	4.071	***41.203***	***1.034***	***8.666***	3.926	***41.203***	***1.034***	***8.666***	3.490	***40.765***	***1.034***	***8.666***
House Perimeter Sod Farm BES 1000	7.779	***81.530***	***2.068***	***17.709***	7.415	***81.530***	***2.068***	***17.332***	6.543	***81.092***	***2.068***	***17.332***
House Perimeter Residential TERMIDOR SC/WG	0.218	***18.410***	***0.574***	***4.898***	0.218	***18.410***	***0.574***	***4.898***	0.145	***18.410***	***0.574***	***4.898***
House Perimeter Sod Farm TERMIDOR SC/WG	0.364	***36.820***	***1.264***	***8.289***	0.364	***36.820***	***1.264***	***8.289***	0.291	***36.820***	***1.264***	***8.289***
Broadcast Fire Ant Residential HG 61743AE	0.654	***6.575***	***0.230***	***1.507***	0.582	***6.575***	***0.230***	***1.507***	0.509	***6.575***	***0.230***	***1.507***

Broadcast Fire Ant-Residential Chipco TopChoice Chipco 61748A TopChoice Select	4.362	***43.833***	***1.034***	***10.173***	4.289	***43.833***	***1.034***	***10.173***	3.780	***43.395***	***1.034***	***10.173***
Broadcast Fire Ant- Sod Farm Chipco TopChoice Chipco 61748A TopChoice Select	8.361	***86.790***	***2.068***	***20.346***	7.997	***86.790***	***2.068***	***20.346***	7.052	***86.352***	***2.068***	***20.346***
Broadcast Fire Ant-Residential Over'n Out	3.126	***31.998***	***0.103***	***7.159***	3.053	***31.998***	***0.103***	***7.159***	2.690	***31.560***	***0.103***	***7.159***

Because the fipronil degradation products are highly persistent, they are prone to accumulate in aquatic and terrestrial environments. The high persistence of fipronil degradation products in sediment led to accumulation of residues in the EFED static small water body. Although the model predicted accumulation is likely exaggerated due to the static hydrology (no outflow) of the small water body, the data clearly illustrate fipronil residue accumulation in sediment and pore water for static water bodies. (Figures 2 and 3). This observation was consistent for all fipronil uses except for pine seedling injection, corn treatment, and the sweet potato/potato.

Figure 2: PRZM/EXAMS Accumulation of Peak Pore Water Concentration of MB136, MB513, and MB950 from Fipronil Use on In-furrow Corn.

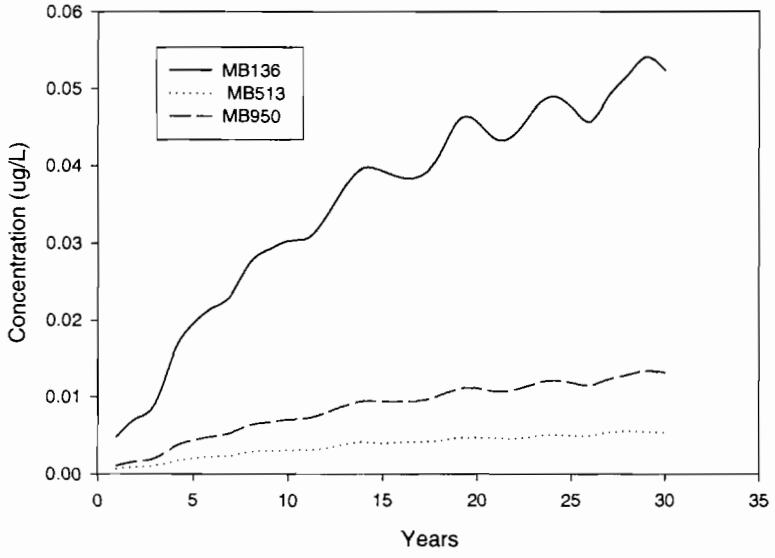

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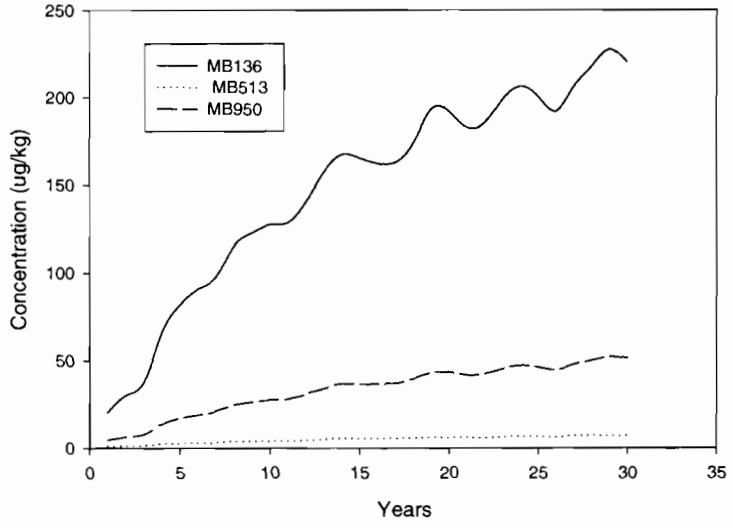
Figure 3: PRZM/EXAMS Accumulation of Sediment Concentration of MB136, MB513, and MB950 from Fipronil Use on In-furrow Corn.



In order to assess the accumulation potential of fipronil degradation products, accumulation curves for peak concentrations of MB136, MB950, and MB513 in pore water and sediment were modeled using Sigma Plot Regression Wizard (Tables 9 and 10).

Table 9: Fipronil Degradation Product Accumulation Curve Models for Sediment Pore Water in the Standard Farm Pond.

Use Pattern	MB136				MB513				MB950			
	Model	a	b	R^2	Model	a	b	R^2	Model	a	b	R^2
In-furrow Corn	Exp	0.0571	0.0758	0.99	Exp	0.0061	0.0706	0.99	Exp	0.0153	0.0614	0.99
Onion Seed (Max Rate)	**Exp**	**0.0685**	**0.0857**	**0.79**	Exp	0.0368	0.1434	0.93	Exp	0.1023	0.1252	0.97
Onion Seed (Typical Rate	Exp	0.1946	0.1545	0.96	Exp	0.0167	0.1434	0.93	Exp	0.0483	0.1253	0.97
Leaf Cutter Ants	Exp	0.3714	0.2571	0.88	Exp	0.0292	0.2800	0.86	Exp	0.0915	0.2109	0.93
Fruit Fly Stations	Exp	0.0100	0.2426	0.89	Exp	0.007	0.2362	0.88	Exp	0.0026	0.1986	0.93
House Perimeter BES 1000 Residential	Exp	0.0094	0.2426	0.89	Exp	0.007	0.2362	0.88	Exp	0.0022	0.1986	0.93
House Perimeter BES 1000 Sod Farm	Exp	0.0188	0.1813	0.92	Exp	0.0016	0.1354	0.93	Exp	0.0044	0.1468	0.95
House Perimeter Termidor SC/WG Residential	Exp	0.0042	0.2432	0.88	Exp	0.0004	0.2363	0.88	Exp	0.0012	0.1057	0.87
House Perimeter Termidor SC/WG Sod Farm	Exp	0.0085	0.1813	0.92	Exp	0.0009	0.1354	0.93	Exp	0.0020	0.1092	0.91
Broadcast Fire Ant HG 61743AE Residential	Exp	0.0015	0.2426	0.89	Exp	0.001	0.2362	0.88	Exp	0.0004	0.1986	0.93
Broadcast Fire Ant Chipco Residential	Exp	0.0200	0.1815	0.92	Exp	0.0016	0.1354	0.93	Exp	0.0052	0.1468	0.95
Broadcast Fire Ant Chipco Sod Farm	Exp	0.0200	0.1813	0.92	Exp	0.0016	0.1356	0.93	Exp	0.0052	0.1468	0.95
Broadcast Fire Ant Over'n Out Residential	Exp	0.0073	0.2426	0.89	Exp	0.0001	0.2362	0.88	Exp	0.0018	0.1986	0.93

Table 10: Fipronil Degradation Product Accumulation Curve Models for Sediment (ug/kg-OC) in the Standard Farm Pond.												
Use Pattern	**MB136**				**MB513**				**MB950**			
	Model	**a**	**b**	**R^2**	**Model**	**a**	**b**	**R^2**	**Model**	**a**	**b**	**R^2**
In-furrow Corn	Exp	240.27	0.0758	0.99	Exp	7.81	0.0706	0.99	Exp	59.85	0.0614	0.99
Onion Seed (Max Rate)	**Exp**	**288.37**	**0.0857**	**0.79**	Exp	47.50	0.1434	0.90	Exp	399.97	0.1252	0.97
Onion Seed (Typical Rate	**Exp**	**818.69**	**0.1545**	**0.96**	Exp	21.59	0.1434	0.93	Exp	189.06	0.1253	0.97
Leaf Cutter Ants	Exp	1562.6	0.2571	0.88	Exp	37.60	0.2801	0.86	Exp	358.01	0.2109	0.93
Fruit Fly Stations	Exp	42.96	0.2426	0.89	**Exp**	**0.9550**	**0.2362**	**0.88**	Exp	10.01	0.1986	0.93
House Perimeter BES 1000 Residential	Exp	39.54	0.2426	0.89	Exp	0.9550	0.2362	0.88	Exp	8.58	0.1986	0.93
House Perimeter BES 1000 Sod Farm	Exp	78.96	0.1813	0.92	Exp	2.0354	0.1354	0.93	Exp	17.33	0.1468	0.95
House Perimeter Termidor SC/WG Residential	Exp	17.85	0.2432	0.88	Exp	0.5730	0.2361	0.88	Exp	4.55	0.1057	0.87
House Perimeter Termidor SC/WG Sod Farm	Exp	35.66	0.1813	0.92	Exp	1.2211	0.1354	0.93	Exp	7.99	0.1092	0.91
Broadcast Fire Ant HG 61743AE Residential	Exp	6.37	0.2426	0.89	Exp	0.1910	0.2362	0.88	Exp	1.43	0.1986	0.93
Broadcast Fire Ant Chipco Residential	Exp	84.05	0.1814	0.92	Exp	2.03	0.1354	0.93	Exp	20.22	0.1468	0.95
Broadcast Fire Ant Chipco Sod Farm	Exp	84.05	0.1813	0.92	Exp	2.03	0.1354	0.93	Exp	20.22	0.1468	0.95
Broadcast Fire Ant Over'n Out Residential	Exp	30.61	0.2426	0.89	Exp	0.0955	0.2362	0.88	Exp	1.4302	0.1986	0.93

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3.2.3 Accumulation in Terrestrial Environments

Because the fipronil degradation products are highly persistent, they are prone to accumulate in terrestrial environments. The high persistence of the fipronil degradation products in soil is likely to promote accumulation of residues in treated fields (Figure 4). As a first approximation, fipronil residue field accumulation rates were estimated using the annual application rate and first-order degradation rate. This approach is expected to provide conservative estimates of residue accumulation because surface water runoff, plant uptake, volatilization, and leaching, in addition to microbial-mediated degradation, as a route of dissipation. Registrant submitted long-term field dissipation studies show fipronil degradation products accumulated under actual use field conditions (MRID 46477001). Table 11 provides an estimate of the year-to-year accumulation models of fipronil degradation products for the proposed and conditionally-registered fipronil uses.

Figure 4: Estimated Soil Concentration (kg/ha) of Fipronil, MB136, MB513, and MB950 from Fipronil Use on In-furrow Corn.

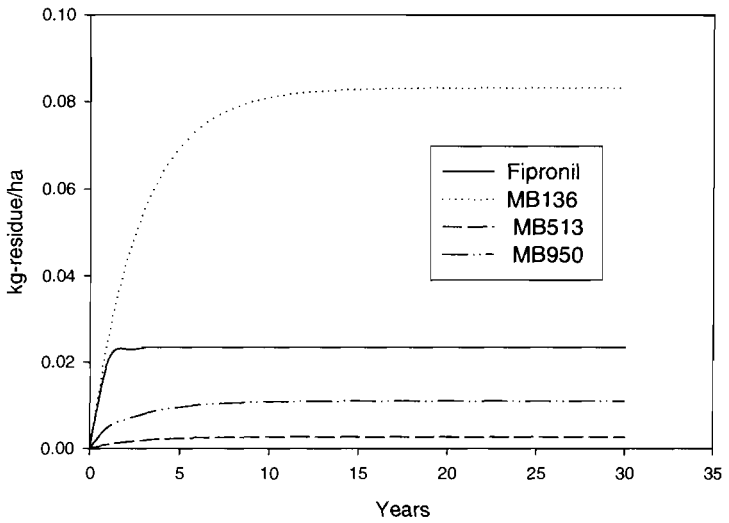

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Table 11: Fipronil Degradation Product Accumulation Curve Models for Soil (kg/ha)												
Use Pattern	MB136				MB513				MB950			
	Model	a	b	R2	Model	a	b	R2	Model	a	b	R2
Potato/Sweet Potato	Exp	0.0620	0.3669	0.99	Exp	0.0020	0.3833	0.99	Exp	0.002	0.3833	0.99
In-furrow Corn	Exp	0.0831	0.3616	0.91	Exp	0.0027	0.3832	0.99	Exp	0.0027	0.3832	0.99
Seed Corn	Exp	0.0856	0.2007	0.93	Exp	0.0004	0.3832	1.00	Exp	0.0004	0.3832	1.00
Onion Seed (Max Rate)	Exp	0.0837	0.2977	0.99	Exp	0.002	0.3833	0.99	Exp	0.0020	0.3833	0.99
Onion Seed (Typical Rate	Exp	0.0848	0.2281	0.96	Exp	0.001	0.3831	0.99	Exp	0.0010	0.3831	0.99
Leaf Cutter Ants	Exp	0.0829	0.8862	0.95	Exp	0.0047	0.3832	1.00	Exp	0.0047	0.3832	1.00
Fruit Fly Stations	Exp	0.0861	0.1880	0.91	Exp	0.000	0.3832	1.00	Exp	0.0000	0.3832	1.00
Pine Seeds	Exp	0.0831	0.3619	0.99	Exp	0.0027	0.3832	0.99	Exp	0.0027	0.3832	0.99
House Perimeter BES 1000 Residential	Exp	0.0857	0.1959	0.92	Exp	0.002	0.3835	0.99	Exp	0.0002	0.3835	0.99
House Perimeter BES 1000 Sod Farm	Exp	0.0854	0.2051	0.93	Exp	0.0005	0.3835	0.99	Exp	0.0005	0.3835	0.99
House Perimeter Termidor SC/WG Residential	Exp	0.0852	0.2118	0.93	Exp	0.0001	0.3832	1.00	Exp	0.0001	0.3832	1.00
House Perimeter Termidor SC/WG Sod Farm	Exp	0.0858	0.1952	0.92	Exp	0.0002	0.3825	0.99	Exp	0.0002	0.3825	0.99
Broadcast Fire Ant HG 61743AE Residential	Exp	0.0860	0.1886	0.91	Exp	0.000	0.3832	1.00	Exp	0.000	0.3832	1.00
Broadcast Fire Ant Chipco Residential	Exp	0.0857	0.1966	0.92	Exp	0.0003	0.3828	0.99	Exp	0.0003	0.3828	1.00
Broadcast Fire Ant Chipco Sod Farm	Exp	0.0854	0.2066	0.93	Exp	0.0005	0.3835	0.99	Exp	0.0005	0.3835	0.99
Broadcast Fire Ant Over'n Out Residential	Exp	0.0858	0.1939	0.92	Exp	0.0002	0.3832	1.00	Exp	0.0002	0.3832	1.00

3.2.4. Uncertainties, Assumptions, and Limitations in Modeling

Major uncertainties in the modeling are associated with the adequate representation of field dissipation processes for some of the proposed fipronil uses. The modeling of a broadcast bait for control of Texas leaf cutter ants has uncertainties with the dissipation rate of fipronil from surface soil because the ants are expected to actively remove the bait from the soil surface. This dissipation process is not considered in the modeling. The proposed onion and corn seed uses of fipronil have uncertainties associated with the environmental availability of fipronil on seed surfaces. Because no seed release rate data are available, it was assumed 100% of the fipronil and its degradation products are available for degradation, runoff, and leaching.

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Other uncertainties in the surface water modeling are predominately associated with persistence and formation efficiency of fipronil degradation products in terrestrial and aquatic environments. Formation efficiencies were modeled according to the maximum percent formation observed in aerobic soil metabolism studies. Although higher degradate formation efficiencies were observed for MB46513 and MB45950 in other laboratory studies (photodegradation in water and anaerobic aquatic), these degradation pathways are not expected to be important for below ground uses of fipronil such as in-furrow and in-slit applications.

The aerobic aquatic metabolism data (MRID 44261909) indicate that fipronil has a half-life of 14.5 days in aerobic aquatic environments. These data appear to contradict the persistence of fipronil ($t_{1/2}$=128 to 308 days) in aerobic soil metabolism studies. The registrant submitted additional aerobic aquatic data showing the first-order half-life for fipronil was 16 days in an Ongar sediment/water system and 35.62 days for Manningtree sediment/water systems (RPA Document 201604). Based on the available aerobic aquatic metabolism data, the upper bound 90th percentile mean aerobic aquatic half-life for fipronil is 33.7 days. It is important to note that the aerobic aquatic metabolism studies were conducted under stratified redox conditions which lead to the formation of MB45950, a toxic degradation product. This compound was predominately associated with the sediment phase. Similar formation patterns were not observed in the aerobic soil metabolism studies (MRID 42928663).

3.2.5 Monitoring Data

Surface Water

Available monitoring data were taken from the several sources including a USGS presentation, registrant sponsored runoff studies, and rice monitoring studies.

The USGS found that most frequent detections (14 to 34%) of fipronil residues are associated with urban and integrated watersheds (Sandstrom and Madison, 2003). A maximum fipronil water concentration of 0.117 µg/L was detected in the integrated (mixed land use) watersheds. These detections may be associated with the use of fipronil in turf for control of fire ants. USGS monitoring studies in the southwestern LA rice growing region indicate water concentrations of fipronil residues ranged from 0.829 to 5.29 µg/L, which corresponded with the tailwater release from rice fields (USGS, 2003). Additionally, fipronil and fipronil sulfone (MB 46136) were detected in the Upper Barton Springs (08155395) (Mahler, 2005). Fipronil residue concentrations were 0.0059-0.0102 ug/L for fipronil and 0.0033-0.0047 ug/L for MB 46136 on May 30, 2005. There were no fipronil residue detections in the Main Springs (08155500), Eliza Spring (08155501), and Old Mill Spring (08155503).

Registrant-sponsored runoff monitoring data in NC, FL, AK, and TX show fipronil residues runoff from turf areas immediately post-application during high rainfall events (MRID 46490305, 46733905, 46733902,46490304, 46490305, and 46733904) (Table 12). The maximum total fipronil water concentration was 0.510 µg/L in an estuary at Gulf Breeze, FL.

Registrant-sponsored buffer effectiveness studies for warm and cool season grass were conducted in NC using rainfall simulators (MRID 46490301 and 46490302). Although the studies show a 15 foot buffer reduced fipronil residue concentrations in runoff, fipronil residues

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were detected in runoff water at the edge of the field. The maximum edge-of- field concentration of fipronil was 3.549 ug/L with no grass buffer and 0.724 ug/L with a grass buffer.

A drinking water monitoring study data on the occurrence of fipronil residues in raw surface source drinking water impacted from in-furrow corn uses of fipronil (MRID 45526101). The study is deficient in assessing the occurrence of fipronil residues in finished drinking water due to the lack of chemical methods for separation and detection of chlorinated fipronil residues. Fipronil and its degradation products (MB46513, MB45950, and MB46136) occurrence were extremely infrequent. Most water samples had fipronil residue concentrations in raw water of ≤ 4 ng/L (LOD). The maximum confirmed daily concentration of fipronil residues was 17.1 ng/L for fipronil, 57.9 ng/L for MB46513, and 55.4 for MB46136 on April 26, 1999 at the Milford, KS site.

An edge-of-field runoff study for fipronil residues was conducted for field corn in the Mid-Western United States (MRID 46477003). The study provides a probabilistic site selection process to represent a 1 year distribution of edge-of-field runoff of fipronil residues in the Mid-Western U.S. corn belt. These data indicate that the maximum edge-of-field concentration of fipronil residues range from 0 to 3,600 ng/L for fipronil, <10(LOD) to 13 ng/L for MB 46513, <10 (LOD) to 165 ng/L for MB 46950, and <10 (LOD) to 61 ng/L for MB 46136. Several sites had farm ponds for sample collection. The maximum concentration in pond water was 159 ng/L for fipronil and 24 ng/L for MB46513. MB 45950 and MB 46136 were not detected in the farm pond water. As expected, runoff of fipronil residues was correlated to precipitation. However, an analysis of the time series of fipronil concentrations on short time intervals (0 to 12 hours after runoff event) indicates a sinus curve of fipronil concentration independent of rainfall amounts. These fluctuations in concentration appear to correspond to changes in volume and velocity of runoff waters.

Table 12: Summary of Registrant Sponsored Runoff Studies

Study MRID	Location	Type of Study	Use Pattern	Application Rate (lbs ai/A)	Months of Application	Years	Peak Water Concentration (ug/L)
46733903	FL	Single Site Estuarine Monitoring	Fire Ant	0.0125	April-May	2	0.510
45526101	Midwest	Multiple Site Drinking Water Monitoring	Corn	NA	April-May	3	0.017[1]
46477003	Midwest	Multiple Site Edge of Field Runoff Monitoring	Corn	4.6 oz of Regent	April-May	1	3.6 edge of field 0.159 surface water
46733905	AK	Single Site Monitoring	Fire Ant	0.0125	May	2	0.348
46733902	TX	Single Site Monitoring	Fire Ant	0.0125	May-June	2	0.021
46490304	FL	Single Site Monitoring	Fire Ant	0.0125	April-May	2	No detections
46490305	NC	Single Site Monitoring	Fire Ant	0.0125	September	1	<0.010
46733904	NC	Single Site	Fire Ant	0.0125	June -	2	0.047 Pond Water 0.287 Storm Water

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Table 12: Summary of Registrant Sponsored Runoff Studies							
Study MRID	**Location**	**Type of Study**	**Use Pattern**	**Application Rate (lbs ai/A)**	**Months of Application**	**Years**	**Peak Water Concentration (ug/L)**
		Monitoring			September		0.033 Stream Water
46490301	NC	Buffer Study	Fire Ant	0.0125	June	1	2.87 (w/o buffer) 0.724 (w/buffer)
46490302	NC	Buffer Study	Fire Ant	0.0125	June	1	3.549 (w/o buffer) 1.451 (w/ buffer)

1-Unconfirmed concentration in duplicate sample.

Sediment

USGS monitoring studies in the southwestern LA rice growing region indicate that fipronil residues accumulated in bed sediment as MB950 (0.636 to 24.8 µg/kg), MB513 (0.55 to 7.01 µg/kg), MB136 (ND to 10.5 µg/kg) (USGS, 2003).

A preliminary analysis of an interagency (USGS, EPA, FDA, and NOAA) post- hurricane Katrina monitoring program was conducted. A brief report of the monitoring data were submitted to OPP on September 13, 2006 (email communication from John Macauly, ORD to Ann Sibold RD/OPP, 9/13/06). This survey was designed to assess contaminant concentrations in sediment and water and its impact on ecological indicators. A probabilistic survey was conducted from October 11-14, 2005 in the Mississippi Sound and October 11-14 in Lake Pontchartrain. Random samples were taken at 30 sites in each water body. Fipronil analysis was conducted using GC/MS methodologies with a limit of quantification (LOQ) of 0.5 ug/kg and a limit of detection (LOD) of 0.34 ug/kg. A preliminary analysis indicates fipronil concentrations in sediment ranged from 0.36 to 1.4 ug/kg. Fipronil degradation products were not considered in the monitoring study.

Registrant-sponsored runoff monitoring data in NC, FL, AK, and TX show fipronil residues runoff from turf areas immediately post-application during high rainfall events (MRID 46490305, 46733905, 46733902,46490304, 46490305, and 46733904) (Table 13). The maximum sediment concentration was 0.102 µg/kg for MB513, 0.059 ug/kg for MB950, and 0.098 ug/kg for MB136.

Table 13 Registrant-sponsored monitoring studies provided sediment analysis for fipronil residues.							
Study MRID	**Location**	**Type of Study**	**Use Pattern**	**Application Rate (lbs ai/A)**	**Months of Application**	**Years**	**Peak Sediment Concentration (µg/kg)**
46733903	FL	Single Site Estuarine Monitoring	Fire Ant	0.0125	April-May	2	MB950-0.059 MB136-0.043
46733905	AK	Single Site Monitoring	Fire Ant	0.0125	May	2	MB513-0.051 MB950-0.191 MB136-0.098
46733902	TX	Single Site Monitoring	Fire Ant	0.0125	May-June	2	MB136-0.101
46490304	FL	Single Site Monitoring	Fire Ant	0.0125	April-May	2	No detections
46490305	NC	Single Site Monitoring	Fire Ant	0.0125	September	1	MB136-<1.00

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Table 13 Registrant-sponsored monitoring studies provided sediment analysis for fipronil residues.							
Study MRID	**Location**	**Type of Study**	**Use Pattern**	**Application Rate (lbs ai/A)**	**Months of Application**	**Years**	**Peak Sediment Concentration (µg/kg)**
46733904	NC	Single Site Monitoring	Fire Ant	0.0125	June - September	2	MB513- 0.102

4.0 Effects Characterization

4.1 Available Avian Effects Data

The following tables summarize the submitted acute and chronic toxicity data for avian wildlife. It should be noted that all studies are registrant submissions and found to be either acceptable or supplemental and therefore suitable for use in the risk assessment.

Comparison of parent fipronil and degradate single oral dose endpoints for the bobwhite quail suggests that the photodegradate MB46513 may be more toxic than the parent and that the other two major environmental degradates MB46136 and MB45950 are less toxic that parent fipronil. There is no evidence that formulated products are more toxic, on an active ingredient adjusted basis, that technical fipronil.

On first inspection the available acute oral dose data may suggest that fipronil is more toxic in gallinaceous birds (pheasants, quail grouse, etc.) than in other orders. However, the number of tested species within each order is very small (3 or less), precluding any definitive conclusion regarding any phylogenic relationship on sensitivity in birds.

Table 14. Acute Oral Dose Toxicity Data for Birds				
Species	**Chemical**	**%A.I.**	**LD50 mg/kg-bw**	**MRID**
Northern bobwhite	fipronil	96	11.3	42918617
Mallard	fipronil	96.8	>2150	42918616
Pigeon	fipronil	97.7	>500	42918613
Red-legged partridge	fipronil	95.4	34	42918614
Pheasant	fipronil	95.4	31	42918615
House sparrow	fipronil	96.7	1000	42918618
Northern bobwhite	MB46513	99.7	5	43776601
Mallard duck	MB46513	98.6	420	43776602
Northern bobwhite	fipronil (1.6 WG)	1.6	1065	42918619

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Table 15. Dietary Acute Toxicity Data for Birds				
Species	Chemical	%A.I.	LC50 mg/kg-diet	MRID
Northern bobwhite	fipronil	95	48	42918620
Mallard duck	fipronil	95	>5000	42918621
Northern bobwhite	MB46513	97.8	119.2	45259201
Northern bobwhite	MB46513	97.8	<178	44920701
Northern bobwhite	MB46136	99.7	84	44890301
Northern bobwhite	MB45950	98.8	114	44890302

Table 16. Reproduction Toxicity Data for Birds					
Species	Chemical	%A.I.	LOEC mg/kg-diet	NOEC mg/kg-diet	MRID
Northern bobwhite	fipronil	96.7	>10	10	42918622
Mallard duck	fipronil	96.7	>1000	1000	42918623

A search of the ECOTOX database identified additional data for fipronil administered via the diet to male red-winged blackbirds (*Agelaius phoeniceus* L) male and female brown-headed cowbirds (*Molothrus ater* Boddaert), and female boat-tailed grackles (*Quiscalus major* Viellot) (Avery et al. 1998). Fipronil was added to a rice seed medium at 0, 325, and 500 mg a.i./kg. Birds were allowed to feed at will from open cups of the treated diet. No adverse toxicological effects were noted and no reduction in food consumption ($p>0.05$) was noted for any species and any dose group.

Calculation of Acute LD50 or Acute LC50 Ratios and Other Extrapolation Factors for Aquatic Organisms

From the data above it is evident that acute single oral dose studies are not available for MB45950 and MB46136. For the purposes of evaluating risks for these degradates, estimates for single oral dose LD50 values are necessary. EFED evaluated the relationship of the acute effects data (LD50:LC50) for bobwhite quail, the most sensitive species tested (LD50:LC50). The ration of LD50 to LC50 from these data is 0.235 (11.3/48). This value will be used to estimate LD50 values for MB45950 and MB46136, using the following equation LC50*0.235=Estimated LD50.

4.2 Available Mammalian Effects Data

The following table presents the available mammalian toxicity data for fipronil for acute oral dose and for reproduction endpoints

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Table 17. Toxicity Data for Mammals			
Species	**% AI**	**LD_{50} (mg/kg-bw)**	**MRID**
Rat	93%	LD_{50} (mg/kg-bw) 97 reproduction NOEC 30 mg/kg-diet effects: litter size and number of matings reproduction NOEL 2.64 mg/kg-bw	42918628 42918647
Rat	MB45950	LD_{50} (mg/kg-bw) 83	HED memo*
Rat	MB46513	LD_{50} (mg/kg-bw) 16	43235402
Rat	MB46136 (98%)	LD_{50} (mg/kg-bw) 218	42918675
Rat	1.6(form.) EXP60655A	LD_{50} (mg/kg-bw)>5000	42918636
Rat	0.25(form.) RM1601c	LD_{50} (mg/kg-bw)>5000	43121104

*Fipronil - Review of toxicity studies (28-day studies with fipronil and metabolite RPA 200766, a developmental neurotoxicity study with fipronil and a paper on the toxicological significance of fipronil and its metabolites). From V.A. Dobozy (Registration Branch 1/HED) to M. Johnson (RD), 8/6/1997.

4.3 Other Available Terrestrial Vertebrate Effects Data

Fipronil was administered by gavage or by contaminated diet in a single exposure event at 30 mg ai/kg body weight (Peveling and Demba 2003). By four weeks post treatment, 62.5% of the lizards feed treated diet and 42% of gavaged lizards died. In both tests survivors showed reduced feeding activity, food consumption, body weight, and liver or fat to body weight ratios. It is notable that these values suggest an LD50 on the order of 30 mg/kg-bw which is bracketed by available LD50 values for birds.

4.4 Available Terrestrial Invertebrate Data

The registrant submitted a summary of an extended laboratory contact toxicity test to evaluate the toxicity of fipronil residues on foliage to honeybees (MRID 44884101). Honeybees were exposed to bean cuttings treated with 25 g of fipronil 80wg for 72 hours. By 72 hours, mortality in treatments was 100% compared to 5 to 8.35 in controls.

4.5 Available Terrestrial Plant Effects Data

Currently, terrestrial plant testing is not required for pesticides other than herbicides except on a case-by-case basis (*e.g.*, labeling shows phytotoxicity warnings, incident data, or literature that demonstrate phytotoxicity). Continuous seedling exposure to fipronil (up to 25 days) at 4000 mg/L did not affect rice (*Oryza sativa*) seedling growth, but that 4-day exposure to 200 mg/L did produce reductions in seed germination (Stevens et al. 1999). Other data from the literature showed fipronil having no effect on biomass of peanuts (*Arachis hypogaea*) treated with fipronil at a rate of 0.025 lb/acre (Mulder 1997). This later study expresses effects information in units

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consisted with terrestrial plant exposure modeling and served as the basis for terrestrial plant risk assessment.

4.6 Available Aquatic Organism Effects Data

4.6.1 Freshwater and Estuarine/Marine Laboratory Studies

Tables 18 and 19 present the available acute and chronic effects data for fipronil, formulated products and degradates for freshwater and estuarine/marine invertebrates and fish. The data include studies originating as registrant submitted studies in compliance with 40 *CFR* Section 158 (identifiable as studies with MRID reference numbers). In addition effects data identified from the publicly available literature (ECOTOX database studies identifiable as studies with Author citations) are also included. All MRID-based data have been described in previous risk assessments and those appearing in Tables 18 and 19 meet either the Agency acceptable or supplemental criteria. Studies identified from the ECOTOX summary of available literature have been evaluated by the Office of Research and Development as suitable for ECOTOX inclusion and have undergone EFED evaluation for inclusion in the risk assessment for possible quantitative evaluation. The following are short summaries of studies extracted from the ECOTOX search of available literature. Appendix J contains a listing of studies identified for fipronil but not included in the Database or this risk assessment

4.6.1.1 Acute Effects Studies

Analytical grade fipronil, (>98% purity) was tested for acute toxicity using 5th instar black fly larvae (*Simulium vittatum*), a native emergent aquatic insect species of the United States (Overmyer et al. 2005). Six concentrations of fipronil, a solvent control (equivalent to highest solvent in all fipronil treatments), and a test water control were included. Test concentrations of fipronil were measured at the start and termination of the 48-hour exposure period. The study was conducted three times with one replicate at each control and test concentration. Medial lethal concentrations and corresponding probit slope estimates were reported: test 1 LC50 0.19 ug/L slope 2.25; test 2 LC50 0.19 ug/L slope 2.43; test 3 0.29 ug/L slope 1.21. The geometric mean of these values is LC50 0.22 ug/L with a slope of 2.20.

Fipronil (99.9% purity) toxicity was tested in six aquatic invertebrate species (Chaton et al. 2002). Studies were preformed in triplicate with 20 individuals per replicate. Controls were performed in test water, which was de-chlorinated tap water. The following results were reported in nominal concentration units:

Species	48-h LC50 ug/L	Probit Slope
Cladocerans		
Daphnia pulex	>highest dose	
Copepods		
Acanthocyclops robustus	84.8	4.8
Diaptomus castor	3.4	4.7
Ostracods		
Eucrypris virens	>highest dose	
Dipterans		
Chaoborus crystallinus	646	1.5
Chironomus annularis	2.4	1.2

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Fipronil (97.1% purity) was tested in 4th instar larvae of 6 species of mosquitoes and two species of field collected chironomid midges (Ali et al. 1998). The assays involved 20 larvae in each of three replicates for six or seven test concentrations of fipronil. Tap water served as a diluent and control. The results in nominal units were reported as follows:

Species	48-h LC50 ug/L	Probit Slope
Mosquitoes		
Aedes aegypti	1.54	4.28
Aedes albopictus	23	1.95
Aedes taeniorhynchus	0.43	4.19
Anopheles quadrimaculatus	0.43	2.51
Culex nigripalpus	0.87	3.16
Culex quinqefasciatus	7.3	5.46
Midges		
Chironomus crassicaudatus	0.42	2
Glyptendipes paripes	0.42	2.18

Konwick et al. (2005) evaluated the acute enantioselective toxicity of fipronil and its desulfinyl photoproduct (MB46513) to the cladoceran *Ceriodaphnia dubia*. Neonates of less than 24 hours age were introduced by pipet to 30 mL polypropylene cups containing moderately hard water (control), a 0.1 % acetone solution in moderately hard water (vehicle control), or fipronil compound dissolved in acetone and diluted with moderately hard water. No feeding took place over the course of the study. Two series of tests were conducted for each fipronil enantiomer and for the racemic mixture. The first test series occurred under a normal photoperiod (16:8 light:dark fluorescent light source). The other test series was conducted dark conditions. For the desulfinyl product, only a 16:8 photoperiod test was conducted. Three replicate tests were conducted for each compound under each photoperiod (except as noted for desulfinyl product). A total of 15 neonates (3 cups of 5) were exposed at all controls and test chemical exposure levels. Mortality was assessed by response to a probe. At 48 hours test conditions (dissolved oxygen and pH) were measured with results ranging from 7.80-8.38 mg/L and 8.3-8.46, respectively. Control survival acceptability criteria was set and attained at >90%. All LC50 values are reported on the basis of measured water concentrations of test chemical 9i.e, adjust of n0minal by observed nominal-measured relationship for low and high doses). The following 48-h LC50 results were reported:

	Ceriodaphnia dubia Mean 48-h LC50 (ug/L)	
Test compound	Light	Dark
fipronil (+) enantiomere	11.3 ±2.0	9.4 ±0.7
fipronil (-) enantiomere	35.4 ±2.6	28.4 ±2.4
fipronil racemic	17.9 ±2.7	17.5 ±1.3
desulfinyl product (MB46513)	355 ±9.3	

The toxicity of fipronil to three aquatic invertebrates (giant river prawn (*Macrobrachium rosenbergii)*, oriental river shrimp (*Macrobrachium nipponensis)*, and Chinese mitten crab (*Eriocheir sinensis*)) was determined under semi-static conditions (Shan et al. 2003). Test water consisted of aerated tap water (ph 7.1) and test temperature was 20 ±1 C. Test chambers consisted of 25 l glass containers filled with 20 L of test solution. Fipronil material consisted of a 5% suspension provided by Aventis CropScience (no other information on the content of the suspension was provided). A total of 10 test organisms were added to each test container with average loading ranging from 0.5 to 1.15 g organism/L. Test solution was replaced very 24

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hours. Mortality and any observations of abnormal behavior were recorded each 24 hours. All Lc50s were reported as nominal concentrations:

	Acute LC50 (ug/L)			
Species	24 h	48h	72h	96h
Macrobrachium rosenbergii	6.41	2.24	1.63	0.98
Macrobrachium nipponense	>25.7	11.61	7.02	4.32
Eriocheir sinensis	57.83	22.57	12.44	8.56

Stark and Vargas (2005) evaluated the acute toxicity of fipronil to *Daphnia pulex*. Regent 4Sc formulation of fipronil was serially diluted in reconstituted dilution water. Batches of 5 neonates (3rd filial generation <24 hours of age) were introduced to 30 mL plastic cups containing 25 mL of each of five to eight logarithmically spaced fipronil concentrations and a water only control. Test conditions were static non renewal. Mortality of test subjects was evaluated based on movement under mechanical stimulation. The experiment was conducted three times with three different generations of test animals. The LC50 was expressed as nominal fipronil active ingredient and reported as 15.6 ug/L (95% CI 0.88- 83) with a slope of 0.93 ($\pm$ 0.26).

The toxicity of fipronil to the crayfish *Procambarus clarkii* was evaluated using static renewal (48 h interval) methods (Biever et al. 2003). Testing was conducted with the formulation ICON 6.2 FS diluted in well water (pH 6.9, hardness 38 mg/L as $CaCO_3$). Test concentrations were performed in duplicate and each chamber consisted of 21 L aquaria filled with 15 L of test solution maintained at 22 $\pm$1 C. Crayfish were observed very 24 hours for mortality. The fipronil nominal 96-hr LC50 was reported as 180 ug/L.

Fipronil as Rhone-Poulenc "suspensible" concentrate EXP 60145A (200g ai/L) was tested for acute toxicity in the final larval instar of the midge *Chironomus tepperi*. Ten larvae were added to 25 ml glass specimen tubes containing 20 mL of fipronil solution or untreated controls. Photoperiod was maintained at 15;9 (light:dark). The bioassays were run in triplicate and replicated 4 times with different larvae cultures all under static conditions. Mortality was assessed as response to manipulation by forceps. The mean 24-hr LC50 was reported by the authors to be 0.43 ug/L (95% limits 0.39-0.47) with a mean slope of 3.29 $\pm$ 0.44.

Field collected grass shrimp, *Palaemonetes pugio*, were evaluated for acute toxic response to fipronil (Stevens et al. 1998). One study involved the use of 10 adult shrimp housed in 4 L glass jars filled with 2 L of test media or control. There were two replicates per treatment. A second study involved the use of 10 larvae (one to two days old) per 600 ml beaker filled with 400 ml of media, three replicates per treatment. A third study involved the use of embryos in 24-well microtiter plates, one stage IV embryo/ 2 mL well. The control and each test concentration were allocated to a single plate for a total of 24 organisms per treatment. Pesticide grade acetone (0.1%) was used as a carrier solvent in all treatments and controls. The following 96-hr LC50 values were reported:

Life Stage	96-hr LC50 (ug/l0 *Palaemonetes pugio*
Adult	0.32
larvae	0.68
embryo	>512

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A 96-hr acute toxicity study with the adult copepod *Amphiascus tenuiremis* was conducted using 98% fipronil (Chandler 2004). Adult male and female organisms were exposed to four nominal concentrations of fipronil (4.3, 7.2, 12.0, and 20 ug/L) and an acetone control in artificial seawater. Four replicates per treatment level were employed and the test chambers consisted of 50 mL glass crystallizing dishes filled with 30 mL of test solution. Twenty organisms (evenly distributed between males and females) were introduced to each replicate, which were then incubated at 20 C for 96 hours in a 12:12 light:dark photoperiod. The LC50 for combined sexes was 6.8 ug/L, with a male LC50 of 3.5 ug/L and a female LC50 of 13.0 ug/L.

4.6.1.2 Early Life Stage and Reproduction Studies

Chandler et al. (2004) conducted a life cycle study (21 days) with the estuarine copepod *A. tenuiremis* exposed to fipronil (98% technical) at measured concentrations of 0.16, 0.22, and 0.42 ug/L in seawater.. The study was conducted in 96-well microtiter plates. One hundred fourty-four test microwells for each treatment and or control were distributed over three microplates per treatment or control. One animal per treatment well was introduced to a treatment or control solution volume of approximately 200 uL for portions of the experiment involving observed copepod rearing (endpoints specific to copepod survival and development). Alternating rows were evaluated for sexually mature copepod pairing and mating and involved two animals (male and female) per cell. The animals were fed with 2 uL of mixed algal cell suspension. All plates were maintained covered at 25C with a photoperiod of 12:12 light:dark. Treatment or control solution was renewed every 3 days and food was introduced every 6 days. There were no adverse effects on copepod survival observed at either day 12 or day 21 of the study (NOEC for survival 0.42 ug/L). Copepod development from stage 1 to adult was significantly ($p<0.01$) delayed for treatment groups 0.22 and 0.42 ug/L (NOEC for delayed development 0.16 ug/L, LOEC 0.22 ug/L). Developmental delays were observed to range from 1.5 to 2.4 days at the LOEC of 0.22 ug/L. The number of mature adults at day 12 was also reduced at 0.22 ug/l , with controls averaging 97.8 adults and 0.22 ug/l averaging 85.6 adults. Fipronil significantly reduced ($p<0.010$ the incidence of female egg production at the 0.22 and 0.42 ug/L by 71% and 94% , respectively (NOEC for incidence of female egg production 0.16 ug/L LOEC 0.22 ug/L). The most sensitive endpoint from this study was time from mating to female egg extrusion. Reproductively successful females took statistically longer than controls to extrude eggs at 0.16 and 0.22 ug/L ($p<00.05$) than controls by average margins of 1.9 and 2.3 days, respectively (NOEC for time to egg production <0.16 ug/L, LOEC o.16 ug/L).

Volz et al. (2003) examined the response of grass shrimp *Palaemonetes pugio* exposed to nominal concentrations of fipronil (technical 98%) at 0, 0.1 and 0.2 ug/L in seawater. Test chambers consisted of 70 L aquaria p[retreated for three weeks with test solutions. A total of 34 adult shrimp (17 male and 167 female) were assigned to each control and treatment chamber (three replicate chambers per treatment level). Measured concentrations of fipronil averaged 0.0979 ug/L (SD 0.02084) and 0.14298 ug/L (SD 0.04052) for the 0.1 and 0.2 ug/L treatment groups. Fipronil significantly ($p=0.01$) reduced adult survival at 0.14298 ug/L, with an observed 19.6% decrease relative to controls (survival NOEC 0.0979 ug/l, LOEC 0.14298 ug/l)). Among surviving shrimp, no significant (p 0.05) effects on the numbers of gravid females, female grass shrimp egg production, vitellogenin, cholesterol, and ecdysteroids were observed at any treatment level (NOEC 0.14298 ug/L).

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Table 18. Aquatic Animal Acute Toxicity data				
Species	**Chemical**	**%A.I.**	**LC50 or EC50 ug/L**	**MRID or Reference**
Freshwater Acute Invertebrate Toxicity Data				
Daphnia magna	fipronil	100	190	42918625
Ceriodaphnia dubia		98 (racemic)	17.9 (light condition) 17.5 (dark condition0	Konwick et al. 2005
Ceriodaphnia dubia		98.1 (-) enantiomere	35.4 (light condition) 28.4 (dark condition)	Konwick et al. 2005
Ceriodaphnia dubia		97.3 (+) enantiomer	11.3 (light condition) 9.4 (dark condition)	Konwick et al. 2005
Corbicula fluminea		95	>2000	46329904
Lumbriculus variegatus		99.7	>1900	46329903
Simulium vittatum		>98	0.22	Overmyer et al. 2005
Acanthocyclops robustus		99.9	84.8	Chaton et al. 2002
Diaptomus castor		99.9	3.4	Chaton et al. 2002
Chaoborus crystallinus		99.9	646	Chaton et al. 2002
Giant river prawn *Macrobrachium rosenbergii*		5	24h - 6.41 48h - 2.24 72h - 1.63 96h - 0.98	Shan et al. 2003
Oriental river shrimp *Macrobrachium nipponense*		5	24h - >25.70 48h - 11.61 72h - 7.02 96h - 4.32	Shan et al. 2003
Chinese mitten crab *Eriocheir sinensis*		5	24h - >57.83 48h - 22.57 72h - 12.44 96h - 8.56	Shan et al. 2003
Procambarus clarkii		--	14.3 (96-h)	Schlenk et al. 2001
Procambarus zonangulus		--	19.5 (96-h)	Schlenk et al. 2001
Chironomus annularis		99.9	2.4	Chaton et al. 2002
Chironomus crassicaudatus		97.1	0.42	Ali et al. 1998
Glyptendipes paripes		97.1	0.42	Ali et al. 1998
Chironomus tentans		98.3	0.41	45878001 (Water-based endpoint)
Hexagenia sp.		99.7	0.44	46329902
Aedes aegypti		97.1	1.54	Ali et al. 1998
Aedes albopictus		97.1	23	Ali et al. 1998

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Table 18. Aquatic Animal Acute Toxicity data				
Species	**Chemical**	**%A.I.**	**LC50 or EC50 ug/L**	**MRID or Reference**
Aedes taeniorhynchus		97.1	0.43	Ali et al. 1998
Anopheles quadrimaculatus		97.1	0.43	Ali et al. 1998
Culex nigripalpus		97.1	0.87	Ali et al. 1998
Culex quinqefasciatus		97.1	7.3	Ali et al. 1998
Culex quinqefasciatus		--	350	Ali et al. 1999
Daphnia magna	RPA 10461	94.7	100,000	43291719
Chironomus riparius	RPA 200766	99.8	430	46376701
Daphnia magna	MB46136	100	29	42918671
Chironomus tentans		99.1	0.72	45175901 (Water-based endpoint)
Daphnia magna	MB45950	100	100	42918669
Chironomus tentans		99.5	2.13	45084801 (Water-based endpoint)
Ceriodaphnia dubia	MB46513	97.8	355	Konwick et al. 2005
Chironomus tentans		99.1	200	45375901 (Water-based endpoint)
Procambarus clarkii	ICON 6.2 FS	56.02	174	45029601
Procambarus clarkii	ICON 6.2 FS	--	180	Biever et al. 2003
Daphnia pulex	Regent 4SC	--	15.6	Stark and Vargas 2005
Chironomus tepperi	RP EXP 60145a	20% (adjusted)	0.43 (24 hr study)	Stevens et al. 1998
Freshwater Acute Fish Toxicity Data				
Onchorynchus mykis	fipronil	100	246	42977902
Lepomis macrochirus		100	83	42918624
Ictalurus punctatus		97	560	44299401
Onchorynchus mykis	MB46136	99.2	39	42918673
Lepomis macrochirus		99.2	25	42918674
Lepomis macrochirus	MB46513	No data	20	43279702
Onchorynchus mykis		94.7	>100,000	43291718
Onchorynchus mykis		100 94.7	>100,000	43279703
Onchorynchus mykis	RPA104615	94.7	>100,000	43291718
Estuarine/Marine Acute Invertebrate Toxicity Data				

Table 18. Aquatic Animal Acute Toxicity data				
Species	**Chemical**	**%A.I.**	**LC50 or EC50 ug/L**	**MRID or Reference**
Amphiascus tenuiremis	fipronil	98	(96 hr study) 6.8 combined 3.5 male 13.0 female	Chandler et al. 2004
Palaemonetes pugio		--	adult 0.32 larvae 0.68 embryo >512	Key et al. 2003
Crassostrea virginianus		96.1	770	43291701
Americamysis bahia		96.1	0.14	43279701
Americamysis bahia	MB46513	97.8	1.5	45120001
Americamysis bahia	MB46136	99.7	0.56	45156301
Americamysis bahia	MB45950	99.7	0.077	45156302
Estuarine/Marine Acute Fish Toxicity Data				
Cyprinodon variegatus	fipronil	96.1	130	43291702

Table 19. Aquatic Animal Chronic Toxicity data				
Species	**Chemical**	**%A.I.**	**LOEC/ NOEC ug/L**	**MRID or Reference**
Freshwater Invertebrate Chronic Toxicity Data				
Daphnia magna	fipronil	100	20/9.8	42918626
Daphnia magna	MB46513	--	100/41	43279704, 44812801
Freshwater Fish Chronic Toxicity Data				
Oncorynchus mykis	fipronil	96.7	15/6.6	42818627
Estuarine/Marine Invertebrate Chronic Toxicity Data				
Americamysis bahia	fipronil	97.7	0.005/not determined	43681201
Palaemonetes pugio		98	*adult survival* 0.14298/0.0979 *reproduction* >0.14298/0.14298	Volz et al. 2003
Amphiascus tenuiremis		98	*Survival* 0.22/0.16 *Time to adult* 0.22/0.16 *Incident of female egg production* 0.22/0.16 *Time from mating to egg production* 0.16/<0.16	Chandler et al. 2004
Americamysis bahia	MB45950	99.5	0.0087/0.0046	45259202
Americamysis	MB46136	99	0.0026 /< 0.0026	45259203

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Table 19. Aquatic Animal Chronic Toxicity data				
Species	**Chemical**	**%A.I.**	**LOEC/ NOEC ug/L**	**MRID or Reference**
bahia				
Estuarine/Marine Fish Chronic Toxicity Data				
Cyprinodon variegatus	fipronil	95 97	*full life cycle* 1.7/0.85 early life stage *0.41/0.24*	45265101 44605502

Table 20. Aquatic Plant Toxicity data					
Species Tested	**Chemical**	**% A.I.**	**5 Day EC50 (µg/L)**	**NOEC (µg/L)**	**MRID or Reference**
Navicula pelliculosa (FW diatom)	fipronil	96.1	>120	120	42918658
Lemna gibba (Duckweed)		96.1	>100	100	42918656
Selenastrum capricornutum (FW green alga)		96.1	140	<140	42918660
Skeletonema costatum (marine diatom)		96.1	>140	140	42918659
Anabaena flos aquae (FW Blue-green alga)		96.1	>170	140	42918657
Selenastrum capricornutum (FW green alga)	MB46513	98.6	76	7.5	43279705

Sediment Toxicity Studies

The following table presents the results of sediment toxicity testing with fipronil and degradates.

Table 21. Sediment Organism Toxicity Data					
Species Tested	**Chemical**	**% A.I.**	**10 Day LC50/EC50 (NOEC) µg/kg-sediment**	**10 Day LC50/EC50 (NOEC) µg/l pore water**	**MRID**
Chironomus tentans	fipronil	98.3	mortality 30.7(16)	Mortality 0.41(0.24)	45878001
	MB46513	97.8-99.6	mortality 1300(200) growth 520(<200)	Not available Not available	45375901
	MB46136	99.01	mortality 44.8(14) growth 34.8(9.1)	mortality 0.72(0.35) growth 0.41(0.41)	45175901
	MB45950	99.5	mortality 116.9(29) growth 50.9(54)	mortality 2.13(0.35) growth 0.66 (0.94)	45084801

4.6.2 Mesocosm, Microcosm, and Field Studies

Wirth et al. (2004) evaluated the effects of fipronil (purity not stated) upon estuarine mesocosms. Each mesocosm chamber consisted of an aerated tank with a simulated diurnal tidal volume 55l

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to 250 L. Each tank consisted of 2 plots of low marsh, 2 plots of mid marsh, and a simulated stream. Natural seawater and unspecified sediment were used. Three replicate mesocosm chambers were used for a control, and 0.150, 0.355, and 5.00 ug/L nominal additions of fipronil. Dosing occurred in the seawater sump approximately one hour prior to flood tide, avoiding a plume event. Test organisms were acclimated in the mesocosms three days prior to dosing. The community consisted of 24 6 month grass shrimp (*P. pugio, 16 males 8 females*) , 30 oysters (*C. virginica*), 30 juvenile clams (*Mercenaria mercenaria*), and 25 fish(*C. variegaus*). Exposure duration was for 28 days, evaporative loss in each chamber was offset through deionized water addition. Clams exhibited no adverse effects at all exposure levels. There were no significant ($p=0.33$) effects on oyster survival or oyster weight ($p=0.38$), but height of oysters was slightly reduced ($p=0.01$) at the highest dose tested. Grass shrimp exhibited reduced survival ($p<0.05$) at the middle dose. Grass shrimp also exhibited a dose dependent reduction in number off oviparous females, though without statistical significance. Fish exhibited no significant effects on survival, length or weight. Because concentrations of fipronil in the water column decreased substantially over the course of the study the NOEC and LOEC for this study can be expressed both as nominal concentration (NOEC 0.150 ug/L, LOEC 0.355 ug/L) and as a 28-day average measured concentration (NOEC 0.076 ug/L, LOEC 0.148 ug/L). No monitoring of sediments nor for degradates was conducted in the study. Consequently the disappearance of fipronil parent from the water column cannot be reliably attributed to any particular fate or dissipation process.

Shan et al. (2003) explored the potential effects of fipronil in rice paddy drainage water upon freshwater crustaceans. An experimental rice paddy was treated with fipronil (5% fipronil suspension) by spray application of 45 g ai./hectare. Water drawn from the experimental paddy was introduced to a fishpond (concrete lined with mud and planted with "water grass") that contained 80 *M. rosenbergii*, 50 *M. nipponensis*, and 80 *E. simensis*. At 24 hours post fipronil application to the paddy draw water from the paddy was introduced to the pond in a 50% volumetric mixture with existing pond water. *E. simensis,* immediately after application of paddy water, showed signs of intoxication (convulsion and arched bodies). Within 10 days there was complete mortality of this species as compared to 50% mortality in an untreated control pond. The other test species also exhibited signs of agitation and complete mortality by 7 days (*M. nipponensis*) or 3 days (*M. rosenbergii*) compared to controls where mortality was 345 and 13.85, respectively. Fipronil concentration in the fish ponds, upon application of treated paddy water was a measured 3.48 ug/L and declined to 2.6 ug/L 30 days later. Traces of MB046136 were detected, while the other two degradates were negligible.

Bayer Crop Science submitted to the Agency an evaluation of fipronil effects on the fauna of outdoor simulated ponds (MRID46733901). Fipronil, as Chipco TopChoice, was used in the experiment. Eight outdoor ponds were used in the study (four replicates for treatment and control). Fipronil was introduced to pond surface water at a nominal initial concentration of 0.4 ug/L. The time-weighted average concentration of fipronil in treated mesocosms from initiation of biological exposure out to 84 days (holding non-detects at half detection limit) was 0.042 ug/L. Biological sampling commenced two weeks prior to test substance treatment and continued for approximately 12 weeks after application. There were no statistically significant ($P>0.05$) differences in phytoplankton (determined by phaeophytin, chlorophyll, and total pigment analysis) between control and treatment. Mean arthropod abundance was lower in the treatment than control at day 7 (52% of control), and Day 14 (61% of control) This trend reversed for days 21, 28, 42, and 56, where treatments showed increases in abundance relative to

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controls ranging from 0.5% to 183 %. None of the overall arthropod effects, though marked were statistically significant (P>0.05). Within the arthropods, certain copepod species (Me*socyclops edax* and *Tropocyclops prasinus*) showed statistically significant ($p \leq 0.05$) reductions in abundance in treatment relative to control. Treatment abundances ranged from 65 to 365 of control values. By day 21 (the last day of analysis at species resolution) these reductions were not statistically significant, but were still markedly reduced 14% to 60% of controls. Hester-Dendy sampling results for clitellora (worms and leeches) showed statistically significant increase in treatments relative to control for sampling days 8, and 14, and 56 (increases greater than 200%). Gastropods (snails) showed similar increases in abundance, though not statistically significant, in treatments relative to control. Evaluation of total macroinvertebrate insect abundance showed mixed results as the study progressed. Reductions in total abundance were statistically significant (P<0.5) for fipronil treatment at day 8, with reductions still evident at day 28 and 56, though not statistically significant. Benthic sampling for mayfly juveniles showed significant reductions in the presence of fipronil ($p<0.05$) at days 8, 14, 28, and 56 of the study. Juvenile chironomids were also reduced significantly ($p<0.05$) by fipronil at day 8, though these effects were largely reversed by day 56 of the study. Numbers of emergent insects were too small in the study to make definitive statistically supported statements about individual taxonomic groups. However, total emergent insects were lower in the fipronil treatment than in control for all sampling days of the study.

The registrant has submitted an interim report on the effects of in place sediment concentrations of fipronil on the re-colonization of natural streams (MRID 46936104). The objective of the study was to evaluate the long-term effects of fipronil on benthic macroinvertebrates in freshwater ecosystems. A total of eight separate surface water sites were considered in this evaluation. Surficial sediments were collected from each test site. These sediments were untreated (control), or treated with fipronil as a low dose 0.75 ug/kg (wet) or high dose 1.5 ug/kg (wet) and replicates of control and fipronil doses (3 each) were placed prepared using the aforementioned sediment placed into 700 ml trays. These trays were then reintroduced to the test sites. The study reports have not been completed at the time of the drafting of this risk assessment.

4.6.3 Calculation of Acute to Chronic Ratios and Other Extrapolation Factors for Aquatic Organisms

Chronic toxicity data are available for but a subset of the freshwater invertebrate species tested in acute toxicity studies. In order to capture the potential for interspecies differences in sensitivity observed in the acute studies, an assumption was made that such differences are conserved in chronic effects. The following acute:chronic ratios (ACRs) for fipronil are available from the data set:

Species	Invert or Fish	Freshwater or Estuarine/marine	Acute LC50	Chronic NOEC	ACR
D. magna	invertebrate	freshwater	190	9.8	19.39
O. mykis	fish	freshwater	246	6.6	37.27
A. bahia	invertebrate	estuarine/marine	0.14	<0.005	>28.00
P. Pugio	invertebrate	estuarine/marine	0.32	0.0979	3.26
A. tenurans	invertebrate	estuarine/marine	6.8	<0.16	>42.50
C. variegates	fish	estuarine/marine	130	0.85	<152.9
				0.24	<541.7

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For the purposes of extrapolating acute freshwater invertebrate results to an estimated chronic effects NOEC when chronic data are unavailable, this risk assessment uses the single ACR for *D. magna* (19.39), where the resulting chronic NOEC estimate will be made using the calculation: LC50/ACR=$NOEC_{est}$. For estuarine/marine invertebrates, extrapolations of acute to chronic effects endpoints would employ the ACR for *A. bahia,* where the resulting chronic NOEC estimate will be made using the calculation: LC50/ACR=$NOEC_{est}$. The selection of *A. bahia* was made because most acute testing available for degradates uses the same species and such extrapolations within the species have the least uncertainty.

There are data gaps for the degradates concern the available acute toxicity data for estuarine/marine fish. To address these gaps this risk assessment assumed the relationship between freshwater species sensitivities for parent fipronil and degradates are conserved. The following relationships can be calculated with available data

Species	Fipronil LC50	MB46136 LC50	Ratio Parent to Degradate
O. mykis	246	39	6.3
L. macrochirus	83	25	3.3
Species	Fipronil LC50	MB46513 LC50	Ratio Parent to Degradate
O. mykis	246	>100,00	<.00246
L. macrochirus	83	20	4.15

4.7 Incidents

There are few incidents in the Agency database for effects on non-target organisms associated with the labeled use of fipronil. The degree to which the low number of years of outdoor use contributes to a lack of incidents is unknown.

Incident number I009142001 is a report of crayfish mortality following use of fipronil as a seed treatment on rice in Louisiana. The database classifies this incident as highly probable. In March of 1999 Louisiana Department of Agriculture and Safety issued a stop order to prevent the use of fipronil on rice seed in Allen, Calcasieu, Cameron, Lafayette, St. Martin, Iberia, St. Mary, St. Landry, Beauregard, Vermillion, Evangeline, Acadia, and Jefferson Davis Parishes. Fipronil was detected in 3 of 9 crawfish samples (mean detection 0.04 ug/kg). Fipronil was detected in water samples from 8 of 16 ponds (average 2,08 ug/L, high 6.09 ug/L), in all samples of the Mermentau River (average 1.67 ug/L, high 3.16 ug/L), and 14 of 17 other water monitoring sites (average 0.84 ug/L, high 5.33 ug/L). the registrant (Rhone-Poulenc reported that 17 crawfish growers had reported to them observations of crawfish at the edges of ponds bordering rice fields planted with fipronil-treated rice. The LA department of Agriculture was investigating 31 reported incidents pf crawfish kills on rice. Among the department and registrant reports there were 45 total incidents. The Louisiana state university Agricultural center conducted a survey and several experiments which substantiated the link between fipronil-treated rice seed and reduced survival of crawfish under hot dry weather conditions. Fipronil is no longer registered for rice seed treatment.

There are two reports of corn crop damage (I011723098 300 acres in North Dakota, and I013103054300 550 acres in Idaho) following use of fipronil Regent SC. These incidents are classified in the database as possible (Idaho incident) and probable (North Dakota). In neither incident report are there any confirmatory residue analyses.

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One other probable incident, outside the United States, is also reported in the Agency database. It involves locust control efforts on the island of Madagascar (I010380001). The incident was summarized in a BBC news article. The article refers to survey results citing declines in the Madagascar bee eater and a kestrel species. In addition, surveys of termite colonies showed a 90% elimination rate ten months after spraying. There are no confirmatory analytical data reported in the incident summary.

4.8 Effects Endpoints Used in the Risk Assessment

The following tables summarize the acute and chronic endpoints quantitatively used in this risk assessment for fipronil and degradates.

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Table 22. Terrestrial Organism Toxicity Endpoints Used in the Pest Risk Assessment				
Chemical	**Acute Toxicity Threshold**	**Chronic Toxicity Threshold**	**Acute Threshold Origin**	**Chronic Threshold Origin**
Birds				
Fipronil	LD_{50} 11.3 mg/kg-bw LC_{50} 48 mg/kg-diet	NOEC 10 mg/kg-diet	1	1
MB46136	LD50 19.7 mg-bw LC_{50} 84mg/kg-diet	NOEC 10 mg/kg-diet	3 1	2
MB46513	LD_{50} 5 mg/kg-bw LC_{50} 119.2 mg/kg-diet	NOEC 10 mg/kg-diet	1	2
MB45950	LD50 26.79 mg/kg-bw LC_{50} 114 mg/kg-bw	NOEC 10 mg/kg-diet	3 1	2
Mammals				
Fipronil	LD_{50} 97 mg/kg-bw	NOEC 30 mg/kg-diet NOEL 2.64 mg/kg-bw	1	1
MB46136	LD_{50} 218 mg/kg-bw	NOEC 30 mg/kg-diet NOEL 2.64 mg/kg-bw	1	2
MB46513	LD_{50} 16 mg/kg-bw	NOEC 30 mg/kg-diet NOEL 2.64 mg/kg-bw	1	2
MB45950	LD_{50} 83 mg/kg-bw	NOEC 30 mg/kg-diet NOEL 2.64 mg/kg-bw	1	2
Plants				
Fipronil	0.025 lb/acre (NOEC)	Not applicable	1	Not applicable
MB46136	0.025 lb/acre (NOEC)	Not applicable	2	Not applicable
MB46513	0.025 lb/acre (NOEC)	Not applicable	2	Not applicable
MB45950	0.025 lb/acre (NOEC)	Not applicable	2	Not applicable

1 most sensitive species tested
2 assumed to be equivalent to parent fipronil
3 estimated by multiplying available LC50 by parent fipronil LD:LC50 ratio
* photodegradate toxicity endpoints provided for background information only as this degradate is not expected to appreciably occur in terrestrial systems due to the low photolysis half-life of fipronil and field study analyses

Table 23. Aquatic Organism Toxicity Endpoints Used in the Pest Risk Assessment				
Chemical	**Acute Toxicity Threshold ug/L**	**Chronic Toxicity Threshold ug/L**	**Acute Threshold Origin**	**Chronic Threshold Origin**
Freshwater Fish				
Fipronil	83	6.6	1	1
MB46136	25	0.67	1	2
MB46513	20	0.59	1	2
MB45950	83	6.6	3	3
Estuarine/Marine Fish				
Fipronil	130	0.24	1	1
MB46136	21	0.039	4	5

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Table 23. Aquatic Organism Toxicity Endpoints Used in the Pest Risk Assessment				
Chemical	**Acute Toxicity Threshold ug/L**	**Chronic Toxicity Threshold ug/L**	**Acute Threshold Origin**	**Chronic Threshold Origin**
MB46513	31	0.057	4	5
MB45950	130	0.24	3	3
Freshwater Invertebrates				
Fipronil	0.22	0.011	1	6
MB46136	0.72	0.037	1	6
MB46513	200	10.31	1	6
MB45950	2.13	0.11	1	6
Estuarine/Marine Invertebrates				
Fipronil	0.14	<0.005	1	1
MB46136	0.56	<0.0026	1	1
MB46513	1.5	0.054	1	7
MB45950	0.077	0.0046	1	1
Freshwater Plants (endpoints non-listed/listed plants)				
Fipronil	Unicellular 140/<140 Vascular >100/100	Not applicable	1	Not applicable
MB46136	Unicellular 140/<140 Vascular >100/100	Not applicable	3	Not applicable
MB46513	Unicellular 140/<140 Vascular >100/100	Not applicable	3	Not applicable
MB45950	Unicellular 140/<140 Vascular >100/100	Not applicable	3	Not applicable
Estuarine/Marine Plants				
Fipronil	>140/140	Not applicable	1	Not applicable
MB46136	>140/140	Not applicable	3	Not applicable
MB46513	>76/7.5	Not applicable	1	Not applicable
MB45950	>140/140	Not applicable	3	Not applicable

1 most sensitive species tested
2 most sensitive species tested acute value divided by *O. mykis* acute:chronic ratio of parent fipronil
3 assumed to be equivalent to parent fipronil
4 estimated based on estuarine/marine value for parent fipronil divided by largest freshwater fish acute parent to degradate ratio
5 estimated by dividing acute value by parent acute to chronic ratio for estuarine/marine fish
6 lowest acute value divided by parent fipronil acute:chronic ratio for *D. magna*
7 lowest acute value divided by parent fipronil acute:chronic ratio of *A. bahia*

5.0 Risk Characterization

5.1 Risk Estimation

The following sections of this screening-level risk assessment present the results of the risk quotient calculations for terrestrial and aquatic organisms.

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5.1.1 Terrestrial Wildlife Risk Quotients

Appendix G presents the results of Risk Quotients calculated using the mass per unit area exposure method (LD50/ft^2) for granular and seed treatment labeled uses. It is important to note that the LD50/ft^2 RQ calculation is only used for acute effects assessment. Table 24 presents those RQ estimates that exceed one or more non-target levels of concern.

Table 24. Terrestrial Vertebrate Acute Risk Quotients for Fipronil Use Based on LD50/ft^2

Chemical	Animal Type	Body Weight g	RQ	LOC Exceeded
Seed Corn Treatment 0.02 kg/ha (0.0178 lb/acre) assume only 1% available (0.000178 lb/acre)				
No RQ in excess of any acute LOC for birds or mammals				
Icon 6.2 Onion Seed treatment 0.112 kg/ha (0.11 lb/acre) assume only 1% available (0.0011 lb/acre)				
No RQ in excess of any acute LOC for birds or mammals				
BES 100 Texas Leafcutter Ant Bait 0.255 kg/ha (0.228 lb/acre) assume 100% available				
Fipronil	Bird	20	14.58	A,RU,LS
		100	2.29	A,RU,LS
		1000	0.16	LS
	Mammal	15	0.74	A,RU,LS
		35	0.39	RU,LS
MB46136	Bird	20	2.01	A,RU,LS
		100	0.32	RU,LS
MB45950	Bird	20	0.31	RU,LS
BES 1000 House Perimeter Granule 0.357 lb/acre within the perimeter treatment zone) assume 100% available				
Fipronil	Bird	20	22.83	A,RU,LS
		100	3.59	A,RU,LS
		1000	0.25	RU,LS
	Mammal	15	1.16	A,RU,LS
		35	0.62	A,RU,LS
MB46136	Bird	20	3.14	A,RU,LS
		100	0.49	RU,LS
	Mammal	15	0.12	LS
MB45950	Bird	20	0.48	RU,LS
Chipco 61748A Broadcast Fire ant 0.014 kg/ha (0.125 lb/acre) assume 100% available **TopChoice Select Broadcast Fire ant** **Chipco Choice Broadcast Fire ant**				
Fipronil	Bird	20	0.80	A,RU,LS
		100	0.13	LS
MB46136	Bird	20	0.11	LS
Over'N Out Broadcast Fire ant 0.01 kg/ha (0.009 lb/acre) assume 100% available				
No RQ in excess of any acute LOC for birds or mammals				

A= acute risk to listed and non-listed species (RQ≥0.5)
RU= restricted use (RQ≥0.2)
LS= acute risk for federally listed threatened and endangered species (RQ≥0.1)

Risk quotients for birds consuming terrestrial invertebrates and seeds in the field at the time of application are presented in the table below. These are calculated using the estimated fipronil concentration in food items as the exposure estimate and effects endpoints expressed as dietary concentrations.

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Table 25. Terrestrial Vertebrate Acute and Chronic Risk Quotients for Fipronil Use Based on Dietary Residues						
Chemical	**Animal Type**	**Body Weight g**	**Food Item**	**Acute RQ (Bird:Dose/Diet) (Mammal: Dose)**	**Chronic RQ (Bird: Diet) (Mammal:Dose/Diet)**	**LOC Exceeded**
Potato/Sweet Potato In-Furrow Spray With Regent 4 SC 0.0112 kg/ha (0.112 lb/acre) assumes only seeds and insects available at time of planting						
Fipronil	Bird	20	Small insects	0.19/--	--	LS
Corn In-Furrow Spray With Regent 4 SC 0.1456 kg/ha (0.130 lb/acre) assumes only seeds and insects available at time of planting						
Fipronil	Bird	20	Small insects	2.46/0.37	1.76	A,RU,LS,C
			Seeds/large insects	0.27/--	--	RU,LS
		100	Small insects	1.10/0.37	1.76	A,RU,LS,C
		1000	Small insects	0.35/0.37	1.76	RU,LS,C
MB46136	Bird	20	Small insects	0.34/--	--	RU,LS
		100	Seeds/large insects	0.15--	--	LS
House Perimeter Treatment Spray With Termidor SC 0.325 lb/acre all food items considered within 1 foot treatment zone						
Fipronil	Bird	20	Short grass	10.91/1.63	7.8	A,RU,LS,C
			Tall grass	5.00/0.74	3.58	A,RU,LS,C
			Broadleaf foliage/small insects	6.14/0.91	4.39	A,RU,LS,C
			Fruits/pods/seeds/large insects	0.68/0.10	--	A,RU,LS
		100	Short grass	4.89/1.63	7.8	A,RU,LS,C
			Tall grass	2.24/0.74	3.58	A,RU,LS,C
			Broadleaf foliage/small insects	2.75/0.91	4.39	A,RU,LS,C
			Fruits/pods/seeds/large insects	0.31/0.10	--	RU,LS
		1000	Short grass	1.55/1.63	7.8	A,RU,LS,C
			Tall grass	0.71/0.74	3.58	A,RU,LS,C
			Broadleaf foliage/small insects	0.87/0.91	4.39	A,RU,LS,C
			Fruits/pods/seeds/large insects	0.10/0.10	--	LS
	Mammal	15	Short grass	0.35	12.82/2.60	A,RU,LS,C
			Tall grass	0.16	5.87/1.19	LS,C
			Broadleaf foliage/small insects	0.20	7.21/1.46	RU,LS,C
		35	Short grass	0.30	10.95/2.60	RU,LS,C
			Tall grass	0.14	5.02/1.19	LS,C
			Broadleaf foliage/small insects	0.17	6.16/1.46	LS,C
		1000	Short grass	0.16	5.87/2.60	LS,C
			Tall grass	--	2.69/1.19	C
			Broadleaf foliage/small insects	--	3.30/1.46	C
MB46136	Bird	20	Short grass	1.50/0.22	1.87	A,RU,LS,C
			Tall grass	0.69/0.10	--	A,RU,LS
			Broadleaf foliage/small insects	0.84/0.13	1.05	A,RU,LS,C
		100	Short grass	0.67/0.22	1.87	A,RU,LS,C
			Tall grass	0.31/0.10	--	RU,LS
			Broadleaf foliage/small insects	0.38/0.13	1.05	RU,LS,C
		1000	Short grass	0.21/0.22	1.87	RU,LS,C
			Tall grass	0.10/0.10	--	LS
			Broadleaf foliage/small insects	0.12/0.13	1.05	LS.C
	Mammal	15	Short grass	--	3.08/--	C
			Tall grass	--	1.41/--	C
			Broadleaf foliage/small insects	--	1.73/--	C
		35	Short grass	--	2.63/--	C

Table 25. Terrestrial Vertebrate Acute and Chronic Risk Quotients for Fipronil Use Based on Dietary Residues						
Chemical	**Animal Type**	**Body Weight g**	**Food Item**	**Acute RQ (Bird:Dose/Diet) (Mammal: Dose)**	**Chronic RQ (Bird: Diet) (Mammal:Dose/Diet)**	**LOC Exceeded**
			Tall grass	--	1.20/--	C
			Broadleaf foliage/small insects	--	1.48/--	C
		1000	Short grass	--	1.41/--	C
MB45950	Bird	20	Short grass	0.23/--	--	RU,LS
			Tall grass	0.11/--	--	LS
			Broadleaf foliage/small insects	0.13/--	--	LS
		100	Short grass	0.10/--	--	LS
MB46513	Bird	20	Short grass	11.10/0.29	3.51	A,RU,LS,C
			Tall grass	5.09/0.13	1.61	A,RU,LS,C
			Broadleaf foliage/small insects	6.24/0.17	1.97	A,RU,LS,C
			Fruits/pods/seeds/large insects	0.69/--	--	A,RU,LS
		100	Short grass	4.97/0.29	3.51	
			Tall grass	2.28/0.13	1.61	A,RU,LS,C
			Broadleaf foliage/small insects	2.80/0.17	1.97	A,RU,LS,C
			Fruits/pods/seeds/large insects	0.31/--	--	RU,LS
		1000	Short grass	1.58/0.29	3.51	A,RU,LS,C
			Tall grass	0.72/0.13	1.61	A,RU,LS,C
			Broadleaf foliage/small insects	0.89/0.17	1.97	A,RU,LS,C
			Fruits/pods/seeds/large insects	0.10/--	--	LS
	Mammal	15	Short grass	0.95	5.77/1.17	A,RU,LS,C
			Tall grass	0.44	2.64/--	RU,LS,C
			Broadleaf foliage/small insects	0.54	3.24/--	A,RU,LS,C
		35	Short grass	0.81	4.93/1.17	A,RU,LS,C
			Tall grass	0.37	2.26/--	RU,LS,C
			Broadleaf foliage/small insects	0.46	2.77/--	RU,LS,C
		1000	Short grass	0.44	2.64/1.17	RU,LS,C
			Tall grass	0.20	1.21/--	RU,LS,C
			Broadleaf foliage/small insects	0.25	1.49/--	RU,LS,C
Broadcast Fire Ant Treatment Spray With HG 61743 AE 0.1089 lb/acre all food items considered within 1 foot treatment zone						
Fipronil	Bird	20	Short grass	3.66/0.54	2.61	A,RU,LS,C
			Tall grass	1.68/0.25	1.20	A,RU,LS,C
			Broadleaf foliage/small insects	2.06/0.31	1.47	A,RU,LS,C
			Fruits/pods/seeds/large insects	0.23/--	--	RU,LS
		100	Short grass	1.64/0.54	2.61	A,RU,LS,C
			Tall grass	0.75/0.25	1.20	A,RU,LS,C
			Broadleaf foliage/small insects	0.92/0.31	1.47	A,RU,LS,C
			Fruits/pods/seeds/large insects	0.1/--	--	LS
		1000	Short grass	0.520.54	2.61	A,RU,LS,C
			Tall grass	0.24/0.25	1.20	RU,LS,C
			Broadleaf foliage/small insects	0.29/0.31	1.47	RU,LS,C
	Mammal	15	Short grass	0.12	4.29/--	LS,C
			Tall grass	--	1.97/--	C
			Broadleaf foliage/small insects	--	2.42/--	C
		35	Short grass	0.10	3.67/--	LS,C
			Tall grass	--	1.68/--	C

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Table 25. Terrestrial Vertebrate Acute and Chronic Risk Quotients for Fipronil Use Based on Dietary Residues						
Chemical	**Animal Type**	**Body Weight g**	**Food Item**	**Acute RQ (Bird:Dose/Diet) (Mammal: Dose)**	**Chronic RQ (Bird: Diet) (Mammal:Dose/Diet)**	**LOC Exceeded**
			Broadleaf foliage/small insects	--	2.06/--	C
		1000	Short grass	--	3.67/--	C
			Tall grass	--	1.68/--	C
			Broadleaf foliage/small insects	--	2.06/--	C
MB46136	Bird	20	Short grass	0.50/--	--	A,RU,LS
			Tall grass	0.23/--	--	RU,LS
			Broadleaf foliage/small insects	0.28/--	--	RU,LS
		100	Short grass	0.23/--	--	RU,LS
			Tall grass	0.10/--	--	LS
			Broadleaf foliage/small insects	0.13/--	--	LS
	Mammal	15	Short grass	--	1.03/--	C
MB46513	Bird	20	Short grass	3.72/0.1	1.18	A,RU,LS,C
			Tall grass	1.70/--	--	A,RU,LS
			Broadleaf foliage/small insects	2.09/--	--	A,RU,LS
			Fruits/pods/seeds/large insects	0.23/--	--	RU,LS
		100	Short grass	1.67/0.1	1.18	A,RU,LS,C
			Tall grass	0.76/--	--	A,RU,LS
			Broadleaf foliage/small insects	0.94/--	--	A,RU,LS
			Fruits/pods/seeds/large insects	0.10/--	--	LS
		1000	Short grass	0.53/0.1	1.18	A,RU,LS,C
			Tall grass	0.24/--	--	RU,LS
			Broadleaf foliage/small insects	0.30/--	--	RU,LS
	Mammal	15	Short grass	0.32	1.93/--	RU,LS,C
			Tall grass	0.15	--	LS
			Broadleaf foliage/small insects	0.18	1.09/--	LS,C
		35	Short grass	0.27	1.65/--	RU,LS,C
			Tall grass	0.12	--	LS
			Broadleaf foliage/small insects	0.15	--	LS
		1000	Short grass	0.15	--	LS

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC, Chronic LOC, -- no LOC exceeded

The following table presents the results of risk quotient calculations for seed and bait treatments where the direct consumption of the treated seed or bait are assumed to be included as a dietary item and result in RQ values in excess of Agency LOCs. Onion seed treatment and Amulet fruit fly station bait were not assessed as it was assumed that no wildlife exposures will occur. For those baits and seed treatments evaluated, it was assumed that only parent fipronil will be on these baits and seeds and no degradates would be evident. This is based on the expected short duration of bait/seed availability to wildlife relative to the long degradation half-life of parent fipronil. Acute risks associated with consumption of treated seeds cannot be dismissed. Using even the largest bird weight category (1000 g), corn seed treatment at 0.1% fipronil in seed yields concentration on corn kernels at levels where 42 granules would reach the LD50 for fipronil, 22 would provide a daily oral dose at the acute risk level of concern, and five corn kernels would provide sufficient daily dose to trigger endangered species concerns. Birds of small weight classes would be at lethal risk with even small numbers of kernels consumed.

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Table 26. Terrestrial Vertebrate Acute and Chronic Risk Quotients for Fipronil Use Based on Residues In/On Treated Seeds and Baits						
Chemical	**Animal Type**	**Body Weight g**	**Food Item**	**Acute RQ (Bird:Dose/Diet) (Mammal: Dose)**	**Chronic RQ (Bird: Diet) (Mammal:Dose/Diet)**	**LOC Exceeded**
Seed Corn Treatment 0.1 lb ai/100 lb seed (1000 mg/kg seed)						
Fipronil	Bird	20	Treated seed (1000 mg/kg)	139.9/20.83	100	A,RU,LS,C
		100		62.7/20.83	100	A,RU,LS,C
		1000		198.86/20.83	100	A,RU,LS,C
	Mammal (granivore)	15		0.99	36.52/33.33	A,RU,LS,C
		35		0.85	31.19/33.33	A,RU,LS,C
		1000		0.46	17.72/33.33	RU,LS,C
Onion Seed Treatment (not evaluated because onion seed is a set treatment assumed unattractive to wildlife)						
Broadcast Texas Leafcutter Ant Bait BES 100 0.003% (30 mg/kg-bait)						
Fipronil	Bird	20	Treated bait as a seed (30 mg/kg)	4.20/0.63	3.00	A,RU,LS,C
		100		1.86/0.63	3.00	A,RU,LS,C
		1000		0.60/0.63	3.00	A,RU,LS,C
	Mammal (granivore)	15		--	1.10/1.0	C
		35		--	0.94/1.0	C
		1000		--	0.5/1.0	C
Amulet Fruit Fly Station Bait (not evaluated because exposure not expected for wildlife)						

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC, Chronic LOC, -- no LOC exceeded

5.1.2 Terrestrial Plant Risk Quotients

Appendix F shows the RQ estimates from TERRPLANT model v1.2.1 , set at zero incorporation rate for the pesticide, using a runoff value of 1% for insoluble fipronil and degradates, and using the NOEL endpoint of 0.025 lb ai./acre no maximum uses of fipronil listed in this risk assessment will produce RQ values in excess of Agency levels of concern (i.e. RQ≥1).

5.1.3 Aquatic Organism Risk Quotients

The following tables calculated risk quotients for water column organisms. Actual RQ values and a comparison with Agency levels of concern are presented. See Appendix G for the full suite of RQ calculations for aquatic organisms.

Table 27. Freshwater Invertebrate Risk Quotients						
Chemical	**Acute EEC (ug/L)**	**Chronic EEC (ug/L)**	**Acute RQ**	**Chronic RQ**	**Acute LOC Exceeded?**	**Chronic LOC Exceeded?**
Potato/Sweet Potato In-Furrow Spray (No RQs Exceed LOCs)						
Corn In-Furrow Spray						
Fipronil	0.2067	0.1311	0.94	11.92	A,RU,LS	yes
MB 46136	0.0653	0.0595	0.09	1.61	LS	yes
MB46513	0.0060	0.0057	0.00	0.10	no	no
MB 45950	0.0150	0.0144	0.01	0.06	no	no
Corn Seed Treatment (No RQs Exceed LOCs)						
Onion Seed Treatment (Maximum Application Rate)						
Fipronil	1.2949	0.9103	5.89	82.75	A,RU,LS	yes
MB 46136	0.4840	0.4332	0.67	11.71	A,RU,LS	yes
MB46513	0.0390	0.0387	0.00	0.68	no	no

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Table 27. Freshwater Invertebrate Risk Quotients						
Chemical	**Acute EEC (ug/L)**	**Chronic EEC (ug/L)**	**Acute RQ**	**Chronic RQ**	**Acute LOC Exceeded?**	**Chronic LOC Exceeded?**
MB 45950	0.1186	0.1092	0.06	0.46	LS	no
Onion Seed Treatment (Typical Application Rate)						
Fipronil	0.6241	0.4389	2.84	39.90	A,RU,LS	yes
MB 46136	0.2420	0.2167	0.34	5.86	RU,LS	yes
MB46513	0.0180	0.0176	0.00	0.31	no	no
MB 45950	0.0561	0.0516	0.03	0.22	no	no
Broadcast Bait Texas Leafcutter Ants						
Fipronil	1.5499	1.0445	7.05	94.95	A,RU,LS	yes
MB 46136	0.6306	0.4835	0.88	13.07	A,RU,LS	yes
MB46513	0.0387	0.0355	0.00	0.62	no	no
MB 45950	0.1387	0.1129	0.06	0.47	LS	no
Fruit Fly Station (No RQs Exceed LOCs)						
Pine Seedling Root Injection (No RQs Exceed LOCs)						
House Perimeter Residential BES100						
Fipronil	0.0412	0.0267	0.19	2.43	RU,LS	yes
MB 46136	0.0154	0.0119	0.02	0.32	no	no
MB46513	0.0009	0.0009	0.00	0.02	no	no
MB 45950	0.0032	0.0027	0.00	0.01	no	no
House Perimeter Sod Farm BES100						
Fipronil	0.0667	0.0413	0.30	3.75	RU,LS	yes
MB 46136	0.0288	0.0239	0.04	0.65	no	no
MB46513	0.0019	0.0018	0.00	0.03	no	no
MB 45950	0.0062	0.0053	0.00	0.02	no	no
House Perimeter Residential Termidor SC/WG (No RQs Exceed LOCs)						
House Perimeter Sod Farm Termidor SC/WG (No RQs Exceed LOCs)						
Broadcast Fire Ant Residential HG 61743AE (No RQs Exceed LOCs)						
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0443	0.0287	0.20	2.61	RU,LS	yes
MB 46136	0.0165	0.0127	0.02	0.34	no	no
MB46513	0.0009	0.0009	0.00	0.02	no	no
MB 45950	0.0037	0.0032	0.00	0.01	no	no
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0718	0.0445	0.33	4.05	RU,LS	yes
MB 46136	0.0307	0.0254	0.04	0.69	no	no
MB46513	0.0017	0.0180	0.00	0.00	no	no
MB 45950	0.0007	0.0006	0.00	0.00	no	no
Broadcast Fire Ant Residential Over'N Out						
Fipronil	0.0694	0.0400	0.32	3.64	RU,LS	yes
MB 46136	0.0120	0.00920	0.02	0.249	no	no
MB46513	0.0090	0.0090	0.00	0.16	no	no
MB 45950	0.0026	0.0022	0.00	0.01	no	no

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC,, -- no LOC exceeded

Table 28. Estuarine/Marine Invertebrate Risk Quotients						
Chemical	**Acute EEC (ug/L)**	**Chronic EEC (ug/L)**	**Acute RQ**	**Chronic RQ**	**Acute LOC Exceeded?**	**Chronic LOC Exceeded?**
Potato/Sweet Potato In-Furrow Spray (No RQs Exceed LOCs)						
Corn In-Furrow Spray						
Fipronil	0.2067	0.1311	1.48	26.22	A,RU,LS	yes
MB 46136	0.0653	0.0595	0.12	22.88	RU,LS	yes
MB46513	0.0060	0.0057	0.00	0.11	no	no
MB 45950	0.0150	0.0144	0.19	3.13	RU,LS	yes
Corn Seed Treatment (No RQs Exceed LOCs)						
Onion Seed Treatment (Maximum Application Rate)						
Fipronil	1.2949	0.9103	9.25	182.06	A,RU,LS	yes
MB 46136	0.4840	0.4332	0.86	166.62	A,RU,LS	yes
MB46513	0.0390	0.0387	0.03	0.72	no	no

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Table 28. Estuarine/Marine Invertebrate Risk Quotients						
Chemical	**Acute EEC (ug/L)**	**Chronic EEC (ug/L)**	**Acute RQ**	**Chronic RQ**	**Acute LOC Exceeded?**	**Chronic LOC Exceeded?**
MB 45950	0.1186	0.1092	1.54	23.74	A,RU,LS	yes
Onion Seed Treatment (Typical Application Rate)						
Fipronil	0.6241	0.4389	4.46	87.78	A,RU,LS	yes
MB 46136	0.2420	0.2167	0.43	83.35	RU,LS	yes
MB46513	0.0180	0.0176	0.01	0.33	no	no
MB 45950	0.0561	0.0516	0.73	11.22	A,RU,LS	yes
Broadcast Bait Texas Leafcutter Ants						
Fipronil	1.5499	1.0445	11.07	208.90	A,RU,LS	yes
MB 46136	0.6306	0.4835	1.13	185.96	A,RU,LS	yes
MB46513	0.0387	0.0355	0.03	0.66	no	no
MB 45950	0.1387	0.1129	1.8	24.54	A,RU,LS	yes
Fruit Fly Station						
Fipronil	0.0109	0.0064	0.08	1.28	LS	yes
MB 46136	0.0075	0.0065	0.01	2.50	no	yes
MB46513	0.0007	0.0007	0.00	0.01	no	no
MB 45950	0.0021	0.0021	0.03	0.46	no	no
Pine Seedling Root Injection (No RQs Exceed LOCs)						
House Perimeter Residential BES100						
Fipronil	0.0412	0.0267	0.29	5.34	RU,LS	yes
MB 46136	0.0154	0.0119	0.03	4.58	no	yes
MB46513	0.0009	0.0009	0.00	0.02	no	no
MB 45950	0.0032	0.0027	0.04	0.59	no	no
House Perimeter Sod Farm BES100						
Fipronil	0.0667	0.0413	0.48	8.26	RU,LS	yes
MB 46136	0.0288	0.0239	0.05	9.19	LS	yes
MB46513	0.0019	0.0018	0.00	0.03	no	no
MB 45950	0.0062	0.0053	0.08	1.15	LS	yes
House Perimeter Residential Termidor SC/WG						
Fipronil	0.0019	0.0012	0.01	0.24	no	no
MB 46136	0.0070	0.0054	0.01	2.08	no	yes
MB46513	0.0005	0.0005	0.00	0.01	no	no
MB 45950	0.0016	0.0014	0.02	0.30	no	no
House Perimeter Sod Farm Termidor SC/WG						
Fipronil	0.0031	0.0019	0.02	0.38	no	no
MB 46136	0.0130	0.0107	0.02	4.12	no	yes
MB46513	0.0011	0.0011	0.00	0.02	no	no
MB 45950	0.0028	0.0025	0.04	0.54	no	no
Broadcast Fire Ant Residential HG 61743AE (No RQs Exceed LOCs)						
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0443	0.0287	0.32	5.74	RU,LS	yes
MB 46136	0.0165	0.0127	0.03	4.88	no	yes
MB46513	0.0009	0.0009	0.00	0.02	no	no
MB 45950	0.0037	0.0032	0.05	0.70	no	no
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0718	0.0445	0.51	8.90	A,RU,LS	yes
MB 46136	0.0307	0.0254	0.05	9.77	LS	yes
MB46513	0.0019	0.0017	0.00	0.00	no	no
MB 45950	0.0007	0.0006	0.01	0.13	no	no
Broadcast Fire Ant Residential Over'N Out						
Fipronil	0.0694	0.0400	0.50	8.00	A,RU,LS	yes
MB 46136	0.0120	0.00920	0.02	3.53	no	yes
MB46513	0.0090	0.0090	0.01	0.17	no	no
MB 45950	0.0026	0.0022	0.03	0.48	no	no

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC,, -- no LOC exceeded

Table 29. Freshwater Fish Risk Quotients
Potato/Sweet Potato In-Furrow Spray (No RQs Exceed LOCs)
Corn In-Furrow Spray (No RQs Exceed LOCs)
Corn Seed Treatment (No RQs Exceed LOCs)
Onion Seed Treatment (Maximum Application Rate) (No RQs Exceed LOCs)
Onion Seed Treatment (Typical Application Rate) (No RQs Exceed LOCs)
Broadcast Bait Texas Leafcutter Ants (No RQs Exceed LOCs)
Fruit Fly Station (No RQs Exceed LOCs)
Pine Seedling Root Injection (No RQs Exceed LOCs)
House Perimeter Residential BES100 (No RQs Exceed LOCs)
House Perimeter Sod Farm BES100 (No RQs Exceed LOCs)
House Perimeter Residential Termidor SC/WG (No RQs Exceed LOCs)
House Perimeter Sod Farm Termidor SC/WG (No RQs Exceed LOCs)
Broadcast Fire Ant Residential HG 61743AE (No RQs Exceed LOCs)
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select (No RQs Exceed LOCs)
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select (No RQs Exceed LOCs)
Broadcast Fire Ant Residential Over'N Out (No RQs Exceed LOCs)

Table 30. Estuarine/Marine Fish Risk Quotients						
Chemical	Acute EEC (ug/L)	Chronic EEC (ug/L)	Acute RQ	Chronic RQ	Acute LOC Exceeded?	Chronic LOC Exceeded?
Potato/Sweet Potato In-Furrow Spray (No RQs Exceed LOCs)						
Corn In-Furrow Spray						
Fipronil	0.2067	0.0671	0.00	0.28	no	no
MB 46136	0.0653	0.0564	0.00	1.45	no	yes
MB46513	0.0060	0.0056	0.00	0.10	no	no
MB 45950	0.0150	0.0139	0.00	0.06	no	no
Corn Seed Treatment (No RQs Exceed LOCs)						
Onion Seed Treatment (Maximum Application Rate)						
Fipronil	1.2949	0.5973	0.01	2.49	no	yes
MB 46136	0.4840	0.4184	0.02	10.73	no	yes
MB46513	0.0390	0.0382	0.00	0.67	no	no
MB 45950	0.1186	0.1063	0.00	0.44	no	no
Onion Seed Treatment (Typical Application Rate)						
Fipronil	0.6241	0.2880	0.00	1.20	no	yes
MB 46136	0.2420	0.2092	0.01	5.36	no	yes
MB46513	0.0180	0.0173	0.00	0.30	no	no
MB 45950	0.0561	0.0502	0.00	0.21	no	no
Broadcast Bait Texas Leafcutter Ants						
Fipronil	1.5499	0.5959	0.01	2.48	no	yes
MB 46136	0.6306	0.4360	0.03	11.18	no	yes
MB46513	0.0387	0.0342	0.00	0.60	no	no
MB 45950	0.1387	0.1033	0.00	0.43	no	no
Fruit Fly Station (No RQs Exceed LOCs)						
Pine Seedling Root Injection (No RQs Exceed LOCs)						
House Perimeter Residential BES100 (No RQs Exceed LOCs)						
House Perimeter Sod Farm BES100 (No RQs Exceed LOCs)						
House Perimeter Residential Termidor SC/WG (No RQs Exceed LOCs)						
House Perimeter Sod Farm Termidor SC/WG (No RQs Exceed LOCs)						
Broadcast Fire Ant Residential HG 61743AE (No RQs Exceed LOCs)						
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select (No RQs Exceed LOCs)						
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select (No RQs Exceed LOCs)						
Broadcast Fire Ant Residential Over'N Out (No RQs Exceed LOCs)						

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC,, -- no LOC exceeded

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Table 31. Aquatic Plant Risk Quotients
Potato/Sweet Potato In-Furrow Spray (No RQs Exceed LOCs)
Corn In-Furrow Spray (No RQs Exceed LOCs)
Corn Seed Treatment (No RQs Exceed LOCs)
Onion Seed Treatment (Maximum Application Rate) (No RQs Exceed LOCs)
Onion Seed Treatment (Typical Application Rate) (No RQs Exceed LOCs)
Broadcast Bait Texas Leafcutter Ants (No RQs Exceed LOCs)
Fruit Fly Station (No RQs Exceed LOCs)
Pine Seedling Root Injection (No RQs Exceed LOCs)
House Perimeter Residential BES100 (No RQs Exceed LOCs)
House Perimeter Sod Farm BES100 (No RQs Exceed LOCs)
House Perimeter Residential Termidor SC/WG (No RQs Exceed LOCs)
House Perimeter Sod Farm Termidor SC/WG (No RQs Exceed LOCs)
Broadcast Fire Ant Residential HG 61743AE (No RQs Exceed LOCs)
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select (No RQs Exceed LOCs)
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select (No RQs Exceed LOCs)
Broadcast Fire Ant Residential Over'N Out (No RQs Exceed LOCs)

5.1.4 Sediment Organism Risk Quotients

Sediment organism risks were based on calculations relating exposures in sediment pore water to pore water-based effects endpoints. This was done because it accounts for the expected bioavailable fraction of fipronil or degradates that is likely responsible for toxicity. The 21-day average concentration served as the basis for these comparisons because that averaging time corresponds with the available toxicity study duration. The table below presents the results for these RQ calculations and identifies situations where Agency levels of concern are exceeded. The full suite of RQ results for all uses are listed in Appendix H.

Table 32. Sediment Organism Acute Risk Quotients for Fipronil Use Based on Residues in Pore Water				
Chemical	**Sediment Pore Water Concentration (ug/L)***	**Toxicity Endpoint (ug/L)**	**Acute RQ****	**Acute LOC Exceeded?*****
Potato/Sweet Potato (No RQ's In Excess of LOC)				
In-furrow Corn				
Fipronil	0.0293	0.41	0.07	LS
MB46136	0.0515	0.41	0.12	LS
MB46513	0.0053	0.72	<0.05	--
MB45950	0.0127	2.13	<0.05	--
Seed Corn Treatment (No RQ's in excess of LOC)				
Onion Seed Treatment (Max App Rate)				
Fipronil	0.2498	0.41	0.61	A,LS
MB46136	0.3807	0.41	0.935	A,LS
MB46513	0.0360	0.72	0.05	LS
MB45950	0.0976	2.13	<0.05	--
Onion Seed Treatment (Typical App Rate)				
Fipronil	0.1205	0.41	0.29	LS
MB46136	0.1904	0.41	0.46	LS
MB46513	0.0164	0.72	<0.05	--
MB45950	0.0461	2.13	<0.05	--

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Table 32. Sediment Organism Acute Risk Quotients for Fipronil Use Based on Residues in Pore Water				
Chemical	**Sediment Pore Water Concentration (ug/L)***	**Toxicity Endpoint (ug/L)**	**Acute RQ****	**Acute LOC Exceeded?*****
Broadcast Bait Texas Leafcutter Ants				
Fipronil	0.2295	0.41	0.56	A,LS
MB46136	0.3891	0.41	0.95	A,LS
MB46513	0.0309	0.72	<0.05	--
MB45950	0.0929	2.13	<0.05	--
Fruit Fly Stations (No RQ's in excess of LOC)				
Pine Seedling (No RQ's in excess of LOC)				
House Perimeter Residential BES 1000 (No RQ's in excess of LOC)				
House Perimeter Sod Farm BES 1000 (No RQ's in excess of LOC)				
House Perimeter Residential Termidor SC/WG (No RQ's in excess of LOC)				
House Perimeter Sod Farm Termidor SC/WG (No RQ's in excess of LOC)				
Broadcast Fire Ant Residential HG 61743AE (No RQ's in excess of LOC)				
Broadcast Fire Ant- Residential **Chipco TopChoice** **Chipco 61748A** **TopChoice Select** **(No RQ's in excess of LOC)**				
Broadcast Fire Ant- Sod farm **Chipco TopChoice** **Chipco 61748A** **TopChoice Select**				
Fipronil	0.011	0.41	<0.05	--
MB46136	0.0206	0.41	0.050243902	LS
MB46513	0.0016	0.72	<0.05	--
MB45950	0.0052	2.13	<0.05	--
Broadcast Fire Ant- Residential Over'N Out (No RQ's in excess of LOC)				

* Peak 21-day 1 in 10 year return frequency
** RQ = EEC/toxicity endpoint
*** A= Acute LOC, LS = Listed LOC, -- no LOC exceeded

5.2 Risk Discussion

5.2.1 Terrestrial Wildlife Risk

5.2.1.1 Soil Injection Uses

The pine seedling application of BASF PTM SC is devoid of concerns for risks to terrestrial wildlife. The application is a sub-soil injection of fipronil to the root ball of pine seedlings. The problem formulation section of this document considered the pesticide to be unavailable to terrestrial wildlife at that depth.

5.2.1.2 Granule and Bait Uses

On an LD50/ft^2 assessment method basis, the corn seed treatment, the onion seed treatment, and the Over'N Out broadcast treatment for fire ants do not trigger any acute concerns. This conclusion is largely driven by the assumption that only about 1% of applied fipronil would be bioavailable at the surface of treated areas. The onion seed risk conclusions from this method

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are carried through to considerations of direct consumption of treated planting material on a residue basis as it is not expected that treated onion sets represent an attractive food source for wildlife. However, there is ample fipronil on treated corn seeds for the direct consumption of seeds to constitute a potential acute and chronic risk to seed-eating birds of all sizes. This concern is evident when evaluating the exposure both on a dietary and as a daily dose basis for acute effects. For chronic effects RQs for birds exceed 100. Mammalian risks are also of concern for granivorous mammals of all sizes and chronic concerns were evident for mammals on both the dietary residue and daily oral dose basis. Assuming 2000 corn seeds per pound, an individual corn seed weighs approximate 0.0005 pound. The mass of fipronil on a seed would be (0.001 lb a.i./lb)(0.0005 lb)= $0.5X10^{-6}$ lb ai or 0.2267 mg. The following shows the number of seeds needed to be consumed to achieve a dose commensurate with a 50% chance of mortality

Animal Mass (kg)	Mass fipronil /animal at LD50*	Number of seeds required to reach 50% chance of mortality**
0.02 (bird)	0.1628 mg	<1
0.1 (bird)	1.036 mg	4.6
1.0 (bird)	14.64 mg	65
0.015 (mammal)	3.20 mg	14
0.035 (mammal)	6.04 mg	27
1.0 (mammal)	74.61 mg	329

* adjusted LD50 from T-REX multiplied by bw in kg
** mass fipronil/animal at LD50 level/ 0.2267 fipronil/seed

These results suggest that it is within the realm of possibility that birds of all sizes could consume enough treated seed associated with labeled use of fipronil on corn to achieve a dose with a 50 percent probability of mortality. Chronic concerns for seed consumption involve an uncertainty as to how long seed will remain available to wildlife and whether fipronil will remain associated with the seed for these periods. Short durations of availability or contamination would serve to reduce concerns for chronic risks. However, given that the RQs are so high (100 for birds and 17-36 for mammals) it is unclear how much impact additional information on these areas of uncertainty would serve to alter risk assessment conclusions of chronic risk.

The leafcutter ant bait application (BES 100) at 0.228 lb ai./acre is among the highest application rate assessed in this risk assessment. On the basis of LD50/ft^2 RQs there is enough active ingredient and degradates MB46136 and MB45950 applied to the treatment area to trigger concerns for acute effects to birds and mammals for all body weight categories assessed. Concerns for acute risks to birds and mammals are further supported when one considers that granivore consumption of baits triggers concerns for acute effects in all bird size categories. In addition consumption of the bait would also trigger concerns for chronic effects in birds and mammals, when assessed on dietary concentration and daily dose exposure bases. Of course with the chronic risk conclusions for this use, there remains uncertainty as to whether the bait will remain available long enough to reach some, as presently yet to be established, temporal duration threshold for exposure. This uncertainty may be most important for mammalian chronic risks where the RQs are essentially at the threshold limit for statistically observable effects for reproduction.

The BES 1000 house perimeter granule application achieves the highest application rate of 0.357 lb ai./acre. However this is only within the treatment zone of 2 feet along the perimeter of

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structures. On the basis of LD50/ft^2 RQs this treatment area presents a concern for acute risks to smaller size categories of birds and mammals, those most likely to occur close to structures. Granules may be consumed as part of the grit requirement of birds or may be consumed incidentally in birds and mammals over the course of feeding. However, BES 1000 is 0.1% active ingredient or 1000 mg ai/kg of granules. The mass of granules needed to be consumed in order to achieve a 50% probability of mortality is as follows:

Animal Mass(kg)	Mass fipronil /animal at LD50*	Mass of granules required to reach 50% chance of mortality**
0.02 (bird)	0.1628 mg	0.1-0.2 g
0.1 (bird)	1.036 mg	1-2 g
1.0 (bird)	14.64 mg	14-15 g
0.015 (mammal)	3.20 mg	3-4 g
0035 (mammal)	6.04 mg	6-7 g
1.0 (mammal)	74.61 mg	74-75 g

* adjusted LD50 from T-REX multiplied by bw in kg
** mass fipronil/animal at LD50 level/ 1 mg fipronil/g granules

This analysis suggests that for smaller birds the consumption of granules may be low enough to constitute an acute risk. However, for larger birds, and mammals granule consumption would have to reach such high daily proportions of body weight as to be an impractical exposure assumption. Chronic effects following granule consumption are not viewed to be of great concern for this use pattern. Even in higher density residential neighborhoods, there is likely so much alternative foraging habitat in yards, rights or way, common areas that a steady foraging pattern within 2-fool perimeters of homes is unlikely. This same argument extends to acute effects (bird or mammal) where the animals likely to be affected are likely only those species and individuals frequenting the immediate area around the structure. The majority of remaining available habitat in such areas will remain largely uncontaminated and therefore not present an acute risk.

Chipco 61748A, TopChoice Select, and Chipco Choice broadcast fire ant granular applications are of sufficiently low application rate as to preclude LD50/ft^2 RQ-based concerns for acute effects associated with parent and degradates in all but the smallest of birds (listed and non-listed species at 20 g body weight, and listed species at 100 g body weight). Chipco 61748A and TopChoice are 0.0143% ai. which corresponds to 0.143 g ai./kg granules or 0.143 mg ai/g. This would mean that even small birds would have to consume extremely large proportions of their body weight in a day as granules to achieve toxic doses. It is very unlikely that this will occur for such a non-nutritive substrate. However, Chipco Choice is 0.1% active ingredient or 1000 mg ai/kg of granule of 1 mg ai./g and, as for BES 100, the mass in the formulation would suggest that there is a potential for small birds to consume sufficient granular mass to pose an acute risk to these birds.

5.2.1.3 In-furrow Spray Uses

For in-furrow spray uses, the risk estimation focuses on those food items that may be contaminated with pesticide at the time of application. Because the in-furrow sprays occur at planting it is reasoned that food items appropriate to such a use pattern include seeds and insects present in a freshly plowed field. Therefore grasses, fruits, and broadleaf foliage are not

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considered. Subsequent Risk Quotients calculated for the potato/sweet potato in-furrow uses with regent 4 SC only trigger concern for acute effects to listed bird species in the 20 g size range for fipronil. In contrast, owing to a much higher application rate (approximately 10 fold higher than the potato use), the in-furrow corn use triggers concerns for fipronil acute effects in non-listed small insectivorous birds (20 g ands 100 g sizes). Parent fipronil would also be an acute concern for larger insectivorous listed birds (1000 g) and MB 46136 degradate acute effects concerns extend to listed small insectivorous and granivorous birds. Fipronil parent chronic effects concerns are limited to birds consuming small insects. Because the RQs are so close to the NOAEC (RQ 1.76) for chronic effects, uncertainties associated with the continued availability of viable treated insects over time, especially for an insecticidal pesticide, suggest that risks may be overestimated in this case.

5.2.1.4 Broadcast Spray Uses

Over the top spray application risks to terrestrial wildlife have been assessed for both parent and degradate wildlife food item residues. These assessments, as effects data allow, are evaluated on both a dietary concentration and a daily oral dose basis. The strength of risk conclusions is greatest when both assessment methods, when available, produce RQ estimates above levels of concern.

House perimeter spray with Termidor SC involves a 1 foot treatment zone around the perimeter of structures. As similar uses for granular formulations, this use pattern involves a rather high application rate within the treatment zone (0.325 lb ai./acre). Fipronil and degradate residues on all wildlife food items are sufficient to result in acute concerns non-listed small birds and for other bird sizes feeding upon grasses broadleaf foliage and large insects. Largely these concerns are evident regardless if the quotients are calculated on a dose or dietary basis. Mammal acute effects concerns primarily extend small herbivorous species or insectivorous species (listed and non-listed) feeding on grasses an, broadleaf foliage, and insects. Larger mammalian risk concerns extend primarily to listed mammals feeding on the same food items as above. While the available risk quotients for chronic effects for birds and mammals are often in excess of concern levels within the perimeter treatment zone it must be remembered that this treatment zone is only 1 foot in width. Even in higher density residential neighborhoods, there is likely so much alternative foraging habitat in yards, rights or way, common areas that a steady foraging pattern within a 1-foot perimeter of homes is unlikely. Therefore chronic concerns for this use are likely overestimated. Using this same logic, acute effects (bird or mammal) are likely to extend to only those species frequenting the immediate area around the structure. The majority of remaining available habitat in such areas will remain largely uncontaminated and therefore not present an acute risk.

As with Termidor SC house perimeter spray application risk quotients for HG 61743 AE as a perimeter spray suggest that fipronil and degradate residues on a variety of wildlife food items are sufficient to result in acute concerns non-listed small birds and for other bird sizes feeding upon grasses broadleaf foliage and large insects. These concerns are evident regardless if the quotients are calculated on a dose or dietary basis. Again small birds are likely to be more at risk than larger birds and the food items of greatest concern are the grasses, broadleaf forage, and insects. Listed species concerns extend to all bird size categories and for most of the wildlife food item categories until reaching the largest bird size category. Mammal acute effect concerns are suggested only for the smallest of mammal size categories and are evident only for listed

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species feeding on grasses. However for the degradate MB 46513 and MB46136, residues on a variety of food items result in RQ values that exceed acute levels of concern of listed and non-listed species. Acute effects (bird or mammal) are likely to extend to only those species frequenting the immediate treated perimeter area around structures. The majority of remaining available habitat in such areas will remain largely uncontaminated and therefore not present an acute risk. As for other perimeter treatments the available risk quotients for chronic effects for birds and mammals are often in excess of concern levels. However this extends to only within the perimeter treatment zone. This treatment zone is only 1 foot in width, and for even high density residential neighborhoods, there is likely so much alternative foraging habitat in yards, rights or way, common areas that a steady foraging pattern within a 1-foot perimeter of homes is unlikely. Therefore chronic concerns for this use are likely overestimated.

5.2.2 Terrestrial Plant Risks

Estimated RQs for plant effects in this risk assessment do not indicate a concern for direct toxic effects to terrestrial plants. However, there are no guideline studies for fipronil or degradate terrestrial plant toxicity. These studies extend to both measures of seed germination (seedling emergence) and for vegetation growth and vigor. The available referenced plant effects information indicates that fipronil had no effects on peanut crops at applications of 0.025 lb ai./acre but the endpoints observed are only partially consistent with the endpoints measured in laboratory studies. While these data likely address actual field conditions, they are only for one species and other data, though not direct applicable to exposures and use patterns considered in this risk assessment show that fipronil may have the potential to affect monocots (i.e. observed effects on rice seedlings). There is uncertainty in risk conclusions based on the available data because of the lack of information on a variety of species (e.g., a lack of test data for monocot species) and endpoints commonly employed to assess impacts to plants (e.g., seedling emergence).

5.2.3 Freshwater Aquatic Organism Risks

The discussion of fipronil risks to aquatic organisms is divided in the following sections to risks to organisms in the water column and those in the sediment.

5.2.3.1 Water Column

Water column organism risk discussions are divided into risk to all aquatic plants, and to aquatic animals in freshwater and estuarine/marine environments

5.2.3.1.1 Risks to Aquatic Plants

The calculated risk quotients for aquatic unicellular and vascular plats suggest no risks of direct effects triggering Agency concern.

5.2.3.1.2 Risks to Freshwater Animals

The following uses trigger **no concerns** for acute or chronic risks to freshwater animals:

- Potato/sweet potato in-furrow spray,
- Corn seed treatment,

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- Fruit fly bait station,
- Pine seedling injection,
- House perimeter residential uses with Termidor SC/WG,
- House perimeter sod farm uses with Termidor SC/WG,
- Broadcast fire ant residential use with HG 61743AE, and
- Broadcast fire ant residential use with Chipco TopChoice, Chipco 61748A, and Topchoice Select.

The predominant concern for the remaining freshwater animals is risks to aquatic invertebrates. There are no uses that trigger concerns for direct effects to freshwater fish. Acute effects concerns for risks to freshwater invertebrates extend to both listed and non-listed species for:

- Corn in-furrow spray,
- Onion seed treatment (both typical and maximum application rate), and
- Broadcast bait for Texas leafcutter ant.

Acute listed species concerns for direct effects to freshwater invertebrates extend to every use except the eight listed at the beginning of this section.

With regard to chronic effects concerns, the Agency level of concern applies to both listed and non-listed species and concerns are indicated for all uses but the eight initially discussed in this section. Chronic RQ values for fipronil alone range from a low of 2.43 for house perimeter use of residential BES 100 to a high of 94.95 for the broadcast bait applications for Texas leafcutter ants.

5.2.3.2 Incorporation of Monitoring Data into Freshwater Organism Risk Conclusions

Additional analysis of these concerns extended to consideration of monitoring data. Table 12 of the risk assessment summarizes the available monitoring data for fipronil from registrant-submitted runoff studies. The available data address only the corn and fire ant uses of the pesticide. A comparison the data for peak monitored water concentrations with the acute EEC values estimated from modeling and the acute freshwater invertebrate toxicity endpoints is summarized in the following table. The table suggests that, at least for those situations where monitoring data correspond with labeled uses, that range of peak water concentrations actually detected encompasses the available EECs and would also trigger concerns for acute freshwater invertebrate effects in many cases. It is also important to note that most of these monitoring results incorporate a 15 foot (60 foot for MRID 46477003) runoff buffer, suggesting that in real terms buffers may reduce loadings but are not preventing exposures exceeding Agency levels of concern for adverse effects.

Table 33: Comparison of Registrant Monitoring data with EECs and Acute Freshwater Invertebrate Effects Endpoint

Study MRID	Location	Use Pattern	App. Rate (lbs ai/A)	Peak Water Concentration (ug/L)	EEC (ug/L)	Acute FW Invert. Endpoint (ug/L)	Is EEC greater than monitoring data?	Would monitoring value trigger concerns?
45526101	Midwest	Corn	NA	0.017[1]	0.2067	0.22	yes	LS

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Table 33: Comparison of Registrant Monitoring data with EECs and Acute Freshwater Invertebrate Effects Endpoint								
Study MRID	**Location**	**Use Pattern**	**App. Rate (lbs ai/A)**	**Peak Water Concentration (ug/L)**	**EEC (ug/L)**	**Acute FW Invert. Endpoint (ug/L)**	**Is EEC greater than monitoring data?**	**Would monitoring value trigger concerns?**
46477003	Midwest	Corn	4.6 oz of Regent	0.159 surface water			yes	A,.RU,LS
46733905	AK	Fire Ant	0.0125	0.348	0.0443		no	A,RU,LS
46733902	TX	Fire Ant	0.0125	0.021			yes	LS
46490304	FL	Fire Ant	0.0125	No detections			yes	--
46490305	NC	Fire Ant	0.0125	No detections			yes	--
46733904	NC	Fire Ant	0.0125	0.047 Pond Water 0.287 Storm Water 0.033 Stream Water			no	RU,LS (pond) A,RU,LS (storm water) RU,LS (stream)
46490301	NC	Fire Ant	0.0125	0.724 (w/buffer)			no	A,RU,LS
46490302	NC	Fire Ant	0.0125	1.451 (w/ buffer)			no	A,RU,LS
46490305	FL	Fire Ant	0.0125	0.510			no	A,RU,LS

1-Unconfirmed concentration in duplicate sample.

5.2.3.3 Incorporation of Runoff Buffer Efficiency

The PRZM/EXAMS model can account for buffers directly as a part of spray drift assumptions used in the model. The Agency and registrant have negotiated placement on the label a 15 foot buffer (e.g., fire ant and leafcutter ant uses near freshwater systems) or a 60 foot buffer (corn, potato/sweet potato, pine tree uses and fire ant and leafcutter ant uses near estuarine systems) for the purposes reducing runoff loading of fipronil to surface waters. Because these buffers are no spray drift buffers they were not incorporated directly into PRZM/WXAMS runs. To evaluate the potential effects of runoff buffers on the risk conclusions, an analysis was conducted of available registrant submissions concerning buffer runoff mitigation efficiency. The following list presents the efficiency findings:

MRID	Removal Efficiency %
46490301	61-71
46490303	33-44
46490301	62-75

These results provide a distribution of removal efficiency of 33 to 75 percent. To evaluate the effect of these removal efficiencies the RQs were multiplied by factors of 0.67 or 0.25 and the results compared to the Agency Levels of Concern.

The following table presents the revised risk conclusions for the 33% loading reduction. This resulted in no material changes to the overall risk conclusions for freshwater aquatic invertebrates.

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Table 34. Freshwater Invertebrate Risk Quotients Adjusted for 33% Removal Efficiency of Buffer		
Chemical	**Acute LOC Exceeded?**	**Chronic LOC Exceeded?**
Potato/Sweet Potato In-Furrow Spray (No RQs Exceed LOCs)		
Corn In-Furrow Spray		
Fipronil	A,RU.LS	yes
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no
Corn Seed Treatment (No RQs Exceed LOCs)		
Onion Seed Treatment (Maximum Application Rate)		
Fipronil	A,RU,LS	yes
MB 46136	RU,LS	yes
MB46513	no	no
MB 45950	no	no
Onion Seed Treatment (Typical Application Rate)		
Fipronil	A,RU,LS	yes
MB 46136	RU,LS	yes
MB46513	no	no
MB 45950	no	no
Broadcast Bait Texas Leafcutter Ants		
Fipronil	A,RU,LS	yes
MB 46136	A,RU,LS	yes
MB46513	no	no
MB 45950	no	no
Fruit Fly Station (No RQs Exceed LOCs)		
Pine Seedling Root Injection (No RQs Exceed LOCs)		
House Perimeter Residential BES100		
Fipronil	RU,LS	yes
MB 46136	no	no
MB46513	no	no
MB 45950	no	no
House Perimeter Sod Farm BES100		
Fipronil	RU,LS	yes
MB 46136	no	no
MB46513	no	no
MB 45950	no	no
House Perimeter Residential Termidor SC/WG (No RQs Exceed LOCs)		
House Perimeter Sod Farm Termidor SC/WG (No RQs Exceed LOCs)		
Broadcast Fire Ant Residential HG 61743AE (No RQs Exceed LOCs)		
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select		
Fipronil	RU,LS	yes
MB 46136	no	no
MB46513	no	no
MB 45950	no	no
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select		
Fipronil	RU,LS	yes
MB 46136	no	no
MB46513	no	no
MB 45950	no	no
Broadcast Fire Ant Residential Over'N Out		
Fipronil	RU,LS	yes

Table 34. Freshwater Invertebrate Risk Quotients Adjusted for 33% Removal Efficiency of Buffer		
Chemical	**Acute LOC Exceeded?**	**Chronic LOC Exceeded?**
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC,, -- no LOC exceeded
Items in ***bold italics*** represent changes from conclusions without buffers.

The following table presents the revised risk conclusions for the 75% loading reduction. This resulted in the elimination of concerns for House Perimeter Residential BES100 use and eliminated chronic concerns for House Perimeter Sod Farm BES100 and the Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select uses.

Table 35. Freshwater Invertebrate Risk Quotients Adjusted for 75% Removal Efficiency of Buffer		
Chemical	**Acute LOC Exceeded?**	**Chronic LOC Exceeded?**
Potato/Sweet Potato In-Furrow Spray (No RQs Exceed LOCs)		
Corn In-Furrow Spray		
Fipronil	***RU.LS***	***yes***
MB 46136	no	no
MB46513	no	no
MB 45950	no	no
Corn Seed Treatment (No RQs Exceed LOCs)		
Onion Seed Treatment (Maximum Application Rate)		
Fipronil	A,RU,LS	yes
MB 46136	RU,LS	yes
MB46513	no	no
MB 45950	no	no
Onion Seed Treatment (Typical Application Rate)		
Fipronil	A,RU,LS	yes
MB 46136	***LS***	yes
MB46513	no	no
MB 45950	no	no
Broadcast Bait Texas Leafcutter Ants		
Fipronil	A,RU,LS	yes
MB 46136	***RU,LS***	yes
MB46513	no	no
MB 45950	no	no
Fruit Fly Station (No RQs Exceed LOCs)		
Pine Seedling Root Injection (No RQs Exceed LOCs)		
House Perimeter Residential BES100		
Fipronil	***no***	***no***
MB 46136	no	no
MB46513	no	no
MB 45950	no	no
House Perimeter Sod Farm BES100		
Fipronil	***LS***	***no***
MB 46136	no	no
MB46513	no	no
MB 45950	no	no
House Perimeter Residential Termidor SC/WG (No RQs Exceed LOCs)		

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Table 35. Freshwater Invertebrate Risk Quotients Adjusted for 75% Removal Efficiency of Buffer		
Chemical	**Acute LOC Exceeded?**	**Chronic LOC Exceeded?**
House Perimeter Sod Farm Termidor SC/WG (No RQs Exceed LOCs)		
Broadcast Fire Ant Residential HG 61743AE (No RQs Exceed LOCs)		
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select		
Fipronil	***LS***	***no***
MB 46136	no	no
MB46513	no	no
MB 45950	no	no
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select		
Fipronil	***LS***	yes
MB 46136	no	no
MB46513	no	no
MB 45950	no	no
Broadcast Fire Ant Residential Over'N Out		
Fipronil	RU,LS	yes
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC,, -- no LOC exceeded
Items in ***bold italics*** represent changes from conclusions without buffers.

5.2.3.4 Consideration of Alternative Effects Endpoints on Conclusion of Risk Assessment for Freshwater Animals

Because the risk assessment process outlined the Overview of Ecological Risk Assessment process in the Office of Pesticide Programs (USEPA 2004) requires that screening level risk assessment consider the most sensitive species tested within a taxonomic group, further analysis was conducted to determine if alternative acute toxicity values would trigger concerns for aquatic invertebrates. Acute EECs for each modeled use were compared with each of the acute toxicity endpoints for freshwater invertebrates listed in Table 18 to determine how many acute effects endpoints for tested organisms would be exceeded by the estimated exposures. This count is presented in the following table. This analysis shows that screening-level identified risk concerns for uses would not materially change if the next highest species was relied on for risk quotient calculation. In fact, with the possible exception for the corn in-furrow spray use, risk conclusions would not differ from those reached with the Overview of Ecological Risk Assessment Process, until at least 8 of the available acute toxicity endpoint were ignored. It should be noted that some of those lowest 8 toxicity endpoints originate in registrant submitted studies.

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Table 36. Comparison of Screening RQ Concerns with Proportion of Tested Freshwater Invertebrates for Which EEC Exceeds LOC Adjusted Acute Toxicity Endpoint			
Use	Screening RQ Risk concerns	Number of endpoints for which acute EEC exceeds acute LOC	Number of endpoints for which acute EEC exceeds acute listed species LOC
Potato/sweet potato	No Concerns	0/27	0/27
Corn In-Furrow Spray	A,RU,LS	2/27	12/27
Corn Seed Treatment	No Concerns	0/27	0/27
Onion Seed Treatment (Maximum Application Rate)	A,RU,LS	11/27	20/27
Onion Seed Treatment (Typical Application Rate)	A,RU,LS	8/27	16/27
Broadcast Bait Texas Leafcutter Ants	A,RU,LS	11/27	20/27
Fruit Fly Station	No Concerns	0/27	0/27
Pine Seedling Root Injection	No Concerns	0/27	0/27
House Perimeter Residential BES1000	RU,LS	0/27	7/27
House Perimeter Sod Farm BES1000	RU,LS	0/27	8/27
House Perimeter Residential Termidor SC/WG	No Concerns	0/27	0/27
House Perimeter Sod Farm Termidor SC/WG	No Concerns	0/27	0/27
Broadcast Fire Ant Residential HG 61743AE	No Concerns	0/27	0/27
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select	RU,LS	0/27	8/27
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select	RU,LS	0/27	8/27
Broadcast Fire Ant Residential Over'N Out	RU,LS	0/27	8/27

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5.2.3.5 Evaluation of the Frequency of Exposure Estimate Excursions above Levels of Concern (focus on Freshwater Invertebrates)

Risk quotients are commonly calculated on the basis of the 1 in 10 year return frequency values from the multiple years of modeled daily receiving water exposures. The modeling, however, is a rich set of estimates comprising daily model predictions of concentrations for three decades of pesticide use. Additional analysis of this data set was made to compare the entire time series of exposures to the acute and chronic toxicity endpoints (modified to correspond with Agency levels of concern). This was conducted for each use for which acute or chronic levels of concern were exceeded under the screening risk assessment approach. Focus was placed on effects to freshwater invertebrate risks and involved comparison of daily estimates to the acute freshwater toxicity endpoint adjusted for non-listed species level of concern (LC50x0.05) and for the listed species level of concern (LC50x0.05). Running 21-day averages of fipronil modeled daily concentrations were compared with the chronic toxicity endpoint for invertebrates. The following table presents the number of days or the number of running 21-day averages that exceeded the adjusted toxicity endpoints. The table shows that when the agency level of concern is triggered using the screening level approach, this is not expected to be an isolated incident only limited to a single exposure event. Modeling results for 30 years would suggest exposure events exceed the adjusted acute effects endpoints quite often, ranging from 11 days to more than 6900 days, depending on the use and the effects endpoint.. For chronic levels of concern, the number of intervals exceeding the level of concern ranges from 20 over almost 7000 intervals over the course of the three decades of modeling.

Table 37: LOC Excursions for Freshwater Aquatic Invertebrates from PRZM/EXAMS Simulations

Use	Total Days	Days LOC Exceeded from PRZM/EXAM Simulation		
		Acute NL[1]	Acute L[1]	Chronic[2]
In-Furrow Corn	10957	94	1888	1998
Onion Seed High Rate	10957	2488	6904	7169
Onion Seed Typical Rate	10957	1031	5898	6213
Leafcutter Ant	10957	1641	4778	5165
BES 1000 Residential	10957	0	388	373
BES 1000 Sod Farm	10957	11	944	969
HG6174AE Sod Farm	10957	0	20	20
Chipco Sod Farm	10957	12	1035	1073
Over'N Out	10957	0	249	206

Acute NL= Acute non-endangered listed species (lowest LC50 X 0.5)
Acute L= Acute endangered listed species (lowest LC50 X 0.05)
Chronic = Lowest invertebrate chronic NOEC
1- Acute comparison represents daily peak concentration from PRZM/EXAMS time series with Acute NL or Acute L endpoints
2- Chronic comparison represents number of intervals for 21-day averages from PRZM/EXAMS time series

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5.2.3.6 Consideration of Field and Mesocosm Results for Water Column Organisms

As was summarized in the effects characterization section of this risk assessment, effects of fipronil addition to aquatic systems has been noted under field and mesocosm conditions. Shan et al. (2003) demonstrated elevated mortality in three species of freshwater crustaceans when fipronil in surface waters of constructed fish ponds was between 3.48 ug/L and declined to 2.6 ug/L over the course of 30 days. These water concentrations are seldom expected based on modeling results.

The registrant's mesocosm study ponds (MRID46733901) showed a variety of declines in aquatic invertebrates. Water column abundances of arthropods were lower in fipronil treatment for the first 14 days of mesocosm exposure (estimated time weighted average concentration during this period was 0.24 ug/L. These effects were transient and as daily concentrations of fipronil were reduced to below 0.065 ug/l water arthropods recovered. The sampled with Hester Dendy substrates.

5.2.3.7 Sediment Animals

Only RQs calculated for the onion seed treatment (maximum application rate) and the Texas leafcutter ant bait treatment exceed Agency acute levels of concern for non-listed species. For listed species the these two uses as well as in-furrow corn and the broadcast fire ant sod farm uses of Chipco TopChoice, Chipco 61748A and TopChoice Select exceed the acute level of concern. While the other uses appear to offer little risk of concern for benthic in-fauna, caution should be exercised in reaching this conclusion. Basing RQ calculations on pore water concentration alone assumes that sediment dwelling species have no exposure to overlying water concentrations. It is important to note that the pore-water toxicity estimated for aquatic sediment invertebrates, are in large part similar to the water column effects endpoints for similar species. For example, pore water-based LC50 for chironomids (e.g. *C. tentans* LC50 for fipronil of 0.41 ug/L) are very similar to water-column LC50 values for chironomids in the absence of any sediment (e.g. *C. crassicaudatus* LC50 for fipronil of 0.42 ug/L). Therefore benthic aquatic organisms, if they have exposure continuity with overlying water may be at more toxic risk than predicted in the pore water risk assessment calculations.

The potential lack of conservatism in the sediment organism risk assessment to address potential risks to epibenthic invertebrates is further supported by the results of the registrant-supplied mesocosm study in which initial water concentrations of fipronil were well within peak and longer-term averages of the parent pesticide in all but the potato/sweet potato, in-furrow corn, and pine seedling use scenarios (MRID 46733901). As discussed in the effects section, this study showed that a number of macroinvertebrate taxa samples from substrates at the sediment water column interface were reduced in abundance for one or more weeks following introduction of environmentally realistic concentrations of fipronil to the system. While pore water measurements were not made in those studies, introduction of fipronil in the aquatic phase and associated partitioning of the material between water column and sediment compartments did produce significant reductions in mayfly juveniles ($p<0.05$) at days 8, 14, 28, and 56 of the study. Juvenile chironomids were also reduced significantly ($p<0.05$) by fipronil at day 8, though these effects were largely reversed by day 56 of the study. And while the numbers of emergent insects were too small in the study to make definitive statistically supported statements about

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individual taxonomic groups, total number of emergent insects was lower in the fipronil treatment than in control for all sampling days of the study.

5.2.4 Risk to Estuarine/Marine Animals

The following uses trigger **no concerns** for acute or chronic risks to estuarine/marine animals:

- Potato/sweet potato in-furrow spray
- Corn seed treatment
- Pine seedling injection
- Broadcast fire ant residential use with HG 61743AE

Risks to estuarine marine fish are limited to chronic concerns for both fipronil and the degradate MB46136. The following uses are associated with fish chronic RQ values in excess of the agency level of concern:

- Corn in-furrow spray,
- Onion seed treatment typical and maximum application rates, and
- Broadcast bait for Texas leafcutter ant.

These risk quotients for chronic effects associated with parent fipronil residues are all below 10. The chronic RQs for MB46136 are somewhat higher. However, it should be noted that chronic effects endpoint for MB46136 is an extrapolation from the acute endpoint for this degradate. The acute endpoint, in turn, is also an extrapolated value. Therefore, there is considerable uncertainty in the resulting chronic risk assessment for MB46136. Additional effects testing, either acute or chronic, involving estuarine/marine fish and this degradate would reduce the current level of uncertainty, though it is not possible to determine, *a priori*, whether results of such testing will change the conclusions of risks to estuarine/marine organisms.

As is the case for freshwater organisms, the predominant risk issue for estuarine/marine organisms lies in the prediction of acute and chronic effects in invertebrates. **Corn in-furrow spray, onion seed treatment (typical and maximum application rates) and broadcast bait treatment for Texas leafcutter ants** are by far the uses with the highest acute and chronic risk quotients. Acute invertebrate effects concerns for these uses span the parent and degradates and extend to both listed and non-listed species. Chronic risk quotient values for these uses range from 226 to 208 for the parent and the quotients for most of the degradates are similarly well above the Agency level of concern, ranging as high as 185. for MB46136.

The risk quotients for the following uses of fipronil extend to acute concerns for listed species and for chronic concern to listed and non-listed species:

- Fruit fly bait station,
- House perimeter residential BES 1000,
- House perimeter sod farm BES 1000
- House perimeter residential uses with Termidor SC/WG,
- House perimeter sod farm uses with Termidor SC/WG,
- Broadcast fire ant residential use with Chipco TopChoice, Chipco 61748A, and Topchoice Select.

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- Broadcast fire ant sod farm use with Chipco TopChoice, Chipco 61748A, and Topchoice Select.
- Broadcast fire ant residential Over'N out

5.2.4.1 Incorporation of Runoff Buffer Efficiency

As for freshwater invertebrate risks, the risk assessment evaluated the impact of 33% and 75% runoff buffer fipronil removal efficiencies.

For risks to estuarine/marine fish consideration of a runoff buffer removal efficiency of 33% results in a removal of concerns for chronic effects associated with typical rate onion seed treatment and corn in-furrow spray. Raising the removal efficiency to the maximum 75% rate eliminates all concerns for all uses except those associate with MB46136 in the Texas leafcutter ant use.

For estuarine/marine invertebrate the risk picture changes only slightly when the 33% removal efficiency is used for runoff buffers. The following table presents these results.

Table 38. Estuarine/Marine Invertebrate Risk Quotients Adjusted for 75% Removal Efficiency of Buffer

Chemical	Acute LOC Exceeded?	Chronic LOC Exceeded?
Potato/Sweet Potato In-Furrow Spray (No RQs Exceed LOCs)		
Corn In-Furrow Spray		
Fipronil	A,RU,LS	yes
MB 46136	***LS***	yes
MB46513	no	no
MB 45950	RU,LS	yes
Corn Seed Treatment (No RQs Exceed LOCs)		
Onion Seed Treatment (Maximum Application Rate)		
Fipronil	A,RU,LS	yes
MB 46136	A,RU,LS	yes
MB46513	no	no
MB 45950	A,RU,LS	yes
Onion Seed Treatment (Typical Application Rate)		
Fipronil	A,RU,LS	yes
MB 46136	RU,LS	yes
MB46513	no	no
MB 45950	***RU,LS***	yes
Broadcast Bait Texas Leafcutter Ants		
Fipronil	A,RU,LS	yes
MB 46136	A,RU,LS	yes
MB46513	no	no
MB 45950	***RU,LS***	yes

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Table 38. Estuarine/Marine Invertebrate Risk Quotients Adjusted for 75% Removal Efficiency of Buffer		
	Acute	Chronic
Fruit Fly Station		
Fipronil	LS	***no***
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no
Pine Seedling Root Injection (No RQs Exceed LOCs)		
House Perimeter Residential BES100		
Fipronil	RU,LS	yes
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no
House Perimeter Sod Farm BES100		
Fipronil	RU,LS	yes
MB 46136	***no***	yes
MB46513	no	no
MB 45950	LS	***no***
House Perimeter Residential Termidor SC/WG		
Fipronil	no	no
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no
House Perimeter Sod Farm Termidor SC/WG		
Fipronil	no	no
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no
Broadcast Fire Ant Residential HG 61743AE (No RQs Exceed LOCs)		
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select		
Fipronil	RU,LS	yes
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select		
Fipronil	***RU,LS***	yes
MB 46136	LS	yes
MB46513	no	no
MB 45950	no	no
Broadcast Fire Ant Residential Over'N Out		
Fipronil	***RU,LS***	yes

Table 38. Estuarine/Marine Invertebrate Risk Quotients Adjusted for 75% Removal Efficiency of Buffer		
	Acute	Chronic
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC,, -- no LOC exceeded
Items in ***bold italics*** represent changes from conclusions without buffers.

Assuming the maximum removal efficiency of 75% for the runoff buffer yields the following results and eliminates concerns for fruit fly bait station use and the house perimeter residential use of Termidor SC/WG.

Table 39. Estuarine/Marine Invertebrate Risk Quotients		
Chemical	Acute LOC Exceeded?	Chronic LOC Exceeded?
Potato/Sweet Potato In-Furrow Spray (No RQs Exceed LOCs)		
Corn In-Furrow Spray		
Fipronil	***RU,LS***	yes
MB 46136	***no***	yes
MB46513	no	no
MB 45950	***no***	***no***
Corn Seed Treatment (No RQs Exceed LOCs)		
Onion Seed Treatment (Maximum Application Rate)		
Fipronil	A,RU,LS	yes
MB 46136	***RU,LS***	yes
MB46513	no	no
MB 45950	***RU,LS***	yes
Onion Seed Treatment (Typical Application Rate)		
Fipronil	A,RU,LS	yes
MB 46136	***LS***	yes
MB46513	no	no
MB 45950	***RU,LS***	yes
Broadcast Bait Texas Leafcutter Ants		
Fipronil	A,RU,LS	yes
MB 46136	***RU,LS***	yes
MB46513	no	no
MB 45950	***RU,LS***	yes
Fruit Fly Station		
Fipronil	***no***	***no***
MB 46136	no	***no***
MB46513	no	no
MB 45950	no	no

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Table 39. Estuarine/Marine Invertebrate Risk Quotients		
	Acute	Chronic
Pine Seedling Root Injection (No RQs Exceed LOCs)		
House Perimeter Residential BES100		
Fipronil	***LS***	yes
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no
House Perimeter Sod Farm BES100		
Fipronil	***RU,LS***	yes
MB 46136	***no***	yes
MB46513	no	no
MB 45950	***no***	***no***
House Perimeter Residential Termidor SC/WG		
Fipronil	no	no
MB 46136	no	***no***
MB46513	no	no
MB 45950	no	no
House Perimeter Sod Farm Termidor SC/WG		
Fipronil	no	no
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no
Broadcast Fire Ant Residential HG 61743AE (No RQs Exceed LOCs)		
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select		
Fipronil	***LS***	yes
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select		
Fipronil	***RU,LS***	yes
MB 46136	***no***	yes
MB46513	no	no
MB 45950	no	no
Broadcast Fire Ant Residential Over'N Out		
Fipronil	***RU,LS***	yes
MB 46136	no	yes
MB46513	no	no
MB 45950	no	no

A= Acute LOC, RU= Restricted Use LOC, LS = Listed LOC, -- no LOC exceeded

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Items in ***bold italics*** represent changes from conclusions without buffers.

5.2.4.2 Incorporation of Monitoring Data into Freshwater Organism Risk Conclusions

Additional analysis of these estuarine/marine invertebrate concerns extended to consideration of monitoring data. Table 12 of the risk assessment summarizes the available monitoring data for fipronil from registrant-submitted runoff studies. One study within this group, MRID46490305, involves actual monitoring in a single estuarine site. As for freshwater invertebrate comparisons, the available data address only the corn and fire ant uses of the pesticide. A comparison the data for peak monitored water concentrations with the acute EEC values estimated from modeling and the acute estuarine/marine invertebrate toxicity endpoints is summarized in the following table. The table suggests that, at least for those situations where monitoring data correspond with labeled uses, that range of peak water concentrations actually detected encompasses the available EECs and would also trigger concerns for acute estuarine/marine invertebrate effects in many cases. This conclusion is comparable to the freshwater conclusions and is consistent with the very similar acute toxicity endpoints for freshwater and estuarine/marine invertebrates.

Table 40: Comparison of Registrant Monitoring data with EECs and Estuarine/Marine Invertebrate Acute Effects Endpoint

Study MRID	Location	Use Pattern	App. Rate (lbs ai/A)	Peak Water Concentration (ug/L)	EEC (ug/L)	Acute FW Invert. Endpoint (ug/L)	Is EEC greater than monitoring data?	Would monitoring value trigger concerns?
45526101	Midwest	Corn	NA	0.017[1]	0.2067	0.14	yes	LS
46477003	Midwest	Corn	4.6 oz of Regent	0.159 surface water			yes	A,.RU,LS
46733905	AK	Fire Ant	0.0125	0.348	0.0443		no	A,RU,LS
46733902	TX	Fire Ant	0.0125	0.021			yes	LS
46490304	FL	Fire Ant	0.0125	No detections			yes	--
46490305	NC	Fire Ant	0.0125	No detections			yes	--
46733904	NC	Fire Ant	0.0125	0.047 Pond Water 0.287 Storm Water 0.033 Stream Water			no	RU,LS (pond) A,RU,LS (storm water) RU,LS (stream)
46490301	NC	Fire Ant	0.0125	0.724 (w/buffer)			no	A,RU,LS
46490302	NC	Fire Ant	0.0125	1.451 (w/ buffer)			no	A,RU,LS
46490305[2]	FL	Fire Ant	0.0125	0.510			no	A,RU,LS

1-Unconfirmed concentration in duplicate sample.
2-monitoring form a single estuarine site

5.2.4.3 Consideration of Alternative Effects Endpoints on Conclusion of Risk Assessment for Estuarine/Marine Invertebrates

Although the data set for fipronil effects on estuarine/marine invertebrates does not address nearly as many organisms as the data for freshwater species, it is still possible to compare estimated fipronil exposures to other tested taxa. The approach was conducted sin the same matter as for freshwater invertebrates and the following table presents the results. With the exception of the sues involving broadcast fire ant sod farm treatment with Chipco TopChoice, Chipco 61748A, and Topchoice Select and broadcast fire ant residential treatment with Over'N

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Out, , all uses triggering acute concerns for non-listed species would still trigger concerns if the next higher 9out of 4 available) toxicity endpoint was selected for quotient calculation.

Table 41. Comparison of Screening RQ Concerns with Proportion of Tested Estuarine/Marine Invertebrates for Which EEC Exceeds LOC Adjusted Acute Toxicity Endpoint

Use	Screening RQ Risk concerns	Number of endpoints for which acute EEC exceeds acute LOC	Number of endpoints for which acute EEC exceeds acute listed species LOC
Potato/sweet potato	No Acute Concerns	0/4	0/4
Corn In-Furrow Spray	A,RU,LS	2 /4	3 /4
Corn Seed Treatment	No Acute Concerns	0/4	0/4
Onion Seed Treatment (Maximum Application Rate)	A,RU,LS	2 /4	3/4
Onion Seed Treatment (Typical Application Rate)	A,RU,LS	2 /4	3 /4
Broadcast Bait Texas Leafcutter Ants	A,RU,LS	2 /4	3 /4
Fruit Fly Station	LS	0 /4	1 /4
Pine Seedling Root Injection	No Concerns	0/4	0/4
House Perimeter Residential BES1000	RU,LS	0 /4	2/4
House Perimeter Sod Farm BES1000	RU,LS	0 /4	2/4
House Perimeter Residential Termidor SC/WG	No Acute Concerns	0 /4	0/4
House Perimeter Sod Farm Termidor SC/WG	No Acute Concerns	0 /4	0/4
Broadcast Fire Ant Residential HG 61743AE	No Acute Concerns	0 /4	0/4
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select	RU,LS	0 /4	2/4
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select	A, RU,LS	1 /4	2/4
Broadcast Fire Ant Residential Over'N Out	A, RU,LS	1 /4	2/4

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5.2.4.4 Evaluation of the Frequency of Exposure Estimate Excursions above Levels of Concern (focus on Freshwater Invertebrates)

As was the case for freshwater invertebrate risks, the available time series data for surface water modeling was evaluated against the acute and chronic effects endpoints (adjusted for Agency levels of concern) for estuarine/marine invertebrates. Owing to the more sensitive endpoints for the estuarine/marine organisms the number of days or 21-day intervals from modeling runs that exceed the adjusted effects endpoints are even greater than for freshwater invertebrates. Again this shows that triggers for acute and chronic concern are not isolated, infrequent events.

Table 42: LOC Excursions for Estuarine/marine Aquatic Invertebrates from PRZM/EXAMS Simulations

Use	Total Days	Days LOC Exceeded from PRZM/EXAM Simulation		
		Acute NL[1]	Acute L[1]	Chronic[2]
In-Furrow Corn	10957	223	2767	3842
Onion Seed High Rate	10957	3591	7356	7985
Onion Seed Typical Rate	10957	1855	6563	7238
Leafcutter Ant	10957	2173	5428	6292
Fruit Fly Station	10957	0	98	154
BES 100 0Residential	10957	0	725	1121
BES 1000 Sod Farm	10957	21	1613	2377
Chipco Sod Farm	10957	26	1741	2552
Chipco Residential	10957	0	795	1205
Over'N Out	10957	0	505	834

Acute NL= Acute non-endangered listed species (lowest LC50 X 0.5)
Acute L= Acute endangered listed species (lowest LC50 X 0.05)
Chronic = Lowest invertebrate chronic NOEC
1- Acute comparison represents daily peak concentration from PRZM/EXAMS time series with Acute NL or Acute L endpoints
2- Chronic comparison represents number of intervals for 21-day averages from PRZM/EXAMS time series

6.0 Federally Listed Threatened and Endangered Species

6.1 Action Area

For listed species assessment purposes, the action area is considered to be the area affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. At the initial screening-level, the risk assessment considers broadly described taxonomic groups and conservatively assumes that listed species within those broad groups are located on or adjacent to the treated site and aquatic organisms are assumed to be located in a surface water body adjacent to the treated site. The assessment also assumes that the listed species are located within an assumed area which has the relatively highest potential exposure to the pesticide, and that exposures are likely to decrease with distance from the treatment area.

If the assumptions associated with the screening-level action area result in RQs that are below the listed species LOCs, a "no effect" determination conclusion is made with respect to listed species in that taxa, and no further refinement of the action area is necessary. Furthermore, RQs below the listed species LOCs for a given taxonomic group indicate no concern for indirect

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effects upon listed species that depend upon the taxonomic group covered by the RQ as a resource. However, in situations where the screening assumptions lead to RQs in excess of the listed species LOCs for a given taxonomic group, a potential for a "may affect" conclusion exists and may be associated with direct effects on listed species belonging to that taxonomic group or may extend to indirect effects upon listed species that depend upon that taxonomic group as a resource. In such cases, additional information on the biology of listed species, the locations of these species, and the locations of use sites could be considered to determine the extent to which screening assumptions regarding an action area apply to a particular listed organism. These subsequent refinement steps could consider how this information would impact the action area for a particular listed organism and may potentially include areas of exposure that are downwind and downstream of the pesticide use site.

6.2 Taxonomic Groups Potentially at Risk

The Level I screening assessment process for listed species uses the generic taxonomic group-based process to make inferences on direct effect concerns for listed species. The first iteration of reporting the results of the Level I screening is a listing of pesticide use sites and taxonomic groups for which RQ calculations reveal values that meet or exceed the listed species LOCs. An evaluation of risk conclusions for each taxonomic group is presented below.

Table 43. Potential Effects to Federally Listed Taxa

Listed Taxon	Direct Effects	Uses of Concern	Indirect Effects	Uses of Concern
Terrestrial and semi-aquatic plants - monocots	No		Yes[1,2]	all
Terrestrial and semi-aquatic plants - dicots	No		Yes[1,2]	all
Terrestrial invertebrates	Yes	all	No	
Birds	Yes	a,b,c,d,e,f,i,j,k,l,m,n,o	Yes[1,2,3]	all
Terrestrial phase amphibians	Yes	a,b,c,d,e,f,i,j,k,l,m,n,o	Yes[1,2,3]	all
Reptiles	Yes	a,b,c,d,e,f,i,j,k,l,m,n,o	Yes[1,2,3]	all
Mammals	Yes	c,f,l,j,k,l,m	Yes[1,2,3]	all
Aquatic vascular plants	No		No	
Freshwater fish	No		Yes[3]	b,d,e,f,g,i,j,n,o,p
Aquatic phase amphibians	No		Yes[3]	b,d,e,f,g,i,j,n,o,p
Freshwater crustaceans	Yes	b,d,e,f,g,i,j,n,o,p	No	
Mollusks	Yes(may be subject to further evaluation)	b,d,e,f,g,i,j,n,o,p	No	
Marine/estuarine	Yes	b,d,e,f	Yes[4]	b,d,e,f,g,i,j,k,l,m,n,o,p

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Table 43. Potential Effects to Federally Listed Taxa				
Listed Taxon	**Direct Effects**	**Uses of Concern**	**Indirect Effects**	**Uses of Concern**
fish				
Marine/estuarine invertebrates	Yes	b,d,e,f,g,i,j,k,l,m,n,o,p	No	

[1] direct effects on insects
[2] direct effects on terrestrial vertebrates
[3] direct effects on aquatic invertebrates
[4] direct effects on estuarine/marine invertebrates
a Potato/Sweet Potato In-Furrow Spray
b Corn In-Furrow Spray
c Corn Seed Treatment
d Onion Seed Treatment (Maximum Application Rate)
e Onion Seed Treatment (Typical Application Rate)
f Broadcast Bait Texas Leafcutter Ants
g Fruit Fly Station
h Pine Seedling Root Injection
i House Perimeter Residential BES1000
j House Perimeter Sod Farm BES1000
k House Perimeter Residential Termidor SC/WG
l House Perimeter Sod Farm Termidor SC/WG
m Broadcast Fire Ant Residential HG 61743AE
n Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select
o Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select
p Broadcast Fire Ant Residential Over'N Out

6.3 Analysis of Dose Response (Effects Study Slope)

With the exception of the acute effects endpoint for freshwater invertebrates, there was insufficient information to establish a definitive slope for acute toxicity studies supplying endpoints for the calculation of risk quotients. An assumed typical probit slope of 4.5 and an assumed range of 2 to 9 for this slope estimate were used to estimate of individual mortality at when exposures for a taxa are at the listed species LOC. Data for freshwater invertebrates provided both a geometric mean slope and a range of measured values. These were used to estimate the changes of individual morality for the freshwater invertebrate taxonomic group.

Table 44. Slopes for fipronil animal endpoints and associated chance of individual mortality associated with RQ = Acute Listed Species LOC				
Taxa/acute study	**Study reference**	**Slope**	**Chance of Individual Mortality at RQ= Listed Species LOC**	**Confidence Intervals Assumed slopes use slope interval 2 to 9 Measured slopes use measured range**
Bird oral dose	42918617	Assume 4.5	1 in 2.94E+05	1 in 4.40E+01 to <1 in 1.0 E+16
Bird dietary	42918620	Assume 4.5	1 in 2.94E+05	1 in 4.40E+01 to <1 in 1.0 E+16
Mammal oral dose	42918628	Assume 4.5	1 in 2.94E+05	1 in 4.40E+01 to <1 in 1.0 E+16
Freshwater fish	42918624	Assume 4.5	1 in 4.18E+08	1 in 2.16E+02 to <<1 in 1.0 E+16
Freshwater invertebrate	Overmyer et al. 2005	2.20 (range 1.21-2.43)	1 in 4.75E+02	1 in 1.73E+01 to 1 in 1.27E+03
Estuarine/marine fish	43291702	Assume 4.5	1 in 4.18E+08	1 in 2.16E+02 to <<1 in 1.0 E+16

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Table 44. Slopes for fipronil animal endpoints and associated chance of individual mortality associated with RQ = Acute Listed Species LOC				
Taxa/acute study	**Study reference**	**Slope**	**Chance of Individual Mortality at RQ= Listed Species LOC**	**Confidence Intervals Assumed slopes use slope interval 2 to 9 Measured slopes use measured range**
Estuarine/marine invertebrate	43279701	Assume 4.5	1 in 4.18E+08	1 in 2.16E+02 to <<1 in 1.0 E+16

6.4 Consideration of Alternative Assumptions of Drift.

The risk assessment team concluded that consideration of alternative assumptions of drift for the fipronil uses was not necessary for this risk assessment.

For granular, seed treatment, and bait uses of fipronil, spray drift exposure is expected to be non-existent. Therefore drift has played no role in calculation of risk quotients for terrestrial or aquatic organisms. For in-furrow spray uses, the spray is directly applied within the furrow and therefore drift is not expected to play any significant role in exposures to terrestrial or aquatic organisms.

Over the top spray uses of fipronil evaluated in this risk assessment are confined to very narrow bands (2 feet or less) adjacent to structures,. These are surrounded by wide swaths of treatment free residential lawns. Drift is not expected to be significant under these circumstances.

6.5 Initial Assessment of Co-Location of Potentially Affected Species With Use Sites

Appendix I lists species within potential directly or indirectly taxonomic groups according to use site. For Fire ant uses, this amounts to a listing of species within quarantine states. Corn was co-located to United States counties where corn is listed as silage or grain.

6.6 Critical Habitat

In the evaluation of pesticide effects on designated critical habitat, consideration is given to the physical and biological features (primary constituent elements) of a critical habitat identified by the U.S Fish and Wildlife and National Marine Fisheries Services as essential to the conservation of a listed species and which may require special management considerations or protection. The evaluation of impacts for a screening level pesticide risk assessment focuses on the biological features that are primary constituent elements and is accomplished using the screening-level taxonomic analysis (RQs) and listed species' levels of concern (LOCs) that are used to evaluate direct and indirect effects to listed organisms.

The screening-level risk assessment for fipronil has identified potential concerns for direct and indirect effects on listed species for those organisms dependant upon a variety of taxonomic groups. In light of the potential for indirect effects, the next step for EPA and the Service(s) is to identify which listed species and critical habitat are potentially implicated.

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Analytically, the identification of such species and critical habitat can occur in either of two ways. First, the agencies could determine whether the action area overlaps critical habitat or the occupied range of any listed species. If so, EPA would examine whether the pesticide's potential impacts on non-endangered species would affect the listed species indirectly or directly affect a primary constituent element of the critical habitat. Alternatively, the agencies could determine which listed species depend on biological resources, or have constituent elements that fall into the taxa that may be directly or indirectly impacted by a pesticide. Then EPA would determine whether or not use of the pesticide overlaps the critical habitat or the occupied range of those listed species. At present, the information reviewed by EPA is not sufficient to permit use of either analytical approach to make a definitive identification of species that are potentially impacted indirectly or critical habitats that are potentially impacted directly by the use of pesticides. EPA and the Service(s) are working together to conduct the necessary analysis.

This screening-level risk assessment for critical habitat provides a listing of potential biological features that, if they are primary constituent elements of one or more critical habitats, would be of potential concern. Risk to a variety of taxa exceeded the LOCs; therefore, they were identified as being of potential concern for indirect effects. These results may be used to develop a problem formulation for further assessment of critical habitat impacts outlined above, should additional work be necessary.

7.0 References

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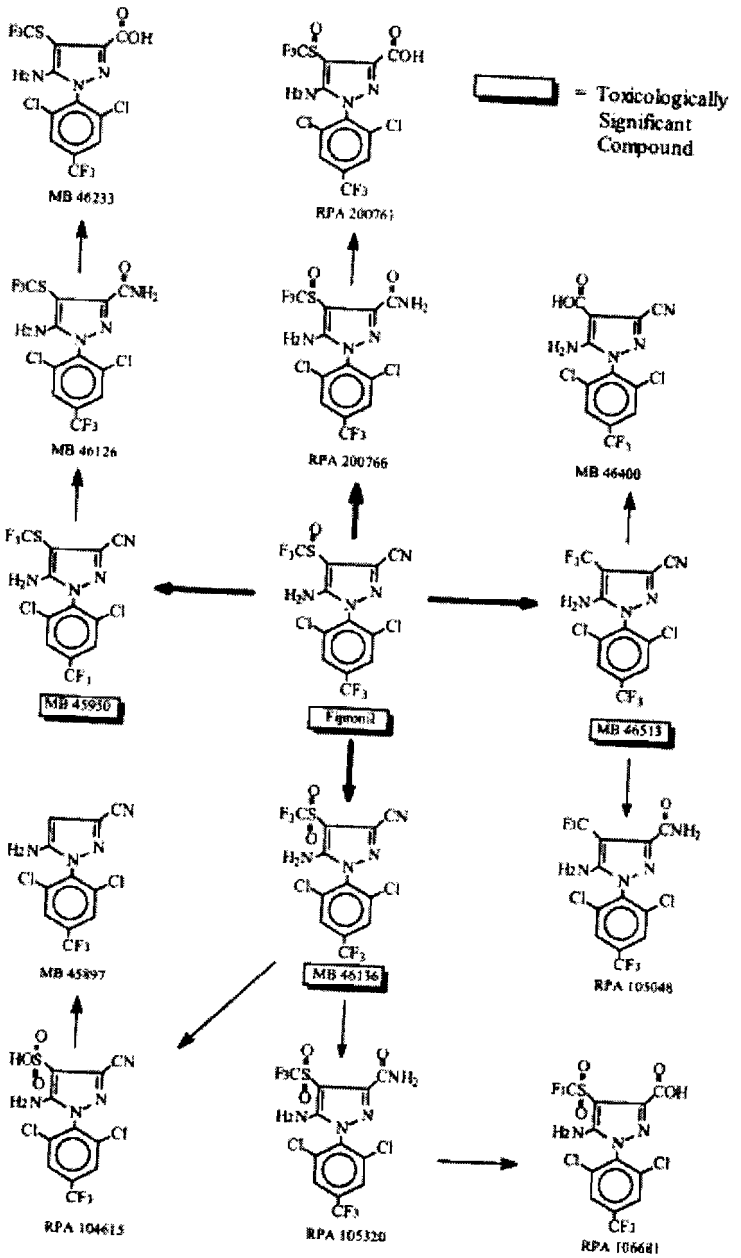
Appendix A
Structures for Fipronil and Degradates


= Toxicologically Significant Compound
MB 46233
RPA 200761
MB 46126
RPA 200766
MB 46400
MB 45950
Fipronil
MB 46513
MB 45897
MB 46136
RPA 105048
RPA 104615
RPA 105320
RPA 106681

Appendix B
PRZM/EXAMS Runs

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Water Column Data
Corn Seed

Fipronil

stored as CORSEDFP.out
Chemical: Fipronil
PRZM environment: MScornC.txt modified Satday, 12 October 2002 at 16:06:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w13893.dvf modified Wedday, 3 July 2002 at 09:06:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0	0	0	0	0	0
1962	0	0	0	0	0	0
1963	0	0	0	0	0	0
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0	0	0	0	0	0
0.0645161290322581		0	0	0	0	0	0
0.0967741935483871		0	0	0	0	0	0
0.129032258064516		0	0	0	0	0	0
0.161290322580645		0	0	0	0	0	0
0.193548387096774		0	0	0	0	0	0
0.225806451612903		0	0	0	0	0	0
0.258064516129032		0	0	0	0	0	0
0.290322580645161		0	0	0	0	0	0
0.32258064516129		0	0	0	0	0	0
0.354838709677419		0	0	0	0	0	0
0.387096774193548		0	0	0	0	0	0
0.419354838709677		0	0	0	0	0	0
0.451612903225806		0	0	0	0	0	0
0.483870967741936		0	0	0	0	0	0
0.516129032258065		0	0	0	0	0	0
0.548387096774194		0	0	0	0	0	0
0.580645161290323		0	0	0	0	0	0
0.612903225806452		0	0	0	0	0	0
0.645161290322581		0	0	0	0	0	0
0.67741935483871		0	0	0	0	0	0
0.709677419354839		0	0	0	0	0	0
0.741935483870968		0	0	0	0	0	0
0.774193548387097		0	0	0	0	0	0
0.806451612903226		0	0	0	0	0	0
0.838709677419355		0	0	0	0	0	0
0.870967741935484		0	0	0	0	0	0
0.903225806451613		0	0	0	0	0	0
0.935483870967742		0	0	0	0	0	0
0.967741935483871		0	0	0	0	0	0
0.1	0	0	0	0	0	0	
					Average of yearly averages:		0

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: CORSEDFP
Metfile: w13893.dvf
PRZM scenario: MScornC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	437	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	
Vapor Pressure	vapr		torr	

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Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	4	cm		
Application Rate:		TAPP	0.02	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as MSSEEDCORN950.out
Chemical: MB45950
PRZM environment: MScornC.txt modified Satday, 12 October 2002 at 16:06:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w13893.dvf modified Wedday, 3 July 2002 at 09:06:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0	0	0	0	0	0
1962	0	0	0	0	0	0
1963	0	0	0	0	0	0
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0	0	0	0	0	0
0.064516129032258 1		0	0	0	0	0	0
0.096774193548387 1		0	0	0	0	0	0
0.129032258064516		0	0	0	0	0	0
0.161290322580645		0	0	0	0	0	0
0.193548387096774		0	0	0	0	0	0
0.225806451612903		0	0	0	0	0	0
0.258064516129032		0	0	0	0	0	0
0.290322580645161		0	0	0	0	0	0
0.32258064516129		0	0	0	0	0	0
0.354838709677419		0	0	0	0	0	0
0.387096774193548		0	0	0	0	0	0
0.419354838709677		0	0	0	0	0	0
0.451612903225806		0	0	0	0	0	0
0.483870967741936		0	0	0	0	0	0
0.516129032258065		0	0	0	0	0	0
0.548387096774194		0	0	0	0	0	0
0.580645161290323		0	0	0	0	0	0
0.612903225806452		0	0	0	0	0	0
0.645161290322581		0	0	0	0	0	0
0.67741935483871		0	0	0	0	0	0
0.709677419354839		0	0	0	0	0	0
0.741935483870968		0	0	0	0	0	0
0.774193548387097		0	0	0	0	0	0
0.806451612903226		0	0	0	0	0	0
0.838709677419355		0	0	0	0	0	0
0.870967741935484		0	0	0	0	0	0

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0.903225806451613	0	0	0	0	0	0
0.935483870967742	0	0	0	0	0	0
0.967741935483871	0	0	0	0	0	0
0.1	0	0	0	0	0	0

Average of yearly averages: 0

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: MSSEEDCORN950
Metfile: w13893.dvf
PRZM scenario: MScornC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.1	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	4	cm		
Application Rate:		TAPP	0.0009	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as MSEEDCORN513.out
Chemical: MB46513
PRZM environment: MScornC.txt modified Satday, 12 October 2002 at 16:06:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w13893.dvf modified Wedday, 3 July 2002 at 09:06:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0	0	0	0	0	0
1962	0	0	0	0	0	0
1963	0	0	0	0	0	0
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0	0	0	0	0	0
0.0645161290322581		0	0	0	0	0	0
0.0967741935483871		0	0	0	0	0	0
0.129032258064516		0	0	0	0	0	0
0.161290322580645		0	0	0	0	0	0
0.193548387096774		0	0	0	0	0	0
0.225806451612903		0	0	0	0	0	0
0.258064516129032		0	0	0	0	0	0

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0.290322580645161	0	0	0	0	0	0
0.32258064516129	0	0	0	0	0	0
0.354838709677419	0	0	0	0	0	0
0.387096774193548	0	0	0	0	0	0
0.419354838709677	0	0	0	0	0	0
0.451612903225806	0	0	0	0	0	0
0.483870967741936	0	0	0	0	0	0
0.516129032258065	0	0	0	0	0	0
0.548387096774194	0	0	0	0	0	0
0.580645161290323	0	0	0	0	0	0
0.612903225806452	0	0	0	0	0	0
0.645161290322581	0	0	0	0	0	0
0.67741935483871	0	0	0	0	0	0
0.709677419354839	0	0	0	0	0	0
0.741935483870968	0	0	0	0	0	0
0.774193548387097	0	0	0	0	0	0
0.806451612903226	0	0	0	0	0	0
0.838709677419355	0	0	0	0	0	0
0.870967741935484	0	0	0	0	0	0
0.903225806451613	0	0	0	0	0	0
0.935483870967742	0	0	0	0	0	0
0.967741935483871	0	0	0	0	0	0

0.1	0	0	0	0	0	0

Average of yearly averages: 0

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: MSEEDCORN513
Metfile: w13893.dvf
PRZM scenario: MScornC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	4	cm		
Application Rate:		TAPP	0.0002	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as MSEEDCORN136.out
Chemical: MB46136
PRZM environment: MScornC.txt modified Satday, 12 October 2002 at 16:06:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w13893.dvf modified Wedday, 3 July 2002 at 09:06:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0	0	0	0	0	0
1962	0	0	0	0	0	0
1963	0	0	0	0	0	0
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0

US EPA ARCHIVE DOCUMENT

1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0	0	0	0	0	0
0.0645161290322581		0	0	0	0	0	0
0.0967741935483871		0	0	0	0	0	0
0.129032258064516		0	0	0	0	0	0
0.161290322580645		0	0	0	0	0	0
0.193548387096774		0	0	0	0	0	0
0.225806451612903		0	0	0	0	0	0
0.258064516129032		0	0	0	0	0	0
0.290322580645161		0	0	0	0	0	0
0.32258064516129		0	0	0	0	0	0
0.354838709677419		0	0	0	0	0	0
0.387096774193548		0	0	0	0	0	0
0.419354838709677		0	0	0	0	0	0
0.451612903225806		0	0	0	0	0	0
0.483870967741936		0	0	0	0	0	0
0.516129032258065		0	0	0	0	0	0
0.548387096774194		0	0	0	0	0	0
0.580645161290323		0	0	0	0	0	0
0.612903225806452		0	0	0	0	0	0
0.645161290322581		0	0	0	0	0	0
0.67741935483871		0	0	0	0	0	0
0.709677419354839		0	0	0	0	0	0
0.741935483870968		0	0	0	0	0	0
0.774193548387097		0	0	0	0	0	0
0.806451612903226		0	0	0	0	0	0
0.838709677419355		0	0	0	0	0	0
0.870967741935484		0	0	0	0	0	0
0.903225806451613		0	0	0	0	0	0
0.935483870967742		0	0	0	0	0	0
0.967741935483871		0	0	0	0	0	0
0.1	0	0	0	0	0	0	
					Average of yearly averages:		0

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: MSEEDCORN136
Metfile: w13893.dvf
PRZM scenario: MScornC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	4	cm		
Application Rate:		TAPP	0.0048	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Fire Ants (Over'N Out)

Fipronil

stored as FLTURFFIP.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.008598	0.007689	0.005398	0.002975	0.002349	0.0006806
1962	0.01166	0.01038	0.006865	0.005491	0.004099	0.00108
1963	0.01799	0.01597	0.01084	0.006479	0.005212	0.001434
1964	0.03033	0.02715	0.02053	0.01032	0.00858	0.002434
1965	0.01847	0.01649	0.01133	0.006271	0.004434	0.001151

US EPA ARCHIVE DOCUMENT

1966	0.01924	0.01723	0.01141	0.009111	0.008897	0.002925
1967	0.008759	0.007828	0.005488	0.00389	0.003354	0.0009686
1968	0.03181	0.02845	0.02024	0.01173	0.008414	0.002167
1969	0.008381	0.007486	0.006268	0.004211	0.003014	0.001125
1970	0.005599	0.005011	0.003306	0.001754	0.00131	0.0003716
1971	0.01541	0.01381	0.009147	0.005632	0.004692	0.001666
1972	0.01512	0.01363	0.009066	0.005037	0.003955	0.001274
1973	0.004034	0.003612	0.002681	0.001379	0.0009727	0.0004334
1974	0.005717	0.00511	0.003997	0.002797	0.002279	0.0006214
1975	0.006743	0.006029	0.004069	0.002066	0.00195	0.0005837
1976	0.04707	0.04202	0.02749	0.01642	0.01291	0.003364
1977	0.006261	0.00554	0.003684	0.002944	0.002146	0.0008117
1978	0.02408	0.02136	0.01363	0.008131	0.006616	0.00184
1979	0.02402	0.02153	0.01389	0.006927	0.005745	0.001599
1980	0.003451	0.003207	0.002129	0.001728	0.001485	0.0005065
1981	0.006516	0.005776	0.004648	0.002621	0.002166	0.000701
1982	0.04303	0.03886	0.02623	0.01372	0.01101	0.00304
1983	0.01046	0.009324	0.007005	0.003902	0.004112	0.001221
1984	0.03022	0.02722	0.01806	0.01168	0.009874	0.002704
1985	0.005476	0.004847	0.003084	0.001623	0.00181	0.0005351
1986	0.01062	0.009391	0.00664	0.004854	0.003465	0.0008889
1987	0.001815	0.001607	0.001008	0.0005404	0.0005228	0.0002065
1988	0.002944	0.002607	0.001659	0.0008204	0.0006287	0.0002915
1989	0.005585	0.004988	0.003258	0.001577	0.001093	0.0005476
1990	0.001657	0.001463	0.0009322	0.0006451	0.0005231	0.0001709

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.04707	0.04202	0.02749	0.01642	0.01291	0.003364
0.0645161290322581		0.04303	0.03886	0.02623	0.01372	0.01101	0.00304
0.0967741935483871		0.03181	0.02845	0.02053	0.01173	0.009874	0.002925
0.129032258064516		0.03033	0.02722	0.02024	0.01168	0.008897	0.002704
0.161290322580645		0.03022	0.02715	0.01806	0.01032	0.00858	0.002434
0.193548387096774		0.02408	0.02153	0.01389	0.009111	0.008414	0.002167
0.225806451612903		0.02402	0.02136	0.01363	0.008131	0.006616	0.00184
0.258064516129032		0.01924	0.01723	0.01141	0.006927	0.005745	0.001666
0.290322580645161		0.01847	0.01649	0.01133	0.006479	0.005212	0.001599
0.32258064516129		0.01799	0.01597	0.01084	0.006271	0.004692	0.001434
0.354838709677419		0.01541	0.01381	0.009147	0.005632	0.004434	0.001274
0.387096774193548		0.01512	0.01363	0.009066	0.005491	0.004112	0.001221
0.419354838709677		0.01166	0.01038	0.007005	0.005037	0.004099	0.001151
0.451612903225806		0.01062	0.009391	0.006865	0.004854	0.003955	0.001125
0.483870967741936		0.01046	0.009324	0.00664	0.004211	0.003465	0.00108
0.516129032258065		0.008759	0.007828	0.006268	0.003902	0.003354	0.0009686
0.548387096774194		0.008598	0.007689	0.005488	0.00389	0.003014	0.0008889
0.580645161290323		0.008381	0.007486	0.005398	0.002975	0.002349	0.0008117
0.612903225806452		0.006743	0.006029	0.004648	0.002944	0.002279	0.000701
0.645161290322581		0.006516	0.005776	0.004069	0.002797	0.002166	0.0006806
0.67741935483871		0.006261	0.00554	0.003997	0.002621	0.002146	0.0006214
0.709677419354839		0.005717	0.00511	0.003684	0.002066	0.00195	0.0005837
0.741935483870968		0.005599	0.005011	0.003306	0.001754	0.00181	0.0005476
0.774193548387097		0.005585	0.004988	0.003258	0.001728	0.001485	0.0005351
0.806451612903226		0.005476	0.004847	0.003084	0.001623	0.00131	0.0005065
0.838709677419355		0.004034	0.003612	0.002681	0.001577	0.001093	0.0004334
0.870967741935484		0.003451	0.003207	0.002129	0.001379	0.0009727	0.0003716
0.903225806451613		0.002944	0.002607	0.001659	0.0008204	0.0006287	0.0002915
0.935483870967742		0.001815	0.001607	0.001008	0.0006451	0.0005231	0.0002065
0.967741935483871		0.001657	0.001463	0.0009322	0.0005404	0.0005228	0.0001709
0.1	0.031662	0.028327	0.020501	0.011725	0.0097763	0.0029029	
					Average of yearly averages:		0.00124476666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURFFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asin	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.01	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

US EPA ARCHIVE DOCUMENT

MB45950

stored as FLTURF950.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0004148	0.0003724	0.000268	0.0002014	0.0001821	8.504e-005
1962	0.0008025	0.0007382	0.0005845	0.0004655	0.0004363	0.0002797
1963	0.001382	0.001257	0.0009722	0.0007766	0.0007158	0.0005556
1964	0.001906	0.001792	0.001487	0.001253	0.001205	0.0009359
1965	0.001552	0.001483	0.001321	0.001194	0.001156	0.001071
1966	0.002721	0.002527	0.002039	0.001804	0.001712	0.001362
1967	0.001878	0.001811	0.001668	0.001543	0.001537	0.001444
1968	0.002544	0.002394	0.002089	0.00195	0.001878	0.001649
1969	0.002425	0.002331	0.00215	0.002001	0.001966	0.00179
1970	0.001911	0.001901	0.001876	0.001867	0.001857	0.001759
1971	0.002204	0.002141	0.002013	0.001904	0.001873	0.001758
1972	0.002529	0.002429	0.002221	0.002063	0.002019	0.001875
1973	0.001987	0.001961	0.00193	0.001922	0.001913	0.00186
1974	0.00242	0.002336	0.00212	0.001985	0.001949	0.001806
1975	0.001895	0.001866	0.001811	0.001797	0.001788	0.001748
1976	0.002833	0.002696	0.002349	0.002104	0.002054	0.001868
1977	0.002147	0.002102	0.002034	0.001964	0.001926	0.001869
1978	0.002188	0.002134	0.001996	0.001929	0.001919	0.001865
1979	0.002505	0.002419	0.002211	0.002103	0.002092	0.001984
1980	0.002009	0.002004	0.001994	0.001989	0.001981	0.001908
1981	0.002291	0.002217	0.002082	0.001939	0.001885	0.001796
1982	0.002528	0.002437	0.002221	0.002096	0.002049	0.001923
1983	0.002337	0.002278	0.002138	0.002033	0.002032	0.001951
1984	0.002645	0.002559	0.002342	0.002184	0.002155	0.002075
1985	0.002231	0.002187	0.002087	0.002026	0.001998	0.001974
1986	0.002507	0.002424	0.002286	0.002126	0.002074	0.001964
1987	0.00199	0.001974	0.001934	0.001907	0.0019	0.001825
1988	0.002142	0.002069	0.001887	0.00175	0.001738	0.001691
1989	0.003104	0.002944	0.002498	0.002125	0.002016	0.001819
1990	0.002008	0.001982	0.001919	0.001862	0.001852	0.001774

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.003104	0.002944	0.002498	0.002184	0.002155	0.002075
0.0645161290322581		0.002833	0.002696	0.002349	0.002126	0.002092	0.001984
0.0967741935483871		0.002721	0.002559	0.002342	0.002125	0.002074	0.001974
0.129032258064516		0.002645	0.002527	0.002286	0.002104	0.002054	0.001964
0.161290322580645		0.002544	0.002437	0.002221	0.002103	0.002049	0.001951
0.193548387096774		0.002529	0.002429	0.002221	0.002096	0.002032	0.001923
0.225806451612903		0.002528	0.002424	0.002211	0.002063	0.002019	0.001908
0.258064516129032		0.002507	0.002419	0.00215	0.002033	0.002016	0.001875
0.290322580645161		0.002505	0.002394	0.002138	0.002026	0.001998	0.001869
0.32258064516129		0.002425	0.002336	0.00212	0.002001	0.001981	0.001868
0.354838709677419		0.00242	0.002331	0.002089	0.001989	0.001966	0.001865
0.387096774193548		0.002337	0.002278	0.002087	0.001985	0.001949	0.00186
0.419354838709677		0.002291	0.002217	0.002082	0.001964	0.001926	0.001825
0.451612903225806		0.002231	0.002187	0.002039	0.00195	0.001919	0.001819
0.483870967741936		0.002204	0.002141	0.002034	0.001939	0.001913	0.001806
0.516129032258065		0.002188	0.002134	0.002013	0.001929	0.0019	0.001796
0.548387096774194		0.002147	0.002102	0.001996	0.001922	0.001885	0.00179
0.580645161290323		0.002142	0.002069	0.001994	0.001907	0.001878	0.001774
0.612903225806452		0.002009	0.002004	0.001934	0.001904	0.001873	0.001759
0.645161290322581		0.002008	0.001982	0.00193	0.001867	0.001857	0.001758
0.67741935483871		0.00199	0.001974	0.001919	0.001862	0.001852	0.001748
0.709677419354839		0.001987	0.001961	0.001887	0.001804	0.001788	0.001691
0.741935483870968		0.001911	0.001901	0.001876	0.001797	0.001738	0.001649
0.774193548387097		0.001906	0.001866	0.001811	0.00175	0.001712	0.001444
0.806451612903226		0.001895	0.001811	0.001668	0.001543	0.001537	0.001362
0.838709677419355		0.001878	0.001792	0.001487	0.001253	0.001205	0.001071
0.870967741935484		0.001552	0.001483	0.001321	0.001194	0.001156	0.0009359
0.903225806451613		0.001382	0.001257	0.0009722	0.0007766	0.0007158	0.0005556
0.935483870967742		0.0008025	0.0007382	0.0005845	0.0004655	0.0004363	0.0002797
0.967741935483871		0.0004148	0.0003724	0.000268	0.0002014	0.0001821	8.504e-005
0.1	0.0027134	0.0025558	0.0023364	0.0021229	0.002072	0.001973	
					Average of yearly averages:		0.001608808

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF950
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments
Molecular weight		mwt	421	g/mol	
Henry's Law Const.		henry		atm-m^3/mol	
Vapor Pressure		vapr		torr	
Solubility	sol	0.04	mg/L		
Kd	Kd		mg/L		
Koc	Koc	3911	mg/L		
Photolysis half-life		kdp		days	Half-life

US EPA ARCHIVE DOCUMENT

Aerobic Aquatic Metabolism	kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife
Aerobic Soil Metabolism	asm	700	days	Halfife	
Hydrolysis: pH 7		days	Half-life		
Method: CAM	1	integer	See PRZM manual		
Incorporation Depth:	DEPI	0.1	cm		
Application Rate:	TAPP	5E-4	kg/ha		
Application Efficiency:	APPEFF	1.0	fraction		
Spray Drift DRFT		fraction of application rate applied to pond			
Application Date	Date	1-4	dd mm or dd/mmm or dd-mm or dd-mmm		
Record 17: FILTRA					
IPSCND					
UPTKF					
Record 18: PLVKRT					
PLDKRT					
FEXTRC	0.5				
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as FLTURF513.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	1.487e-005	1.443e-005	1.3e-005	1.143e-005	1.074e-005	5.291e-006
1962	2.889e-005	2.802e-005	2.543e-005	2.326e-005	2.283e-005	1.542e-005
1963	5.032e-005	4.891e-005	4.465e-005	4.004e-005	3.78e-005	2.808e-005
1964	5.945e-005	5.879e-005	5.675e-005	5.465e-005	5.371e-005	4.49e-005
1965	6.803e-005	6.701e-005	6.357e-005	5.936e-005	5.753e-005	5.162e-005
1966	9.701e-005	9.519e-005	8.912e-005	8.347e-005	8.083e-005	6.629e-005
1967	8.17e-005	8.091e-005	7.915e-005	7.58e-005	7.525e-005	7.054e-005
1968	0.0001049	0.0001031	9.87e-005	9.587e-005	9.287e-005	7.944e-005
1969	9.638e-005	9.554e-005	9.368e-005	9.043e-005	8.964e-005	8.365e-005
1970	8.64e-005	8.616e-005	8.528e-005	8.458e-005	8.418e-005	8.032e-005
1971	9.034e-005	8.961e-005	8.713e-005	8.393e-005	8.336e-005	8.044e-005
1972	9.605e-005	9.52e-005	9.234e-005	8.851e-005	8.814e-005	8.322e-005
1973	8.544e-005	8.533e-005	8.495e-005	8.433e-005	8.388e-005	8.15e-005
1974	8.289e-005	8.241e-005	8.086e-005	8.024e-005	7.981e-005	7.686e-005
1975	7.725e-005	7.698e-005	7.614e-005	7.464e-005	7.475e-005	7.298e-005
1976	0.0001033	0.000102	9.784e-005	9.293e-005	9.173e-005	8.161e-005
1977	8.992e-005	8.926e-005	8.759e-005	8.538e-005	8.434e-005	8.05e-005
1978	9.383e-005	9.297e-005	9.14e-005	8.827e-005	8.821e-005	8.343e-005
1979	0.0001021	0.0001011	9.712e-005	9.332e-005	9.296e-005	8.648e-005
1980	8.532e-005	8.505e-005	8.48e-005	8.44e-005	8.405e-005	8.175e-005
1981	8.987e-005	8.899e-005	8.635e-005	8.332e-005	8.154e-005	7.676e-005
1982	0.0001046	0.0001033	9.881e-005	9.509e-005	9.349e-005	8.649e-005
1983	9.869e-005	9.789e-005	9.523e-005	9.198e-005	9.106e-005	8.701e-005
1984	0.0001121	0.0001109	0.0001067	0.0001015	9.964e-005	9.262e-005
1985	9.407e-005	9.359e-005	9.191e-005	8.965e-005	8.934e-005	8.76e-005
1986	0.0001004	9.933e-005	9.714e-005	9.218e-005	9.045e-005	8.395e-005
1987	8.198e-005	8.193e-005	8.175e-005	8.146e-005	8.116e-005	7.788e-005
1988	7.486e-005	7.444e-005	7.362e-005	7.329e-005	7.303e-005	7.095e-005
1989	8.902e-005	8.819e-005	8.507e-005	7.98e-005	7.712e-005	7.162e-005
1990	7.317e-005	7.307e-005	7.272e-005	7.219e-005	7.194e-005	6.879e-005

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0001121	0.0001109	0.0001067	0.0001015	9.964e-005	9.262e-005
0.0645161290322581		0.0001049	0.0001033	9.881e-005	9.587e-005	9.349e-005	8.76e-005
0.0967741935483871		0.0001046	0.0001031	9.87e-005	9.509e-005	9.296e-005	8.701e-005
0.129032258064516		0.0001033	0.000102	9.784e-005	9.332e-005	9.287e-005	8.649e-005
0.161290322580645		0.0001021	0.0001011	9.714e-005	9.293e-005	9.173e-005	8.648e-005
0.193548387096774		0.0001004	9.933e-005	9.712e-005	9.218e-005	9.106e-005	8.395e-005
0.225806451612903		9.869e-005	9.789e-005	9.523e-005	9.198e-005	9.045e-005	8.365e-005
0.258064516129032		9.701e-005	9.554e-005	9.368e-005	9.043e-005	8.964e-005	8.343e-005
0.290322580645161		9.638e-005	9.52e-005	9.234e-005	8.965e-005	8.934e-005	8.322e-005
0.32258064516129		9.605e-005	9.519e-005	9.191e-005	8.851e-005	8.821e-005	8.175e-005
0.354838709677419		9.407e-005	9.359e-005	9.14e-005	8.827e-005	8.814e-005	8.161e-005
0.387096774193548		9.383e-005	9.297e-005	8.912e-005	8.538e-005	8.434e-005	8.15e-005
0.419354838709677		9.034e-005	8.961e-005	8.759e-005	8.458e-005	8.418e-005	8.05e-005
0.451612903225806		8.992e-005	8.926e-005	8.713e-005	8.44e-005	8.405e-005	8.044e-005
0.483870967741936		8.987e-005	8.899e-005	8.635e-005	8.433e-005	8.388e-005	8.032e-005
0.516129032258065		8.902e-005	8.819e-005	8.528e-005	8.393e-005	8.336e-005	7.944e-005
0.548387096774194		8.64e-005	8.616e-005	8.507e-005	8.347e-005	8.154e-005	7.788e-005
0.580645161290323		8.544e-005	8.533e-005	8.495e-005	8.332e-005	8.116e-005	7.686e-005
0.612903225806452		8.532e-005	8.505e-005	8.48e-005	8.146e-005	8.083e-005	7.676e-005
0.645161290322581		8.289e-005	8.241e-005	8.175e-005	8.024e-005	7.981e-005	7.298e-005
0.67741935483871		8.198e-005	8.193e-005	8.086e-005	7.98e-005	7.712e-005	7.162e-005
0.709677419354839		8.17e-005	8.091e-005	7.915e-005	7.58e-005	7.525e-005	7.095e-005
0.741935483870968		7.725e-005	7.698e-005	7.614e-005	7.464e-005	7.475e-005	7.054e-005
0.774193548387097		7.486e-005	7.444e-005	7.362e-005	7.329e-005	7.303e-005	6.879e-005
0.806451612903226		7.317e-005	7.307e-005	7.272e-005	7.219e-005	7.194e-005	6.629e-005
0.838709677419355		6.803e-005	6.701e-005	6.357e-005	5.936e-005	5.753e-005	5.162e-005
0.870967741935484		5.945e-005	5.879e-005	5.675e-005	5.465e-005	5.371e-005	4.49e-005
0.903225806451613		5.032e-005	4.891e-005	4.465e-005	4.004e-005	3.78e-005	2.808e-005
0.935483870967742		2.889e-005	2.802e-005	2.543e-005	2.326e-005	2.283e-005	1.542e-005
0.967741935483871		1.487e-005	1.443e-005	1.3e-005	1.143e-005	1.074e-005	5.291e-006
0.1	0.00010447	0.00010299	9.8614e-005	9.4913e-005	9.2951e-005	8.6958e-005	

US EPA ARCHIVE DOCUMENT

Average of yearly averages: 7.12663666666667e-005

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name	Value	Units	Comments	
Molecular weight	mwt	389	g/mol		
Henry's Law Const.	henry		atm-m^3/mol		
Vapor Pressure	vapr		torr		
Solubility sol	0.95	mg/L			
Kd Kd		mg/L			
Koc Koc	1290	mg/L			
Photolysis half-life	kdp		days	Half-life	
Aerobic Aquatic Metabolism	kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism	kbacs	1320	days	Halfife	
Aerobic Soil Metabolism	asm	660	days	Halfife	
Hydrolysis: pH 7		days	Half-life		
Method: CAM	1	integer	See PRZM manual		
Incorporation Depth:	DEPI	0.1	cm		
Application Rate:	TAPP	1E-5	kg/ha		
Application Efficiency:	APPEEF	1.0	fraction		
Spray Drift DRFT		fraction of application rate applied to pond			
Application Date	Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17: FILTRA					
IPSCND					
UPTKF					
Record 18: PLVKRT					
PLDKRT					
FEXTRC	0.5				
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as FLTURF136.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001875	0.001667	0.001174	0.0008673	0.0007877	0.0003645
1962	0.003645	0.00332	0.002565	0.002007	0.001873	0.001193
1963	0.006248	0.005629	0.004253	0.00334	0.003065	0.002367
1964	0.008589	0.008019	0.006495	0.005406	0.005173	0.003982
1965	0.006692	0.006354	0.00558	0.005001	0.004828	0.004463
1966	0.012	0.01104	0.008677	0.007603	0.007182	0.005638
1967	0.007913	0.007577	0.006878	0.006296	0.006265	0.005865
1968	0.01085	0.01011	0.008637	0.007983	0.007663	0.006657
1969	0.01017	0.009698	0.008798	0.008107	0.007943	0.007163
1970	0.007669	0.007615	0.007491	0.007444	0.007396	0.006923
1971	0.008897	0.008582	0.007963	0.007462	0.007312	0.006817
1972	0.01039	0.009886	0.008852	0.008095	0.007905	0.007265
1973	0.00773	0.007599	0.007471	0.007428	0.007384	0.007124
1974	0.009795	0.009363	0.008287	0.007654	0.00748	0.006833
1975	0.007253	0.007106	0.006809	0.006758	0.006717	0.006525
1976	0.01156	0.01087	0.009183	0.008051	0.007826	0.007003
1977	0.008244	0.008025	0.007708	0.007386	0.007211	0.006959
1978	0.008392	0.008122	0.007468	0.007164	0.007126	0.006894
1979	0.009859	0.009431	0.008435	0.007962	0.007909	0.007408
1980	0.00751	0.007489	0.007435	0.007413	0.007373	0.007031
1981	0.008799	0.008434	0.007813	0.007141	0.006895	0.006499
1982	0.009859	0.009414	0.008367	0.00779	0.00758	0.007025
1983	0.009028	0.008726	0.008026	0.007519	0.007517	0.007133
1984	0.0103	0.00988	0.008831	0.00811	0.007987	0.007646
1985	0.008404	0.008187	0.007702	0.007418	0.007268	0.007163
1986	0.009644	0.009234	0.008555	0.00783	0.007598	0.007111
1987	0.007282	0.007197	0.006996	0.006868	0.00683	0.006498
1988	0.008117	0.007748	0.006849	0.006175	0.006122	0.00592
1989	0.01268	0.01186	0.009645	0.007898	0.007408	0.006509
1990	0.007421	0.007287	0.00697	0.006695	0.006653	0.006309

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129	0.01268	0.01186	0.009645	0.00811	0.007987	0.007646	
0.0645161290322581	0.012	0.01104	0.009183	0.008107	0.007943	0.007408	
0.0967741935483871	0.01156	0.01087	0.008852	0.008095	0.007909	0.007265	
0.129032258064516	0.01085	0.01011	0.008831	0.008051	0.007905	0.007163	
0.161290322580645	0.01039	0.009886	0.008798	0.007983	0.007826	0.007163	
0.193548387096774	0.0103	0.00988	0.008677	0.007962	0.007663	0.007133	
0.225806451612903	0.01017	0.009698	0.008637	0.007898	0.007598	0.007124	
0.258064516129032	0.009859	0.009431	0.008555	0.00783	0.00758	0.007111	
0.290322580645161	0.009859	0.009414	0.008435	0.00779	0.007517	0.007031	
0.32258064516129	0.009795	0.009363	0.008367	0.007654	0.00748	0.007025	
0.354838709677419	0.009644	0.009234	0.008287	0.007603	0.007408	0.007003	
0.387096774193548	0.009028	0.008726	0.008026	0.007519	0.007396	0.006959	
0.419354838709677	0.008897	0.008582	0.007963	0.007462	0.007384	0.006923	
0.451612903225806	0.008799	0.008434	0.007813	0.007444	0.007373	0.006894	

US EPA ARCHIVE DOCUMENT

0.483870967741936	0.008589	0.008187	0.007708	0.007428	0.007312	0.006833
0.516129032258065	0.008404	0.008122	0.007702	0.007418	0.007268	0.006817
0.548387096774194	0.008392	0.008025	0.007491	0.007413	0.007211	0.006657
0.580645161290323	0.008244	0.008019	0.007471	0.007386	0.007182	0.006525
0.612903225806452	0.008117	0.007748	0.007468	0.007164	0.007126	0.006509
0.645161290322581	0.007913	0.007615	0.007435	0.007141	0.006895	0.006499
0.67741935483871	0.00773	0.007599	0.006996	0.006868	0.00683	0.006498
0.709677419354839	0.007669	0.007577	0.00697	0.006758	0.006717	0.006309
0.741935483870968	0.00751	0.007489	0.006878	0.006695	0.006653	0.00592
0.774193548387097	0.007421	0.007287	0.006849	0.006296	0.006265	0.005865
0.806451612903226	0.007282	0.007197	0.006809	0.006175	0.006122	0.005638
0.838709677419355	0.007253	0.007106	0.006495	0.005406	0.005173	0.004463
0.870967741935484	0.006692	0.006354	0.00558	0.005001	0.004828	0.003982
0.903225806451613	0.006248	0.005629	0.004253	0.00334	0.003065	0.002367
0.935483870967742	0.003645	0.00332	0.002565	0.002007	0.001873	0.001193
0.967741935483871	0.001875	0.001667	0.001174	0.0008673	0.0007877	0.0003645
0.1 0.011489	0.010794	0.0088499	0.0080906	0.0079086	0.0072548	
				Average of yearly averages:		0.00607625

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments
Molecular weight		mwt	453	g/mol	
Henry's Law Const.		henry		atm-m^3/mol	
Vapor Pressure		vapr		torr	
Solubility	sol	0.16	mg/L		
Kd	Kd		mg/L		
Koc	Koc	4208	mg/L		
Photolysis half-life		kdp	7	days	Half-life
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	1	integer	See PRZM manual	
Incorporation Depth:		DEPI	0.1	cm	
Application Rate:		TAPP	0.0024	kg/ha	
Application Efficiency:		APPEFF	1.0	fraction	
Spray Drift	DRFT		fraction of application rate applied to pond		
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm	
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	0.5			
Flag for Index Res. Run		IR	Pond		
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)	

Fire Ants (HG61743AE Residential)

Fipronil

stored as FLTURFFIP.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001719	0.001537	0.001079	0.0005949	0.0004698	0.0001361
1962	0.002333	0.002077	0.001373	0.001099	0.0008201	0.0002161
1963	0.003598	0.003194	0.002168	0.001296	0.001042	0.0002868
1964	0.006064	0.005429	0.004106	0.002064	0.001716	0.0004867
1965	0.003693	0.003297	0.002266	0.001254	0.0008867	0.0002303
1966	0.003848	0.003447	0.002281	0.001822	0.001779	0.0005851
1967	0.001751	0.001565	0.001097	0.0007778	0.0006707	0.0001937
1968	0.006362	0.00569	0.004047	0.002346	0.001683	0.0004333
1969	0.001676	0.001497	0.001253	0.0008422	0.0006028	0.0002251
1970	0.00112	0.001002	0.0006612	0.0003509	0.0002619	7.432e-005
1971	0.003082	0.002762	0.001829	0.001126	0.0009383	0.0003332
1972	0.003023	0.002726	0.001813	0.001008	0.000791	0.0002548
1973	0.0008067	0.0007225	0.0005362	0.0002758	0.0001945	8.668e-005
1974	0.001143	0.001022	0.0007994	0.0005593	0.0004557	0.0001243
1975	0.001349	0.001206	0.0008138	0.0004131	0.00039	0.0001168
1976	0.009415	0.008405	0.005497	0.003283	0.002583	0.0006727
1977	0.001252	0.001108	0.0007367	0.0005887	0.0004291	0.0001623
1978	0.004816	0.004271	0.002726	0.001626	0.001323	0.000368
1979	0.004804	0.004306	0.002778	0.001385	0.001149	0.0003197

US EPA ARCHIVE DOCUMENT

1980	0.0006901	0.0006415	0.0004259	0.0003456	0.000297	0.0001013
1981	0.001304	0.001156	0.0009299	0.0005243	0.0004332	0.0001402
1982	0.008605	0.007771	0.005245	0.002742	0.002201	0.0006078
1983	0.002092	0.001865	0.001401	0.0007805	0.0008225	0.0002443
1984	0.006043	0.005443	0.003612	0.002335	0.001975	0.0005407
1985	0.001095	0.0009695	0.0006168	0.0003245	0.0003621	0.000107
1986	0.002124	0.001878	0.001328	0.0009709	0.0006931	0.0001778
1987	0.0003631	0.0003214	0.0002017	0.0001081	0.0001046	4.13e-005
1988	0.0005886	0.0005212	0.0003317	0.000164	0.0001257	5.829e-005
1989	0.001117	0.0009979	0.0006518	0.0003155	0.0002187	0.0001095
1990	0.0003313	0.0002925	0.0001864	0.000129	0.0001046	3.419e-005

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.009415	0.008405	0.005497	0.003283	0.002583	0.0006727
0.0645161290322581		0.008605	0.007771	0.005245	0.002742	0.002201	0.0006078
0.0967741935483871		0.006362	0.00569	0.004106	0.002346	0.001975	0.0005851
0.129032258064516		0.006064	0.005443	0.004047	0.002335	0.001779	0.0005407
0.161290322580645		0.006043	0.005429	0.003612	0.002064	0.001716	0.0004867
0.193548387096774		0.004816	0.004306	0.002778	0.001822	0.001683	0.0004333
0.225806451612903		0.004804	0.004271	0.002726	0.001626	0.001323	0.000368
0.258064516129032		0.003848	0.003447	0.002281	0.001385	0.001149	0.0003332
0.290322580645161		0.003693	0.003297	0.002266	0.001296	0.001042	0.0003197
0.32258064516129		0.003598	0.003194	0.002168	0.001254	0.0009383	0.0002868
0.354838709677419		0.003082	0.002762	0.001829	0.001126	0.0008867	0.0002548
0.387096774193548		0.003023	0.002726	0.001813	0.001099	0.0008225	0.0002443
0.419354838709677		0.002333	0.002077	0.001401	0.001008	0.0008201	0.0002303
0.451612903225806		0.002124	0.001878	0.001373	0.0009709	0.000791	0.0002251
0.483870967741936		0.002092	0.001865	0.001328	0.0008422	0.0006931	0.0002161
0.516129032258065		0.001751	0.001565	0.001253	0.0007805	0.0006707	0.0001937
0.548387096774194		0.001719	0.001537	0.001097	0.0007778	0.0006028	0.0001778
0.580645161290323		0.001676	0.001497	0.001079	0.0005949	0.0004698	0.0001623
0.612903225806452		0.001349	0.001206	0.0009299	0.0005887	0.0004557	0.0001402
0.645161290322581		0.001304	0.001156	0.0008138	0.0005593	0.0004332	0.0001361
0.67741935483871		0.001252	0.001108	0.0007994	0.0005243	0.0004291	0.0001243
0.709677419354839		0.001143	0.001022	0.0007367	0.0004131	0.00039	0.0001168
0.741935483870968		0.00112	0.001002	0.0006612	0.0003509	0.0003621	0.0001095
0.774193548387097		0.001117	0.0009979	0.0006518	0.0003456	0.000297	0.000107
0.806451612903226		0.001095	0.0009695	0.0006168	0.0003245	0.0002619	0.0001013
0.838709677419355		0.0008067	0.0007225	0.0005362	0.0003155	0.0002187	8.668e-005
0.870967741935484		0.0006901	0.0006415	0.0004259	0.0002758	0.0001945	7.432e-005
0.903225806451613		0.0005886	0.0005212	0.0003317	0.000164	0.0001257	5.829e-005
0.935483870967742		0.0003631	0.0003214	0.0002017	0.000129	0.0001046	4.13e-005
0.967741935483871		0.0003313	0.0002925	0.0001864	0.0001081	0.0001046	3.419e-005
0.1	0.0063322	0.0056653	0.0041001	0.0023449	0.0019554	0.00058066	
					Average of yearly averages:		0.000248946

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURFFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.002	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as FLTURF950.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	8.296e-005	7.449e-005	5.36e-005	4.028e-005	3.642e-005	1.701e-005

US EPA ARCHIVE DOCUMENT

1962	0.0001605	0.0001476	0.0001169	9.311e-005	8.726e-005	5.594e-005
1963	0.0002763	0.0002515	0.0001945	0.0001553	0.0001432	0.0001111
1964	0.0003811	0.0003584	0.0002974	0.0002507	0.000241	0.0001872
1965	0.0003104	0.0002967	0.0002642	0.0002388	0.0002312	0.0002141
1966	0.0005442	0.0005054	0.0004078	0.0003607	0.0003423	0.0002723
1967	0.0003756	0.0003621	0.0003337	0.0003086	0.0003073	0.0002887
1968	0.0005088	0.0004788	0.0004177	0.00039	0.0003757	0.0003298
1969	0.000485	0.0004663	0.00043	0.0004001	0.0003933	0.000358
1970	0.0003821	0.0003802	0.0003752	0.0003734	0.0003715	0.0003519
1971	0.0004408	0.0004282	0.0004025	0.0003808	0.0003746	0.0003517
1972	0.0005058	0.0004859	0.0004442	0.0004125	0.0004038	0.0003749
1973	0.0003974	0.0003921	0.000386	0.0003844	0.0003827	0.000372
1974	0.000484	0.0004671	0.000424	0.0003971	0.0003899	0.0003612
1975	0.000379	0.0003732	0.0003621	0.0003593	0.0003576	0.0003495
1976	0.0005665	0.0005391	0.0004699	0.0004208	0.0004107	0.0003736
1977	0.0004293	0.0004204	0.0004068	0.0003928	0.0003851	0.0003737
1978	0.0004377	0.0004267	0.0003992	0.0003859	0.0003838	0.0003729
1979	0.000501	0.0004839	0.0004423	0.0004205	0.0004184	0.0003967
1980	0.0004019	0.0004009	0.0003988	0.0003979	0.0003963	0.0003816
1981	0.0004583	0.0004434	0.0004165	0.0003878	0.0003769	0.0003592
1982	0.0005056	0.0004873	0.0004443	0.0004192	0.0004098	0.0003845
1983	0.0004673	0.0004557	0.0004277	0.0004067	0.0004064	0.0003902
1984	0.000529	0.0005119	0.0004683	0.0004367	0.0004309	0.000415
1985	0.0004461	0.0004375	0.0004175	0.0004053	0.0003996	0.0003949
1986	0.0005014	0.0004848	0.0004572	0.0004253	0.0004149	0.0003927
1987	0.000398	0.0003947	0.0003868	0.0003815	0.0003799	0.0003649
1988	0.0004283	0.0004138	0.0003774	0.00035	0.0003477	0.0003382
1989	0.0006207	0.0005888	0.0004995	0.0004249	0.0004032	0.0003638
1990	0.0004017	0.0003965	0.0003839	0.0003723	0.0003705	0.0003547

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0006207	0.0005888	0.0004995	0.0004367	0.0004309	0.000415
0.064516129032258 1		0.0005665	0.0005391	0.0004699	0.0004253	0.0004184	0.0003967
0.0967741935483871		0.0005442	0.0005119	0.0004683	0.0004249	0.0004149	0.0003949
0.129032258064516		0.000529	0.0005054	0.0004572	0.0004208	0.0004107	0.0003927
0.161290322580645		0.0005088	0.0004873	0.0004443	0.0004205	0.0004098	0.0003902
0.193548387096774		0.0005058	0.0004859	0.0004442	0.0004192	0.0004064	0.0003845
0.225806451612903		0.0005056	0.0004848	0.0004423	0.0004125	0.0004038	0.0003816
0.258064516129032		0.0005014	0.0004839	0.00043	0.0004067	0.0004032	0.0003749
0.290322580645161		0.000501	0.0004788	0.0004277	0.0004053	0.0003996	0.0003737
0.32258064516129		0.000485	0.0004671	0.000424	0.0004001	0.0003963	0.0003736
0.354838709677419		0.000484	0.0004663	0.0004177	0.0003979	0.0003933	0.0003729
0.387096774193548		0.0004673	0.0004557	0.0004175	0.0003971	0.0003899	0.000372
0.419354838709677		0.0004583	0.0004434	0.0004165	0.0003928	0.0003851	0.0003649
0.451612903225806		0.0004461	0.0004375	0.0004078	0.00039	0.0003838	0.0003638
0.483870967741936		0.0004408	0.0004282	0.0004068	0.0003878	0.0003827	0.0003612
0.516129032258065		0.0004377	0.0004267	0.0004025	0.0003859	0.0003799	0.0003592
0.548387096774194		0.0004293	0.0004204	0.0003992	0.0003844	0.0003769	0.000358
0.580645161290323		0.0004283	0.0004138	0.0003988	0.0003815	0.0003757	0.0003547
0.612903225806452		0.0004019	0.0004009	0.0003868	0.0003808	0.0003746	0.0003519
0.645161290322581		0.0004017	0.0003965	0.000386	0.0003734	0.0003715	0.0003517
0.67741935483871		0.000398	0.0003947	0.0003839	0.0003723	0.0003705	0.0003495
0.709677419354839		0.0003974	0.0003921	0.0003774	0.0003607	0.0003576	0.0003382
0.741935483870968		0.0003821	0.0003802	0.0003752	0.0003593	0.0003477	0.0003298
0.774193548387097		0.0003811	0.0003732	0.0003621	0.00035	0.0003423	0.0002887
0.806451612903226		0.000379	0.0003621	0.0003337	0.0003086	0.0003073	0.0002723
0.838709677419355		0.0003756	0.0003584	0.0002974	0.0002507	0.000241	0.0002141
0.870967741935484		0.0003104	0.0002967	0.0002642	0.0002388	0.0002312	0.0001872
0.903225806451613		0.0002763	0.0002515	0.0001945	0.0001553	0.0001432	0.0001111
0.935483870967742		0.0001605	0.0001476	0.0001169	9.311e-005	8.726e-005	5.594e-005
0.967741935483871		8.296e-005	7.449e-005	5.36e-005	4.028e-005	3.642e-005	1.701e-005
0.1	0.00054268	0.00051125	0.00046719	0.00042449	0.00041448	0.00039468	
					Average of yearly averages:		0.000321731666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF950
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife	
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	1E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					

US EPA ARCHIVE DOCUMENT

FEXTRC	0.5		
Flag for Index Res. Run	IR	Pond	
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)

MB46513

stored as FLTURF513.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	2.973e-005	2.885e-005	2.599e-005	2.286e-005	2.148e-005	1.058e-005
1962	5.778e-005	5.603e-005	5.087e-005	4.652e-005	4.565e-005	3.085e-005
1963	0.0001006	9.782e-005	8.929e-005	8.008e-005	7.56e-005	5.615e-005
1964	0.0001189	0.0001176	0.0001135	0.0001093	0.0001074	8.979e-005
1965	0.0001361	0.000134	0.0001271	0.0001187	0.000115	0.0001032
1966	0.000194	0.0001904	0.0001782	0.0001669	0.0001617	0.0001326
1967	0.0001634	0.0001618	0.0001583	0.0001516	0.0001505	0.0001411
1968	0.0002098	0.0002061	0.0001974	0.0001917	0.0001857	0.0001589
1969	0.0001928	0.0001911	0.0001873	0.0001809	0.0001793	0.0001673
1970	0.0001728	0.0001723	0.0001706	0.0001692	0.0001684	0.0001606
1971	0.0001807	0.0001792	0.0001743	0.0001678	0.0001667	0.0001609
1972	0.0001921	0.0001904	0.0001847	0.000177	0.0001763	0.0001664
1973	0.0001709	0.0001707	0.0001699	0.0001686	0.0001678	0.000163
1974	0.0001658	0.0001648	0.0001617	0.0001605	0.0001596	0.0001537
1975	0.0001545	0.000154	0.0001523	0.0001493	0.0001495	0.000146
1976	0.0002066	0.0002041	0.0001957	0.0001859	0.0001834	0.0001632
1977	0.0001798	0.0001785	0.0001752	0.0001708	0.0001687	0.000161
1978	0.0001877	0.0001859	0.0001828	0.0001765	0.0001764	0.0001668
1979	0.0002043	0.0002023	0.0001942	0.0001866	0.0001859	0.000173
1980	0.0001706	0.0001701	0.0001696	0.0001688	0.0001681	0.0001635
1981	0.0001797	0.000178	0.0001727	0.0001666	0.0001631	0.0001535
1982	0.0002092	0.0002066	0.0001976	0.0001902	0.000187	0.000173
1983	0.0001974	0.0001958	0.0001905	0.000184	0.0001821	0.000174
1984	0.0002242	0.0002217	0.0002134	0.0002031	0.0001993	0.0001852
1985	0.0001881	0.0001872	0.0001838	0.0001793	0.0001787	0.0001752
1986	0.0002008	0.0001987	0.0001943	0.0001844	0.0001809	0.0001679
1987	0.000164	0.0001639	0.0001635	0.0001629	0.0001623	0.0001558
1988	0.0001497	0.0001489	0.0001472	0.0001466	0.0001461	0.0001419
1989	0.000178	0.0001764	0.0001701	0.0001596	0.0001542	0.0001432
1990	0.0001463	0.0001461	0.0001454	0.0001444	0.0001439	0.0001376

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0002242	0.0002217	0.0002134	0.0002031	0.0001993	0.0001852
0.0645161290322581		0.0002098	0.0002066	0.0001976	0.0001917	0.000187	0.0001752
0.0967741935483871		0.0002092	0.0002061	0.0001974	0.0001902	0.0001859	0.000174
0.129032258064516		0.0002066	0.0002041	0.0001957	0.0001866	0.0001857	0.000173
0.161290322580645		0.0002043	0.0002023	0.0001943	0.0001859	0.0001834	0.000173
0.193548387096774		0.0002008	0.0001987	0.0001942	0.0001844	0.0001821	0.0001679
0.225806451612903		0.0001974	0.0001958	0.0001905	0.000184	0.0001809	0.0001673
0.258064516129032		0.000194	0.0001911	0.0001873	0.0001809	0.0001793	0.0001668
0.290322580645161		0.0001928	0.0001904	0.0001847	0.0001793	0.0001787	0.0001664
0.32258064516129		0.0001921	0.0001904	0.0001838	0.000177	0.0001764	0.0001635
0.354838709677419		0.0001881	0.0001872	0.0001828	0.0001765	0.0001763	0.0001632
0.387096774193548		0.0001877	0.0001859	0.0001782	0.0001708	0.0001687	0.000163
0.419354838709677		0.0001807	0.0001792	0.0001752	0.0001692	0.0001684	0.000161
0.451612903225806		0.0001798	0.0001785	0.0001743	0.0001688	0.0001681	0.0001609
0.483870967741936		0.0001797	0.000178	0.0001727	0.0001686	0.0001678	0.0001606
0.516129032258065		0.000178	0.0001764	0.0001706	0.0001678	0.0001667	0.0001589
0.548387096774194		0.0001728	0.0001723	0.0001701	0.0001669	0.0001631	0.0001558
0.580645161290323		0.0001709	0.0001707	0.0001699	0.0001666	0.0001623	0.0001537
0.612903225806452		0.0001706	0.0001701	0.0001696	0.0001629	0.0001617	0.0001535
0.645161290322581		0.0001658	0.0001648	0.0001635	0.0001605	0.0001596	0.000146
0.67741935483871		0.000164	0.0001639	0.0001617	0.0001596	0.0001542	0.0001432
0.709677419354839		0.0001634	0.0001618	0.0001583	0.0001516	0.0001505	0.0001419
0.741935483870968		0.0001545	0.000154	0.0001523	0.0001493	0.0001495	0.0001411
0.774193548387097		0.0001497	0.0001489	0.0001472	0.0001466	0.0001461	0.0001376
0.806451612903226		0.0001463	0.0001461	0.0001454	0.0001444	0.0001439	0.0001326
0.838709677419355		0.0001361	0.000134	0.0001271	0.0001187	0.000115	0.0001032
0.870967741935484		0.0001189	0.0001176	0.0001135	0.0001093	0.0001074	8.979e-005
0.903225806451613		0.0001006	9.782e-005	8.929e-005	8.008e-005	7.56e-005	5.615e-005
0.935483870967742		5.778e-005	5.603e-005	5.087e-005	4.652e-005	4.565e-005	3.085e-005
0.967741935483871		2.973e-005	2.885e-005	2.599e-005	2.286e-005	2.148e-005	1.058e-005
0.1	0.00020894	0.0002059	0.00019723	0.00018984	0.00018588	0.0001739	
					Average of yearly averages:		0.000142529

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	389	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	0.95	mg/L	

US EPA ARCHIVE DOCUMENT

Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	2E-5	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as FLTURF136.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0003907	0.0003474	0.0002445	0.0001807	0.0001641	7.592e-005
1962	0.0007594	0.0006916	0.0005344	0.0004181	0.0003901	0.0002485
1963	0.001301	0.001173	0.0008859	0.0006958	0.0006385	0.000493
1964	0.001789	0.00167	0.001353	0.001126	0.001078	0.0008294
1965	0.001394	0.001324	0.001162	0.001042	0.001006	0.0009298
1966	0.0025	0.002299	0.001808	0.001584	0.001496	0.001174
1967	0.001649	0.001579	0.001433	0.001312	0.001305	0.001222
1968	0.002261	0.002106	0.001799	0.001663	0.001596	0.001387
1969	0.002119	0.00202	0.001833	0.001689	0.001655	0.001492
1970	0.001598	0.001586	0.001561	0.001551	0.001541	0.001442
1971	0.001854	0.001788	0.001659	0.001555	0.001523	0.00142
1972	0.002165	0.00206	0.001844	0.001686	0.001647	0.001513
1973	0.00161	0.001583	0.001557	0.001548	0.001538	0.001484
1974	0.002041	0.001951	0.001727	0.001595	0.001558	0.001424
1975	0.001511	0.00148	0.001419	0.001408	0.001399	0.00136
1976	0.002408	0.002265	0.001913	0.001677	0.00163	0.001459
1977	0.001717	0.001672	0.001606	0.001539	0.001502	0.00145
1978	0.001748	0.001692	0.001556	0.001492	0.001485	0.001436
1979	0.002054	0.001965	0.001757	0.001659	0.001648	0.001543
1980	0.001565	0.00156	0.001549	0.001544	0.001536	0.001465
1981	0.001833	0.001757	0.001628	0.001488	0.001436	0.001354
1982	0.002054	0.001961	0.001743	0.001623	0.001579	0.001463
1983	0.001881	0.001818	0.001672	0.001566	0.001566	0.001486
1984	0.002147	0.002058	0.00184	0.00169	0.001664	0.001593
1985	0.001751	0.001706	0.001605	0.001545	0.001514	0.001492
1986	0.002009	0.001924	0.001782	0.001631	0.001583	0.001481
1987	0.001517	0.001499	0.001457	0.001431	0.001423	0.001354
1988	0.001691	0.001614	0.001427	0.001286	0.001275	0.001233
1989	0.002642	0.002471	0.002009	0.001646	0.001543	0.001356
1990	0.001546	0.001518	0.001452	0.001395	0.001386	0.001314

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.002642	0.002471	0.002009	0.00169	0.001664	0.001593
0.064516129032258		0.0025	0.002299	0.001913	0.001689	0.001655	0.001543
0.0967741935483871		0.002408	0.002265	0.001844	0.001686	0.001648	0.001513
0.129032258064516		0.002261	0.002106	0.00184	0.001677	0.001647	0.001492
0.161290322580645		0.002165	0.00206	0.001833	0.001663	0.00163	0.001492
0.193548387096774		0.002147	0.002058	0.001808	0.001659	0.001596	0.001486
0.225806451612903		0.002119	0.00202	0.001799	0.001646	0.001583	0.001484
0.258064516129032		0.002054	0.001965	0.001782	0.001631	0.001579	0.001481
0.290322580645161		0.002054	0.001961	0.001757	0.001623	0.001566	0.001465
0.32258064516129		0.002041	0.001951	0.001743	0.001595	0.001558	0.001463
0.354838709677419		0.002009	0.001924	0.001727	0.001584	0.001543	0.001459
0.387096774193548		0.001881	0.001818	0.001672	0.001566	0.001541	0.00145
0.419354838709677		0.001854	0.001788	0.001659	0.001555	0.001538	0.001442
0.451612903225806		0.001833	0.001757	0.001628	0.001551	0.001536	0.001436
0.483870967741936		0.001789	0.001706	0.001606	0.001548	0.001523	0.001424
0.516129032258065		0.001751	0.001692	0.001605	0.001545	0.001514	0.00142
0.548387096774194		0.001748	0.001672	0.001561	0.001544	0.001502	0.001387
0.580645161290323		0.001717	0.00167	0.001557	0.001539	0.001496	0.00136
0.612903225806452		0.001691	0.001614	0.001556	0.001492	0.001485	0.001356
0.645161290322581		0.001649	0.001586	0.001549	0.001488	0.001436	0.001354
0.67741935483871		0.00161	0.001583	0.001457	0.001431	0.001423	0.001354
0.709677419354839		0.001598	0.001579	0.001452	0.001408	0.001399	0.001314
0.741935483870968		0.001565	0.00156	0.001433	0.001395	0.001386	0.001233
0.774193548387097		0.001546	0.001518	0.001427	0.001312	0.001305	0.001222
0.806451612903226		0.001517	0.001499	0.001419	0.001286	0.001275	0.001174
0.838709677419355		0.001511	0.00148	0.001353	0.001126	0.001078	0.0009298
0.870967741935484		0.001394	0.001324	0.001162	0.001042	0.001006	0.0008294
0.903225806451613		0.001301	0.001173	0.0008859	0.0006958	0.0006385	0.000493
0.935483870967742		0.0007594	0.0006916	0.0005344	0.0004181	0.0003901	0.0002485
0.967741935483871		0.0003907	0.0003474	0.0002445	0.0001807	0.0001641	7.592e-005

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0.1	0.0023933	0.0022491	0.0018436	0.0016851	0.0016479	0.0015109

Average of yearly averages: 0.00126578733333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife	
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	5E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Fire Ants (HG61743AE Sod Farm)

Fipronil

stored as FLTURFFIP.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001719	0.001537	0.001079	0.0005949	0.0004698	0.0001408
1962	0.002582	0.002299	0.00152	0.001227	0.0009141	0.000252
1963	0.007132	0.006453	0.004526	0.002223	0.001497	0.0006866
1964	0.006197	0.005552	0.0042	0.002119	0.001757	0.0007616
1965	0.003789	0.003383	0.002327	0.001288	0.0009109	0.000346
1966	0.004004	0.003588	0.002378	0.001861	0.001833	0.0007099
1967	0.001818	0.001625	0.001139	0.0008242	0.0007075	0.0002498
1968	0.007852	0.007038	0.004721	0.002693	0.001929	0.0009542
1969	0.003948	0.003598	0.00251	0.001873	0.001587	0.0006484
1970	0.001205	0.001082	0.0007242	0.0004199	0.0003359	0.0002075
1971	0.008131	0.007271	0.005421	0.00307	0.002207	0.001016
1972	0.009884	0.008948	0.006373	0.00358	0.002466	0.000903
1973	0.002008	0.00179	0.001166	0.0005883	0.0004328	0.0002997
1974	0.00123	0.0011	0.0008595	0.0006056	0.0004905	0.000159
1975	0.001521	0.00136	0.0009184	0.0004665	0.0004365	0.0001788
1976	0.01026	0.00916	0.005991	0.003567	0.002793	0.0008293
1977	0.002465	0.002259	0.001624	0.0009804	0.0007207	0.0003941
1978	0.006677	0.005974	0.004515	0.002486	0.00178	0.0008466
1979	0.01025	0.009231	0.00625	0.003621	0.002952	0.001163
1980	0.000831	0.000775	0.000606	0.0004693	0.0003718	0.0002106
1981	0.00135	0.001239	0.0009491	0.0005352	0.0004454	0.0002444
1982	0.008962	0.008096	0.005471	0.002866	0.002292	0.0008005
1983	0.01156	0.01033	0.007063	0.003829	0.003067	0.001057
1984	0.006205	0.005597	0.003735	0.002416	0.002037	0.0008073
1985	0.001244	0.001101	0.0007014	0.000373	0.0004262	0.0002043
1986	0.004551	0.00423	0.002932	0.001569	0.001122	0.0005817
1987	0.001831	0.001694	0.001215	0.0009694	0.0007195	0.0002617
1988	0.0074	0.006632	0.004438	0.002118	0.001468	0.0004774
1989	0.02766	0.02524	0.01741	0.008922	0.0063	0.001992
1990	0.001624	0.00144	0.0009981	0.0005694	0.0004825	0.0002526

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.02766	0.02524	0.01741	0.008922	0.0063	0.001992
0.0645161290322581		0.01156	0.01033	0.007063	0.003829	0.003067	0.001163
0.0967741935483871		0.01026	0.009231	0.006373	0.003621	0.002952	0.001057
0.129032258064516		0.01025	0.00916	0.00625	0.00358	0.002793	0.001016
0.161290322580645		0.009884	0.008948	0.005991	0.003567	0.002466	0.0009542
0.193548387096774		0.008962	0.008096	0.005471	0.00307	0.002292	0.000903
0.225806451612903		0.008131	0.007271	0.005421	0.002866	0.002207	0.0008466
0.258064516129032		0.007852	0.007038	0.004721	0.002693	0.002037	0.0008293
0.290322580645161		0.0074	0.006632	0.004526	0.002486	0.001929	0.0008073
0.32258064516129		0.007132	0.006453	0.004515	0.002416	0.001833	0.0008005

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0.354838709677419	0.006677	0.005974	0.004438	0.002223	0.00178	0.0007616
0.387096774193548	0.006205	0.005597	0.0042	0.002119	0.001757	0.0007099
0.419354838709677	0.006197	0.005552	0.003735	0.002118	0.001587	0.0006866
0.451612903225806	0.004551	0.00423	0.002932	0.001873	0.001497	0.0006484
0.483870967741936	0.004004	0.003598	0.00251	0.001861	0.001468	0.0005817
0.516129032258065	0.003948	0.003588	0.002378	0.001569	0.001122	0.0004774
0.548387096774194	0.003789	0.003383	0.002327	0.001288	0.0009141	0.0003941
0.580645161290323	0.002582	0.002299	0.001624	0.001227	0.0009109	0.000346
0.612903225806452	0.002465	0.002259	0.00152	0.0009804	0.0007207	0.0002997
0.645161290322581	0.002008	0.00179	0.001215	0.0009694	0.0007195	0.0002617
0.67741935483871	0.001831	0.001694	0.001166	0.0008242	0.0007075	0.0002526
0.709677419354839	0.001818	0.001625	0.001139	0.0006056	0.0004905	0.000252
0.741935483870968	0.001719	0.001537	0.001079	0.0005949	0.0004825	0.0002498
0.774193548387097	0.001624	0.00144	0.0009981	0.0005883	0.0004698	0.0002444
0.806451612903226	0.001521	0.00136	0.0009491	0.0005694	0.0004454	0.0002106
0.838709677419355	0.00135	0.001239	0.0009184	0.0005352	0.0004365	0.0002075
0.870967741935484	0.001244	0.001101	0.0008595	0.0004693	0.0004328	0.0002043
0.903225806451613	0.00123	0.0011	0.0007242	0.0004665	0.0004262	0.0001788
0.935483870967742	0.001205	0.001082	0.0007014	0.0004199	0.0003718	0.000159
0.967741935483871	0.000831	0.000775	0.000606	0.000373	0.0003359	0.0001408

0.1	0.010259	0.0092239	0.0063607	0.0036169	0.0029361	0.0010529
					Average of yearly averages:	0.00058786

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURFFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.002	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as FLTURF950.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	8.296e-005	7.449e-005	5.36e-005	4.028e-005	3.648e-005	1.709e-005
1962	0.0002314	0.0002118	0.0001649	0.0001292	0.0001205	7.176e-005
1963	0.0005289	0.000484	0.0003713	0.0002689	0.0002404	0.0001714
1964	0.000597	0.0005636	0.0004741	0.0004094	0.0003945	0.0003167
1965	0.0004993	0.0004786	0.0004294	0.000391	0.0003792	0.0003556
1966	0.0008628	0.0008032	0.000653	0.0005804	0.0005519	0.0004467
1967	0.0006086	0.0005873	0.0005424	0.0005026	0.0005005	0.0004723
1968	0.0008381	0.0007884	0.0006986	0.0006415	0.0006328	0.0005512
1969	0.0008074	0.0007779	0.0007408	0.0006972	0.0006888	0.0006184
1970	0.0007012	0.0006946	0.0006777	0.0006714	0.0006673	0.0006293
1971	0.0009092	0.0008722	0.0007962	0.0007235	0.0007003	0.0006438
1972	0.001087	0.001034	0.0009129	0.0008184	0.0007732	0.0007054
1973	0.0007481	0.0007468	0.0007431	0.00074	0.0007365	0.000712
1974	0.0008689	0.0008423	0.0007742	0.000733	0.0007209	0.0006808
1975	0.0006939	0.0006843	0.0006732	0.0006693	0.0006662	0.000649
1976	0.0009928	0.0009481	0.000835	0.0007549	0.0007391	0.0006802
1977	0.0008524	0.0008302	0.0007741	0.0007367	0.0007246	0.0006978
1978	0.0008248	0.0008033	0.0007657	0.0007226	0.00071	0.0006918
1979	0.001066	0.001023	0.0009142	0.0008347	0.0008127	0.0007536
1980	0.0007879	0.0007851	0.0007776	0.0007731	0.0007697	0.0007374
1981	0.0008442	0.0008209	0.0007791	0.0007332	0.0007155	0.0006954
1982	0.0009215	0.000892	0.0008201	0.0007803	0.0007671	0.0007303
1983	0.001038	0.0009959	0.0008941	0.0008211	0.0008188	0.0007487
1984	0.0009727	0.0009484	0.000886	0.0008393	0.0008347	0.0008098

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1985	0.0008367	0.0008225	0.0007897	0.0007761	0.000773	0.000759
1986	0.001037	0.001005	0.000902	0.0008246	0.0008041	0.0007755
1987	0.0008137	0.000803	0.0007774	0.0007621	0.0007586	0.0007253
1988	0.0009626	0.0009202	0.0008134	0.0007198	0.0007019	0.0006829
1989	0.001552	0.00146	0.001201	0.0009865	0.0009236	0.0007911
1990	0.0009241	0.0009094	0.0008742	0.0008426	0.0008348	0.0007961

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001552	0.00146	0.001201	0.0009865	0.0009236	0.0008098
0.064516129032258 1		0.001087	0.001034	0.0009142	0.0008426	0.0008348	0.0007961
0.096774193548387 1		0.001066	0.001023	0.0009129	0.0008393	0.0008347	0.0007911
0.129032258064516		0.001038	0.001005	0.000902	0.0008347	0.0008188	0.0007755
0.161290322580645		0.001037	0.0009959	0.0008941	0.0008246	0.0008127	0.000759
0.193548387096774		0.0009928	0.0009484	0.000886	0.0008211	0.0008041	0.0007536
0.225806451612903		0.0009727	0.0009481	0.0008742	0.0008184	0.0007732	0.0007487
0.258064516129032		0.0009626	0.0009202	0.000835	0.0007803	0.000773	0.0007374
0.290322580645161		0.0009241	0.0009094	0.0008201	0.0007761	0.0007697	0.0007303
0.32258064516129		0.0009215	0.000892	0.0008134	0.0007731	0.0007671	0.0007253
0.354838709677419		0.0009092	0.0008722	0.0007962	0.0007621	0.0007586	0.000712
0.387096774193548		0.0008689	0.0008423	0.0007897	0.0007549	0.0007391	0.0007054
0.419354838709677		0.0008628	0.0008302	0.0007791	0.00074	0.0007365	0.0006978
0.451612903225806		0.0008524	0.0008225	0.0007776	0.0007367	0.0007246	0.0006954
0.483870967741936		0.0008442	0.0008209	0.0007774	0.0007332	0.0007209	0.0006918
0.516129032258065		0.0008381	0.0008033	0.0007742	0.000733	0.0007155	0.0006829
0.548387096774194		0.0008367	0.0008032	0.0007741	0.0007235	0.00071	0.0006808
0.580645161290323		0.0008248	0.000803	0.0007657	0.0007226	0.0007019	0.0006802
0.612903225806452		0.0008137	0.0007884	0.0007431	0.0007198	0.0007003	0.000649
0.645161290322581		0.0008074	0.0007851	0.0007408	0.0006972	0.0006888	0.0006438
0.67741935483871		0.0007879	0.0007779	0.0006986	0.0006714	0.0006673	0.0006293
0.709677419354839		0.0007481	0.0007468	0.0006777	0.0006693	0.0006662	0.0006184
0.741935483870968		0.0007012	0.0006946	0.0006732	0.0006415	0.0006328	0.0005512
0.774193548387097		0.0006939	0.0006843	0.000653	0.0005804	0.0005519	0.0004723
0.806451612903226		0.0006086	0.0005873	0.0005424	0.0005026	0.0005005	0.0004467
0.838709677419355		0.000597	0.0005636	0.0004741	0.0004094	0.0003945	0.0003556
0.870967741935484		0.0005289	0.000484	0.0004294	0.000391	0.0003792	0.0003167
0.903225806451613		0.0004993	0.0004786	0.0003713	0.0002689	0.0002404	0.0001714
0.935483870967742		0.0002314	0.0002118	0.0001649	0.0001292	0.0001205	7.176e-005
0.967741935483871		8.296e-005	7.449e-005	5.36e-005	4.028e-005	3.648e-005	1.709e-005
0.1	0.0010632	0.0010212	0.00091181	0.00083884	0.00083311	0.00078954	
					Average of yearly averages:		0.000603878333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF950
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	1E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as FLTURF513.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	2.973e-005	2.885e-005	2.599e-005	2.286e-005	2.161e-005	1.065e-005
1962	7.655e-005	7.402e-005	6.657e-005	6.022e-005	5.873e-005	3.741e-005
1963	0.0001689	0.0001648	0.0001513	0.0001201	0.0001083	7.922e-005
1964	0.000172	0.0001693	0.0001646	0.0001615	0.0001606	0.000144

US EPA ARCHIVE DOCUMENT

1965	0.0001976	0.000195	0.0001864	0.0001758	0.000171	0.0001582
1966	0.0002644	0.0002601	0.0002458	0.0002326	0.000226	0.0001941
1967	0.0002329	0.0002308	0.000226	0.000217	0.0002153	0.000204
1968	0.0003106	0.0003071	0.0002954	0.0002812	0.0002723	0.0002399
1969	0.0003096	0.0003072	0.0003003	0.0002957	0.0002954	0.0002697
1970	0.000298	0.0002971	0.0002942	0.0002915	0.0002895	0.0002735
1971	0.0003612	0.0003568	0.0003421	0.0003261	0.0003164	0.0002863
1972	0.0004067	0.0004013	0.0003848	0.0003632	0.0003426	0.0003121
1973	0.000345	0.0003441	0.0003409	0.0003366	0.0003341	0.0003199
1974	0.0003091	0.0003078	0.0003042	0.0003025	0.0003015	0.0002954
1975	0.000288	0.0002871	0.0002845	0.000282	0.0002806	0.0002736
1976	0.0003449	0.0003415	0.0003303	0.000318	0.0003162	0.0002884
1977	0.000328	0.0003259	0.0003189	0.0003109	0.0003069	0.0002963
1978	0.0003367	0.0003342	0.0003303	0.00032	0.0003134	0.0002992
1979	0.0004149	0.0004099	0.0003932	0.0003719	0.0003577	0.0003273
1980	0.00035	0.0003494	0.0003471	0.0003453	0.0003434	0.0003283
1981	0.0003349	0.0003327	0.0003257	0.0003178	0.0003134	0.0003071
1982	0.0003766	0.0003733	0.0003614	0.0003455	0.0003454	0.0003264
1983	0.0004122	0.0004072	0.0003905	0.0003717	0.0003655	0.000332
1984	0.0004108	0.000408	0.0003983	0.0003854	0.0003826	0.0003672
1985	0.0003601	0.0003586	0.0003543	0.0003518	0.00035	0.0003404
1986	0.0003909	0.0003885	0.0003773	0.000362	0.0003554	0.0003447
1987	0.0003411	0.0003403	0.0003378	0.0003343	0.0003329	0.0003203
1988	0.0003683	0.0003639	0.0003494	0.000319	0.0003101	0.0003021
1989	0.0005633	0.0005541	0.0005232	0.0004708	0.0004433	0.0003629
1990	0.0004094	0.0004083	0.0004047	0.0004004	0.0004004	0.0003798

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0005633	0.0005541	0.0005232	0.0004708	0.0004433	0.0003798
0.064516129032258 1		0.0004149	0.0004099	0.0004047	0.0004004	0.0004004	0.0003672
0.0967741935483871		0.0004122	0.0004083	0.0003983	0.0003854	0.0003826	0.0003629
0.129032258064516		0.0004108	0.000408	0.0003932	0.0003719	0.0003655	0.0003447
0.161290322580645		0.0004094	0.0004072	0.0003905	0.0003717	0.0003577	0.0003404
0.193548387096774		0.0004067	0.0004013	0.0003848	0.0003632	0.0003554	0.000332
0.225806451612903		0.0003909	0.0003885	0.0003773	0.000362	0.00035	0.0003283
0.258064516129032		0.0003766	0.0003733	0.0003614	0.0003518	0.0003454	0.0003273
0.290322580645161		0.0003683	0.0003639	0.0003543	0.0003455	0.0003434	0.0003264
0.32258064516129		0.0003612	0.0003586	0.0003494	0.0003453	0.0003426	0.0003203
0.354838709677419		0.0003601	0.0003568	0.0003471	0.0003366	0.0003341	0.0003199
0.387096774193548		0.00035	0.0003494	0.0003421	0.0003343	0.0003329	0.0003121
0.419354838709677		0.000345	0.0003441	0.0003409	0.0003261	0.0003164	0.0003071
0.451612903225806		0.0003449	0.0003415	0.0003378	0.00032	0.0003162	0.0003021
0.483870967741936		0.0003411	0.0003403	0.0003303	0.000319	0.0003134	0.0002992
0.516129032258065		0.0003367	0.0003342	0.0003303	0.000318	0.0003134	0.0002963
0.548387096774194		0.0003349	0.0003327	0.0003257	0.0003178	0.0003101	0.0002954
0.580645161290323		0.000328	0.0003259	0.0003189	0.0003109	0.0003069	0.0002884
0.612903225806452		0.0003106	0.0003078	0.0003042	0.0003025	0.0003015	0.0002863
0.645161290322581		0.0003096	0.0003072	0.0003003	0.0002957	0.0002954	0.0002736
0.67741935483871		0.0003091	0.0003071	0.0002954	0.0002915	0.0002895	0.0002735
0.709677419354839		0.000298	0.0002971	0.0002942	0.000282	0.0002806	0.0002697
0.741935483870968		0.000288	0.0002871	0.0002845	0.0002812	0.0002723	0.0002399
0.774193548387097		0.0002644	0.0002601	0.0002458	0.0002326	0.000226	0.000204
0.806451612903226		0.0002329	0.0002308	0.000226	0.000217	0.0002153	0.0001941
0.838709677419355		0.0001976	0.000195	0.0001864	0.0001758	0.000171	0.0001582
0.870967741935484		0.000172	0.0001693	0.0001646	0.0001615	0.0001606	0.000144
0.903225806451613		0.0001689	0.0001648	0.0001513	0.0001201	0.0001083	7.922e-005
0.935483870967742		7.655e-005	7.402e-005	6.657e-005	6.022e-005	5.873e-005	3.741e-005
0.967741935483871		2.973e-005	2.885e-005	2.599e-005	2.286e-005	2.161e-005	1.065e-005
0.1	0.00041206	0.00040827	0.00039779	0.00038405	0.00038089	0.00036108	
					Average of yearly averages:		0.000267346

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1320	days	Halfife	
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	2E-5	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			

US EPA ARCHIVE DOCUMENT

Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)

MB46136

stored as FLTURF136.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0003907	0.0003474	0.0002445	0.0001807	0.0001641	7.627e-005
1962	0.001099	0.0009959	0.0007567	0.0005821	0.0005406	0.00032
1963	0.002507	0.002271	0.001696	0.001209	0.001077	0.0007651
1964	0.002823	0.002647	0.002173	0.001845	0.001776	0.001412
1965	0.002253	0.002146	0.0019	0.001716	0.00166	0.001553
1966	0.003988	0.003676	0.002912	0.002563	0.002426	0.001938
1967	0.002685	0.002574	0.002342	0.002148	0.002137	0.00201
1968	0.003743	0.003486	0.003014	0.00275	0.002704	0.002333
1969	0.003545	0.003388	0.003181	0.00296	0.002918	0.002597
1970	0.002969	0.002934	0.002846	0.002816	0.002794	0.002603
1971	0.003898	0.003708	0.003333	0.002983	0.002878	0.002627
1972	0.00474	0.004464	0.00385	0.003391	0.003182	0.002878
1973	0.003053	0.003047	0.00303	0.003013	0.002995	0.002871
1974	0.003658	0.003515	0.003158	0.002954	0.002893	0.002702
1975	0.00277	0.002719	0.002656	0.002636	0.00262	0.002536
1976	0.004211	0.003975	0.003396	0.003009	0.002934	0.002661
1977	0.003495	0.003379	0.003092	0.002909	0.00285	0.002719
1978	0.003331	0.003219	0.003025	0.002816	0.002761	0.002674
1979	0.004486	0.004259	0.003707	0.003321	0.003222	0.00295
1980	0.003101	0.003086	0.003047	0.003026	0.003008	0.002851
1981	0.003367	0.003247	0.003044	0.002819	0.002735	0.00264
1982	0.003723	0.00357	0.003212	0.003019	0.002956	0.002787
1983	0.004286	0.004065	0.003552	0.003199	0.003191	0.002864
1984	0.003926	0.003798	0.003481	0.003257	0.003237	0.003125
1985	0.003273	0.003198	0.003032	0.002955	0.002939	0.002875
1986	0.004254	0.004082	0.003552	0.003176	0.003078	0.002942
1987	0.003145	0.003088	0.002955	0.002881	0.002861	0.002709
1988	0.003894	0.003673	0.003134	0.00269	0.002598	0.002513
1989	0.006733	0.006246	0.004932	0.003902	0.00361	0.003004
1990	0.003637	0.003559	0.003378	0.003221	0.003189	0.003009

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.006733	0.006246	0.004932	0.003902	0.00361	0.003125
0.064516129032258 1		0.00474	0.004464	0.00385	0.003391	0.003237	0.003009
0.0967741935483871		0.004486	0.004259	0.003707	0.003321	0.003222	0.003004
0.129032258064516		0.004286	0.004082	0.003552	0.003257	0.003191	0.00295
0.161290322580645		0.004254	0.004065	0.003552	0.003221	0.003189	0.002942
0.193548387096774		0.004211	0.003975	0.003481	0.003199	0.003182	0.002878
0.225806451612903		0.003988	0.003798	0.003396	0.003176	0.003078	0.002875
0.258064516129032		0.003926	0.003708	0.003378	0.003026	0.003008	0.002871
0.290322580645161		0.003898	0.003676	0.003333	0.003019	0.002995	0.002864
0.32258064516129		0.003894	0.003673	0.003212	0.003013	0.002956	0.002851
0.354838709677419		0.003743	0.00357	0.003181	0.003009	0.002939	0.002787
0.387096774193548		0.003723	0.003559	0.003158	0.002983	0.002934	0.002719
0.419354838709677		0.003658	0.003515	0.003134	0.00296	0.002918	0.002709
0.451612903225806		0.003637	0.003486	0.003092	0.002955	0.002893	0.002702
0.483870967741936		0.003545	0.003388	0.003047	0.002954	0.002878	0.002674
0.516129032258065		0.003495	0.003379	0.003044	0.002909	0.002861	0.002661
0.548387096774194		0.003367	0.003247	0.003032	0.002881	0.00285	0.00264
0.580645161290323		0.003331	0.003219	0.00303	0.002819	0.002794	0.002627
0.612903225806452		0.003273	0.003198	0.003025	0.002816	0.002761	0.002603
0.645161290322581		0.003145	0.003088	0.003014	0.002816	0.002735	0.002597
0.67741935483871		0.003101	0.003086	0.002955	0.00275	0.002704	0.002536
0.709677419354839		0.003053	0.003047	0.002912	0.00269	0.00262	0.002513
0.741935483870968		0.002969	0.002934	0.002846	0.002636	0.002598	0.002333
0.774193548387097		0.002823	0.002719	0.002656	0.002563	0.002426	0.00201
0.806451612903226		0.00277	0.002647	0.002342	0.002148	0.002137	0.001938
0.838709677419355		0.002685	0.002574	0.002173	0.001845	0.001776	0.001553
0.870967741935484		0.002507	0.002271	0.0019	0.001716	0.00166	0.001412
0.903225806451613		0.002253	0.002146	0.001696	0.001209	0.001077	0.0007651
0.935483870967742		0.001099	0.0009959	0.0007567	0.0005821	0.0005406	0.00032
0.967741935483871		0.0003907	0.0003474	0.0002445	0.0001807	0.0001641	7.627e-005
0.1	0.004466	0.0042413	0.0036915	0.0033146	0.0032189	0.0029986	
					Average of yearly averages:		0.00238481233333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	453	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility sol	0.16	mg/L		
Kd Kd		mg/L		
Koc Koc	4208	mg/L		

US EPA ARCHIVE DOCUMENT

Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	5E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Fire Ants (Chipco Residential)

Fipronil

stored as FLTURFFIP.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.01204	0.01076	0.007556	0.004165	0.003289	0.0009528
1962	0.01633	0.01453	0.009613	0.00769	0.00574	0.001512
1963	0.02519	0.02236	0.01518	0.009071	0.007297	0.002008
1964	0.04246	0.03801	0.02875	0.01445	0.01201	0.003408
1965	0.02585	0.02308	0.01587	0.00878	0.006208	0.001612
1966	0.02693	0.02412	0.01597	0.01275	0.01245	0.004095
1967	0.01226	0.01096	0.007682	0.005446	0.004696	0.001356
1968	0.04454	0.03983	0.02833	0.01643	0.01178	0.003033
1969	0.01173	0.01048	0.008774	0.005895	0.004219	0.001575
1970	0.007837	0.007014	0.004627	0.002456	0.001833	0.0005202
1971	0.02158	0.01933	0.01281	0.007884	0.006568	0.002332
1972	0.02116	0.01908	0.01269	0.007053	0.005538	0.001783
1973	0.005649	0.005059	0.003754	0.001931	0.001362	0.0006069
1974	0.008004	0.007153	0.005596	0.003916	0.00319	0.00087
1975	0.009438	0.008439	0.005696	0.002891	0.002729	0.0008172
1976	0.06592	0.05885	0.03849	0.02299	0.01808	0.00471
1977	0.008766	0.007756	0.005157	0.004121	0.003004	0.001136
1978	0.03371	0.0299	0.01908	0.01138	0.009262	0.002576
1979	0.03363	0.03014	0.01945	0.009698	0.008043	0.002238
1980	0.004832	0.004489	0.00298	0.002419	0.002079	0.0007091
1981	0.009123	0.008086	0.006508	0.003669	0.003032	0.0009815
1982	0.06027	0.05443	0.03674	0.01921	0.01542	0.004257
1983	0.01464	0.01305	0.009806	0.005462	0.005756	0.00171
1984	0.0423	0.0381	0.02529	0.01635	0.01382	0.003785
1985	0.007668	0.006788	0.004318	0.002272	0.002535	0.0007491
1986	0.01487	0.01315	0.009298	0.006796	0.004851	0.001245
1987	0.002542	0.00225	0.001411	0.0007567	0.000732	0.0002891
1988	0.004121	0.003649	0.002323	0.001148	0.0008801	0.0004081
1989	0.007818	0.006983	0.004561	0.002208	0.001531	0.0007666
1990	0.002319	0.002048	0.001305	0.0009031	0.0007324	0.0002393

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.06592	0.05885	0.03849	0.02299	0.01808	0.00471
0.0645161290322581		0.06027	0.05443	0.03674	0.01921	0.01542	0.004257
0.0967741935483871		0.04454	0.03983	0.02875	0.01643	0.01382	0.004095
0.129032258064516		0.04246	0.0381	0.02833	0.01635	0.01245	0.003785
0.161290322580645		0.0423	0.03801	0.02529	0.01445	0.01201	0.003408
0.193548387096774		0.03371	0.03014	0.01945	0.01275	0.01178	0.003033
0.225806451612903		0.03363	0.0299	0.01908	0.01138	0.009262	0.002576
0.258064516129032		0.02693	0.02412	0.01597	0.009698	0.008043	0.002332
0.290322580645161		0.02585	0.02308	0.01587	0.009071	0.007297	0.002238
0.32258064516129		0.02519	0.02236	0.01518	0.00878	0.006568	0.002008
0.354838709677419		0.02158	0.01933	0.01281	0.007884	0.006208	0.001783
0.387096774193548		0.02116	0.01908	0.01269	0.00769	0.005756	0.00171
0.419354838709677		0.01633	0.01453	0.009806	0.007053	0.00574	0.001612
0.451612903225806		0.01487	0.01315	0.009613	0.006796	0.005538	0.001575
0.483870967741936		0.01464	0.01305	0.009298	0.005895	0.004851	0.001512
0.516129032258065		0.01226	0.01096	0.008774	0.005462	0.004696	0.001356
0.548387096774194		0.01204	0.01076	0.007682	0.005446	0.004219	0.001245
0.580645161290323		0.01173	0.01048	0.007556	0.004165	0.003289	0.001136
0.612903225806452		0.009438	0.008439	0.006508	0.004121	0.00319	0.0009815
0.645161290322581		0.009123	0.008086	0.005696	0.003916	0.003032	0.0009528
0.67741935483871		0.008766	0.007756	0.005596	0.003669	0.003004	0.00087
0.709677419354839		0.008004	0.007153	0.005157	0.002891	0.002729	0.0008172
0.741935483870968		0.007837	0.007014	0.004627	0.002456	0.002535	0.0007666
0.774193548387097		0.007818	0.006983	0.004561	0.002419	0.002079	0.0007491
0.806451612903226		0.007668	0.006788	0.004318	0.002272	0.001833	0.0007091
0.838709677419355		0.005649	0.005059	0.003754	0.002208	0.001531	0.0006069

0.870967741935484	0.004832	0.004489	0.00298	0.001931	0.001362	0.0005202
0.903225806451613	0.004121	0.003649	0.002323	0.001148	0.0008801	0.0004081
0.935483870967742	0.002542	0.00225	0.001411	0.0009031	0.0007324	0.0002891
0.967741935483871	0.002319	0.002048	0.001305	0.0007567	0.000732	0.0002393

0.1	0.044332	0.039657	0.028708	0.016422	0.013683	0.004064

Average of yearly averages: 0.00174269666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURFFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	i	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.014	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as FLTURF950.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0005807	0.0005214	0.0003752	0.0002819	0.000255	0.0001191
1962	0.001124	0.001034	0.0008183	0.0006518	0.0006109	0.0003916
1963	0.001934	0.001761	0.001361	0.001087	0.001002	0.0007779
1964	0.002668	0.002509	0.002082	0.001755	0.001687	0.00131
1965	0.002173	0.002077	0.001849	0.001671	0.001618	0.001499
1966	0.003809	0.003538	0.002855	0.002525	0.002396	0.001906
1967	0.002629	0.002535	0.002336	0.00216	0.002151	0.002021
1968	0.003561	0.003351	0.002924	0.00273	0.002629	0.002309
1969	0.003395	0.003264	0.00301	0.002801	0.002753	0.002506
1970	0.002675	0.002661	0.002626	0.002613	0.0026	0.002463
1971	0.003085	0.002997	0.002818	0.002665	0.002622	0.002462
1972	0.00354	0.003401	0.003109	0.002888	0.002826	0.002625
1973	0.002782	0.002745	0.002702	0.002691	0.002679	0.002604
1974	0.003388	0.00327	0.002968	0.00278	0.002729	0.002529
1975	0.002653	0.002613	0.002535	0.002515	0.002503	0.002447
1976	0.003965	0.003774	0.003289	0.002945	0.002875	0.002615
1977	0.003005	0.002943	0.002848	0.00275	0.002696	0.002616
1978	0.003064	0.002987	0.002794	0.002701	0.002686	0.00261
1979	0.003507	0.003387	0.003096	0.002944	0.002929	0.002777
1980	0.002813	0.002806	0.002791	0.002785	0.002774	0.002671
1981	0.003208	0.003104	0.002915	0.002715	0.002638	0.002514
1982	0.00354	0.003411	0.00311	0.002934	0.002869	0.002692
1983	0.003271	0.00319	0.002994	0.002847	0.002845	0.002731
1984	0.003703	0.003583	0.003278	0.003057	0.003017	0.002905
1985	0.003123	0.003062	0.002922	0.002837	0.002797	0.002764
1986	0.00351	0.003394	0.0032	0.002977	0.002904	0.002749
1987	0.002786	0.002763	0.002708	0.00267	0.002659	0.002554
1988	0.002998	0.002897	0.002642	0.00245	0.002434	0.002367
1989	0.004345	0.004122	0.003496	0.002974	0.002823	0.002546
1990	0.002812	0.002775	0.002687	0.002606	0.002593	0.002483

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.004345	0.004122	0.003496	0.003057	0.003017	0.002905
0.0645161290322581		0.003965	0.003774	0.003289	0.002977	0.002929	0.002777
0.0967741935483871		0.003809	0.003583	0.003278	0.002974	0.002904	0.002764
0.129032258064516		0.003703	0.003538	0.0032	0.002945	0.002875	0.002749
0.161290322580645		0.003561	0.003411	0.00311	0.002944	0.002869	0.002731
0.193548387096774		0.00354	0.003401	0.003109	0.002934	0.002845	0.002692
0.225806451612903		0.00354	0.003394	0.003096	0.002888	0.002826	0.002671

US EPA ARCHIVE DOCUMENT

0.258064516129032	0.00351	0.003387	0.00301	0.002847	0.002823	0.002625
0.290322580645161	0.003507	0.003351	0.002994	0.002837	0.002797	0.002616
0.32258064516129	0.003395	0.00327	0.002968	0.002801	0.002774	0.002615
0.354838709677419	0.003388	0.003264	0.002924	0.002785	0.002753	0.00261
0.387096774193548	0.003271	0.00319	0.002922	0.00278	0.002729	0.002604
0.419354838709677	0.003208	0.003104	0.002915	0.00275	0.002696	0.002554
0.451612903225806	0.003123	0.003062	0.002855	0.00273	0.002686	0.002546
0.483870967741936	0.003085	0.002997	0.002848	0.002715	0.002679	0.002529
0.516129032258065	0.003064	0.002987	0.002818	0.002701	0.002659	0.002514
0.548387096774194	0.003005	0.002943	0.002794	0.002691	0.002638	0.002506
0.580645161290323	0.002998	0.002897	0.002791	0.00267	0.002629	0.002483
0.612903225806452	0.002813	0.002806	0.002708	0.002665	0.002622	0.002463
0.645161290322581	0.002812	0.002775	0.002702	0.002613	0.0026	0.002462
0.67741935483871	0.002786	0.002763	0.002687	0.002606	0.002593	0.002447
0.709677419354839	0.002782	0.002745	0.002642	0.002525	0.002503	0.002367
0.741935483870968	0.002675	0.002661	0.002626	0.002515	0.002434	0.002309
0.774193548387097	0.002668	0.002613	0.002535	0.00245	0.002396	0.002021
0.806451612903226	0.002653	0.002535	0.002336	0.00216	0.002151	0.001906
0.838709677419355	0.002629	0.002509	0.002082	0.001755	0.001687	0.001499
0.870967741935484	0.002173	0.002077	0.001849	0.001671	0.001618	0.00131
0.903225806451613	0.001934	0.001761	0.001361	0.001087	0.001002	0.0007779
0.935483870967742	0.001124	0.001034	0.0008183	0.0006518	0.0006109	0.0003916
0.967741935483871	0.0005807	0.0005214	0.0003752	0.0002819	0.000255	0.0001191
0.1	0.0037984	0.0035785	0.0032702	0.0029711	0.0029011	0.0027625
					Average of yearly averages:	0.00225212

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF950
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	I	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0007	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as FLTURF513.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001487	0.0001443	0.00013	0.0001143	0.0001074	5.291e-005
1962	0.0002889	0.0002802	0.0002543	0.0002326	0.0002283	0.0001542
1963	0.0005032	0.0004891	0.0004465	0.0004004	0.000378	0.0002808
1964	0.0005945	0.0005879	0.0005675	0.0005465	0.0005371	0.000449
1965	0.0006803	0.0006701	0.0006357	0.0005936	0.0005753	0.0005162
1966	0.0009701	0.0009519	0.0008912	0.0008347	0.0008083	0.0006629
1967	0.000817	0.0008091	0.0007915	0.000758	0.0007525	0.0007054
1968	0.001049	0.001031	0.000987	0.0009587	0.0009287	0.0007944
1969	0.0009638	0.0009554	0.0009368	0.0009043	0.0008964	0.0008365
1970	0.000864	0.0008616	0.0008528	0.0008458	0.0008418	0.0008032
1971	0.0009034	0.0008961	0.0008713	0.0008393	0.0008336	0.0008044
1972	0.0009605	0.000952	0.0009234	0.0008851	0.0008814	0.0008322
1973	0.0008544	0.0008533	0.0008495	0.0008433	0.0008388	0.000815
1974	0.0008289	0.0008241	0.0008086	0.0008024	0.0007981	0.0007686
1975	0.0007725	0.0007698	0.0007614	0.0007464	0.0007475	0.0007298
1976	0.001033	0.00102	0.0009784	0.0009293	0.0009173	0.0008161
1977	0.0008992	0.0008926	0.0008759	0.0008538	0.0008434	0.000805
1978	0.0009383	0.0009297	0.000914	0.0008827	0.0008821	0.0008343
1979	0.001021	0.001011	0.0009712	0.0009332	0.0009296	0.0008648
1980	0.0008532	0.0008505	0.000848	0.000844	0.0008405	0.0008175
1981	0.0008987	0.0008899	0.0008635	0.0008332	0.0008154	0.0007676
1982	0.001046	0.001033	0.0009881	0.0009509	0.0009349	0.0008649

1983	0.0009869	0.0009789	0.0009523	0.0009198	0.0009106	0.0008701
1984	0.001121	0.001109	0.001067	0.001015	0.0009964	0.0009262
1985	0.0009407	0.0009359	0.0009191	0.0008965	0.0008934	0.000876
1986	0.001004	0.0009933	0.0009714	0.0009218	0.0009045	0.0008395
1987	0.0008198	0.0008193	0.0008175	0.0008146	0.0008116	0.0007788
1988	0.0007486	0.0007444	0.0007362	0.0007329	0.0007303	0.0007095
1989	0.0008902	0.0008819	0.0008507	0.000798	0.0007712	0.0007162
1990	0.0007317	0.0007307	0.0007272	0.0007219	0.0007194	0.0006879

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001121	0.001109	0.001067	0.001015	0.0009964	0.0009262
0.064516129032258 1		0.001049	0.001033	0.0009881	0.0009587	0.0009349	0.000876
0.096774193548387 1		0.001046	0.001031	0.000987	0.0009509	0.0009296	0.0008701
0.129032258064516		0.001033	0.00102	0.0009784	0.0009332	0.0009287	0.0008649
0.161290322580645		0.001021	0.001011	0.0009714	0.0009293	0.0009173	0.0008648
0.193548387096774		0.001004	0.0009933	0.0009712	0.0009218	0.0009106	0.0008395
0.225806451612903		0.0009869	0.0009789	0.0009523	0.0009198	0.0009045	0.0008365
0.258064516129032		0.0009701	0.0009554	0.0009368	0.0009043	0.0008964	0.0008343
0.290322580645161		0.0009638	0.000952	0.0009234	0.0008965	0.0008934	0.0008322
0.32258064516129		0.0009605	0.0009519	0.0009191	0.0008851	0.0008821	0.0008175
0.354838709677419		0.0009407	0.0009359	0.000914	0.0008827	0.0008814	0.0008161
0.387096774193548		0.0009383	0.0009297	0.0008912	0.0008538	0.0008434	0.000815
0.419354838709677		0.0009034	0.0008961	0.0008759	0.0008458	0.0008418	0.000805
0.451612903225806		0.0008992	0.0008926	0.0008713	0.000844	0.0008405	0.0008044
0.483870967741936		0.0008987	0.0008899	0.0008635	0.0008433	0.0008388	0.0008032
0.516129032258065		0.0008902	0.0008819	0.0008528	0.0008393	0.0008336	0.0007944
0.548387096774194		0.000864	0.0008616	0.0008507	0.0008347	0.0008154	0.0007788
0.580645161290323		0.0008544	0.0008533	0.0008495	0.0008332	0.0008116	0.0007686
0.612903225806452		0.0008532	0.0008505	0.000848	0.0008146	0.0008083	0.0007676
0.645161290322581		0.0008289	0.0008241	0.0008175	0.0008024	0.0007981	0.0007298
0.6774193548387 1		0.0008198	0.0008193	0.0008086	0.000798	0.0007712	0.0007162
0.709677419354839		0.000817	0.0008091	0.0007915	0.000758	0.0007525	0.0007095
0.741935483870968		0.0007725	0.0007698	0.0007614	0.0007464	0.0007475	0.0007054
0.774193548387097		0.0007486	0.0007444	0.0007362	0.0007329	0.0007303	0.0006879
0.806451612903226		0.0007317	0.0007307	0.0007272	0.0007219	0.0007194	0.0006629
0.838709677419355		0.0006803	0.0006701	0.0006357	0.0005936	0.0005753	0.0005162
0.870967741935484		0.0005945	0.0005879	0.0005675	0.0005465	0.0005371	0.000449
0.903225806451613		0.0005032	0.0004891	0.0004465	0.0004004	0.000378	0.0002808
0.935483870967742		0.0002889	0.0002802	0.0002543	0.0002326	0.0002283	0.0001542
0.967741935483871		0.0001487	0.0001443	0.00013	0.0001143	0.0001074	5.291e-005
0.1	0.0010447	0.0010299	0.00098614	0.00094913	0.00092951	0.00086958	
					Average of yearly averages:		0.000712663666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0001	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as FLTURF136.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.002578	0.002293	0.001614	0.001192	0.001083	0.0005011
1962	0.005012	0.004565	0.003527	0.00276	0.002575	0.00164
1963	0.00859	0.00774	0.005847	0.004593	0.004214	0.003254
1964	0.01181	0.01103	0.008931	0.007433	0.007113	0.005475

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1965	0.009201	0.008736	0.007672	0.006876	0.006638	0.006137
1966	0.0165	0.01517	0.01193	0.01045	0.009875	0.007751
1967	0.01088	0.01042	0.009457	0.008657	0.008614	0.008064
1968	0.01492	0.0139	0.01188	0.01098	0.01054	0.009153
1969	0.01398	0.01333	0.0121	0.01115	0.01092	0.00985
1970	0.01055	0.01047	0.0103	0.01024	0.01017	0.009519
1971	0.01223	0.0118	0.01095	0.01026	0.01005	0.009373
1972	0.01429	0.01359	0.01217	0.01113	0.01087	0.009989
1973	0.01063	0.01045	0.01027	0.01021	0.01015	0.009795
1974	0.01347	0.01287	0.0114	0.01052	0.01028	0.009395
1975	0.009973	0.009771	0.009362	0.009292	0.009236	0.008972
1976	0.0159	0.01495	0.01263	0.01107	0.01076	0.009629
1977	0.01133	0.01103	0.0106	0.01016	0.009915	0.009568
1978	0.01154	0.01117	0.01027	0.00985	0.009798	0.009479
1979	0.01356	0.01297	0.0116	0.01095	0.01087	0.01019
1980	0.01033	0.0103	0.01022	0.01019	0.01014	0.009668
1981	0.0121	0.0116	0.01074	0.009819	0.009481	0.008936
1982	0.01356	0.01294	0.01151	0.01071	0.01042	0.009659
1983	0.01241	0.012	0.01104	0.01034	0.01034	0.009807
1984	0.01417	0.01358	0.01214	0.01115	0.01098	0.01051
1985	0.01156	0.01126	0.01059	0.0102	0.009994	0.009849
1986	0.01326	0.0127	0.01176	0.01077	0.01045	0.009778
1987	0.01001	0.009896	0.009619	0.009443	0.009391	0.008935
1988	0.01116	0.01065	0.009417	0.008491	0.008418	0.00814
1989	0.01744	0.01631	0.01326	0.01086	0.01019	0.00895
1990	0.0102	0.01002	0.009584	0.009206	0.009149	0.008676

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.01744	0.01631	0.01326	0.01115	0.01098	0.01051
0.0645161290322581		0.0165	0.01517	0.01263	0.01115	0.01092	0.01019
0.0967741935483871		0.0159	0.01495	0.01217	0.01113	0.01087	0.009989
0.129032258064516		0.01492	0.0139	0.01214	0.01107	0.01087	0.00985
0.161290322580645		0.01429	0.01359	0.0121	0.01098	0.01076	0.009849
0.193548387096774		0.01417	0.01358	0.01193	0.01095	0.01054	0.009807
0.225806451612903		0.01398	0.01333	0.01188	0.01086	0.01045	0.009795
0.258064516129032		0.01356	0.01297	0.01176	0.01077	0.01042	0.009778
0.290322580645161		0.01356	0.01294	0.0116	0.01071	0.01034	0.009668
0.32258064516129		0.01347	0.01287	0.01151	0.01052	0.01028	0.009659
0.354838709677419		0.01326	0.0127	0.0114	0.01045	0.01019	0.009629
0.387096774193548		0.01241	0.012	0.01104	0.01034	0.01017	0.009568
0.419354838709677		0.01223	0.0118	0.01095	0.01026	0.01015	0.009519
0.451612903225806		0.0121	0.0116	0.01074	0.01024	0.01014	0.009479
0.483870967741936		0.01181	0.01126	0.0106	0.01021	0.01005	0.009395
0.516129032258065		0.01156	0.01117	0.01059	0.0102	0.009994	0.009373
0.548387096774194		0.01154	0.01103	0.0103	0.01019	0.009915	0.009153
0.580645161290323		0.01133	0.01103	0.01027	0.01016	0.009875	0.008972
0.612903225806452		0.01116	0.01065	0.01027	0.00985	0.009798	0.00895
0.645161290322581		0.01088	0.01047	0.01022	0.009819	0.009481	0.008936
0.67741935483871		0.01063	0.01045	0.009619	0.009443	0.009391	0.008935
0.709677419354839		0.01055	0.01042	0.009584	0.009292	0.009236	0.008676
0.741935483870968		0.01033	0.0103	0.009457	0.009206	0.009149	0.00814
0.774193548387097		0.0102	0.01002	0.009417	0.008657	0.008614	0.008064
0.806451612903226		0.01001	0.009896	0.009362	0.008491	0.008418	0.007751
0.838709677419355		0.009973	0.009771	0.008931	0.007433	0.007113	0.006137
0.870967741935484		0.009201	0.008736	0.007672	0.006876	0.006638	0.005475
0.903225806451613		0.00859	0.00774	0.005847	0.004593	0.004214	0.003254
0.935483870967742		0.005012	0.004565	0.003527	0.00276	0.002575	0.00164
0.967741935483871		0.002578	0.002293	0.001614	0.001192	0.001083	0.0005011
0.1	0.015802	0.014845	0.012167	0.011124	0.01087	0.0099751	
					Average of yearly averages:		0.00835473666666666

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0033	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

US EPA ARCHIVE DOCUMENT

Fire Ants (Chipco Sod Farm)

Fipronil

stored as FLTURFFIP.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.01204	0.01076	0.007556	0.004165	0.003289	0.0009857
1962	0.01808	0.01609	0.01064	0.008591	0.006399	0.001764
1963	0.04992	0.04517	0.03168	0.01556	0.01048	0.004806
1964	0.04338	0.03887	0.0294	0.01484	0.0123	0.005331
1965	0.02652	0.02368	0.01629	0.009019	0.006377	0.002422
1966	0.02803	0.02512	0.01664	0.01302	0.01283	0.004969
1967	0.01273	0.01138	0.007973	0.005769	0.004952	0.001749
1968	0.05497	0.04926	0.03305	0.01885	0.01351	0.006679
1969	0.02764	0.02519	0.01757	0.01311	0.01111	0.004539
1970	0.008433	0.007574	0.005068	0.002939	0.002351	0.001453
1971	0.05692	0.05089	0.03794	0.02149	0.01545	0.00711
1972	0.06919	0.06264	0.04462	0.02506	0.01726	0.006321
1973	0.01406	0.01253	0.008161	0.004118	0.00303	0.002098
1974	0.008612	0.007699	0.006017	0.004239	0.003434	0.001113
1975	0.01065	0.009521	0.006429	0.003265	0.003055	0.001252
1976	0.07183	0.06412	0.04194	0.02497	0.01955	0.005806
1977	0.01725	0.01581	0.01137	0.006864	0.005045	0.002759
1978	0.04673	0.04182	0.0316	0.0174	0.01246	0.005926
1979	0.07175	0.06461	0.04374	0.02535	0.02066	0.008142
1980	0.005817	0.005425	0.004242	0.003285	0.002602	0.001474
1981	0.009451	0.008671	0.006644	0.003746	0.003117	0.00171
1982	0.06271	0.05665	0.03829	0.02005	0.01604	0.005602
1983	0.08092	0.07233	0.04944	0.0268	0.02147	0.007403
1984	0.04345	0.03919	0.02615	0.01692	0.01426	0.005652
1985	0.008708	0.00771	0.00491	0.002611	0.002984	0.00143
1986	0.03186	0.02961	0.02053	0.01098	0.007856	0.004072
1987	0.01282	0.01186	0.008507	0.006785	0.005036	0.001832
1988	0.0518	0.04642	0.03106	0.01482	0.01027	0.003342
1989	0.1936	0.1767	0.1219	0.06245	0.0441	0.01394
1990	0.01137	0.01008	0.006988	0.003986	0.003377	0.001768

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.1936	0.1767	0.1219	0.06245	0.0441	0.01394
0.0645161290322581		0.08092	0.07233	0.04944	0.0268	0.02147	0.008142
0.0967741935483871		0.07183	0.06461	0.04462	0.02535	0.02066	0.007403
0.129032258064516		0.07175	0.06412	0.04374	0.02506	0.01955	0.00711
0.161290322580645		0.06919	0.06264	0.04194	0.02497	0.01726	0.006679
0.193548387096774		0.06271	0.05665	0.03829	0.02149	0.01604	0.006321
0.225806451612903		0.05692	0.05089	0.03794	0.02005	0.01545	0.005926
0.258064516129032		0.05497	0.04926	0.03305	0.01885	0.01426	0.005806
0.290322580645161		0.0518	0.04642	0.03168	0.0174	0.01351	0.005652
0.32258064516129		0.04992	0.04517	0.0316	0.01692	0.01283	0.005602
0.354838709677419		0.04673	0.04182	0.03106	0.01556	0.01246	0.005331
0.387096774193548		0.04345	0.03919	0.0294	0.01484	0.0123	0.004969
0.419354838709677		0.04338	0.03887	0.02615	0.01482	0.01111	0.004806
0.451612903225806		0.03186	0.02961	0.02053	0.01311	0.01048	0.004539
0.483870967741936		0.02803	0.02519	0.01757	0.01302	0.01027	0.004072
0.516129032258065		0.02764	0.02512	0.01664	0.01098	0.007856	0.003342
0.548387096774194		0.02652	0.02368	0.01629	0.009019	0.006399	0.002759
0.580645161290323		0.01808	0.01609	0.01137	0.008591	0.006377	0.002422
0.612903225806452		0.01725	0.01581	0.01064	0.006864	0.005045	0.002098
0.645161290322581		0.01406	0.01253	0.008507	0.006785	0.005036	0.001832
0.67741935483871		0.01282	0.01186	0.008161	0.005769	0.004952	0.001768
0.709677419354839		0.01273	0.01138	0.007973	0.004239	0.003434	0.001764
0.741935483870968		0.01204	0.01076	0.007556	0.004165	0.003377	0.001749
0.774193548387097		0.01137	0.01008	0.006988	0.004118	0.003289	0.00171
0.806451612903226		0.01065	0.009521	0.006644	0.003986	0.003117	0.001474
0.838709677419355		0.009451	0.008671	0.006429	0.003746	0.003055	0.001453
0.870967741935484		0.008708	0.00771	0.006017	0.003285	0.00303	0.00143
0.903225806451613		0.008612	0.007699	0.005068	0.003265	0.002984	0.001252
0.935483870967742		0.008433	0.007574	0.00491	0.002939	0.002602	0.001113
0.967741935483871		0.005817	0.005425	0.004242	0.002611	0.002351	0.0009857
0.1	0.071822	0.064561	0.044532	0.025321	0.020549	0.0073737	
					Average of yearly averages:		0.00411499

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURFFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	437	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	

US EPA ARCHIVE DOCUMENT

Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.014	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as FLTURF950.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0005807	0.0005214	0.0003752	0.0002819	0.0002554	0.0001196
1962	0.00162	0.001482	0.001154	0.0009043	0.0008436	0.0005023
1963	0.003702	0.003388	0.002599	0.001882	0.001683	0.0012
1964	0.004179	0.003945	0.003319	0.002866	0.002761	0.002217
1965	0.003495	0.00335	0.003006	0.002737	0.002655	0.002489
1966	0.006039	0.005622	0.004571	0.004063	0.003864	0.003127
1967	0.00426	0.004112	0.003797	0.003518	0.003504	0.003306
1968	0.005867	0.005519	0.00489	0.004491	0.00443	0.003858
1969	0.005652	0.005445	0.005186	0.00488	0.004822	0.004329
1970	0.004908	0.004863	0.004744	0.0047	0.004671	0.004405
1971	0.006364	0.006106	0.005573	0.005065	0.004902	0.004507
1972	0.007607	0.007238	0.00639	0.005729	0.005413	0.004938
1973	0.005237	0.005228	0.005201	0.00518	0.005155	0.004984
1974	0.006082	0.005896	0.005419	0.005131	0.005046	0.004765
1975	0.004858	0.00479	0.004712	0.004685	0.004663	0.004543
1976	0.00695	0.006637	0.005845	0.005285	0.005174	0.004762
1977	0.005967	0.005811	0.005418	0.005157	0.005072	0.004884
1978	0.005774	0.005623	0.00536	0.005058	0.00497	0.004843
1979	0.007464	0.007161	0.006399	0.005843	0.005689	0.005275
1980	0.005515	0.005496	0.005443	0.005412	0.005388	0.005161
1981	0.00591	0.005746	0.005453	0.005133	0.005008	0.004868
1982	0.006451	0.006244	0.00574	0.005462	0.00537	0.005112
1983	0.007269	0.006971	0.006258	0.005747	0.005731	0.005241
1984	0.006809	0.006639	0.006202	0.005875	0.005842	0.005668
1985	0.005857	0.005757	0.005528	0.005432	0.005411	0.005313
1986	0.007261	0.007037	0.006314	0.005772	0.005628	0.005428
1987	0.005696	0.005621	0.005442	0.005335	0.00531	0.005077
1988	0.006739	0.006441	0.005694	0.005039	0.004914	0.004781
1989	0.01086	0.01022	0.008407	0.006905	0.006465	0.005538
1990	0.006468	0.006365	0.006119	0.005898	0.005844	0.005573

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.01086	0.01022	0.008407	0.006905	0.006465	0.005668
0.0645161290322581		0.007607	0.007238	0.006399	0.005898	0.005844	0.005573
0.096774193548387 1		0.007464	0.007161	0.00639	0.005875	0.005842	0.005538
0.129032258064516		0.007269	0.007037	0.006314	0.005843	0.005731	0.005428
0.161290322580645		0.007261	0.006971	0.006258	0.005772	0.005689	0.005313
0.193548387096774		0.00695	0.006639	0.006202	0.005747	0.005628	0.005275
0.225806451612903		0.006809	0.006637	0.006119	0.005729	0.005413	0.005241
0.258064516129032		0.006739	0.006441	0.005845	0.005462	0.005411	0.005161
0.290322580645161		0.006468	0.006365	0.00574	0.005432	0.005388	0.005112
0.32258064516129		0.006451	0.006244	0.005694	0.005412	0.00537	0.005077
0.354838709677419		0.006364	0.006106	0.005573	0.005335	0.00531	0.004984
0.387096774193548		0.006082	0.005896	0.005528	0.005285	0.005174	0.004938
0.419354838709677		0.006039	0.005811	0.005453	0.00518	0.005155	0.004884
0.451612903225806		0.005967	0.005757	0.005443	0.005157	0.005072	0.004868
0.483870967741936		0.00591	0.005746	0.005442	0.005133	0.005046	0.004843
0.516129032258065		0.005867	0.005623	0.005419	0.005131	0.005008	0.004781
0.548387096774194		0.005857	0.005622	0.005418	0.005065	0.00497	0.004765
0.580645161290323		0.005774	0.005621	0.00536	0.005058	0.004914	0.004762
0.612903225806452		0.005696	0.005519	0.005201	0.005039	0.004902	0.004543
0.645161290322581		0.005652	0.005496	0.005186	0.00488	0.004822	0.004507
0.67741935483871		0.005515	0.005445	0.00489	0.0047	0.004671	0.004405
0.709677419354839		0.005237	0.005228	0.004744	0.004685	0.004663	0.004329
0.741935483870968		0.004908	0.004863	0.004712	0.004491	0.00443	0.003858
0.774193548387097		0.004858	0.00479	0.004571	0.004063	0.003864	0.003306
0.806451612903226		0.00426	0.004112	0.003797	0.003518	0.003504	0.003127
0.838709677419355		0.004179	0.003945	0.003319	0.002866	0.002761	0.002489

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0.870967741935484	0.003702	0.003388	0.003006	0.002737	0.002655	0.002217
0.903225806451613	0.003495	0.00335	0.002599	0.001882	0.001683	0.0012
0.935483870967742	0.00162	0.001482	0.001154	0.0009043	0.0008436	0.0005023
0.967741935483871	0.0005807	0.0005214	0.0003752	0.0002819	0.0002554	0.0001196

0.1	0.0074445	0.0071486	0.0063824	0.0058718	0.0058309	0.005527
					Average of yearly averages:	0.00422713

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF950
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days		Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0007	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as FLTURF513.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001487	0.0001443	0.00013	0.0001143	0.000108	5.327e-005
1962	0.0003827	0.0003701	0.0003328	0.0003011	0.0002937	0.0001871
1963	0.0008446	0.000824	0.0007565	0.0006007	0.0005415	0.0003961
1964	0.0008602	0.0008465	0.000823	0.0008075	0.0008029	0.0007201
1965	0.0009881	0.0009753	0.0009321	0.0008788	0.0008553	0.0007913
1966	0.001322	0.001301	0.001229	0.001163	0.00113	0.0009704
1967	0.001164	0.001154	0.00113	0.001085	0.001077	0.00102
1968	0.001553	0.001536	0.001477	0.001406	0.001362	0.0012
1969	0.001548	0.001536	0.001502	0.001478	0.001477	0.001348
1970	0.00149	0.001486	0.001471	0.001457	0.001447	0.001367
1971	0.001806	0.001784	0.001711	0.00163	0.001582	0.001432
1972	0.002033	0.002006	0.001924	0.001816	0.001713	0.00156
1973	0.001725	0.00172	0.001704	0.001683	0.00167	0.001599
1974	0.001546	0.001539	0.001521	0.001512	0.001507	0.001477
1975	0.00144	0.001436	0.001422	0.00141	0.001403	0.001368
1976	0.001724	0.001708	0.001651	0.00159	0.001581	0.001442
1977	0.00164	0.00163	0.001595	0.001555	0.001535	0.001482
1978	0.001684	0.001671	0.001652	0.0016	0.001567	0.001496
1979	0.002074	0.002049	0.001966	0.001859	0.001788	0.001637
1980	0.00175	0.001747	0.001736	0.001727	0.001717	0.001641
1981	0.001675	0.001663	0.001629	0.001589	0.001567	0.001535
1982	0.001883	0.001866	0.001807	0.001728	0.001727	0.001632
1983	0.002061	0.002036	0.001953	0.001858	0.001828	0.00166
1984	0.002054	0.00204	0.001992	0.001927	0.001913	0.001836
1985	0.001801	0.001793	0.001771	0.001759	0.00175	0.001702
1986	0.001954	0.001943	0.001886	0.00181	0.001777	0.001724
1987	0.001705	0.001701	0.001689	0.001672	0.001664	0.001602
1988	0.001841	0.001819	0.001747	0.001595	0.00155	0.00151
1989	0.002816	0.00277	0.002616	0.002354	0.002216	0.001815
1990	0.002047	0.002042	0.002024	0.002002	0.002002	0.001899

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129	0.002816	0.00277	0.002616	0.002354	0.002216	0.001899	
0.0645161290322581	0.002074	0.002049	0.002024	0.002002	0.002002	0.001836	
0.0967741935483871	0.002061	0.002042	0.001992	0.001927	0.001913	0.001815	
0.129032258064516	0.002054	0.00204	0.001966	0.001859	0.001828	0.001724	
0.161290322580645	0.002047	0.002036	0.001953	0.001858	0.001788	0.001702	
0.193548387096774	0.002033	0.002006	0.001924	0.001816	0.001777	0.00166	

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0.225806451612903	0.001954	0.001943	0.001886	0.00181	0.00175	0.001641
0.258064516129032	0.001883	0.001866	0.001807	0.001759	0.001727	0.001637
0.290322580645161	0.001841	0.001819	0.001771	0.001728	0.001717	0.001632
0.32258064516129	0.001806	0.001793	0.001747	0.001727	0.001713	0.001602
0.354838709677419	0.001801	0.001784	0.001736	0.001683	0.00167	0.001599
0.387096774193548	0.00175	0.001747	0.001711	0.001672	0.001664	0.00156
0.419354838709677	0.001725	0.00172	0.001704	0.00163	0.001582	0.001535
0.451612903225806	0.001724	0.001708	0.001689	0.0016	0.001581	0.00151
0.483870967741936	0.001705	0.001701	0.001652	0.001595	0.001567	0.001496
0.516129032258065	0.001684	0.001671	0.001651	0.00159	0.001567	0.001482
0.548387096774194	0.001675	0.001663	0.001629	0.001589	0.00155	0.001477
0.580645161290323	0.00164	0.00163	0.001595	0.001555	0.001535	0.001442
0.612903225806452	0.001553	0.001539	0.001521	0.001512	0.001507	0.001432
0.645161290322581	0.001548	0.001536	0.001502	0.001478	0.001477	0.001368
0.67741935483871	0.001546	0.001536	0.001477	0.001457	0.001447	0.001367
0.709677419354839	0.00149	0.001486	0.001471	0.00141	0.001403	0.001348
0.741935483870968	0.00144	0.001436	0.001422	0.001406	0.001362	0.0012
0.774193548387097	0.001322	0.001301	0.001229	0.001163	0.00113	0.00102
0.806451612903226	0.001164	0.001154	0.00113	0.001085	0.001077	0.0009704
0.838709677419355	0.0009881	0.0009753	0.0009321	0.0008788	0.0008553	0.0007913
0.870967741935484	0.0008602	0.0008465	0.000823	0.0008075	0.0008029	0.0007201
0.903225806451613	0.0008446	0.000824	0.0007565	0.0006007	0.0005415	0.0003961
0.935483870967742	0.0003827	0.0003701	0.0003328	0.0003011	0.0002937	0.0001871
0.967741935483871	0.0001487	0.0001443	0.00013	0.0001143	0.000108	5.327e-005

0.1	0.0020603	0.0020418	0.0019894	0.0019202	0.0019045	0.0018059
					Average of yearly averages:	0.00133674233333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1320	days		Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0001	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as FLTURF136.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.002578	0.002293	0.001614	0.001192	0.001083	0.0005033
1962	0.007255	0.006573	0.004994	0.003842	0.003568	0.002112
1963	0.01655	0.01499	0.0112	0.007982	0.007111	0.00505
1964	0.01864	0.01747	0.01434	0.01218	0.01172	0.009318
1965	0.01487	0.01416	0.01254	0.01132	0.01095	0.01025
1966	0.02632	0.02426	0.01922	0.01692	0.01601	0.01279
1967	0.01772	0.01699	0.01546	0.01418	0.01411	0.01327
1968	0.0247	0.02301	0.01989	0.01815	0.01785	0.01539
1969	0.0234	0.02236	0.02099	0.01953	0.01926	0.01714
1970	0.0196	0.01937	0.01878	0.01859	0.01844	0.01718
1971	0.02573	0.02447	0.022	0.01969	0.019	0.01734
1972	0.03128	0.02946	0.02541	0.02238	0.021	0.019
1973	0.02015	0.02011	0.02	0.01989	0.01977	0.01895
1974	0.02414	0.02319	0.02084	0.0195	0.01909	0.01784
1975	0.01828	0.01795	0.01753	0.0174	0.01729	0.01673
1976	0.02779	0.02623	0.02241	0.01986	0.01936	0.01756
1977	0.02307	0.0223	0.02041	0.0192	0.01881	0.01795
1978	0.02198	0.02124	0.01996	0.01858	0.01822	0.01765
1979	0.02961	0.02811	0.02446	0.02192	0.02127	0.01947
1980	0.02047	0.02037	0.02011	0.01997	0.01985	0.01882

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1981	0.02222	0.02143	0.02009	0.0186	0.01805	0.01742
1982	0.02457	0.02356	0.0212	0.01993	0.01951	0.01839
1983	0.02829	0.02683	0.02345	0.02111	0.02106	0.0189
1984	0.02591	0.02507	0.02298	0.0215	0.02136	0.02063
1985	0.0216	0.02111	0.02001	0.01951	0.0194	0.01898
1986	0.02808	0.02694	0.02344	0.02096	0.02031	0.01942
1987	0.02076	0.02038	0.01951	0.01901	0.01888	0.01788
1988	0.0257	0.02424	0.02069	0.01775	0.01714	0.01659
1989	0.04444	0.04122	0.03255	0.02575	0.02383	0.01982
1990	0.024	0.02349	0.02229	0.02126	0.02105	0.01986

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.04444	0.04122	0.03255	0.02575	0.02383	0.02063
0.0645161290322581		0.03128	0.02946	0.02541	0.02238	0.02136	0.01986
0.096774193548387 1		0.02961	0.02811	0.02446	0.02192	0.02127	0.01982
0.129032258064516		0.02829	0.02694	0.02345	0.0215	0.02106	0.01947
0.161290322580645		0.02808	0.02683	0.02344	0.02126	0.02105	0.01942
0.193548387096774		0.02779	0.02623	0.02298	0.02111	0.021	0.019
0.225806451612903		0.02632	0.02507	0.02241	0.02096	0.02031	0.01898
0.258064516129032		0.02591	0.02447	0.02229	0.01997	0.01985	0.01895
0.290322580645161		0.02573	0.02426	0.022	0.01993	0.01977	0.0189
0.32258064516129		0.0257	0.02424	0.0212	0.01989	0.01951	0.01882
0.354838709677419		0.0247	0.02356	0.02099	0.01986	0.0194	0.01839
0.387096774193548		0.02457	0.02349	0.02084	0.01969	0.01936	0.01795
0.419354838709677		0.02414	0.02319	0.02069	0.01953	0.01926	0.01788
0.451612903225806		0.024	0.02301	0.02041	0.01951	0.01909	0.01784
0.483870967741936		0.0234	0.02236	0.02011	0.0195	0.019	0.01765
0.516129032258065		0.02307	0.0223	0.02009	0.0192	0.01888	0.01756
0.548387096774194		0.02222	0.02143	0.02001	0.01901	0.01881	0.01742
0.580645161290323		0.02198	0.02124	0.02	0.0186	0.01844	0.01734
0.612903225806452		0.0216	0.02111	0.01996	0.01859	0.01822	0.01718
0.645161290322581		0.02076	0.02038	0.01989	0.01858	0.01805	0.01714
0.67741935483871		0.02047	0.02037	0.01951	0.01815	0.01785	0.01673
0.709677419354839		0.02015	0.02011	0.01922	0.01775	0.01729	0.01659
0.741935483870968		0.0196	0.01937	0.01878	0.0174	0.01714	0.01539
0.774193548387097		0.01864	0.01795	0.01753	0.01692	0.01601	0.01327
0.806451612903226		0.01828	0.01747	0.01546	0.01418	0.01411	0.01279
0.838709677419355		0.01772	0.01699	0.01434	0.01218	0.01172	0.01025
0.870967741935484		0.01655	0.01499	0.01254	0.01132	0.01095	0.009318
0.903225806451613		0.01487	0.01416	0.0112	0.007982	0.007111	0.00505
0.935483870967742		0.007255	0.006573	0.004994	0.003842	0.003568	0.002112
0.967741935483871		0.002578	0.002293	0.001614	0.001192	0.001083	0.0005033
0.1	0.029478	0.027993	0.024359	0.021878	0.021249	0.019785	
					Average of yearly averages:		0.01574011

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0033	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

House Perimeter (Termidor Sod Farm)

Fipronil

stored as PerimFIP.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

US EPA ARCHIVE DOCUMENT

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0005157	0.0004612	0.0003238	0.0001785	0.0001409	4.224e-005
1962	0.0007747	0.0006896	0.000456	0.0003681	0.0002742	7.56e-005
1963	0.002139	0.001935	0.001358	0.0006669	0.0004491	0.0002059
1964	0.001859	0.001666	0.00126	0.0006358	0.000527	0.0002285
1965	0.001137	0.001015	0.000698	0.0003865	0.0002733	0.0001038
1966	0.001201	0.001077	0.0007134	0.0005582	0.0005499	0.000213
1967	0.0005455	0.0004876	0.0003417	0.0002473	0.0002122	7.495e-005
1968	0.002356	0.002111	0.001416	0.0008078	0.0005788	0.0002863
1969	0.001184	0.001079	0.000753	0.0005619	0.000476	0.0001945
1970	0.0003615	0.0003247	0.0002173	0.000126	0.0001008	6.226e-005
1971	0.002439	0.002181	0.001626	0.0009211	0.000662	0.0003047
1972	0.002965	0.002684	0.001912	0.001074	0.0007397	0.0002709
1973	0.0006023	0.000537	0.0003497	0.0001765	0.0001298	8.989e-005
1974	0.0003692	0.00033	0.0002579	0.0001817	0.0001472	4.769e-005
1975	0.0004562	0.000408	0.0002755	0.0001399	0.0001309	5.364e-005
1976	0.003078	0.002748	0.001797	0.00107	0.0008377	0.0002488
1977	0.0007394	0.0006777	0.0004874	0.0002941	0.0002162	0.0001182
1978	0.002003	0.001792	0.001355	0.0007457	0.0005341	0.000254
1979	0.003075	0.002769	0.001875	0.001086	0.0008856	0.000349
1980	0.0002493	0.0002325	0.0001818	0.0001408	0.0001115	6.319e-005
1981	0.0004051	0.0003717	0.0002847	0.0001605	0.0001336	7.331e-005
1982	0.002688	0.002429	0.001641	0.0008597	0.0006875	0.0002401
1983	0.003468	0.0031	0.002119	0.001149	0.0009199	0.0003172
1984	0.001862	0.001679	0.001121	0.000725	0.0006111	0.0002422
1985	0.0003732	0.0003304	0.0002104	0.0001119	0.0001279	6.128e-005
1986	0.001365	0.001269	0.0008796	0.0004707	0.0003366	0.0001745
1987	0.0005493	0.0005082	0.0003646	0.0002908	0.0002158	7.851e-005
1988	0.00222	0.001989	0.001331	0.0006352	0.0004403	0.0001432
1989	0.008296	0.007571	0.005223	0.002676	0.00189	0.0005975
1990	0.0004872	0.0004319	0.0002994	0.0001708	0.0001447	7.577e-005

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.008296	0.007571	0.005223	0.002676	0.00189	0.0005975
0.0645161290322581		0.003468	0.0031	0.002119	0.001149	0.0009199	0.000349
0.0967741935483871		0.003078	0.002769	0.001912	0.001086	0.0008856	0.0003172
0.129032258064516		0.003075	0.002748	0.001875	0.001074	0.0008377	0.0003047
0.161290322580645		0.002965	0.002684	0.001797	0.00107	0.0007397	0.0002863
0.193548387096774		0.002688	0.002429	0.001641	0.0009211	0.0006875	0.0002709
0.225806451612903		0.002439	0.002181	0.001626	0.0008597	0.000662	0.000254
0.258064516129032		0.002356	0.002111	0.001416	0.0008078	0.0006111	0.0002488
0.290322580645161		0.00222	0.001989	0.001358	0.0007457	0.0005788	0.0002422
0.32258064516129		0.002139	0.001935	0.001355	0.000725	0.0005499	0.0002401
0.354838709677419		0.002003	0.001792	0.001331	0.0006669	0.0005341	0.0002285
0.387096774193548		0.001862	0.001679	0.00126	0.0006358	0.000527	0.000213
0.419354838709677		0.001859	0.001666	0.001121	0.0006352	0.000476	0.0002059
0.451612903225806		0.001365	0.001269	0.0008796	0.0005619	0.0004491	0.0001945
0.483870967741936		0.001201	0.001079	0.000753	0.0005582	0.0004403	0.0001745
0.516129032258065		0.001184	0.001077	0.0007134	0.0004707	0.0003366	0.0001432
0.548387096774194		0.001137	0.001015	0.000698	0.0003865	0.0002742	0.0001182
0.580645161290323		0.0007747	0.0006896	0.0004874	0.0003681	0.0002733	0.0001038
0.612903225806452		0.0007394	0.0006777	0.000456	0.0002941	0.0002162	8.989e-005
0.645161290322581		0.0006023	0.000537	0.0003646	0.0002908	0.0002158	7.851e-005
0.67741935483871		0.0005493	0.0005082	0.0003497	0.0002473	0.0002122	7.577e-005
0.709677419354839		0.0005455	0.0004876	0.0003417	0.0001817	0.0001472	7.56e-005
0.741935483870968		0.0005157	0.0004612	0.0003238	0.0001785	0.0001447	7.495e-005
0.774193548387097		0.0004872	0.0004319	0.0002994	0.0001765	0.0001409	7.331e-005
0.806451612903226		0.0004562	0.000408	0.0002847	0.0001708	0.0001336	6.319e-005
0.838709677419355		0.0004051	0.0003717	0.0002755	0.0001605	0.0001309	6.226e-005
0.870967741935484		0.0003732	0.0003304	0.0002579	0.0001408	0.0001298	6.128e-005
0.903225806451613		0.0003692	0.00033	0.0002173	0.0001399	0.0001279	5.364e-005
0.935483870967742		0.0003615	0.0003247	0.0002104	0.000126	0.0001115	4.769e-005
0.967741935483871		0.0002493	0.0002325	0.0001818	0.0001119	0.0001008	4.224e-005
0.1	0.0030777	0.0027669	0.0019083	0.0010848	0.00088081	0.00031595	
					Average of yearly averages:		0.000176354333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: PerimFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	6E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1		interval	180	days	Set to 0 or delete line for single app.	
Record 17:	FILTRA					

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	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run		IR	Pond	
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)

MB45950

stored as perim9502.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12842.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001871	0.0001659	8.987e-005	4.47e-005	3.68e-005	1.643e-005
1962	0.0007252	0.0006464	0.0004486	0.0003079	0.0002741	0.0001338
1963	0.001419	0.001277	0.0009199	0.000642	0.0005307	0.0003432
1964	0.001536	0.001422	0.001141	0.001007	0.0009562	0.0007534
1965	0.001272	0.001214	0.001083	0.0009846	0.0009646	0.0008742
1966	0.001401	0.001337	0.001158	0.001087	0.001061	0.0009505
1967	0.001725	0.001625	0.001387	0.001209	0.001172	0.001018
1968	0.001694	0.001624	0.001445	0.001336	0.001295	0.001157
1969	0.001816	0.001755	0.001634	0.001528	0.001501	0.001385
1970	0.001573	0.001551	0.001496	0.001472	0.001468	0.001419
1971	0.002393	0.002256	0.001911	0.001745	0.001698	0.001534
1972	0.002095	0.002024	0.00192	0.001789	0.001748	0.001628
1973	0.001883	0.001837	0.001739	0.001692	0.001656	0.001613
1974	0.003605	0.003332	0.002645	0.002154	0.00203	0.001702
1975	0.002155	0.002093	0.001937	0.00185	0.001821	0.001732
1976	0.002884	0.002727	0.002324	0.002093	0.002014	0.001818
1977	0.001793	0.001788	0.001776	0.001763	0.001754	0.001663
1978	0.001744	0.001717	0.001648	0.001593	0.00158	0.001501
1979	0.007143	0.006419	0.004643	0.003356	0.003047	0.002247
1980	0.002469	0.00244	0.002364	0.002324	0.002312	0.002241
1981	0.002661	0.002587	0.002398	0.002259	0.002217	0.002177
1982	0.002881	0.002781	0.002566	0.002423	0.00238	0.002219
1983	0.002758	0.002677	0.002484	0.002369	0.002337	0.002224
1984	0.002338	0.002298	0.002194	0.002135	0.002123	0.002057
1985	0.002848	0.00272	0.002394	0.002181	0.002187	0.001991
1986	0.002273	0.002245	0.002147	0.002065	0.002041	0.001962
1987	0.002366	0.002297	0.002131	0.00203	0.001999	0.001912
1988	0.002542	0.002443	0.00223	0.002057	0.002019	0.001882
1989	0.002012	0.001982	0.001921	0.001904	0.001894	0.001846
1990	0.002141	0.002076	0.001918	0.001787	0.001756	0.001707

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.007143	0.006419	0.004643	0.003356	0.003047	0.002247
0.0645161290322581		0.003605	0.003332	0.002645	0.002423	0.00238	0.002241
0.0967741935483871		0.002884	0.002781	0.002566	0.002369	0.002337	0.002224
0.129032258064516		0.002881	0.002727	0.002484	0.002324	0.002312	0.002219
0.161290322580645		0.002848	0.00272	0.002398	0.002259	0.002217	0.002177
0.193548387096774		0.002758	0.002677	0.002394	0.002181	0.002187	0.002057
0.225806451612903		0.002661	0.002587	0.002364	0.002154	0.002123	0.001991
0.258064516129032		0.002542	0.002443	0.002324	0.002135	0.002041	0.001962
0.290322580645161		0.002469	0.00244	0.00223	0.002093	0.00203	0.001912
0.32258064516129		0.002393	0.002298	0.002194	0.002065	0.002019	0.001882
0.354838709677419		0.002366	0.002297	0.002147	0.002057	0.002014	0.001846
0.387096774193548		0.002338	0.002256	0.002131	0.00203	0.001999	0.001818
0.419354838709677		0.002273	0.002245	0.001937	0.001904	0.001894	0.001732
0.451612903225806		0.002155	0.002093	0.001921	0.00185	0.001821	0.001707
0.483870967741936		0.002141	0.002076	0.00192	0.001789	0.001756	0.001702
0.516129032258065		0.002095	0.002024	0.001918	0.001787	0.001754	0.001663
0.548387096774194		0.002012	0.001982	0.001911	0.001763	0.001748	0.001628
0.580645161290323		0.001883	0.001837	0.001776	0.001745	0.001698	0.001613
0.612903225806452		0.001816	0.001788	0.001739	0.001692	0.001656	0.001534
0.645161290322581		0.001793	0.001755	0.001648	0.001593	0.00158	0.001501
0.67741935483871		0.001744	0.001717	0.001634	0.001528	0.001501	0.001419
0.709677419354839		0.001725	0.001625	0.001496	0.001472	0.001468	0.001385
0.741935483870968		0.001694	0.001624	0.001445	0.001336	0.001295	0.001157
0.774193548387097		0.001573	0.001551	0.001387	0.001209	0.001172	0.001018
0.806451612903226		0.001536	0.001422	0.001158	0.001087	0.001061	0.0009505
0.838709677419355		0.001419	0.001337	0.001141	0.001007	0.0009646	0.0008742
0.870967741935484		0.001401	0.001277	0.001083	0.0009846	0.0009562	0.0007534
0.903225806451613		0.001272	0.001214	0.0009199	0.000642	0.0005307	0.0003432
0.935483870967742		0.0007252	0.0006464	0.0004486	0.0003079	0.0002741	0.0001338
0.967741935483871		0.0001871	0.0001659	8.987e-005	4.47e-005	3.68e-005	1.643e-005
0.1	0.0028837	0.0027756	0.0025578	0.0023645	0.0023345	0.0022235	
					Average of yearly averages:		0.001523551

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: perim9502
Metfile: w12842.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name	Value	Units	Comments

US EPA ARCHIVE DOCUMENT

Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	3E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as Perim513.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	8.919e-005	8.655e-005	7.797e-005	6.857e-005	6.482e-005	3.196e-005
1962	0.0002296	0.000222	0.0001997	0.0001807	0.0001762	0.0001122
1963	0.0005067	0.0004944	0.0004539	0.0003604	0.0003249	0.0002377
1964	0.0005161	0.0005078	0.0004938	0.0004845	0.0004818	0.0004321
1965	0.0005929	0.0005852	0.0005593	0.0005273	0.0005132	0.0004747
1966	0.0007932	0.0007804	0.0007375	0.0006977	0.0006779	0.0005823
1967	0.0006986	0.0006923	0.0006781	0.0006511	0.0006459	0.0006121
1968	0.0009319	0.0009214	0.0008862	0.0008436	0.0008169	0.0007197
1969	0.0009287	0.0009215	0.000901	0.000887	0.0008863	0.000809
1970	0.0008941	0.0008914	0.0008826	0.0008744	0.0008685	0.0008205
1971	0.001083	0.00107	0.001026	0.0009781	0.0009491	0.0008589
1972	0.00122	0.001204	0.001154	0.00109	0.001028	0.0009362
1973	0.001035	0.001032	0.001023	0.00101	0.001002	0.0009596
1974	0.0009274	0.0009234	0.0009126	0.0009074	0.0009045	0.0008862
1975	0.0008639	0.0008614	0.0008535	0.000846	0.0008417	0.0008207
1976	0.001035	0.001025	0.0009908	0.000954	0.0009485	0.0008653
1977	0.000984	0.0009777	0.0009568	0.0009327	0.0009207	0.000889
1978	0.00101	0.001003	0.000991	0.0009599	0.0009403	0.0008976
1979	0.001245	0.00123	0.001179	0.001116	0.001073	0.0009819
1980	0.00105	0.001048	0.001041	0.001036	0.00103	0.0009849
1981	0.001005	0.000998	0.0009772	0.0009534	0.0009403	0.0009212
1982	0.00113	0.00112	0.001084	0.001037	0.001036	0.0009792
1983	0.001237	0.001222	0.001172	0.001115	0.001097	0.0009961
1984	0.001232	0.001224	0.001195	0.001156	0.001148	0.001102
1985	0.00108	0.001076	0.001063	0.001055	0.00105	0.001021
1986	0.001173	0.001166	0.001132	0.001086	0.001066	0.001034
1987	0.001023	0.001021	0.001013	0.001003	0.0009986	0.0009611
1988	0.001105	0.001092	0.001048	0.0009571	0.0009302	0.0009063
1989	0.00169	0.001662	0.001569	0.001412	0.00133	0.001089
1990	0.001228	0.001225	0.001214	0.001201	0.001201	0.00114

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.00169	0.001662	0.001569	0.001412	0.00133	0.00114
0.0645161290322581		0.001245	0.00123	0.001214	0.001201	0.001201	0.001102
0.0967741935483871		0.001237	0.001225	0.001195	0.001156	0.001148	0.001089
0.129032258064516		0.001232	0.001224	0.001179	0.001116	0.001097	0.001034
0.161290322580645		0.001228	0.001222	0.001172	0.001115	0.001073	0.001021
0.193548387096774		0.00122	0.001204	0.001154	0.00109	0.001066	0.0009961
0.225806451612903		0.001173	0.001166	0.001132	0.001086	0.00105	0.0009849
0.258064516129032		0.00113	0.00112	0.001084	0.001055	0.001036	0.0009819
0.290322580645161		0.001105	0.001092	0.001063	0.001037	0.00103	0.0009792
0.32258064516129		0.001083	0.001076	0.001048	0.001036	0.001028	0.0009611
0.354838709677419		0.00108	0.00107	0.001041	0.00101	0.001002	0.0009596
0.387096774193548		0.00105	0.001048	0.001026	0.001003	0.0009986	0.0009362
0.419354838709677		0.001035	0.001032	0.001023	0.0009781	0.0009491	0.0009212
0.451612903225806		0.001035	0.001025	0.001013	0.0009599	0.0009485	0.0009063
0.483870967741936		0.001023	0.001021	0.000991	0.0009571	0.0009403	0.0008976
0.516129032258065		0.00101	0.001003	0.0009908	0.000954	0.0009403	0.000889
0.548387096774194		0.001005	0.000998	0.0009772	0.0009534	0.0009302	0.0008862
0.580645161290323		0.000984	0.0009777	0.0009568	0.0009327	0.0009207	0.0008653
0.612903225806452		0.0009319	0.0009234	0.0009126	0.0009074	0.0009045	0.0008589
0.645161290322581		0.0009287	0.0009215	0.000901	0.000887	0.0008863	0.0008207
0.67741935483871		0.0009274	0.0009214	0.0008862	0.0008744	0.0008685	0.0008205
0.709677419354839		0.0008941	0.0008914	0.0008826	0.000846	0.0008417	0.000809
0.741935483870968		0.0008639	0.0008614	0.0008535	0.0008436	0.0008169	0.0007197
0.774193548387097		0.0007932	0.0007804	0.0007375	0.0006977	0.0006779	0.0006121

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0.806451612903226	0.0006986	0.0006923	0.0006781	0.0006511	0.0006459	0.0005823
0.838709677419355	0.0005929	0.0005852	0.0005593	0.0005273	0.0005132	0.0004747
0.870967741935484	0.0005161	0.0005078	0.0004938	0.0004845	0.0004818	0.0004321
0.903225806451613	0.0005067	0.0004944	0.0004539	0.0003604	0.0003249	0.0002377
0.935483870967742	0.0002296	0.000222	0.0001997	0.0001807	0.0001762	0.0001122
0.967741935483871	8.919e-005	8.655e-005	7.797e-005	6.857e-005	6.482e-005	3.196e-005

0.1	0.0012365	0.0012249	0.0011934	0.001152	0.0011429	0.0010835
					Average of yearly averages:	0.000802082

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	6E-5	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as Perim136.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001094	0.0009727	0.0006847	0.000506	0.0004595	0.0002136
1962	0.003078	0.002788	0.002119	0.00163	0.001514	0.000896
1963	0.007021	0.00636	0.00475	0.003386	0.003017	0.002142
1964	0.007905	0.00741	0.006083	0.005167	0.004972	0.003953
1965	0.006309	0.006009	0.005321	0.004804	0.004647	0.004349
1966	0.01116	0.01029	0.008152	0.007177	0.006793	0.005426
1967	0.007519	0.007207	0.006557	0.006015	0.005985	0.005629
1968	0.01048	0.009761	0.008439	0.007701	0.007571	0.006531
1969	0.009925	0.009486	0.008906	0.008287	0.008169	0.007272
1970	0.008314	0.008216	0.007968	0.007884	0.007824	0.007289
1971	0.01091	0.01038	0.009333	0.008351	0.008059	0.007355
1972	0.01327	0.0125	0.01078	0.009495	0.008909	0.008059
1973	0.008547	0.008531	0.008483	0.008438	0.008385	0.008038
1974	0.01024	0.00984	0.008841	0.008271	0.0081	0.007566
1975	0.007757	0.007614	0.007437	0.007382	0.007336	0.007099
1976	0.01179	0.01113	0.009507	0.008424	0.008214	0.007449
1977	0.009787	0.009461	0.008658	0.008144	0.00798	0.007614
1978	0.009325	0.009013	0.00847	0.007884	0.007731	0.007488
1979	0.01256	0.01193	0.01038	0.009298	0.009023	0.008259
1980	0.008682	0.00864	0.008531	0.008471	0.008422	0.007983
1981	0.009427	0.009091	0.008523	0.007892	0.007657	0.007391
1982	0.01043	0.009996	0.008993	0.008454	0.008276	0.007804
1983	0.012	0.01138	0.009947	0.008956	0.008936	0.008019
1984	0.01099	0.01064	0.009748	0.00912	0.009063	0.008751
1985	0.009164	0.008955	0.00849	0.008275	0.00823	0.00805
1986	0.01191	0.01143	0.009947	0.008893	0.008617	0.008238
1987	0.008806	0.008646	0.008275	0.008066	0.008012	0.007584
1988	0.0109	0.01028	0.008776	0.007531	0.007273	0.007037
1989	0.01885	0.01749	0.01381	0.01092	0.01011	0.00841
1990	0.01018	0.009966	0.009457	0.009019	0.008929	0.008424

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.01885	0.01749	0.01381	0.01092	0.01011	0.008751
0.0645161290322581		0.01327	0.0125	0.01078	0.009495	0.009063	0.008424
0.0967741935483871		0.01256	0.01193	0.01038	0.009298	0.009023	0.00841
0.129032258064516		0.012	0.01143	0.009947	0.00912	0.008936	0.008259
0.161290322580645		0.01191	0.01138	0.009947	0.009019	0.008929	0.008238

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0.193548387096774	0.01179	0.01113	0.009748	0.008956	0.008909	0.008059
0.225806451612903	0.01116	0.01064	0.009507	0.008893	0.008617	0.00805
0.258064516129032	0.01099	0.01038	0.009457	0.008471	0.008422	0.008038
0.290322580645161	0.01091	0.01029	0.009333	0.008454	0.008385	0.008019
0.32258064516129	0.0109	0.01028	0.008993	0.008438	0.008276	0.007983
0.354838709677419	0.01048	0.009996	0.008906	0.008424	0.00823	0.007804
0.387096774193548	0.01043	0.009966	0.008841	0.008351	0.008214	0.007614
0.419354838709677	0.01024	0.00984	0.008776	0.008287	0.008169	0.007584
0.451612903225806	0.01018	0.009761	0.008658	0.008275	0.0081	0.007566
0.483870967741936	0.009925	0.009486	0.008531	0.008271	0.008059	0.007488
0.516129032258065	0.009787	0.009461	0.008523	0.008144	0.008012	0.007449
0.548387096774194	0.009427	0.009091	0.00849	0.008066	0.00798	0.007391
0.580645161290323	0.009325	0.009013	0.008483	0.007892	0.007824	0.007355
0.612903225806452	0.009164	0.008955	0.00847	0.007884	0.007731	0.007289
0.645161290322581	0.008806	0.008646	0.008439	0.007884	0.007657	0.007272
0.67741935483871	0.008682	0.00864	0.008275	0.007701	0.007571	0.007099
0.709677419354839	0.008547	0.008531	0.008152	0.007531	0.007336	0.007037
0.741935483870968	0.008314	0.008216	0.007968	0.007382	0.007273	0.006531
0.774193548387097	0.007905	0.007614	0.007437	0.007177	0.006793	0.005629
0.806451612903226	0.007757	0.00741	0.006557	0.006015	0.005985	0.005426
0.838709677419355	0.007519	0.007207	0.006083	0.005167	0.004972	0.004349
0.870967741935484	0.007021	0.00636	0.005321	0.004804	0.004647	0.003953
0.903225806451613	0.006309	0.006009	0.00475	0.003386	0.003017	0.002142
0.935483870967742	0.003078	0.002788	0.002119	0.00163	0.001514	0.000896
0.967741935483871	0.001094	0.0009727	0.0006847	0.000506	0.0004595	0.0002136

0.1	0.012504	0.01188	0.0103367	0.0092802	0.0090143	0.0083949
					Average of yearly averages:	0.00667728666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	1.4E-3	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

House Perimeter(Termidor Residential)

Fipronil

stored as PerimFIP.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0005157	0.0004612	0.0003238	0.0001785	0.0001409	4.083e-005
1962	0.0006996	0.0006227	0.0004119	0.0003295	0.0002459	6.48e-005
1963	0.00108	0.0009584	0.0006506	0.0003888	0.0003128	8.605e-005
1964	0.00182	0.001629	0.001232	0.0006193	0.0005148	0.000146
1965	0.001108	0.0009893	0.00068	0.0003762	0.000266	6.909e-005
1966	0.001154	0.001034	0.0006843	0.0005466	0.0005338	0.0001755
1967	0.0005254	0.0004696	0.0003292	0.0002334	0.0002012	5.811e-005
1968	0.001909	0.001707	0.001214	0.0007039	0.0005048	0.00013
1969	0.0005028	0.0004491	0.000376	0.0002527	0.0001808	6.752e-005
1970	0.0003359	0.0003006	0.0001983	0.0001052	7.857e-005	2.229e-005
1971	0.0009247	0.0008285	0.0005488	0.0003379	0.0002815	9.997e-005
1972	0.000907	0.0008179	0.000544	0.0003023	0.0002373	7.643e-005
1973	0.000242	0.0002167	0.0001608	8.275e-005	5.836e-005	2.6e-005
1974	0.000343	0.0003066	0.0002398	0.0001678	0.0001367	3.728e-005
1975	0.0004046	0.0003617	0.0002441	0.0001239	0.000117	3.503e-005
1976	0.002824	0.002521	0.001649	0.0009851	0.0007748	0.0002018
1977	0.0003756	0.0003324	0.000221	0.0001766	0.0001287	4.87e-005

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1978	0.001445	0.001281	0.0008178	0.0004879	0.000397	0.0001104
1979	0.001441	0.001292	0.0008334	0.0004156	0.0003446	9.59e-005
1980	0.0002071	0.0001924	0.0001277	0.0001037	8.909e-005	3.039e-005
1981	0.000391	0.0003466	0.000279	0.0001573	0.00013	4.206e-005
1982	0.002582	0.002332	0.001574	0.0008229	0.0006605	0.0001824
1983	0.0006275	0.0005595	0.0004203	0.0002341	0.0002468	7.328e-005
1984	0.001813	0.001633	0.001084	0.0007006	0.0005925	0.0001622
1985	0.0003285	0.0002908	0.000185	9.735e-005	0.0001086	3.21e-005
1986	0.0006372	0.0005635	0.0003985	0.0002913	0.0002079	5.334e-005
1987	0.0001089	9.64e-005	6.048e-005	3.243e-005	3.137e-005	1.239e-005
1988	0.0001766	0.0001564	9.954e-005	4.922e-005	3.772e-005	1.749e-005
1989	0.0003351	0.0002993	0.0001955	9.465e-005	6.56e-005	3.286e-005
1990	9.942e-005	8.778e-005	5.594e-005	3.871e-005	3.139e-005	1.026e-005

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.002824	0.002521	0.001649	0.0009851	0.0007748	0.0002018
0.064516129032258 1		0.002582	0.002332	0.001574	0.0008229	0.0006605	0.0001824
0.096774193548387 1		0.001909	0.001707	0.001232	0.0007039	0.0005925	0.0001755
0.129032258064516		0.00182	0.001633	0.001214	0.0007006	0.0005338	0.0001622
0.161290322580645		0.001813	0.001629	0.001084	0.0006193	0.0005148	0.000146
0.193548387096774		0.001445	0.001292	0.0008334	0.0005466	0.0005048	0.00013
0.225806451612903		0.001441	0.001281	0.0008178	0.0004879	0.000397	0.0001104
0.258064516129032		0.001154	0.001034	0.0006843	0.0004156	0.0003446	9.997e-005
0.290322580645161		0.001108	0.0009893	0.00068	0.0003888	0.0003128	9.59e-005
0.32258064516129		0.00108	0.0009584	0.0006506	0.0003762	0.0002815	8.605e-005
0.354838709677419		0.0009247	0.0008285	0.0005488	0.0003379	0.000266	7.643e-005
0.387096774193548		0.000907	0.0008179	0.000544	0.0003295	0.0002468	7.328e-005
0.419354838709677		0.0006996	0.0006227	0.0004203	0.0003023	0.0002459	6.909e-005
0.451612903225806		0.0006372	0.0005635	0.0004119	0.0002913	0.0002373	6.752e-005
0.483870967741936		0.0006275	0.0005595	0.0003985	0.0002527	0.0002079	6.48e-005
0.516129032258065		0.0005254	0.0004696	0.000376	0.0002341	0.0002012	5.811e-005
0.548387096774194		0.0005157	0.0004612	0.0003292	0.0002334	0.0001808	5.334e-005
0.580645161290323		0.0005028	0.0004491	0.0003238	0.0001785	0.0001409	4.87e-005
0.612903225806452		0.0004046	0.0003617	0.000279	0.0001766	0.0001367	4.206e-005
0.645161290322581		0.000391	0.0003466	0.0002441	0.0001678	0.00013	4.083e-005
0.67741935483871		0.0003756	0.0003324	0.0002398	0.0001573	0.0001287	3.728e-005
0.709677419354839		0.000343	0.0003066	0.000221	0.0001239	0.000117	3.503e-005
0.741935483870968		0.0003359	0.0003006	0.0001983	0.0001052	0.0001086	3.286e-005
0.774193548387097		0.0003351	0.0002993	0.0001955	0.0001037	8.909e-005	3.21e-005
0.806451612903226		0.0003285	0.0002908	0.000185	9.735e-005	7.857e-005	3.039e-005
0.838709677419355		0.000242	0.0002167	0.0001608	9.465e-005	6.56e-005	2.6e-005
0.870967741935484		0.0002071	0.0001924	0.0001277	8.275e-005	5.836e-005	2.229e-005
0.903225806451613		0.0001766	0.0001564	9.954e-005	4.922e-005	3.772e-005	1.749e-005
0.935483870967742		0.0001089	9.64e-005	6.048e-005	3.871e-005	3.139e-005	1.239e-005
0.967741935483871		9.942e-005	8.778e-005	5.594e-005	3.243e-005	3.137e-005	1.026e-005
0.1	0.0019001	0.0016996	0.0012302	0.00070357	0.00058663	0.00017417	
					Average of yearly averages:		7.46823333333333e-005

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: PerimFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	437	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility sol	2.4	mg/L		
Kd Kd		mg/L		
Koc Koc	727	mg/L		
Photolysis half-life	kdp	0.16	days	Half-life
Aerobic Aquatic Metabolism	kbacw	33.7	days	Halfife
Anaerobic Aquatic Metabolism		kbacs	33.7	days Halfife
Aerobic Soil Metabolism	asm	128	days	Halfife
Hydrolysis: pH 7		days	Half-life	
Method: CAM	1	integer	See PRZM manual	
Incorporation Depth:	DEPI	0.1	cm	
Application Rate:	TAPP	6E-4	kg/ha	
Application Efficiency:	APPEFF	1.0	fraction	
Spray Drift DRFT		fraction of application rate applied to pond		
Application Date	Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1 interval		days	Set to 0 or delete line for single app.	
Interval 2 interval		days	Set to 0 or delete line for single app.	
Interval 3 interval		days	Set to 0 or delete line for single app.	
Record 17: FILTRA				
IPSCND				
UPTKF				
Record 18: PLVKRT				
PLDKRT				
FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	

MB45950

stored as perim9502.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30

US EPA ARCHIVE DOCUMENT

Metfile: w12842.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	8.212e-005	7.172e-005	4.598e-005	3.713e-005	3.216e-005	1.373e-005
1962	0.0004838	0.0004306	0.0002971	0.0002021	0.0001793	8.382e-005
1963	0.0005424	0.0004964	0.0003807	0.0002909	0.0002563	0.0001896
1964	0.0009166	0.0008404	0.0006539	0.0005661	0.0005303	0.0003888
1965	0.0007305	0.0006937	0.0006109	0.0005494	0.000537	0.0004759
1966	0.0008143	0.0007736	0.0006609	0.000616	0.0006004	0.0005289
1967	0.001009	0.0009476	0.0008022	0.000689	0.0006637	0.0005712
1968	0.0008873	0.0008557	0.0007702	0.0007139	0.0007117	0.0006463
1969	0.001039	0.0009982	0.0009242	0.0008579	0.0008411	0.0007582
1970	0.0008681	0.0008528	0.0008165	0.0007864	0.0007836	0.0007664
1971	0.001381	0.001295	0.00108	0.000957	0.0009295	0.0008371
1972	0.001197	0.001152	0.001088	0.000997	0.0009712	0.0008941
1973	0.001062	0.001032	0.0009694	0.000941	0.0009187	0.0008832
1974	0.00216	0.001987	0.001552	0.001242	0.001164	0.0009523
1975	0.001228	0.001186	0.001096	0.001044	0.001029	0.000974
1976	0.001679	0.001582	0.001335	0.001193	0.001146	0.001024
1977	0.001006	0.001004	0.0009999	0.0009943	0.0009898	0.0009399
1978	0.0009359	0.000927	0.0009039	0.0008859	0.0008819	0.0008401
1979	0.004509	0.004039	0.002882	0.002046	0.001845	0.001319
1980	0.001477	0.001459	0.001412	0.001388	0.001381	0.001338
1981	0.001454	0.001423	0.00136	0.001317	0.001293	0.001268
1982	0.001699	0.001638	0.001506	0.001418	0.001393	0.001292
1983	0.001645	0.001591	0.001464	0.001389	0.001369	0.001291
1984	0.001375	0.001349	0.001282	0.001234	0.001228	0.001194
1985	0.001682	0.001604	0.001407	0.001269	0.00125	0.00115
1986	0.001215	0.001206	0.001176	0.00115	0.001149	0.001101
1987	0.001216	0.00119	0.001124	0.001084	0.001076	0.001039
1988	0.001472	0.001407	0.001267	0.001153	0.001116	0.00102
1989	0.001107	0.001088	0.001042	0.001027	0.001027	0.001001
1990	0.001205	0.001163	0.001063	0.0009816	0.0009588	0.000926

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.004509	0.004039	0.002882	0.002046	0.001845	0.001338
0.064516129032258		0.00216	0.001987	0.001552	0.001418	0.001393	0.001319
0.096774193548387		0.001699	0.001638	0.001506	0.001389	0.001381	0.001292
0.129032258064516		0.001682	0.001604	0.001464	0.001388	0.001369	0.001291
0.161290322580645		0.001679	0.001591	0.001412	0.001317	0.001293	0.001268
0.193548387096774		0.001645	0.001582	0.001407	0.001269	0.00125	0.001194
0.225806451612903		0.001477	0.001459	0.00136	0.001242	0.001228	0.00115
0.258064516129032		0.001472	0.001423	0.001335	0.001234	0.001164	0.001101
0.290322580645161		0.001454	0.001407	0.001282	0.001193	0.001149	0.001039
0.32258064516129		0.001381	0.001349	0.001267	0.001153	0.001146	0.001024
0.354838709677419		0.001375	0.001295	0.001176	0.00115	0.001116	0.00102
0.387096774193548		0.001228	0.001206	0.001124	0.001084	0.001076	0.001001
0.419354838709677		0.001216	0.00119	0.001096	0.001044	0.001029	0.000974
0.451612903225806		0.001215	0.001186	0.001088	0.001027	0.001027	0.0009523
0.483870967741936		0.001205	0.001163	0.00108	0.000997	0.0009898	0.0009399
0.516129032258065		0.001197	0.001152	0.001063	0.0009943	0.0009712	0.000926
0.548387096774194		0.001107	0.001088	0.001042	0.0009816	0.0009588	0.0008941
0.580645161290323		0.001062	0.001032	0.0009999	0.000957	0.0009295	0.0008832
0.612903225806452		0.001039	0.001004	0.0009694	0.000941	0.0009187	0.0008401
0.645161290322581		0.001009	0.0009982	0.0009242	0.0008859	0.0008819	0.0008371
0.67741935483871		0.001006	0.0009476	0.0009039	0.0008579	0.0008411	0.0007664
0.709677419354839		0.0009359	0.000927	0.0008165	0.0007864	0.0007836	0.0007582
0.741935483870968		0.0009166	0.0008557	0.0008022	0.0007139	0.0007117	0.0006463
0.774193548387097		0.0008873	0.0008528	0.0007702	0.000689	0.0006637	0.0005712
0.806451612903226		0.0008681	0.0008404	0.0006609	0.000616	0.0006004	0.0005289
0.838709677419355		0.0008143	0.0007736	0.0006539	0.0005661	0.000537	0.0004759
0.870967741935484		0.0007305	0.0006937	0.0006109	0.0005494	0.0005303	0.0003888
0.903225806451613		0.0005424	0.0004964	0.0003807	0.0002909	0.0002563	0.0001896
0.935483870967742		0.0004838	0.0004306	0.0002971	0.0002021	0.0001793	8.382e-005
0.967741935483871		8.212e-005	7.172e-005	4.598e-005	3.713e-005	3.216e-005	1.373e-005
0.1	0.0016973	0.0016346	0.0015018	0.0013889	0.0013798	0.0012919	
					Average of yearly averages:		0.000856885

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: perim9502
Metfile: w12842.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife	
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	3E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		

US EPA ARCHIVE DOCUMENT

Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run		IR	Pond	
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)

MB46513

stored as Perim513.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	8.919e-005	8.655e-005	7.797e-005	6.857e-005	6.444e-005	3.175e-005
1962	0.0001733	0.0001681	0.0001526	0.0001396	0.0001369	9.253e-005
1963	0.0003019	0.0002935	0.0002679	0.0002403	0.0002268	0.0001685
1964	0.0003567	0.0003527	0.0003405	0.0003279	0.0003222	0.0002694
1965	0.0004082	0.000402	0.0003814	0.0003562	0.0003451	0.0003097
1966	0.000582	0.0005711	0.0005347	0.0005008	0.000485	0.0003977
1967	0.0004902	0.0004855	0.0004749	0.0004548	0.0004515	0.0004232
1968	0.0006295	0.0006184	0.0005922	0.0005752	0.0005572	0.0004766
1969	0.0005783	0.0005732	0.000562	0.0005425	0.0005378	0.0005019
1970	0.0005184	0.0005169	0.0005117	0.0005074	0.000505	0.0004819
1971	0.000542	0.0005377	0.0005227	0.0005035	0.0005001	0.0004826
1972	0.0005763	0.0005712	0.000554	0.000531	0.0005288	0.0004993
1973	0.0005126	0.000512	0.0005097	0.0005059	0.0005033	0.000489
1974	0.0004973	0.0004944	0.0004851	0.0004814	0.0004789	0.0004612
1975	0.0004635	0.0004619	0.0004568	0.0004478	0.0004485	0.0004378
1976	0.0006198	0.0006123	0.0005871	0.0005576	0.0005504	0.0004897
1977	0.0005395	0.0005355	0.0005255	0.0005123	0.0005061	0.000483
1978	0.000563	0.0005579	0.0005484	0.0005296	0.0005293	0.0005006
1979	0.0006128	0.0006068	0.0005827	0.0005599	0.0005578	0.0005189
1980	0.0005119	0.0005103	0.0005088	0.0005064	0.0005043	0.0004905
1981	0.0005392	0.0005339	0.0005181	0.0004999	0.0004892	0.0004606
1982	0.0006275	0.0006199	0.0005929	0.0005705	0.000561	0.0005189
1983	0.0005921	0.0005873	0.0005714	0.0005519	0.0005464	0.000522
1984	0.0006725	0.0006652	0.0006403	0.0006092	0.0005979	0.0005557
1985	0.0005644	0.0005615	0.0005514	0.0005379	0.0005361	0.0005256
1986	0.0006023	0.000596	0.0005828	0.0005531	0.0005427	0.0005037
1987	0.0004919	0.0004916	0.0004905	0.0004888	0.0004869	0.0004673
1988	0.0004492	0.0004466	0.0004417	0.0004397	0.0004382	0.0004257
1989	0.0005341	0.0005291	0.0005104	0.0004788	0.0004627	0.0004297
1990	0.000439	0.0004384	0.0004363	0.0004331	0.0004316	0.0004127

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0006725	0.0006652	0.0006403	0.0006092	0.0005979	0.0005557
0.0645161290322581		0.0006295	0.0006199	0.0005929	0.0005752	0.000561	0.0005256
0.096774193548387 1		0.0006275	0.0006184	0.0005922	0.0005705	0.0005578	0.000522
0.129032258064516		0.0006198	0.0006123	0.0005871	0.0005599	0.0005572	0.0005189
0.161290322580645		0.0006128	0.0006068	0.0005828	0.0005576	0.0005504	0.0005189
0.193548387096774		0.0006023	0.000596	0.0005827	0.0005531	0.0005464	0.0005037
0.225806451612903		0.0005921	0.0005873	0.0005714	0.0005519	0.0005427	0.0005019
0.258064516129032		0.000582	0.0005732	0.000562	0.0005425	0.0005378	0.0005006
0.290322580645161		0.0005783	0.0005712	0.000554	0.0005379	0.0005361	0.0004993
0.32258064516129		0.0005763	0.0005711	0.0005514	0.000531	0.0005293	0.0004905
0.354838709677419		0.0005644	0.0005615	0.0005484	0.0005296	0.0005288	0.0004897
0.387096774193548		0.000563	0.0005579	0.0005347	0.0005123	0.0005061	0.000489
0.419354838709677		0.000542	0.0005377	0.0005255	0.0005074	0.000505	0.000483
0.451612903225806		0.0005395	0.0005355	0.0005227	0.0005064	0.0005043	0.0004826
0.483870967741936		0.0005392	0.0005339	0.0005181	0.0005059	0.0005033	0.0004819
0.516129032258065		0.0005341	0.0005291	0.0005117	0.0005035	0.0005001	0.0004766
0.548387096774194		0.0005184	0.0005169	0.0005104	0.0005008	0.0004892	0.0004673
0.580645161290323		0.0005126	0.000512	0.0005097	0.0004999	0.0004869	0.0004612
0.612903225806452		0.0005119	0.0005103	0.0005088	0.0004888	0.000485	0.0004606
0.645161290322581		0.0004973	0.0004944	0.0004905	0.0004814	0.0004789	0.0004378
0.677419354838 71		0.0004919	0.0004916	0.0004851	0.0004788	0.0004627	0.0004297
0.709677419354839		0.0004902	0.0004855	0.0004749	0.0004548	0.0004515	0.0004257
0.741935483870968		0.0004635	0.0004619	0.0004568	0.0004478	0.0004485	0.0004232
0.774193548387097		0.0004492	0.0004466	0.0004417	0.0004397	0.0004382	0.0004127
0.806451612903226		0.000439	0.0004384	0.0004363	0.0004331	0.0004316	0.0003977
0.838709677419355		0.0004082	0.000402	0.0003814	0.0003562	0.0003451	0.0003097
0.870967741935484		0.0003567	0.0003527	0.0003405	0.0003279	0.0003222	0.0002694
0.903225806451613		0.0003019	0.0002935	0.0002679	0.0002403	0.0002268	0.0001685
0.935483870967742		0.0001733	0.0001681	0.0001526	0.0001396	0.0001369	9.253e-005
0.967741935483871		8.919e-005	8.655e-005	7.797e-005	6.857e-005	6.444e-005	3.175e-005
0.1	0.00062673	0.00061779	0.00059169	0.00056944	0.00055774	0.00052169	
					Average of yearly averages:		0.000427589333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

US EPA ARCHIVE DOCUMENT

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	6E-5	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as Perim136.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001094	0.0009727	0.0006847	0.000506	0.0004595	0.0002126
1962	0.002126	0.001937	0.001497	0.001171	0.001092	0.0006959
1963	0.003644	0.003284	0.002481	0.001948	0.001788	0.001381
1964	0.00501	0.004678	0.003789	0.003154	0.003018	0.002323
1965	0.003904	0.003706	0.003255	0.002917	0.002816	0.002604
1966	0.007001	0.006438	0.005062	0.004435	0.00419	0.003289
1967	0.004616	0.00442	0.004012	0.003673	0.003655	0.003421
1968	0.00633	0.005898	0.005038	0.004657	0.00447	0.003883
1969	0.005933	0.005658	0.005132	0.004729	0.004634	0.004179
1970	0.004474	0.004442	0.00437	0.004343	0.004315	0.004039
1971	0.00519	0.005006	0.004645	0.004353	0.004266	0.003977
1972	0.006062	0.005767	0.005164	0.004722	0.004611	0.004238
1973	0.004509	0.004433	0.004358	0.004333	0.004308	0.004156
1974	0.005714	0.005462	0.004834	0.004465	0.004363	0.003986
1975	0.004231	0.004145	0.003972	0.003942	0.003918	0.003807
1976	0.006744	0.006342	0.005357	0.004697	0.004565	0.004085
1977	0.004809	0.004681	0.004496	0.004308	0.004207	0.004059
1978	0.004895	0.004738	0.004356	0.004179	0.004157	0.004021
1979	0.005751	0.005501	0.00492	0.004644	0.004614	0.004321
1980	0.004381	0.004369	0.004337	0.004324	0.004301	0.004101
1981	0.005132	0.00492	0.004557	0.004165	0.004022	0.003791
1982	0.005751	0.005491	0.004881	0.004544	0.004421	0.004098
1983	0.005266	0.00509	0.004681	0.004386	0.004385	0.004161
1984	0.006011	0.005763	0.005151	0.004731	0.004659	0.00446
1985	0.004902	0.004775	0.004493	0.004327	0.00424	0.004178
1986	0.005626	0.005386	0.00499	0.004567	0.004432	0.004148
1987	0.004248	0.004198	0.004081	0.004006	0.003984	0.003791
1988	0.004735	0.00452	0.003995	0.003602	0.003571	0.003453
1989	0.007397	0.006919	0.005626	0.004607	0.004321	0.003797
1990	0.004329	0.00425	0.004066	0.003905	0.003881	0.00368

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.007397	0.006919	0.005626	0.004731	0.004659	0.00446
0.0645161290322581		0.007001	0.006438	0.005357	0.004729	0.004634	0.004321
0.0967741935483871		0.006744	0.006342	0.005164	0.004722	0.004614	0.004238
0.129032258064516		0.00633	0.005898	0.005151	0.004697	0.004611	0.004179
0.161290322580645		0.006062	0.005767	0.005132	0.004657	0.004565	0.004178
0.193548387096774		0.006011	0.005763	0.005062	0.004644	0.00447	0.004161
0.225806451612903		0.005933	0.005658	0.005038	0.004607	0.004432	0.004156
0.258064516129032		0.005751	0.005501	0.00499	0.004567	0.004421	0.004148
0.290322580645161		0.005751	0.005491	0.00492	0.004544	0.004385	0.004101
0.32258064516129		0.005714	0.005462	0.004881	0.004465	0.004363	0.004098
0.354838709677419		0.005626	0.005386	0.004834	0.004435	0.004321	0.004085
0.387096774193548		0.005266	0.00509	0.004681	0.004386	0.004315	0.004059
0.419354838709677		0.00519	0.005006	0.004645	0.004353	0.004308	0.004039
0.451612903225806		0.005132	0.00492	0.004557	0.004343	0.004301	0.004021
0.483870967741936		0.00501	0.004775	0.004496	0.004333	0.004266	0.003986
0.516129032258065		0.004902	0.004738	0.004493	0.004327	0.00424	0.003977
0.548387096774194		0.004895	0.004681	0.00437	0.004324	0.004207	0.003883
0.580645161290323		0.004809	0.004678	0.004358	0.004308	0.00419	0.003807
0.612903225806452		0.004735	0.00452	0.004356	0.004179	0.004157	0.003797
0.645161290322581		0.004616	0.004442	0.004337	0.004165	0.004022	0.003791
0.67741935483871		0.004509	0.004433	0.004081	0.004006	0.003984	0.003791
0.709677419354839		0.004474	0.00442	0.004066	0.003942	0.003918	0.00368
0.741935483870968		0.004381	0.004369	0.004012	0.003905	0.003881	0.003453
0.774193548387097		0.004329	0.00425	0.003995	0.003673	0.003655	0.003421

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0.806451612903226	0.004248	0.004198	0.003972	0.003602	0.003571	0.003289
0.838709677419355	0.004231	0.004145	0.003789	0.003154	0.003018	0.002604
0.870967741935484	0.003904	0.003706	0.003255	0.002917	0.002816	0.002323
0.903225806451613	0.003644	0.003284	0.002481	0.001948	0.001788	0.001381
0.935483870967742	0.002126	0.001937	0.001497	0.001171	0.001092	0.0006959
0.967741935483871	0.001094	0.0009727	0.0006847	0.000506	0.0004595	0.0002126

0.1	0.0067026	0.0062976	0.0051627	0.0047195	0.0046137	0.0042321
					Average of yearly averages:	0.00354451666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	1.4E-3	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval		days	Set to 0 or delete line for single app.		
Interval 2	interval		days	Set to 0 or delete line for single app.		
Interval 3	interval		days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

House Perimeter (BES 100 Sod Farm)

Fipronil

stored as PerimFIP.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.01117	0.009991	0.007014	0.003866	0.003053	0.0009151
1962	0.01679	0.01494	0.009882	0.007976	0.005942	0.001638
1963	0.04635	0.04194	0.02942	0.01445	0.009732	0.004462
1964	0.04028	0.03609	0.0273	0.01378	0.01142	0.00495
1965	0.02463	0.02199	0.01512	0.008374	0.005921	0.002249
1966	0.02603	0.02332	0.01546	0.01209	0.01191	0.004614
1967	0.01182	0.01056	0.007403	0.005357	0.004598	0.001624
1968	0.05104	0.04574	0.03069	0.0175	0.01254	0.006202
1969	0.02566	0.02339	0.01631	0.01217	0.01031	0.004215
1970	0.007831	0.007033	0.004706	0.002729	0.002183	0.001349
1971	0.05285	0.04726	0.03523	0.01996	0.01434	0.006602
1972	0.06425	0.05816	0.04143	0.02327	0.01603	0.005869
1973	0.01305	0.01163	0.007577	0.003823	0.002813	0.001948
1974	0.007997	0.007149	0.005587	0.003937	0.003189	0.001033
1975	0.009884	0.008839	0.005968	0.003031	0.002836	0.001162
1976	0.06667	0.05952	0.03893	0.02318	0.01815	0.005389
1977	0.01602	0.01468	0.01056	0.006372	0.004684	0.002562
1978	0.04339	0.03883	0.02935	0.01616	0.01157	0.005503
1979	0.06662	0.05999	0.04062	0.02353	0.01919	0.007561
1980	0.005401	0.005037	0.003939	0.00305	0.002416	0.001369
1981	0.008777	0.008052	0.00617	0.003479	0.002895	0.001588
1982	0.05823	0.05261	0.03556	0.01862	0.01489	0.005202
1983	0.07514	0.06716	0.04591	0.02489	0.01993	0.006873
1984	0.04035	0.03639	0.02428	0.01571	0.01324	0.005248
1985	0.008082	0.007157	0.004557	0.002424	0.00277	0.001328
1986	0.02958	0.0275	0.01906	0.0102	0.007294	0.003781
1987	0.0119	0.01101	0.007899	0.006301	0.004676	0.001701
1988	0.0481	0.04311	0.02885	0.01376	0.00954	0.003103
1989	0.1798	0.164	0.1132	0.05799	0.04095	0.01295
1990	0.01056	0.009359	0.006487	0.003701	0.003136	0.001642

Sorted results

US EPA ARCHIVE DOCUMENT

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.1798	0.164	0.1132	0.05799	0.04095	0.01295
0.064516129032258 1		0.07514	0.06716	0.04591	0.02489	0.01993	0.007561
0.096774193548387 1		0.06667	0.05999	0.04143	0.02353	0.01919	0.006873
0.129032258064516		0.06662	0.05952	0.04062	0.02327	0.01815	0.006602
0.161290322580645		0.06425	0.05816	0.03893	0.02318	0.01603	0.006202
0.193548387096774		0.05823	0.05261	0.03556	0.01996	0.01489	0.005869
0.225806451612903		0.05285	0.04726	0.03523	0.01862	0.01434	0.005503
0.258064516129032		0.05104	0.04574	0.03069	0.0175	0.01324	0.005389
0.290322580645161		0.0481	0.04311	0.02942	0.01616	0.01254	0.005248
0.32258064516129		0.04635	0.04194	0.02935	0.01571	0.01191	0.005202
0.354838709677419		0.04339	0.03883	0.02885	0.01445	0.01157	0.00495
0.387096774193548		0.04035	0.03639	0.0273	0.01378	0.01142	0.004614
0.419354838709677		0.04028	0.03609	0.02428	0.01376	0.01031	0.004462
0.451612903225806		0.02958	0.0275	0.01906	0.01217	0.009732	0.004215
0.483870967741936		0.02603	0.02339	0.01631	0.01209	0.00954	0.003781
0.516129032258065		0.02566	0.02332	0.01546	0.0102	0.007294	0.003103
0.548387096774194		0.02463	0.02199	0.01512	0.008374	0.005942	0.002562
0.580645161290323		0.01679	0.01494	0.01056	0.007976	0.005921	0.002249
0.612903225806452		0.01602	0.01468	0.009882	0.006372	0.004684	0.001948
0.645161290322581		0.01305	0.01163	0.007899	0.006301	0.004676	0.001701
0.67741935483871		0.0119	0.01101	0.007577	0.005357	0.004598	0.001642
0.709677419354839		0.01182	0.01056	0.007403	0.003937	0.003189	0.001638
0.741935483870968		0.01117	0.009991	0.007014	0.003866	0.003136	0.001624
0.774193548387097		0.01056	0.009359	0.006487	0.003823	0.003053	0.001588
0.806451612903226		0.009884	0.008839	0.00617	0.003701	0.002895	0.001369
0.838709677419355		0.008777	0.008052	0.005968	0.003479	0.002836	0.001349
0.870967741935484		0.008082	0.007157	0.005587	0.00305	0.002813	0.001328
0.903225806451613		0.007997	0.007149	0.004706	0.003031	0.00277	0.001162
0.935483870967742		0.007831	0.007033	0.004557	0.002729	0.002416	0.001033
0.967741935483871		0.005401	0.005037	0.003939	0.002424	0.002183	0.0009151
0.1	0.066665	0.059943	0.041349	0.023504	0.019086	0.0068459	
					Average of yearly averages:		0.00382107

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: PerimFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.013	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as perim9502.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0004978	0.0004469	0.0003216	0.0002417	0.0002189	0.0001025
1962	0.001388	0.001271	0.0009894	0.0007751	0.0007231	0.0004306
1963	0.003173	0.002904	0.002228	0.001613	0.001443	0.001029
1964	0.003582	0.003382	0.002845	0.002456	0.002367	0.0019
1965	0.002996	0.002871	0.002577	0.002346	0.002275	0.002133
1966	0.005177	0.004819	0.003918	0.003482	0.003312	0.00268
1967	0.003652	0.003524	0.003255	0.003016	0.003003	0.002834
1968	0.005028	0.00473	0.004191	0.003849	0.003797	0.003307
1969	0.004845	0.004667	0.004445	0.004183	0.004133	0.00371
1970	0.004207	0.004168	0.004066	0.004029	0.004004	0.003776
1971	0.005455	0.005233	0.004777	0.004341	0.004202	0.003863
1972	0.00652	0.006204	0.005477	0.004911	0.004639	0.004232
1973	0.004489	0.004481	0.004458	0.00444	0.004419	0.004272

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1974	0.005213	0.005054	0.004645	0.004398	0.004325	0.004084
1975	0.004164	0.004106	0.004039	0.004016	0.003997	0.003894
1976	0.005957	0.005689	0.00501	0.00453	0.004435	0.004081
1977	0.005114	0.004981	0.004644	0.00442	0.004348	0.004187
1978	0.004949	0.00482	0.004594	0.004335	0.00426	0.004151
1979	0.006398	0.006139	0.005485	0.005008	0.004876	0.004522
1980	0.004728	0.004711	0.004666	0.004639	0.004618	0.004424
1981	0.005065	0.004926	0.004675	0.004399	0.004293	0.004172
1982	0.005529	0.005352	0.004921	0.004682	0.004603	0.004382
1983	0.006231	0.005976	0.005364	0.004926	0.004913	0.004492
1984	0.005836	0.00569	0.005316	0.005036	0.005008	0.004859
1985	0.00502	0.004935	0.004738	0.004656	0.004638	0.004554
1986	0.006224	0.006031	0.005412	0.004948	0.004824	0.004653
1987	0.004883	0.004818	0.004664	0.004573	0.004552	0.004352
1988	0.005776	0.005521	0.00488	0.004319	0.004212	0.004098
1989	0.009313	0.008758	0.007206	0.005919	0.005542	0.004747
1990	0.005544	0.005456	0.005245	0.005055	0.005009	0.004777

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.009313	0.008758	0.007206	0.005919	0.005542	0.004859
0.0645161290322581		0.00652	0.006204	0.005485	0.005055	0.005009	0.004777
0.0967741935483871		0.006398	0.006139	0.005477	0.005036	0.005008	0.004747
0.129032258064516		0.006231	0.006031	0.005412	0.005008	0.004913	0.004653
0.161290322580645		0.006224	0.005976	0.005364	0.004948	0.004876	0.004554
0.193548387096774		0.005957	0.00569	0.005316	0.004926	0.004824	0.004522
0.225806451612903		0.005836	0.005689	0.005245	0.004911	0.004639	0.004492
0.258064516129032		0.005776	0.005521	0.00501	0.004682	0.004638	0.004424
0.290322580645161		0.005544	0.005456	0.004921	0.004656	0.004618	0.004382
0.32258064516129		0.005529	0.005352	0.00488	0.004639	0.004603	0.004352
0.354838709677419		0.005455	0.005233	0.004777	0.004573	0.004552	0.004272
0.387096774193548		0.005213	0.005054	0.004738	0.00453	0.004435	0.004232
0.419354838709677		0.005177	0.004981	0.004675	0.00444	0.004419	0.004187
0.451612903225806		0.005114	0.004935	0.004666	0.00442	0.004348	0.004172
0.483870967741936		0.005065	0.004926	0.004664	0.004399	0.004325	0.004151
0.516129032258065		0.005028	0.00482	0.004645	0.004398	0.004293	0.004098
0.548387096774194		0.00502	0.004819	0.004644	0.004341	0.00426	0.004084
0.580645161290323		0.004949	0.004818	0.004594	0.004335	0.004212	0.004081
0.612903225806452		0.004883	0.00473	0.004458	0.004319	0.004202	0.003894
0.645161290322581		0.004845	0.004711	0.004445	0.004183	0.004133	0.003863
0.67741935483871		0.004728	0.004667	0.004191	0.004029	0.004004	0.003776
0.709677419354839		0.004489	0.004481	0.004066	0.004016	0.003997	0.00371
0.741935483870968		0.004207	0.004168	0.004039	0.003849	0.003797	0.003307
0.774193548387097		0.004164	0.004106	0.003918	0.003482	0.003312	0.002834
0.806451612903226		0.003652	0.003524	0.003255	0.003016	0.003003	0.00268
0.838709677419355		0.003582	0.003382	0.002845	0.002456	0.002367	0.002133
0.870967741935484		0.003173	0.002904	0.002577	0.002346	0.002275	0.0019
0.903225806451613		0.002996	0.002871	0.002228	0.001613	0.001443	0.001029
0.935483870967742		0.001388	0.001271	0.0009894	0.0007751	0.0007231	0.0004306
0.967741935483871		0.0004978	0.0004469	0.0003216	0.0002417	0.0002189	0.0001025
0.1	0.0063813	0.0061282	0.0054705	0.0050332	0.0049985	0.0047376	
					Average of yearly averages:		0.00362327

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: perim9502
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife	
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0006	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

US EPA ARCHIVE DOCUMENT

stored as Perim513.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001487	0.0001443	0.00013	0.0001143	0.000108	5.327e-005
1962	0.0003827	0.0003701	0.0003328	0.0003011	0.0002937	0.0001871
1963	0.0008446	0.000824	0.0007565	0.0006007	0.0005415	0.0003961
1964	0.0008602	0.0008465	0.000823	0.0008075	0.0008029	0.0007201
1965	0.0009881	0.0009753	0.0009321	0.0008788	0.0008553	0.0007913
1966	0.001322	0.001301	0.001229	0.001163	0.00113	0.0009704
1967	0.001164	0.001154	0.00113	0.001085	0.001077	0.00102
1968	0.001553	0.001536	0.001477	0.001406	0.001362	0.0012
1969	0.001548	0.001536	0.001502	0.001478	0.001477	0.001348
1970	0.00149	0.001486	0.001471	0.001457	0.001447	0.001367
1971	0.001806	0.001784	0.001711	0.00163	0.001582	0.001432
1972	0.002033	0.002006	0.001924	0.001816	0.001713	0.00156
1973	0.001725	0.00172	0.001704	0.001683	0.00167	0.001599
1974	0.001546	0.001539	0.001521	0.001512	0.001507	0.001477
1975	0.00144	0.001436	0.001422	0.00141	0.001403	0.001368
1976	0.001724	0.001708	0.001651	0.00159	0.001581	0.001442
1977	0.00164	0.00163	0.001595	0.001555	0.001535	0.001482
1978	0.001684	0.001671	0.001652	0.0016	0.001567	0.001496
1979	0.002074	0.002049	0.001966	0.001859	0.001788	0.001637
1980	0.00175	0.001747	0.001736	0.001727	0.001717	0.001641
1981	0.001675	0.001663	0.001629	0.001589	0.001567	0.001535
1982	0.001883	0.001866	0.001807	0.001728	0.001727	0.001632
1983	0.002061	0.002036	0.001953	0.001858	0.001828	0.00166
1984	0.002054	0.00204	0.001992	0.001927	0.001913	0.001836
1985	0.001801	0.001793	0.001771	0.001759	0.00175	0.001702
1986	0.001954	0.001943	0.001886	0.00181	0.001777	0.001724
1987	0.001705	0.001701	0.001689	0.001672	0.001664	0.001602
1988	0.001841	0.001819	0.001747	0.001595	0.00155	0.00151
1989	0.002816	0.00277	0.002616	0.002354	0.002216	0.001815
1990	0.002047	0.002042	0.002024	0.002002	0.002002	0.001899

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.002816	0.00277	0.002616	0.002354	0.002216	0.001899
0.0645161290322581		0.002074	0.002049	0.002024	0.002002	0.002002	0.001836
0.096774193548387 1		0.002061	0.002042	0.001992	0.001927	0.001913	0.001815
0.129032258064516		0.002054	0.00204	0.001966	0.001859	0.001828	0.001724
0.161290322580645		0.002047	0.002036	0.001953	0.001858	0.001788	0.001702
0.193548387096774		0.002033	0.002006	0.001924	0.001816	0.001777	0.00166
0.225806451612903		0.001954	0.001943	0.001886	0.00181	0.00175	0.001641
0.258064516129032		0.001883	0.001866	0.001807	0.001759	0.001727	0.001637
0.290322580645161		0.001841	0.001819	0.001771	0.001728	0.001717	0.001632
0.32258064516129		0.001806	0.001793	0.001747	0.001727	0.001713	0.001602
0.354838709677419		0.001801	0.001784	0.001736	0.001683	0.00167	0.001599
0.387096774193548		0.00175	0.001747	0.001711	0.001672	0.001664	0.00156
0.419354838709677		0.001725	0.00172	0.001704	0.00163	0.001582	0.001535
0.451612903225806		0.001724	0.001708	0.001689	0.0016	0.001581	0.00151
0.483870967741936		0.001705	0.001701	0.001652	0.001595	0.001567	0.001496
0.516129032258065		0.001684	0.001671	0.001651	0.00159	0.001567	0.001482
0.548387096774194		0.001675	0.001663	0.001629	0.001589	0.00155	0.001477
0.580645161290323		0.00164	0.00163	0.001595	0.001555	0.001535	0.001442
0.612903225806452		0.001553	0.001539	0.001521	0.001512	0.001507	0.001432
0.645161290322581		0.001548	0.001536	0.001502	0.001478	0.001477	0.001368
0.67741935483871		0.001546	0.001536	0.001477	0.001457	0.001447	0.001367
0.709677419354839		0.00149	0.001486	0.001471	0.00141	0.001403	0.001348
0.741935483870968		0.00144	0.001436	0.001422	0.001406	0.001362	0.0012
0.774193548387097		0.001322	0.001301	0.001229	0.001163	0.00113	0.00102
0.806451612903226		0.001164	0.001154	0.00113	0.001085	0.001077	0.0009704
0.838709677419355		0.0009881	0.0009753	0.0009321	0.0008788	0.0008553	0.0007913
0.870967741935484		0.0008602	0.0008465	0.000823	0.0008075	0.0008029	0.0007201
0.903225806451613		0.0008446	0.000824	0.0007565	0.0006007	0.0005415	0.0003961
0.935483870967742		0.0003827	0.0003701	0.0003328	0.0003011	0.0002937	0.0001871
0.967741935483871		0.0001487	0.0001443	0.00013	0.0001143	0.000108	5.327e-005
0.1	0.0020603	0.0020418	0.0019894	0.0019202	0.0019045	0.0018059	
					Average of yearly averages:		0.00133674233333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7			days	Half-life	
Method:	CAM	1	integer	See PRZM manual		

US EPA ARCHIVE DOCUMENT

Incorporation Depth:		DEPI	0.1	cm
Application Rate:		TAPP	0.0001	kg/ha
Application Efficiency:		APPEFF	1.0	fraction
Spray Drift	DRFT		fraction of application rate applied to pond	
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm
Interval 1	interval	180	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run		IR	Pond	
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)

MB46136

stored as Perim136.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.002422	0.002154	0.001516	0.00112	0.001017	0.0004729
1962	0.006816	0.006175	0.004692	0.003609	0.003352	0.001984
1963	0.01555	0.01408	0.01052	0.007498	0.00668	0.004744
1964	0.0175	0.01641	0.01347	0.01144	0.01101	0.008753
1965	0.01397	0.01331	0.01178	0.01064	0.01029	0.00963
1966	0.02473	0.02279	0.01805	0.01589	0.01504	0.01201
1967	0.01665	0.01596	0.01452	0.01332	0.01325	0.01247
1968	0.02321	0.02161	0.01869	0.01705	0.01677	0.01446
1969	0.02198	0.02101	0.01972	0.01835	0.01809	0.0161
1970	0.01841	0.01819	0.01764	0.01746	0.01733	0.01614
1971	0.02417	0.02299	0.02067	0.01849	0.01785	0.01629
1972	0.02939	0.02768	0.02387	0.02102	0.01973	0.01785
1973	0.01893	0.01889	0.01879	0.01868	0.01857	0.0178
1974	0.02268	0.02179	0.01958	0.01831	0.01794	0.01675
1975	0.01718	0.01686	0.01647	0.01635	0.01625	0.01572
1976	0.02611	0.02464	0.02105	0.01865	0.01819	0.0165
1977	0.02167	0.02095	0.01917	0.01803	0.01767	0.01686
1978	0.02065	0.01996	0.01876	0.01746	0.01712	0.01658
1979	0.02781	0.02641	0.02298	0.02059	0.01998	0.01829
1980	0.01923	0.01913	0.01889	0.01876	0.01865	0.01768
1981	0.02088	0.02013	0.01887	0.01748	0.01696	0.01637
1982	0.02308	0.02213	0.01991	0.01872	0.01832	0.01728
1983	0.02657	0.0252	0.02202	0.01983	0.01979	0.01776
1984	0.02434	0.02355	0.02159	0.02019	0.02007	0.01938
1985	0.02029	0.01983	0.0188	0.01832	0.01822	0.01783
1986	0.02638	0.02531	0.02203	0.01969	0.01908	0.01824
1987	0.0195	0.01915	0.01832	0.01786	0.01774	0.01679
1988	0.02415	0.02277	0.01943	0.01668	0.01611	0.01558
1989	0.04175	0.03873	0.03058	0.02419	0.02238	0.01862
1990	0.02255	0.02207	0.02094	0.01997	0.01977	0.01865

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.04175	0.03873	0.03058	0.02419	0.02238	0.01938
0.0645161290322581		0.02939	0.02768	0.02387	0.02102	0.02007	0.01865
0.096774193548387 1		0.02781	0.02641	0.02298	0.02059	0.01998	0.01862
0.129032258064516		0.02657	0.02531	0.02203	0.02019	0.01979	0.01829
0.161290322580645		0.02638	0.0252	0.02202	0.01997	0.01977	0.01824
0.193548387096774		0.02611	0.02464	0.02159	0.01983	0.01973	0.01785
0.225806451612903		0.02473	0.02355	0.02105	0.01969	0.01908	0.01783
0.258064516129032		0.02434	0.02299	0.02094	0.01876	0.01865	0.0178
0.290322580645161		0.02417	0.02279	0.02067	0.01872	0.01857	0.01776
0.32258064516129		0.02415	0.02277	0.01991	0.01868	0.01832	0.01768
0.354838709677419		0.02321	0.02213	0.01972	0.01865	0.01822	0.01728
0.387096774193548		0.02308	0.02207	0.01958	0.01849	0.01819	0.01686
0.419354838709677		0.02268	0.02179	0.01943	0.01835	0.01809	0.01679
0.451612903225806		0.02255	0.02161	0.01917	0.01832	0.01794	0.01675
0.483870967741936		0.02198	0.02101	0.01889	0.01831	0.01785	0.01658
0.516129032258065		0.02167	0.02095	0.01887	0.01803	0.01774	0.0165
0.548387096774194		0.02088	0.02013	0.0188	0.01786	0.01767	0.01637
0.580645161290323		0.02065	0.01996	0.01879	0.01748	0.01733	0.01629
0.612903225806452		0.02029	0.01983	0.01876	0.01746	0.01712	0.01614
0.645161290322581		0.0195	0.01915	0.01869	0.01746	0.01696	0.0161
0.67741935483871		0.01923	0.01913	0.01832	0.01705	0.01677	0.01572
0.709677419354839		0.01893	0.01889	0.01805	0.01668	0.01625	0.01558
0.741935483870968		0.01841	0.01819	0.01764	0.01635	0.01611	0.01446
0.774193548387097		0.0175	0.01686	0.01647	0.01589	0.01504	0.01247
0.806451612903226		0.01718	0.01641	0.01452	0.01332	0.01325	0.01201
0.838709677419355		0.01665	0.01596	0.01347	0.01144	0.01101	0.00963
0.870967741935484		0.01555	0.01408	0.01178	0.01064	0.01029	0.008753
0.903225806451613		0.01397	0.01331	0.01052	0.007498	0.00668	0.004744
0.935483870967742		0.006816	0.006175	0.004692	0.003609	0.003352	0.001984
0.967741935483871		0.002422	0.002154	0.001516	0.00112	0.001017	0.0004729
0.1	0.027686	0.0263	0.022885	0.02055	0.019961	0.018587	
					Average of yearly averages:		0.01478613

US EPA ARCHIVE DOCUMENT

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		astn	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0031	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

House Perimeter (BES 100 Residential)

Fipronil

stored as PerimFIP.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.01117	0.009991	0.007014	0.003866	0.003053	0.0008845
1962	0.01516	0.0135	0.008928	0.00714	0.00533	0.001404
1963	0.02339	0.02076	0.01409	0.008423	0.006776	0.001864
1964	0.03943	0.0353	0.02669	0.01342	0.01115	0.003164
1965	0.02401	0.02143	0.01473	0.008152	0.005764	0.001497
1966	0.02501	0.02241	0.01483	0.01184	0.01157	0.003803
1967	0.01138	0.01017	0.007133	0.005057	0.00436	0.001259
1968	0.04135	0.03698	0.02631	0.01525	0.01094	0.002817
1969	0.01089	0.009731	0.008147	0.005474	0.003918	0.001463
1970	0.00728	0.006515	0.004298	0.002281	0.001703	0.0004831
1971	0.02003	0.01795	0.01189	0.007321	0.0061	0.002166
1972	0.01965	0.01772	0.01179	0.006549	0.005142	0.001656
1973	0.005244	0.004696	0.003485	0.001793	0.001265	0.0005635
1974	0.007432	0.006642	0.005196	0.003635	0.002962	0.0008077
1975	0.008766	0.007839	0.00529	0.002686	0.002535	0.0007589
1976	0.06121	0.05464	0.03574	0.02135	0.01679	0.004374
1977	0.008137	0.0072	0.004787	0.003826	0.002789	0.001055
1978	0.0313	0.02776	0.01772	0.01057	0.008601	0.002392
1979	0.03123	0.02799	0.01806	0.009005	0.007468	0.002078
1980	0.004487	0.004168	0.002767	0.002246	0.00193	0.0006584
1981	0.008473	0.00751	0.006044	0.003407	0.002816	0.0009114
1982	0.05596	0.05054	0.03411	0.01784	0.01432	0.003953
1983	0.01359	0.01212	0.009106	0.005072	0.005346	0.001588
1984	0.03928	0.03538	0.02348	0.01518	0.01284	0.003515
1985	0.007118	0.006301	0.004009	0.002109	0.002353	0.0006955
1986	0.01381	0.01221	0.008634	0.006311	0.004505	0.001156
1987	0.002361	0.002089	0.001311	0.0007027	0.0006798	0.0002685
1988	0.003827	0.003389	0.002157	0.001067	0.0008173	0.000379
1989	0.007263	0.006487	0.004237	0.002051	0.001422	0.000712
1990	0.002154	0.001902	0.001212	0.0008386	0.00068	0.0002222

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.06121	0.05464	0.03574	0.02135	0.01679	0.004374
0.0645161290322581		0.05596	0.05054	0.03411	0.01784	0.01432	0.003953
0.0967741935483871		0.04135	0.03698	0.02669	0.01525	0.01284	0.003803
0.129032258064516		0.03943	0.03538	0.02631	0.01518	0.01157	0.003515
0.161290322580645		0.03928	0.0353	0.02348	0.01342	0.01115	0.003164
0.193548387096774		0.0313	0.02799	0.01806	0.01184	0.01094	0.002817
0.225806451612903		0.03123	0.02776	0.01772	0.01057	0.008601	0.002392
0.258064516129032		0.02501	0.02241	0.01483	0.009005	0.007468	0.002166
0.290322580645161		0.02401	0.02143	0.01473	0.008423	0.006776	0.002078

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0.322580645161 29	0.02339	0.02076	0.01409	0.008152	0.0061	0.001864
0.354838709677419	0.02003	0.01795	0.01189	0.007321	0.005764	0.001656
0.387096774193548	0.01965	0.01772	0.01179	0.00714	0.005346	0.001588
0.419354838709677	0.01516	0.0135	0.009106	0.006549	0.00533	0.001497
0.451612903225806	0.01381	0.01221	0.008928	0.006311	0.005142	0.001463
0.483870967741936	0.01359	0.01212	0.008634	0.005474	0.004505	0.001404
0.516129032258065	0.01138	0.01017	0.008147	0.005072	0.00436	0.001259
0.548387096774194	0.01117	0.009991	0.007133	0.005057	0.003918	0.001156
0.580645161290323	0.01089	0.009731	0.007014	0.003866	0.003053	0.001055
0.612903225806452	0.008766	0.007839	0.006044	0.003826	0.002962	0.0009114
0.645161290322581	0.008473	0.00751	0.00529	0.003635	0.002816	0.0008845
0.67741935483871	0.008137	0.0072	0.005196	0.003407	0.002789	0.0008077
0.709677419354839	0.007432	0.006642	0.004787	0.002686	0.002535	0.0007589
0.741935483870968	0.00728	0.006515	0.004298	0.002281	0.002353	0.000712
0.774193548387097	0.007263	0.006487	0.004237	0.002246	0.00193	0.0006955
0.806451612903226	0.007118	0.006301	0.004009	0.002109	0.001703	0.0006584
0.838709677419355	0.005244	0.004696	0.003485	0.002051	0.001422	0.0005635
0.870967741935484	0.004487	0.004168	0.002767	0.001793	0.001265	0.0004831
0.903225806451613	0.003827	0.003389	0.002157	0.001067	0.0008173	0.000379
0.935483870967742	0.002361	0.002089	0.001311	0.0008386	0.00068	0.0002685
0.967741935483871	0.002154	0.001902	0.001212	0.0007027	0.0006798	0.0002222
0.1	0.041158	0.03682	0.026652	0.015243	0.012713	0.0037742
					Average of yearly averages:	0.00161829

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: PerimFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments
Molecular weight		mwt	437	g/mol	
Henry's Law Const.		henry		atm-m^3/mol	
Vapor Pressure		vapr		torr	
Solubility	sol	2.4	mg/L		
Kd	Kd		mg/L		
Koc	Koc	727	mg/L		
Photolysis half-life		kdp	0.16	days	Half-life
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife
Anaerobic Aquatic Metabolism		kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	1	integer	See PRZM manual	
Incorporation Depth:		DEPI	0.1	cm	
Application Rate:		TAPP	0.013	kg/ha	
Application Efficiency:		APPEFF	1.0	fraction	
Spray Drift	DRFT		fraction of application rate applied to pond		
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm	
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	0.5			
Flag for Index Res. Run		IR	Pond		
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)	

MB45950

stored as perim9502.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0004978	0.0004469	0.0003216	0.0002417	0.0002185	0.0001021
1962	0.000963	0.0008859	0.0007014	0.0005587	0.0005236	0.0003357
1963	0.001658	0.001509	0.001167	0.000932	0.0008589	0.0006668
1964	0.002287	0.00215	0.001784	0.001504	0.001446	0.001123
1965	0.001862	0.00178	0.001585	0.001433	0.001387	0.001285
1966	0.003265	0.003032	0.002447	0.002164	0.002054	0.001634
1967	0.002253	0.002173	0.002002	0.001851	0.001844	0.001732
1968	0.003052	0.002872	0.002506	0.00234	0.002254	0.001979
1969	0.00291	0.002797	0.00258	0.002401	0.002359	0.002148
1970	0.002293	0.002281	0.002251	0.00224	0.002229	0.002111
1971	0.002645	0.002569	0.002415	0.002284	0.002248	0.00211
1972	0.003035	0.002915	0.002665	0.002475	0.002423	0.00225
1973	0.002384	0.002353	0.002316	0.002306	0.002296	0.002232
1974	0.002904	0.002803	0.002544	0.002382	0.002339	0.002167
1975	0.002274	0.002239	0.002173	0.002156	0.002146	0.002097
1976	0.003399	0.003235	0.002819	0.002525	0.002464	0.002242
1977	0.002576	0.002522	0.002441	0.002357	0.002311	0.002242
1978	0.002626	0.00256	0.002395	0.002315	0.002303	0.002237
1979	0.003006	0.002903	0.002654	0.002523	0.00251	0.00238
1980	0.002411	0.002405	0.002393	0.002387	0.002378	0.00229
1981	0.00275	0.00266	0.002499	0.002327	0.002261	0.002155
1982	0.003034	0.002924	0.002665	0.002515	0.002459	0.002307

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1983	0.002804	0.002734	0.002566	0.00244	0.002438	0.002341
1984	0.003174	0.003071	0.00281	0.00262	0.002586	0.00249
1985	0.002677	0.002625	0.002505	0.002432	0.002398	0.002369
1986	0.003008	0.002909	0.002743	0.002552	0.002489	0.002356
1987	0.002388	0.002368	0.002321	0.002289	0.00228	0.00219
1988	0.00257	0.002483	0.002264	0.0021	0.002086	0.002029
1989	0.003724	0.003533	0.002997	0.002549	0.002419	0.002183
1990	0.00241	0.002379	0.002303	0.002234	0.002223	0.002128

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.003724	0.003533	0.002997	0.00262	0.002586	0.00249
0.0645161290322581		0.003399	0.003235	0.002819	0.002552	0.00251	0.00238
0.0967741935483871		0.003265	0.003071	0.00281	0.002549	0.002489	0.002369
0.129032258064516		0.003174	0.003032	0.002743	0.002525	0.002464	0.002356
0.161290322580645		0.003052	0.002924	0.002665	0.002523	0.002459	0.002341
0.193548387096774		0.003035	0.002915	0.002665	0.002515	0.002438	0.002307
0.225806451612903		0.003034	0.002909	0.002654	0.002475	0.002423	0.00229
0.258064516129032		0.003008	0.002903	0.00258	0.00244	0.002419	0.00225
0.290322580645161		0.003006	0.002872	0.002566	0.002432	0.002398	0.002242
0.32258064516129		0.00291	0.002803	0.002544	0.002401	0.002378	0.002242
0.354838709677419		0.002904	0.002797	0.002506	0.002387	0.002359	0.002237
0.387096774193548		0.002804	0.002734	0.002505	0.002382	0.002339	0.002232
0.419354838709677		0.00275	0.00266	0.002499	0.002357	0.002311	0.00219
0.451612903225806		0.002677	0.002625	0.002447	0.00234	0.002303	0.002183
0.483870967741936		0.002645	0.002569	0.002441	0.002327	0.002296	0.002167
0.516129032258065		0.002626	0.00256	0.002415	0.002315	0.00228	0.002155
0.548387096774194		0.002576	0.002522	0.002395	0.002306	0.002261	0.002148
0.580645161290323		0.00257	0.002483	0.002393	0.002289	0.002254	0.002128
0.612903225806452		0.002411	0.002405	0.002321	0.002284	0.002248	0.002111
0.645161290322581		0.00241	0.002379	0.002316	0.00224	0.002229	0.00211
0.67741935483871		0.002388	0.002368	0.002303	0.002234	0.002223	0.002097
0.709677419354839		0.002384	0.002353	0.002264	0.002164	0.002146	0.002029
0.741935483870968		0.002293	0.002281	0.002251	0.002156	0.002086	0.001979
0.774193548387097		0.002287	0.002239	0.002173	0.0021	0.002054	0.001732
0.806451612903226		0.002274	0.002173	0.002002	0.001851	0.001844	0.001634
0.838709677419355		0.002253	0.00215	0.001784	0.001504	0.001446	0.001285
0.870967741935484		0.001862	0.00178	0.001585	0.001433	0.001387	0.001123
0.903225806451613		0.001658	0.001509	0.001167	0.000932	0.0008589	0.0006668
0.935483870967742		0.000963	0.0008859	0.0007014	0.0005587	0.0005236	0.0003357
0.967741935483871		0.0004978	0.0004469	0.0003216	0.0002417	0.0002185	0.0001021
0.1	0.0032559	0.0030671	0.0028033	0.0025466	0.0024865	0.0023677	
					Average of yearly averages:		0.00193038666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: perim9502
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife	
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0006	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as Perim513.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001487	0.0001443	0.00013	0.0001143	0.0001074	5.291e-005
1962	0.0002889	0.0002802	0.0002543	0.0002326	0.0002283	0.0001542
1963	0.0005032	0.0004891	0.0004465	0.0004004	0.000378	0.0002808
1964	0.0005945	0.0005879	0.0005675	0.0005465	0.0005371	0.000449
1965	0.0006803	0.0006701	0.0006357	0.0005936	0.0005753	0.0005162
1966	0.0009701	0.0009519	0.0008912	0.0008347	0.0008083	0.0006629

US EPA ARCHIVE DOCUMENT

1967	0.000817	0.0008091	0.0007915	0.000758	0.0007525	0.0007054
1968	0.001049	0.001031	0.000987	0.0009587	0.0009287	0.0007944
1969	0.0009638	0.0009554	0.0009368	0.0009043	0.0008964	0.0008365
1970	0.000864	0.0008616	0.0008528	0.0008458	0.0008418	0.0008032
1971	0.0009034	0.0008961	0.0008713	0.0008393	0.0008336	0.0008044
1972	0.0009605	0.000952	0.0009234	0.0008851	0.0008814	0.0008322
1973	0.0008544	0.0008533	0.0008495	0.0008433	0.0008388	0.000815
1974	0.0008289	0.0008241	0.0008086	0.0008024	0.0007981	0.0007686
1975	0.0007725	0.0007698	0.0007614	0.0007464	0.0007475	0.0007298
1976	0.001033	0.00102	0.0009784	0.0009293	0.0009173	0.0008161
1977	0.0008992	0.0008926	0.0008759	0.0008538	0.0008434	0.000805
1978	0.0009383	0.0009297	0.000914	0.0008827	0.0008821	0.0008343
1979	0.001021	0.001011	0.0009712	0.0009332	0.0009296	0.0008648
1980	0.0008532	0.0008505	0.000848	0.000844	0.0008405	0.0008175
1981	0.0008987	0.0008899	0.0008635	0.0008332	0.0008154	0.0007676
1982	0.001046	0.001033	0.0009881	0.0009509	0.0009349	0.0008649
1983	0.0009869	0.0009789	0.0009523	0.0009198	0.0009106	0.0008701
1984	0.001121	0.001109	0.001067	0.001015	0.0009964	0.0009262
1985	0.0009407	0.0009359	0.0009191	0.0008965	0.0008934	0.000876
1986	0.001004	0.0009933	0.0009714	0.0009218	0.0009045	0.0008395
1987	0.0008198	0.0008193	0.0008175	0.0008146	0.0008116	0.0007788
1988	0.0007486	0.0007444	0.0007362	0.0007329	0.0007303	0.0007095
1989	0.0008902	0.0008819	0.0008507	0.000798	0.0007712	0.0007162
1990	0.0007317	0.0007307	0.0007272	0.0007219	0.0007194	0.0006879

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001121	0.001109	0.001067	0.001015	0.0009964	0.0009262
0.0645161290322581		0.001049	0.001033	0.0009881	0.0009587	0.0009349	0.000876
0.0967741935483871		0.001046	0.001031	0.000987	0.0009509	0.0009296	0.0008701
0.129032258064516		0.001033	0.00102	0.0009784	0.0009332	0.0009287	0.0008649
0.161290322580645		0.001021	0.001011	0.0009714	0.0009293	0.0009173	0.0008648
0.193548387096774		0.001004	0.0009933	0.0009712	0.0009218	0.0009106	0.0008395
0.225806451612903		0.0009869	0.0009789	0.0009523	0.0009198	0.0009045	0.0008365
0.258064516129032		0.0009701	0.0009554	0.0009368	0.0009043	0.0008964	0.0008343
0.290322580645161		0.0009638	0.000952	0.0009234	0.0008965	0.0008934	0.0008322
0.32258064516129		0.0009605	0.0009519	0.0009191	0.0008851	0.0008821	0.0008175
0.354838709677419		0.0009407	0.0009359	0.000914	0.0008827	0.0008814	0.0008161
0.387096774193548		0.0009383	0.0009297	0.0008912	0.0008538	0.0008434	0.000815
0.419354838709677		0.0009034	0.0008961	0.0008759	0.0008458	0.0008418	0.000805
0.451612903225806		0.0008992	0.0008926	0.0008713	0.000844	0.0008405	0.0008044
0.483870967741936		0.0008987	0.0008899	0.0008635	0.0008433	0.0008388	0.0008032
0.516129032258065		0.0008902	0.0008819	0.0008528	0.0008393	0.0008336	0.0007944
0.548387096774194		0.000864	0.0008616	0.0008507	0.0008347	0.0008154	0.0007788
0.580645161290323		0.0008544	0.0008533	0.0008495	0.0008332	0.0008116	0.0007686
0.612903225806452		0.0008532	0.0008505	0.000848	0.0008146	0.0008083	0.0007676
0.645161290322581		0.0008289	0.0008241	0.0008175	0.0008024	0.0007981	0.0007298
0.67741935483871		0.0008198	0.0008193	0.0008086	0.000798	0.0007712	0.0007162
0.709677419354839		0.000817	0.0008091	0.0007915	0.000758	0.0007525	0.0007095
0.741935483870968		0.0007725	0.0007698	0.0007614	0.0007464	0.0007475	0.0007054
0.774193548387097		0.0007486	0.0007444	0.0007362	0.0007329	0.0007303	0.0006879
0.806451612903226		0.0007317	0.0007307	0.0007272	0.0007219	0.0007194	0.0006629
0.838709677419355		0.0006803	0.0006701	0.0006357	0.0005936	0.0005753	0.0005162
0.870967741935484		0.0005945	0.0005879	0.0005675	0.0005465	0.0005371	0.000449
0.903225806451613		0.0005032	0.0004891	0.0004465	0.0004004	0.000378	0.0002808
0.935483870967742		0.0002889	0.0002802	0.0002543	0.0002326	0.0002283	0.0001542
0.967741935483871		0.0001487	0.0001443	0.00013	0.0001143	0.0001074	5.291e-005
0.1	0.0010447	0.0010299	0.00098614	0.00094913	0.00092951	0.00086958	
					Average of yearly averages:		0.000712663666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	1E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

US EPA ARCHIVE DOCUMENT

MB46136

stored as Perim136.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.002422	0.002154	0.001516	0.00112	0.001017	0.0004708
1962	0.004708	0.004288	0.003314	0.002592	0.002419	0.001541
1963	0.00807	0.007271	0.005493	0.004314	0.003959	0.003057
1964	0.01109	0.01036	0.00839	0.006983	0.006682	0.005143
1965	0.008643	0.008207	0.007207	0.00646	0.006236	0.005765
1966	0.0155	0.01426	0.01121	0.009821	0.009278	0.007282
1967	0.01022	0.009788	0.008885	0.008133	0.008092	0.007576
1968	0.01402	0.01306	0.01116	0.01031	0.009898	0.008599
1969	0.01314	0.01253	0.01136	0.01047	0.01026	0.009253
1970	0.009906	0.009836	0.009677	0.009616	0.009554	0.008943
1971	0.01149	0.01108	0.01029	0.009639	0.009445	0.008805
1972	0.01342	0.01277	0.01143	0.01046	0.01021	0.009383
1973	0.009985	0.009815	0.00965	0.009595	0.009538	0.009201
1974	0.01265	0.01209	0.0107	0.009887	0.009662	0.008826
1975	0.009369	0.009179	0.008795	0.008729	0.008676	0.008429
1976	0.01493	0.01404	0.01186	0.0104	0.01011	0.009046
1977	0.01065	0.01037	0.009956	0.00954	0.009315	0.008989
1978	0.01084	0.01049	0.009646	0.009253	0.009205	0.008904
1979	0.01273	0.01218	0.0109	0.01028	0.01022	0.009568
1980	0.0097	0.009674	0.009604	0.009575	0.009523	0.009082
1981	0.01136	0.01089	0.01009	0.009224	0.008906	0.008394
1982	0.01273	0.01216	0.01081	0.01006	0.009791	0.009073
1983	0.01166	0.01127	0.01037	0.009712	0.009709	0.009213
1984	0.01331	0.01276	0.01141	0.01048	0.01032	0.009876
1985	0.01086	0.01057	0.009948	0.009582	0.009388	0.009252
1986	0.01246	0.01193	0.01105	0.01011	0.009814	0.009185
1987	0.009406	0.009296	0.009036	0.008871	0.008822	0.008394
1988	0.01048	0.01001	0.008847	0.007976	0.007908	0.007646
1989	0.01638	0.01532	0.01246	0.0102	0.009569	0.008407
1990	0.009586	0.009412	0.009003	0.008648	0.008594	0.00815

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.01638	0.01532	0.01246	0.01048	0.01032	0.009876
0.0645161290322581		0.0155	0.01426	0.01186	0.01047	0.01026	0.009568
0.0967741935483871		0.01493	0.01404	0.01143	0.01046	0.01022	0.009383
0.129032258064516		0.01402	0.01306	0.01141	0.0104	0.01021	0.009253
0.161290322580645		0.01342	0.01277	0.01136	0.01031	0.01011	0.009252
0.193548387096774		0.01331	0.01276	0.01121	0.01028	0.009898	0.009213
0.225806451612903		0.01314	0.01253	0.01116	0.0102	0.009814	0.009201
0.258064516129032		0.01273	0.01218	0.01105	0.01011	0.009791	0.009185
0.290322580645161		0.01273	0.01216	0.0109	0.01006	0.009709	0.009082
0.32258064516129		0.01265	0.01209	0.01081	0.009887	0.009662	0.009073
0.354838709677419		0.01246	0.01193	0.0107	0.009821	0.009569	0.009046
0.387096774193548		0.01166	0.01127	0.01037	0.009712	0.009554	0.008989
0.419354838709677		0.01149	0.01108	0.01029	0.009639	0.009538	0.008943
0.451612903225806		0.01136	0.01089	0.01009	0.009616	0.009523	0.008904
0.483870967741936		0.01109	0.01057	0.009956	0.009595	0.009445	0.008826
0.516129032258065		0.01086	0.01049	0.009948	0.009582	0.009388	0.008805
0.548387096774194		0.01084	0.01037	0.009677	0.009575	0.009315	0.008599
0.580645161290323		0.01065	0.01036	0.00965	0.00954	0.009278	0.008429
0.612903225806452		0.01048	0.01001	0.009646	0.009253	0.009205	0.008407
0.645161290322581		0.01022	0.009836	0.009604	0.009224	0.008906	0.008394
0.67741935483871		0.009985	0.009815	0.009036	0.008871	0.008822	0.008394
0.709677419354839		0.009906	0.009788	0.009003	0.008729	0.008676	0.00815
0.741935483870968		0.0097	0.009674	0.008885	0.008648	0.008594	0.007646
0.774193548387097		0.009586	0.009412	0.008847	0.008133	0.008092	0.007576
0.806451612903226		0.009406	0.009296	0.008795	0.007976	0.007908	0.007282
0.838709677419355		0.009369	0.009179	0.00839	0.006983	0.006682	0.005765
0.870967741935484		0.008643	0.008207	0.007207	0.00646	0.006236	0.005143
0.903225806451613		0.00807	0.007271	0.005493	0.004314	0.003959	0.003057
0.935483870967742		0.004708	0.004288	0.003314	0.002592	0.002419	0.001541
0.967741935483871		0.002422	0.002154	0.001516	0.00112	0.001017	0.0004708
0.1	0.014839	0.013942	0.011428	0.010454	0.010219	0.00937	

Average of yearly averages: 0.00784842666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments
Molecular weight		mwt	453	g/mol	
Henry's Law Const.		henry		atm-m^3/mol	
Vapor Pressure		vapr		torr	
Solubility	sol	0.16	mg/L		
Kd	Kd		mg/L		
Koc	Koc	4208	mg/L		
Photolysis half-life		kdp	7	days	Half-life
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife

US EPA ARCHIVE DOCUMENT

Aerobic Soil Metabolism		asm	700	days	Halfife
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	1	integer	See PRZM manual	
Incorporation Depth:		DEPI	0.1	cm	
Application Rate:		TAPP	0.0031	kg/ha	
Application Efficiency:		APPEFF	1.0	fraction	
Spray Drift	DRFT		fraction of application rate applied to pond		
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm	
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	0.5			
Flag for Index Res. Run		IR	Pond		
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)	

Pine Seeds

Fipronil

stored as NCPINE.out
Chemical: Fipronil
PRZM environment: NCappleC.txt modified Satday, 12 October 2002 at 16:09:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w03812.dvf modified Wedday, 3 July 2002 at 09:05:50
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.037037037037037		0	0	0	0	0	0
0.0740740740740741		0	0	0	0	0	0
0.111111111111111		0	0	0	0	0	0
0.148148148148148		0	0	0	0	0	0
0.185185185185185		0	0	0	0	0	0
0.222222222222222		0	0	0	0	0	0
0.259259259259259		0	0	0	0	0	0
0.296296296296296		0	0	0	0	0	0
0.333333333333333		0	0	0	0	0	0
0.37037037037037		0	0	0	0	0	0
0.407407407407407		0	0	0	0	0	0
0.444444444444444		0	0	0	0	0	0
0.481481481481481		0	0	0	0	0	0
0.518518518518518		0	0	0	0	0	0
0.555555555555556		0	0	0	0	0	0
0.592592592592593		0	0	0	0	0	0
0.62962962962963		0	0	0	0	0	0
0.666666666666667		0	0	0	0	0	0
0.703703703703704		0	0	0	0	0	0
0.740740740740741		0	0	0	0	0	0
0.777777777777778		0	0	0	0	0	0
0.814814814814815		0	0	0	0	0	0
0.851851851851852		0	0	0	0	0	0
0.888888888888889		0	0	0	0	0	0
0.925925925925926		0	0	0	0	0	0
0.962962962962963		0	0	0	0	0	0
0.1	0	0	0	0	0	0	
					Average of yearly averages:		0

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: NCPINE
Metfile: w03812.dvf

US EPA ARCHIVE DOCUMENT

PRZM scenario:		NCappleC.txt				
EXAMS environment file:		pond298.exv				
Chemical Name:		Fipronil				
Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	7.62	cm		
Application Rate:		TAPP	0.1456	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as NCPINE9502.out
Chemical: MB45950
PRZM environment: NCappleC.txt modified Satday, 12 October 2002 at 16:09:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w03812.dvf modified Wedday, 3 July 2002 at 09:05:50
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.037037037037037		0	0	0	0	0	0
0.0740740740740741		0	0	0	0	0	0
0.111111111111111		0	0	0	0	0	0
0.148148148148148		0	0	0	0	0	0
0.185185185185185		0	0	0	0	0	0
0.222222222222222		0	0	0	0	0	0
0.259259259259259		0	0	0	0	0	0
0.296296296296296		0	0	0	0	0	0
0.333333333333333		0	0	0	0	0	0
0.37037037037037		0	0	0	0	0	0
0.407407407407407		0	0	0	0	0	0
0.444444444444444		0	0	0	0	0	0
0.481481481481481		0	0	0	0	0	0
0.518518518518518		0	0	0	0	0	0
0.555555555555556		0	0	0	0	0	0
0.592592592592593		0	0	0	0	0	0
0.62962962962963		0	0	0	0	0	0
0.666666666666667		0	0	0	0	0	0
0.703703703703704		0	0	0	0	0	0
0.740740740740741		0	0	0	0	0	0
0.777777777777778		0	0	0	0	0	0
0.814814814814815		0	0	0	0	0	0
0.851851851851852		0	0	0	0	0	0
0.888888888888889		0	0	0	0	0	0
0.925925925925926		0	0	0	0	0	0
0.962962962962963		0	0	0	0	0	0

0.1	0	0	0	0	0	0
					Average of yearly averages:	0

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: NCPINE9502
Metfile: w03812.dvf
PRZM scenario: NCappleC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	7.62	cm		
Application Rate:		TAPP	0.0071	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as NCPIN513.out
Chemical: MB46513
PRZM environment: NCappleC.txt modified Satday, 12 October 2002 at 16:09:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w03812.dvf modified Wedday, 3 July 2002 at 09:05:50
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.037037037037037		0	0	0	0	0	0
0.0740740740740741		0	0	0	0	0	0
0.111111111111111		0	0	0	0	0	0
0.148148148148148		0	0	0	0	0	0
0.185185185185185		0	0	0	0	0	0
0.222222222222222		0	0	0	0	0	0
0.259259259259259		0	0	0	0	0	0
0.296296296296296		0	0	0	0	0	0
0.333333333333333		0	0	0	0	0	0
0.37037037037037		0	0	0	0	0	0
0.407407407407407		0	0	0	0	0	0
0.444444444444444		0	0	0	0	0	0
0.481481481481481		0	0	0	0	0	0
0.518518518518518		0	0	0	0	0	0
0.555555555555556		0	0	0	0	0	0
0.592592592592593		0	0	0	0	0	0
0.62962962962963		0	0	0	0	0	0

US EPA ARCHIVE DOCUMENT

0.666666666666667	0	0	0	0	0	0
0.703703703703704	0	0	0	0	0	0
0.740740740740741	0	0	0	0	0	0
0.777777777777778	0	0	0	0	0	0
0.814814814814815	0	0	0	0	0	0
0.851851851851852	0	0	0	0	0	0
0.888888888888889	0	0	0	0	0	0
0.925925925925926	0	0	0	0	0	0
0.962962962962963	0	0	0	0	0	0
0.1 0	0	0	0	0	0	
					Average of yearly averages:	0

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: NCPIN513
Metfile: w03812.dvf
PRZM scenario: NCappleC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1320	days	Halfife	
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	7.62	cm		
Application Rate:		TAPP	0.0014	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

Stored as NCPIN136.out
Chemical: MB46136
PRZM environment: NCappleC.txt modified Satday, 12 October 2002 at 16:09:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w03812.dvf modified Wedday, 3 July 2002 at 09:05:50
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.037037037037037		0	0	0	0	0	0
0.0740740740740741		0	0	0	0	0	0
0.111111111111111		0	0	0	0	0	0
0.148148148148148		0	0	0	0	0	0
0.185185185185185		0	0	0	0	0	0
0.222222222222222		0	0	0	0	0	0

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0.259259259259259	0	0	0	0	0	0
0.296296296296296	0	0	0	0	0	0
0.333333333333333	0	0	0	0	0	0
0.37037037037037	0	0	0	0	0	0
0.407407407407407	0	0	0	0	0	0
0.444444444444444	0	0	0	0	0	0
0.481481481481481	0	0	0	0	0	0
0.518518518518518	0	0	0	0	0	0
0.555555555555556	0	0	0	0	0	0
0.592592592592593	0	0	0	0	0	0
0.62962962962963	0	0	0	0	0	0
0.666666666666667	0	0	0	0	0	0
0.703703703703704	0	0	0	0	0	0
0.740740740740741	0	0	0	0	0	0
0.777777777777778	0	0	0	0	0	0
0.814814814814815	0	0	0	0	0	0
0.851851851851852	0	0	0	0	0	0
0.888888888888889	0	0	0	0	0	0
0.925925925925926	0	0	0	0	0	0
0.962962962962963	0	0	0	0	0	0
0.1	0	0	0	0	0	0
					Average of yearly averages:	0

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: NCPIN136
Metfile: w03812.dvf
PRZM scenario: NCappleC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife	
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	7.62	cm		
Application Rate:		TAPP	0.0348	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Fruit Fly Stations

Fipronil

stored as BaitFIP.out
Chemical: Fipronil
PRZM environment: FLcitrusC.txt modified Satday, 12 October 2002 at 15:39:50
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w12842.dvf modified Wedday, 3 July 2002 at 09:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.004632	0.004191	0.002948	0.001856	0.00136	0.0007948
1962	0.003745	0.003339	0.002447	0.001786	0.001355	0.0007281
1963	0.008644	0.007831	0.005285	0.00354	0.002647	0.001579
1964	0.009995	0.008893	0.006033	0.00421	0.003399	0.002037
1965	0.006462	0.005743	0.004211	0.002596	0.002424	0.0009166

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1966	0.006877	0.006192	0.004259	0.002752	0.00241	0.001051
1967	0.00696	0.006236	0.004342	0.003767	0.003014	0.001214
1968	0.009163	0.00816	0.005873	0.003465	0.002936	0.001299
1969	0.006747	0.00598	0.00455	0.003483	0.003226	0.001754
1970	0.003878	0.003587	0.002807	0.001789	0.001569	0.0009503
1971	0.009209	0.008134	0.005141	0.002616	0.002377	0.001563
1972	0.006057	0.00535	0.004237	0.0035	0.003015	0.001464
1973	0.00522	0.004628	0.003524	0.002382	0.001879	0.000934
1974	0.01105	0.009807	0.006436	0.003555	0.002699	0.0009278
1975	0.00837	0.007435	0.005074	0.003099	0.002628	0.001306
1976	0.01004	0.009056	0.006134	0.003843	0.00307	0.001125
1977	0.002011	0.001812	0.00129	0.0009536	0.0008482	0.000476
1978	0.003292	0.003021	0.002204	0.001441	0.001163	0.0007372
1979	0.03484	0.03111	0.02038	0.01019	0.007702	0.00301
1980	0.004856	0.004343	0.002859	0.002011	0.001679	0.0009287
1981	0.008709	0.007846	0.005299	0.0029	0.002088	0.001285
1982	0.01112	0.009992	0.007526	0.004392	0.003752	0.001471
1983	0.005411	0.004786	0.003312	0.002206	0.002146	0.001261
1984	0.003524	0.003111	0.002138	0.001814	0.001676	0.0008
1985	0.005787	0.005076	0.003272	0.002875	0.002753	0.001232
1986	0.003528	0.00319	0.002201	0.001427	0.00117	0.0008585
1987	0.005681	0.00504	0.003705	0.002445	0.001903	0.001381
1988	0.005795	0.005119	0.00374	0.002864	0.002243	0.001239
1989	0.004029	0.003772	0.002584	0.002022	0.001784	0.000751
1990	0.00925	0.008167	0.00561	0.002997	0.002184	0.001005

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.03484	0.03111	0.02038	0.01019	0.007702	0.00301
0.064516129032258 1		0.01112	0.009992	0.007526	0.004392	0.003752	0.002037
0.096774193548387 1		0.01105	0.009807	0.006436	0.00421	0.003399	0.001754
0.129032258064516		0.01004	0.009056	0.006134	0.003843	0.003226	0.001579
0.161290322580645		0.009995	0.008893	0.006033	0.003767	0.00307	0.001563
0.193548387096774		0.00925	0.008167	0.005873	0.003555	0.003015	0.001471
0.225806451612903		0.009209	0.00816	0.00561	0.00354	0.003014	0.001464
0.258064516129032		0.009163	0.008134	0.005299	0.0035	0.002936	0.001381
0.290322580645161		0.008709	0.007846	0.005285	0.003483	0.002753	0.001306
0.32258064516129		0.008644	0.007831	0.005141	0.003465	0.002699	0.001299
0.354838709677419		0.00837	0.007435	0.005074	0.003099	0.002647	0.001285
0.387096774193548		0.00696	0.006236	0.00455	0.002997	0.002628	0.001261
0.419354838709677		0.006877	0.006192	0.004342	0.0029	0.002424	0.001239
0.451612903225806		0.006747	0.00598	0.004259	0.002875	0.00241	0.001232
0.483870967741936		0.006462	0.005743	0.004237	0.002864	0.002377	0.001214
0.516129032258065		0.006057	0.00535	0.004211	0.002752	0.002243	0.001125
0.548387096774194		0.005795	0.005119	0.00374	0.002616	0.002184	0.001051
0.580645161290323		0.005787	0.005076	0.003705	0.002596	0.002146	0.001005
0.612903225806452		0.005681	0.00504	0.003524	0.002445	0.002088	0.0009503
0.645161290322581		0.005411	0.004786	0.003312	0.002382	0.001903	0.000934
0.67741935483871		0.00522	0.004628	0.003272	0.002206	0.001879	0.0009287
0.709677419354839		0.004856	0.004343	0.002948	0.002022	0.001784	0.0009278
0.741935483870968		0.004632	0.004191	0.002859	0.002011	0.001679	0.0009166
0.774193548387097		0.004029	0.003772	0.002807	0.001856	0.001676	0.0008585
0.806451612903226		0.003878	0.003587	0.002584	0.001814	0.001569	0.0008
0.838709677419355		0.003745	0.003339	0.002447	0.001789	0.00136	0.0007948
0.870967741935484		0.003528	0.00319	0.002204	0.001786	0.001355	0.000751
0.903225806451613		0.003524	0.003111	0.002201	0.001441	0.00117	0.0007372
0.935483870967742		0.003292	0.003021	0.002138	0.001427	0.001163	0.0007281
0.967741935483871		0.002011	0.001812	0.00129	0.0009536	0.0008482	0.000476
0.1	0.010949	0.0097319	0.0064058	0.0041733	0.0033817	0.0017365	
					Average of yearly averages:		0.00120263333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: BaitFIP
Metfile: w12842.dvf
PRZM scenario: FLcitrusC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name	Value	Units	Comments	
Molecular weight	mwt	437	g/mol		
Henry's Law Const.	henry		atm-m^3/mol		
Vapor Pressure	vapr		torr		
Solubility	sol	2.4	mg/L		
Kd	Kd		mg/L		
Koc	Koc	727	mg/L		
Photolysis half-life	kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism	kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism	kbacs	33.7	days	Halfife	
Aerobic Soil Metabolism	asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	1	integer	See PRZM manual	
Incorporation Depth:	DEPI	0.1	cm		
Application Rate:	TAPP	0.001	kg/ha		
Application Efficiency:	APPEFF	1.0	fraction		
Spray Drift	DRFT	fraction of application rate applied to pond			
Application Date	Date	1-1	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	90	days	Set to 0 or delete line for single app.	
Interval 2	interval	90	days	Set to 0 or delete line for single app.	
Interval 3	interval	90	days	Set to 0 or delete line for single app.	
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	0.5			

US EPA ARCHIVE DOCUMENT

Flag for Index Res. Run	IR	Pond	
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)

MB45950

stored as bait9502.out
Chemical: MB45950
PRZM environment: FLcitrusC.txt modified Satday, 12 October 2002 at 14:39:50
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12842.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001746	0.0001599	0.0001085	8.58e-005	7.877e-005	4.591e-005
1962	0.0005317	0.0004847	0.0003677	0.0002956	0.0002744	0.000165
1963	0.0008039	0.0007504	0.0006089	0.0005015	0.0004585	0.0003623
1964	0.001133	0.001063	0.0009086	0.0008629	0.0008308	0.0006694
1965	0.001098	0.001053	0.0009756	0.0009054	0.0008937	0.0007982
1966	0.001146	0.001111	0.001026	0.000963	0.0009479	0.0008817
1967	0.001455	0.001387	0.001236	0.001108	0.00108	0.0009516
1968	0.001349	0.0013	0.001201	0.001152	0.001146	0.001053
1969	0.001544	0.001497	0.001448	0.001376	0.001357	0.001243
1970	0.001428	0.001413	0.001379	0.001338	0.001333	0.001303
1971	0.001757	0.001706	0.001574	0.001506	0.001473	0.001353
1972	0.001763	0.001712	0.001649	0.001547	0.001522	0.001436
1973	0.001649	0.001613	0.001556	0.001546	0.001515	0.001459
1974	0.002234	0.002122	0.001844	0.001649	0.001602	0.001467
1975	0.001811	0.001763	0.001655	0.001602	0.001575	0.001474
1976	0.001931	0.001871	0.001716	0.001646	0.001617	0.001529
1977	0.00155	0.001542	0.001521	0.001508	0.001499	0.00144
1978	0.001542	0.001518	0.001462	0.001417	0.001405	0.001362
1979	0.003161	0.002942	0.002393	0.001979	0.001893	0.001662
1980	0.001814	0.001791	0.001733	0.001709	0.001706	0.00167
1981	0.001942	0.001895	0.001776	0.00173	0.001696	0.00165
1982	0.002117	0.00206	0.00196	0.001855	0.001857	0.001727
1983	0.002021	0.00198	0.001894	0.001847	0.001844	0.001784
1984	0.001824	0.001802	0.001754	0.001738	0.001732	0.001694
1985	0.002194	0.002119	0.001917	0.001783	0.001772	0.001654
1986	0.001858	0.001832	0.001759	0.001698	0.00168	0.001643
1987	0.001973	0.00192	0.001795	0.001708	0.001687	0.001644
1988	0.002207	0.002126	0.001963	0.001833	0.001781	0.00166
1989	0.001787	0.001766	0.001738	0.001708	0.001692	0.001653
1990	0.001932	0.00188	0.001771	0.001665	0.001632	0.001588

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.003161	0.002942	0.002393	0.001979	0.001893	0.001784
0.064516129032258 1		0.002234	0.002126	0.001963	0.001855	0.001857	0.001727
0.0967741935483871		0.002207	0.002122	0.00196	0.001847	0.001844	0.001694
0.129032258064516		0.002194	0.002119	0.001917	0.001833	0.001781	0.00167
0.161290322580645		0.002117	0.00206	0.001894	0.001783	0.001772	0.001662
0.193548387096774		0.002021	0.00198	0.001844	0.001738	0.001732	0.00166
0.225806451612903		0.001973	0.00192	0.001795	0.00173	0.001706	0.001654
0.258064516129032		0.001942	0.001895	0.001776	0.001709	0.001696	0.001653
0.290322580645161		0.001932	0.00188	0.001771	0.001708	0.001692	0.00165
0.32258064516129		0.001931	0.001871	0.001759	0.001708	0.001687	0.001644
0.354838709677419		0.001858	0.001832	0.001754	0.001698	0.00168	0.001643
0.387096774193548		0.001824	0.001802	0.001738	0.001665	0.001632	0.001588
0.419354838709677		0.001814	0.001791	0.001733	0.001649	0.001617	0.001529
0.451612903225806		0.001811	0.001766	0.001716	0.001646	0.001602	0.001474
0.483870967741936		0.001787	0.001763	0.001655	0.001602	0.001575	0.001467
0.516129032258065		0.001763	0.001712	0.001649	0.001547	0.001522	0.001459
0.548387096774194		0.001757	0.001706	0.001574	0.001546	0.001515	0.00144
0.580645161290323		0.001649	0.001613	0.001556	0.001508	0.001499	0.001436
0.612903225806452		0.00155	0.001542	0.001521	0.001506	0.001473	0.001362
0.645161290322581		0.001544	0.001518	0.001462	0.001417	0.001405	0.001353
0.67741935483871		0.001542	0.001497	0.001448	0.001376	0.001357	0.001303
0.709677419354839		0.001455	0.001413	0.001379	0.001338	0.001333	0.001243
0.741935483870968		0.001428	0.001387	0.001236	0.001152	0.001146	0.001053
0.774193548387097		0.001349	0.0013	0.001201	0.001108	0.00108	0.0009516
0.806451612903226		0.001146	0.001111	0.001026	0.000963	0.0009479	0.0008817
0.838709677419355		0.001133	0.001063	0.0009756	0.0009054	0.0008937	0.0007982
0.870967741935484		0.001098	0.001053	0.0009086	0.0008629	0.0008308	0.0006694
0.903225806451613		0.0008039	0.0007504	0.0006089	0.0005015	0.0004585	0.0003623
0.935483870967742		0.0005317	0.0004847	0.0003677	0.0002956	0.0002744	0.000165
0.967741935483871		0.0001746	0.0001599	0.0001085	8.58e-005	7.877e-005	4.591e-005
0.1	0.0022057	0.0021217	0.0019557	0.0018456	0.0018377	0.0016916	
					Average of yearly averages:		0.001300737

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: bait9502
Metfile: w12842.dvf
PRZM scenario: FLcitrusC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	421	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility sol	0.04	mg/L		
Kd Kd		mg/L		

US EPA ARCHIVE DOCUMENT

Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	5E-5	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-1	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	90	days	Set to 0 or delete line for single app.		
Interval 2	interval	90	days	Set to 0 or delete line for single app.		
Interval 3	interval	90	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as Bait5132.out
Chemical: MB46513
PRZM environment: FLcitrusC.txt modified Satday, 12 October 2002 at 15:39:50
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w12842.dvf modified Wedday, 3 July 2002 at 09:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	7.971e-005	7.801e-005	6.372e-005	5.71e-005	5.484e-005	3.323e-005
1962	0.0001673	0.0001637	0.0001519	0.0001372	0.0001334	9.406e-005
1963	0.0002831	0.0002789	0.0002631	0.000239	0.0002228	0.0001796
1964	0.0004019	0.0003957	0.0003795	0.0003716	0.0003645	0.0003092
1965	0.0004243	0.0004196	0.0004131	0.0003979	0.0003938	0.0003573
1966	0.0004611	0.0004567	0.0004448	0.0004301	0.0004238	0.0003955
1967	0.000528	0.0005222	0.0005054	0.0004818	0.0004757	0.0004251
1968	0.0005396	0.000534	0.0005191	0.0005098	0.0005033	0.0004683
1969	0.0006211	0.0006161	0.0006082	0.0005925	0.0005864	0.0005449
1970	0.0005918	0.000589	0.0005864	0.0005802	0.0005795	0.0005667
1971	0.0006556	0.0006513	0.0006401	0.0006336	0.0006267	0.0005886
1972	0.0006989	0.0006936	0.0006825	0.0006634	0.0006557	0.0006217
1973	0.0006598	0.0006565	0.000652	0.0006497	0.0006419	0.0006268
1974	0.0007649	0.0007555	0.0007252	0.000688	0.000674	0.0006237
1975	0.0007109	0.0007055	0.0006912	0.0006738	0.0006673	0.000628
1976	0.0007262	0.0007215	0.0007045	0.000693	0.000687	0.0006525
1977	0.0006525	0.0006515	0.000648	0.0006444	0.0006412	0.0006142
1978	0.0006212	0.000619	0.0006123	0.0006022	0.0005975	0.0005791
1979	0.0009689	0.0009527	0.000897	0.0008225	0.0007973	0.0006993
1980	0.0007364	0.0007337	0.0007239	0.0007186	0.0007166	0.0007017
1981	0.0007558	0.0007511	0.0007371	0.0007265	0.0007174	0.0007003
1982	0.0008219	0.0008151	0.000806	0.0007798	0.0007731	0.0007257
1983	0.0007791	0.0007752	0.0007658	0.0007574	0.0007572	0.000736
1984	0.0007259	0.0007247	0.000721	0.000716	0.0007137	0.0007003
1985	0.0007762	0.0007705	0.000749	0.0007256	0.0007243	0.0006842
1986	0.0007267	0.0007239	0.0007152	0.000702	0.000696	0.000681
1987	0.0007193	0.0007154	0.0007027	0.0006892	0.0006841	0.0006743
1988	0.0007692	0.0007626	0.0007447	0.0007217	0.0007108	0.0006765
1989	0.0007032	0.0006999	0.000692	0.0006884	0.000683	0.0006707
1990	0.0007214	0.0007158	0.0007039	0.0006783	0.0006662	0.0006474

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0009689	0.0009527	0.000897	0.0008225	0.0007973	0.000736
0.0645161290322581		0.0008219	0.0008151	0.000806	0.0007798	0.0007731	0.0007257
0.0967741935483871		0.0007791	0.0007752	0.0007658	0.0007574	0.0007572	0.0007017
0.129032258064516		0.0007762	0.0007705	0.000749	0.0007265	0.0007243	0.0007003
0.161290322580645		0.0007692	0.0007626	0.0007447	0.0007256	0.0007174	0.0007003
0.193548387096774		0.0007649	0.0007555	0.0007371	0.0007217	0.0007166	0.0006993
0.225806451612903		0.0007558	0.0007511	0.0007252	0.0007186	0.0007137	0.0006842
0.258064516129032		0.0007364	0.0007337	0.0007239	0.000716	0.0007108	0.000681
0.290322580645161		0.0007267	0.0007247	0.000721	0.000702	0.000696	0.0006765
0.32258064516129		0.0007262	0.0007239	0.0007152	0.000693	0.000687	0.0006743
0.354838709677419		0.0007259	0.0007215	0.0007045	0.0006892	0.0006841	0.0006707
0.387096774193548		0.0007214	0.0007158	0.0007039	0.0006884	0.000683	0.0006525
0.419354838709677		0.0007193	0.0007154	0.0007027	0.000688	0.000674	0.0006474
0.451612903225806		0.0007109	0.0007055	0.000692	0.0006783	0.0006673	0.000628
0.483870967741936		0.0007032	0.0006999	0.0006912	0.0006738	0.0006662	0.0006268
0.516129032258065		0.0006989	0.0006936	0.0006825	0.0006634	0.0006557	0.0006237
0.548387096774194		0.0006598	0.0006565	0.000652	0.0006497	0.0006419	0.0006217
0.580645161290323		0.0006556	0.0006515	0.000648	0.0006444	0.0006412	0.0006142
0.612903225806452		0.0006525	0.0006513	0.0006401	0.0006336	0.0006267	0.0005886
0.645161290322581		0.0006212	0.000619	0.0006123	0.0006022	0.0005975	0.0005791
0.67741935483871		0.0006211	0.0006161	0.0006082	0.0005925	0.0005864	0.0005667
0.709677419354839		0.0005918	0.000589	0.0005864	0.0005802	0.0005795	0.0005449
0.741935483870968		0.0005396	0.000534	0.0005191	0.0005098	0.0005033	0.0004683
0.774193548387097		0.000528	0.0005222	0.0005054	0.0004818	0.0004757	0.0004251
0.806451612903226		0.0004611	0.0004567	0.0004448	0.0004301	0.0004238	0.0003955

0.838709677419355	0.0004243	0.0004196	0.0004131	0.0003979	0.0003938	0.0003573
0.870967741935484	0.0004019	0.0003957	0.0003795	0.0003716	0.0003645	0.0003092
0.903225806451613	0.0002831	0.0002789	0.0002631	0.000239	0.0002228	0.0001796
0.935483870967742	0.0001673	0.0001637	0.0001519	0.0001372	0.0001334	9.406e-005
0.967741935483871	7.971e-005	7.801e-005	6.372e-005	5.71e-005	5.484e-005	3.323e-005

0.1	0.00077881	0.00077473	0.00076412	0.00075431	0.00075391	0.00070156
					Average of yearly averages:	0.000553529666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Bait5132
Metfile: w12842.dvf
PRZM scenario: FLcitrusC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name	Value	Units	Comments	
Molecular weight	mwt	389	g/mol		
Henry's Law Const.	henry		atm-m^3/mol		
Vapor Pressure	vapr		torr		
Solubility sol	0.95	mg/L			
Kd Kd		mg/L			
Koc Koc	1290	mg/L			
Photolysis half-life	kdp		days	Half-life	
Aerobic Aquatic Metabolism	kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1320	days	Halfife
Aerobic Soil Metabolism	asm	660	days	Halfife	
Hydrolysis: pH 7		days	Half-life		
Method: CAM	1	integer	See PRZM manual		
Incorporation Depth:	DEPI	0.1	cm		
Application Rate:	TAPP	9E-6	kg/ha		
Application Efficiency:	APPEFF	1.0	fraction		
Spray Drift DRFT		fraction of application rate applied to pond			
Application Date	Date	1-1	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1 interval	90	days	Set to 0 or delete line for single app.		
Interval 2 interval	90	days	Set to 0 or delete line for single app.		
Interval 3 interval	90	days	Set to 0 or delete line for single app.		
Record 17: FILTRA					
IPSCND					
UPTKF					
Record 18: PLVKRT					
PLDKRT					
FEXTRC	0.5				
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as Bait136.out
Chemical: MB46136
PRZM environment: FLcitrusC.txt modified Satday, 12 October 2002 at 14:39:50
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12842.dvf modified Wedday, 3 July 2002 at 08:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0006477	0.0005878	0.0003905	0.0003078	0.0002813	0.0001634
1962	0.001998	0.001804	0.001335	0.001065	0.0009823	0.0005851
1963	0.002988	0.002763	0.002189	0.001778	0.00162	0.001281
1964	0.004194	0.0039	0.003269	0.003085	0.002959	0.002367
1965	0.003956	0.003765	0.003446	0.003171	0.003123	0.002778
1966	0.004046	0.003902	0.003558	0.003313	0.003262	0.003018
1967	0.005175	0.004892	0.004278	0.00378	0.003673	0.003209
1968	0.004665	0.004465	0.004071	0.003856	0.003843	0.003513
1969	0.005317	0.005123	0.004915	0.004639	0.004566	0.004145
1970	0.004791	0.004729	0.004587	0.004445	0.00443	0.004298
1971	0.00599	0.005789	0.005249	0.004976	0.004853	0.004414
1972	0.00594	0.005729	0.005461	0.005063	0.004973	0.004658
1973	0.005446	0.005295	0.00506	0.005014	0.004895	0.004688
1974	0.007707	0.007237	0.006106	0.005351	0.005176	0.004673
1975	0.005962	0.005765	0.005328	0.005136	0.005029	0.004656
1976	0.006407	0.006156	0.005522	0.005251	0.005138	0.004814
1977	0.004883	0.004849	0.004763	0.004708	0.004673	0.004448
1978	0.00485	0.004751	0.004522	0.004348	0.004303	0.004146
1979	0.0112	0.01028	0.008028	0.006418	0.006095	0.005245
1980	0.005793	0.0057	0.005463	0.005373	0.005359	0.00523
1981	0.006283	0.006086	0.0056	0.005412	0.005281	0.005113
1982	0.006877	0.006642	0.006232	0.005834	0.005846	0.00536
1983	0.006483	0.006312	0.005958	0.005775	0.005765	0.005544
1984	0.005689	0.005598	0.005421	0.005358	0.005329	0.00518
1985	0.007151	0.006837	0.006022	0.005504	0.005464	0.005017
1986	0.005799	0.005692	0.005394	0.005153	0.005099	0.004964
1987	0.006273	0.006053	0.005537	0.0052	0.005125	0.00497
1988	0.007177	0.006842	0.006183	0.005681	0.005484	0.005021
1989	0.005509	0.005425	0.005315	0.005194	0.005134	0.004984
1990	0.006096	0.005878	0.005438	0.005035	0.004913	0.004743

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129	0.0112	0.01028	0.008028	0.006418	0.006095	0.005544	
0.064516129032258	0.007707	0.007237	0.006232	0.005834	0.005846	0.00536	
0.096774193548387	0.007177	0.006842	0.006183	0.005775	0.005765	0.005245	
0.129032258064516	0.007151	0.006837	0.006106	0.005681	0.005484	0.00523	
0.161290322580645	0.006877	0.006642	0.006022	0.005504	0.005464	0.00518	
0.193548387096774	0.006483	0.006312	0.005958	0.005412	0.005359	0.005113	

US EPA ARCHIVE DOCUMENT

0.225806451612903	0.006407	0.006156	0.0056	0.005373	0.005329	0.005021
0.258064516129032	0.006283	0.006086	0.005537	0.005358	0.005281	0.005017
0.290322580645161	0.006273	0.006053	0.005522	0.005351	0.005176	0.004984
0.32258064516129	0.006096	0.005878	0.005463	0.005251	0.005138	0.00497
0.354838709677419	0.00599	0.005789	0.005461	0.0052	0.005134	0.004964
0.387096774193548	0.005962	0.005765	0.005438	0.005194	0.005125	0.004814
0.419354838709677	0.00594	0.005729	0.005421	0.005153	0.005099	0.004743
0.451612903225806	0.005799	0.0057	0.005394	0.005136	0.005029	0.004688
0.483870967741936	0.005793	0.005692	0.005328	0.005063	0.004973	0.004673
0.516129032258065	0.005689	0.005598	0.005315	0.005035	0.004913	0.004658
0.548387096774194	0.005509	0.005425	0.005249	0.005014	0.004895	0.004656
0.580645161290323	0.005446	0.005295	0.00506	0.004976	0.004853	0.004448
0.612903225806452	0.005317	0.005123	0.004915	0.004708	0.004673	0.004414
0.645161290322581	0.005175	0.004892	0.004763	0.004639	0.004566	0.004298
0.67741935483871	0.004883	0.004849	0.004587	0.004445	0.00443	0.004146
0.709677419354839	0.00485	0.004751	0.004522	0.004348	0.004303	0.004145
0.741935483870968	0.004791	0.004729	0.004278	0.003856	0.003843	0.003513
0.774193548387097	0.004665	0.004465	0.004071	0.00378	0.003673	0.003209
0.806451612903226	0.004194	0.003902	0.003558	0.003313	0.003262	0.003018
0.838709677419355	0.004046	0.0039	0.003446	0.003171	0.003123	0.002778
0.870967741935484	0.003956	0.003765	0.003269	0.003085	0.002959	0.002367
0.903225806451613	0.002988	0.002763	0.002189	0.001778	0.00162	0.001281
0.935483870967742	0.001998	0.001804	0.001335	0.001065	0.0009823	0.0005851
0.967741935483871	0.0006477	0.0005878	0.0003905	0.0003078	0.0002813	0.0001634

0.1	0.0071744	0.0068415	0.0061753	0.0057656	0.0057369	0.0052435
					Average of yearly averages:	0.00410751666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Bait136
Metfile: w12842.dvf
PRZM scenario: FLcitrusC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	2E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-1	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	90	days	Set to 0 or delete line for single app.		
Interval 2	interval	90	days	Set to 0 or delete line for single app.		
Interval 3	interval	90	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Leaf Cutter Ants

Fipronil

stored as FLFIP.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 13:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 09:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.7117	0.6364	0.4476	0.2485	0.2007	0.05582
1962	0.7312	0.6508	0.4305	0.3442	0.2572	0.06798
1963	1.324	1.175	0.7973	0.4712	0.3806	0.1033
1964	0.826	0.734	0.553	0.2951	0.3199	0.1086
1965	1.153	1.029	0.7074	0.3916	0.2769	0.0721
1966	1.575	1.407	1.072	0.7287	0.5561	0.1548
1967	0.5133	0.4587	0.3216	0.228	0.1966	0.05694
1968	1.992	1.782	1.268	0.7369	0.5287	0.1363
1969	0.5295	0.4729	0.396	0.2661	0.1905	0.07184
1970	0.05477	0.04856	0.03096	0.02179	0.01607	0.006056
1971	0.7246	0.6457	0.4182	0.2316	0.2021	0.0665
1972	0.9598	0.8655	0.5757	0.3201	0.2513	0.08179
1973	0.1734	0.1544	0.1183	0.08513	0.06371	0.01768
1974	0.3418	0.3055	0.2391	0.1673	0.1366	0.03741
1975	0.2122	0.1891	0.1388	0.08495	0.07634	0.02618
1976	1.117	1	0.6904	0.4945	0.3623	0.09471

US EPA ARCHIVE DOCUMENT

1977	0.3936	0.3483	0.2316	0.1861	0.1358	0.05145
1978	0.805	0.7118	0.4967	0.2905	0.2732	0.08243
1979	0.7322	0.6469	0.4992	0.2615	0.2686	0.08258
1980	0.2228	0.2019	0.1331	0.07672	0.06833	0.02073
1981	0.3884	0.3443	0.2774	0.1564	0.1292	0.04195
1982	1.067	0.9467	0.619	0.3497	0.2755	0.07626
1983	1.116	0.9933	0.7261	0.405	0.3045	0.08543
1984	2.082	1.856	1.2	0.6072	0.4388	0.1159
1985	0.4273	0.378	0.2397	0.1201	0.09692	0.03138
1986	0.6462	0.5715	0.4045	0.295	0.2107	0.0541
1987	0.1185	0.1048	0.06558	0.03406	0.03085	0.01168
1988	0.1998	0.1769	0.1125	0.05561	0.04263	0.01987
1989	0.4176	0.3802	0.2609	0.1336	0.0948	0.03379
1990	0.123	0.1086	0.06839	0.04695	0.03807	0.013

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		2.082	1.856	1.268	0.7369	0.5561	0.1548
0.0645161290322581		1.992	1.782	1.2	0.7287	0.5287	0.1363
0.0967741935483871		1.575	1.407	1.072	0.6072	0.4388	0.1159
0.129032258064516		1.324	1.175	0.7973	0.4945	0.3806	0.1086
0.161290322580645		1.153	1.029	0.7261	0.4712	0.3623	0.1033
0.193548387096774		1.117	1	0.7074	0.405	0.3199	0.09471
0.225806451612903		1.116	0.9933	0.6904	0.3916	0.3045	0.08543
0.258064516129032		1.067	0.9467	0.619	0.3497	0.2769	0.08258
0.290322580645161		0.9598	0.8655	0.5757	0.3442	0.2755	0.08243
0.32258064516129		0.826	0.734	0.553	0.3201	0.2732	0.08179
0.354838709677419		0.805	0.7118	0.4992	0.2951	0.2686	0.07626
0.387096774193548		0.7322	0.6508	0.4967	0.295	0.2572	0.0721
0.419354838709677		0.7312	0.6469	0.4476	0.2905	0.2513	0.07184
0.451612903225806		0.7246	0.6457	0.4305	0.2661	0.2107	0.06798
0.483870967741936		0.7117	0.6364	0.4182	0.2615	0.2021	0.0665
0.516129032258065		0.6462	0.5715	0.4045	0.2485	0.2007	0.05694
0.548387096774194		0.5295	0.4729	0.396	0.2316	0.1966	0.05582
0.580645161290323		0.5133	0.4587	0.3216	0.228	0.1905	0.0541
0.612903225806452		0.4273	0.3802	0.2774	0.1861	0.1366	0.05145
0.645161290322581		0.4176	0.378	0.2609	0.1673	0.1358	0.04195
0.67741935483871		0.3936	0.3483	0.2397	0.1564	0.1292	0.03741
0.709677419354839		0.3884	0.3443	0.2391	0.1336	0.09692	0.03379
0.741935483870968		0.3418	0.3055	0.2316	0.1201	0.0948	0.03138
0.774193548387097		0.2228	0.2019	0.1388	0.08513	0.07634	0.02618
0.806451612903226		0.2122	0.1891	0.1331	0.08495	0.06833	0.02073
0.838709677419355		0.1998	0.1769	0.1183	0.07672	0.06371	0.01987
0.870967741935484		0.1734	0.1544	0.1125	0.05561	0.04263	0.01768
0.903225806451613		0.123	0.1086	0.06839	0.04695	0.03807	0.013
0.935483870967742		0.1185	0.1048	0.06558	0.03406	0.03085	0.01168
0.967741935483871		0.05477	0.04856	0.03096	0.02179	0.01607	0.006056
0.1	1.5499	1.3838	1.04453	0.59593	0.43298	0.11517	
					Average of yearly averages:		0.0626185333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI		cm		
Application Rate:		TAPP	0.255	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	30	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as FLTF950.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 13:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30

Metfile: w12834.dvf modified Wedday, 3 July 2002 at 09:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.02277	0.02045	0.01472	0.01107	0.01003	0.004659
1962	0.04256	0.03918	0.03108	0.02482	0.02327	0.01504
1963	0.07397	0.06733	0.05204	0.04156	0.0383	0.02969
1964	0.101	0.09474	0.07807	0.06525	0.06263	0.04819
1965	0.08076	0.07714	0.06859	0.06192	0.05992	0.05543
1966	0.1449	0.1341	0.1068	0.09368	0.08861	0.06932
1967	0.09681	0.0933	0.08587	0.07932	0.07899	0.07409
1968	0.1317	0.1239	0.1079	0.1007	0.09697	0.08499
1969	0.1255	0.1206	0.1112	0.1034	0.1017	0.09245
1970	0.09878	0.09827	0.09698	0.0965	0.09601	0.09046
1971	0.1137	0.1103	0.1034	0.09747	0.09584	0.0895
1972	0.1307	0.1255	0.1146	0.1063	0.1039	0.09618
1973	0.1026	0.1012	0.09932	0.0989	0.09845	0.09548
1974	0.1253	0.1209	0.1096	0.1025	0.1006	0.09303
1975	0.0978	0.09626	0.09321	0.09267	0.09224	0.08991
1976	0.1465	0.1387	0.119	0.1048	0.1011	0.0924
1977	0.1084	0.106	0.1024	0.09863	0.09663	0.09338
1978	0.1068	0.1045	0.09955	0.095	0.09555	0.09279
1979	0.1208	0.1177	0.111	0.1054	0.1047	0.09832
1980	0.1005	0.1002	0.0996	0.09934	0.09894	0.09499
1981	0.1161	0.1122	0.1051	0.09762	0.09477	0.0899
1982	0.1268	0.1218	0.1096	0.1026	0.1001	0.0933
1983	0.119	0.1156	0.1076	0.1016	0.1015	0.09583
1984	0.1352	0.1302	0.1174	0.1082	0.1062	0.1022
1985	0.1127	0.1103	0.1048	0.1015	0.09973	0.09814
1986	0.1272	0.1228	0.1156	0.1073	0.1046	0.09869
1987	0.1004	0.09955	0.09749	0.09611	0.0957	0.09191
1988	0.1094	0.1056	0.09597	0.08832	0.0877	0.0854
1989	0.162	0.1534	0.1293	0.1093	0.1034	0.09247
1990	0.1031	0.1017	0.09837	0.09527	0.09473	0.09076

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.162	0.1534	0.1293	0.1093	0.1062	0.1022
0.0645161290322581		0.1465	0.1387	0.119	0.1082	0.1047	0.09869
0.0967741935483871		0.1449	0.1341	0.1174	0.1073	0.1046	0.09832
0.129032258064516		0.1352	0.1302	0.1156	0.1063	0.1039	0.09814
0.161290322580645		0.1317	0.1255	0.1146	0.1054	0.1034	0.09618
0.193548387096774		0.1307	0.1239	0.1112	0.1048	0.1017	0.09583
0.225806451612903		0.1272	0.1228	0.111	0.1034	0.1015	0.09548
0.258064516129032		0.1268	0.1218	0.1096	0.1026	0.1011	0.09499
0.290322580645161		0.1255	0.1209	0.1096	0.1025	0.1006	0.09338
0.32258064516129		0.1253	0.1206	0.1079	0.1016	0.1001	0.0933
0.354838709677419		0.1208	0.1177	0.1076	0.1015	0.09973	0.09303
0.387096774193548		0.119	0.1156	0.1068	0.1007	0.09894	0.09279
0.419354838709677		0.1161	0.1122	0.1051	0.09934	0.09845	0.09247
0.451612903225806		0.1137	0.1103	0.1048	0.0989	0.09697	0.09245
0.483870967741936		0.1127	0.1103	0.1034	0.09863	0.09663	0.0924
0.51612903225806 5		0.1094	0.106	0.1024	0.09762	0.09601	0.09191
0.548387096774194		0.1084	0.1056	0.0996	0.09747	0.09584	0.09076
0.580645161290323		0.1068	0.1045	0.09955	0.0965	0.0957	0.09046
0.612903225806452		0.1031	0.1017	0.09932	0.09611	0.09555	0.08991
0.645161290322581		0.1026	0.1012	0.09837	0.09527	0.09477	0.0899
0.67741935483871		0.101	0.1002	0.09749	0.095	0.09473	0.0895
0.709677419354839		0.1005	0.09955	0.09698	0.09368	0.09224	0.0854
0.741935483870968		0.1004	0.09827	0.09597	0.09267	0.08861	0.08499
0.774193548387097		0.09878	0.09626	0.09321	0.08832	0.0877	0.07409
0.806451612903226		0.0978	0.09474	0.08587	0.07932	0.07899	0.06932
0.838709677419355		0.09681	0.0933	0.07807	0.06525	0.06263	0.05543
0.870967741935484		0.08076	0.07714	0.06859	0.06192	0.05992	0.04819
0.903225806451613		0.07397	0.06733	0.05204	0.04156	0.0383	0.02969
0.935483870967742		0.04256	0.03918	0.03108	0.02482	0.02327	0.01504
0.967741935483871		0.02277	0.02045	0.01472	0.01107	0.01003	0.004659
0.1	0.14393	0.13371	0.11722	0.1072	0.10453	0.098302	
					Average of yearly averages:		0.0812966333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTF950
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI		cm		
Application Rate:		TAPP	0.0125	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		

Interval 1	interval	30	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run		IR	Pond	
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)

MB46513

stored as FLTF513.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 13:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 09:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.007401	0.007179	0.006458	0.005669	0.005323	0.002581
1962	0.01297	0.01259	0.01148	0.01053	0.01035	0.007169
1963	0.02308	0.02243	0.02047	0.01835	0.01732	0.01284
1964	0.02638	0.02603	0.02494	0.02366	0.02323	0.01908
1965	0.0291	0.02866	0.0272	0.02541	0.02462	0.02211
1966	0.0437	0.04273	0.0395	0.03647	0.03517	0.02776
1967	0.0346	0.03428	0.03355	0.03216	0.03193	0.03002
1968	0.04458	0.04379	0.04193	0.04074	0.03946	0.03376
1969	0.04108	0.04072	0.03992	0.03853	0.03818	0.0356
1970	0.03641	0.03637	0.03626	0.03604	0.03586	0.03378
1971	0.03742	0.03708	0.03594	0.03484	0.0346	0.03306
1972	0.04017	0.03981	0.03858	0.03695	0.03681	0.03462
1973	0.03569	0.03565	0.03549	0.03522	0.03503	0.03386
1974	0.03464	0.03444	0.03379	0.03353	0.03335	0.03211
1975	0.03164	0.03152	0.03136	0.03116	0.031	0.03029
1976	0.04157	0.04093	0.03878	0.03599	0.03484	0.03119
1977	0.03541	0.03512	0.03441	0.03346	0.03304	0.03128
1978	0.03602	0.03572	0.03513	0.03388	0.03383	0.0321
1979	0.03933	0.0389	0.03802	0.03654	0.0361	0.03324
1980	0.0333	0.03325	0.03316	0.033	0.03286	0.03175
1981	0.03563	0.03526	0.03417	0.03292	0.03219	0.0301
1982	0.03877	0.03828	0.03681	0.03545	0.03471	0.03163
1983	0.03878	0.03835	0.03693	0.03518	0.03489	0.03278
1984	0.04419	0.04358	0.04151	0.03901	0.03819	0.03507
1985	0.03677	0.03656	0.0358	0.03471	0.03436	0.03388
1986	0.03984	0.0394	0.03849	0.03644	0.03571	0.03295
1987	0.0323	0.03228	0.03221	0.0321	0.03198	0.03069
1988	0.0302	0.03001	0.02938	0.02898	0.02888	0.02816
1989	0.03781	0.03739	0.03587	0.03331	0.032	0.02892
1990	0.03012	0.03007	0.02991	0.0297	0.02961	0.02838

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.04458	0.04379	0.04193	0.04074	0.03946	0.0356
0.0645161290322581		0.04419	0.04358	0.04151	0.03901	0.03819	0.03507
0.0967741935483871		0.0437	0.04273	0.03992	0.03853	0.03818	0.03462
0.129032258064516		0.04157	0.04093	0.0395	0.03695	0.03681	0.03388
0.161290322580645		0.04108	0.04072	0.03878	0.03654	0.0361	0.03386
0.193548387096774		0.04017	0.03981	0.03858	0.03647	0.03586	0.03378
0.225806451612903		0.03984	0.0394	0.03849	0.03644	0.03571	0.03376
0.258064516129032		0.03933	0.0389	0.03802	0.03604	0.03517	0.03324
0.290322580645161		0.03878	0.03835	0.03693	0.03599	0.03503	0.03306
0.32258064516129		0.03877	0.03828	0.03681	0.03545	0.03489	0.03295
0.354838709677419		0.03781	0.03739	0.03626	0.03522	0.03484	0.03278
0.387096774193548		0.03742	0.03708	0.03594	0.03518	0.03471	0.03211
0.419354838709677		0.03677	0.03656	0.03587	0.03484	0.0346	0.0321
0.451612903225806		0.03641	0.03637	0.0358	0.03471	0.03436	0.03175
0.483870967741936		0.03602	0.03572	0.03549	0.03388	0.03383	0.03163
0.516129032258065		0.03569	0.03565	0.03513	0.03353	0.03335	0.03128
0.548387096774194		0.03563	0.03526	0.03441	0.03346	0.03304	0.03119
0.580645161290323		0.03541	0.03512	0.03417	0.03331	0.03286	0.03069
0.612903225806452		0.03464	0.03444	0.03379	0.033	0.03219	0.03029
0.645161290322581		0.0346	0.03428	0.03355	0.03292	0.032	0.0301
0.67741935483871		0.0333	0.03325	0.03316	0.03216	0.03198	0.03002
0.709677419354839		0.0323	0.03228	0.03221	0.0321	0.03193	0.02892
0.741935483870968		0.03164	0.03152	0.03136	0.03116	0.031	0.02838
0.774193548387097		0.0302	0.03007	0.02991	0.0297	0.02961	0.02816
0.806451612903226		0.03012	0.03001	0.02938	0.02898	0.02888	0.02776
0.838709677419355		0.0291	0.02866	0.0272	0.02541	0.02462	0.02211
0.870967741935484		0.02638	0.02603	0.02494	0.02366	0.02323	0.01908
0.903225806451613		0.02308	0.02243	0.02047	0.01835	0.01732	0.01284
0.935483870967742		0.01297	0.01259	0.01148	0.01053	0.01035	0.007169
0.967741935483871		0.007401	0.007179	0.006458	0.005669	0.005323	0.002581
0.1	0.043487	0.04255	0.039878	0.038372	0.038043	0.034546	
					Average of yearly averages:		0.028692

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTF513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

US EPA ARCHIVE DOCUMENT

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI		cm		
Application Rate:		TAPP	0.002	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	30	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as FLTF136.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 13:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 09:04:28
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.1043	0.09273	0.06532	0.04831	0.04399	0.02024
1962	0.1961	0.1787	0.1384	0.1085	0.1014	0.06506
1963	0.3393	0.3057	0.2309	0.1813	0.1664	0.1283
1964	0.4619	0.4304	0.3461	0.2857	0.2729	0.208
1965	0.3536	0.3356	0.2942	0.2633	0.2541	0.2346
1966	0.6495	0.595	0.4618	0.4011	0.3776	0.2913
1967	0.4146	0.3968	0.3596	0.3288	0.3272	0.3057
1968	0.5711	0.5319	0.4537	0.419	0.4021	0.3486
1969	0.5349	0.51	0.4625	0.426	0.4174	0.376
1970	0.403	0.4001	0.3936	0.3911	0.3886	0.3617
1971	0.4666	0.4494	0.4156	0.3881	0.3801	0.3522
1972	0.5463	0.5193	0.4644	0.424	0.4136	0.3787
1973	0.4062	0.3989	0.3908	0.3886	0.3862	0.3716
1974	0.516	0.493	0.4357	0.4019	0.3926	0.3578
1975	0.3807	0.3728	0.3571	0.3545	0.3523	0.3413
1976	0.6092	0.5695	0.4724	0.4061	0.3894	0.3504
1977	0.4228	0.411	0.3938	0.3764	0.3672	0.3525
1978	0.415	0.4034	0.3779	0.3578	0.3599	0.3478
1979	0.4837	0.4676	0.4301	0.4055	0.4023	0.3723
1980	0.3814	0.3802	0.3771	0.3759	0.3738	0.3553
1981	0.4541	0.4346	0.4014	0.3657	0.3527	0.3306
1982	0.5045	0.4791	0.4193	0.3867	0.3753	0.3449
1983	0.4696	0.452	0.4113	0.3823	0.3822	0.3555
1984	0.5387	0.5133	0.4509	0.4087	0.3996	0.3825
1985	0.4332	0.4211	0.3942	0.3785	0.3704	0.3623
1986	0.4994	0.4776	0.4414	0.4028	0.3906	0.3644
1987	0.3749	0.3704	0.3597	0.3529	0.3509	0.3338
1988	0.4233	0.4036	0.3556	0.3178	0.315	0.305
1989	0.6755	0.6308	0.5099	0.4147	0.388	0.3377
1990	0.3892	0.3819	0.3647	0.3497	0.3473	0.3296

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.6755	0.6308	0.5099	0.426	0.4174	0.3825
0.0645161290322581		0.6495	0.595	0.4724	0.424	0.4136	0.3787
0.0967741935483871		0.6092	0.5695	0.4644	0.419	0.4023	0.376
0.129032258064516		0.5711	0.5319	0.4625	0.4147	0.4021	0.3723
0.161290322580645		0.5463	0.5193	0.4618	0.4087	0.3996	0.3716
0.193548387096774		0.5387	0.5133	0.4537	0.4061	0.3926	0.3644
0.225806451612903		0.5349	0.51	0.4509	0.4055	0.3906	0.3623
0.258064516129032		0.516	0.493	0.4414	0.4028	0.3894	0.3617
0.290322580645161		0.5045	0.4791	0.4357	0.4019	0.3886	0.3578
0.32258064516129		0.4994	0.4776	0.4301	0.4011	0.388	0.3555
0.354838709677419		0.4837	0.4676	0.4193	0.3911	0.3862	0.3553
0.387096774193548		0.4696	0.452	0.4156	0.3886	0.3822	0.3525
0.419354838709677		0.4666	0.4494	0.4113	0.3881	0.3801	0.3522
0.451612903225806		0.4619	0.4346	0.4014	0.3867	0.3776	0.3504
0.483870967741936		0.4541	0.4304	0.3942	0.3823	0.3753	0.3486
0.516129032258065		0.4332	0.4211	0.3938	0.3785	0.3738	0.3478
0.548387096774194		0.4233	0.411	0.3936	0.3764	0.3704	0.3449
0.580645161290323		0.4228	0.4036	0.3908	0.3759	0.3672	0.3413
0.612903225806452		0.415	0.4034	0.3779	0.3657	0.3599	0.3377
0.645161290322581		0.4146	0.4001	0.3771	0.3578	0.3527	0.3338
0.67741935483871		0.4062	0.3989	0.3647	0.3545	0.3523	0.3306

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0.709677419354839	0.403	0.3968	0.3597	0.3529	0.3509	0.3296
0.741935483870968	0.3892	0.3819	0.3596	0.3497	0.3473	0.3057
0.774193548387097	0.3814	0.3802	0.3571	0.3288	0.3272	0.305
0.806451612903226	0.3807	0.3728	0.3556	0.3178	0.315	0.2913
0.838709677419355	0.3749	0.3704	0.3461	0.2857	0.2729	0.2346
0.870967741935484	0.3536	0.3356	0.2942	0.2633	0.2541	0.208
0.903225806451613	0.3393	0.3057	0.2309	0.1813	0.1664	0.1283
0.935483870967742	0.1961	0.1787	0.1384	0.1085	0.1014	0.06506
0.967741935483871	0.1043	0.09273	0.06532	0.04831	0.04399	0.02024

0.1	0.60539	0.56574	0.46421	0.41857	0.40228	0.37563	
					Average of yearly averages:		0.31219

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTF136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI		cm		
Application Rate:		TAPP	0.061	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	30	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Onion Seed (Typical Seeding Rate)

Fipronil

stored as GAONIONFIP2.out
Chemical: Fipronil
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.1837	0.166	0.1236	0.09051	0.07378	0.01888
1962	0.2007	0.1799	0.1198	0.09888	0.07499	0.03368
1963	0.3678	0.3294	0.2571	0.1688	0.1265	0.03982
1964	0.5805	0.5251	0.4433	0.2931	0.2661	0.08257
1965	0.191	0.1719	0.1217	0.09633	0.08523	0.03879
1966	0.1558	0.1406	0.09497	0.06704	0.05516	0.02341
1967	0.2269	0.2169	0.1731	0.1037	0.07782	0.04046
1968	0.2044	0.1843	0.1393	0.1024	0.09072	0.02891
1969	0.6289	0.572	0.3996	0.2425	0.1952	0.05657
1970	0.296	0.2633	0.1771	0.1133	0.09132	0.04156
1971	0.393	0.3543	0.2812	0.1797	0.1491	0.04649
1972	0.2269	0.2084	0.1692	0.1017	0.09359	0.03278
1973	0.1139	0.1029	0.07027	0.04884	0.04377	0.02288
1974	0.1826	0.1641	0.1133	0.1001	0.07909	0.02773
1975	0.3352	0.3004	0.2232	0.1407	0.1049	0.03452
1976	0.3267	0.2949	0.201	0.1622	0.1263	0.03773
1977	0.1708	0.1543	0.1165	0.09494	0.0753	0.02831
1978	0.1542	0.1411	0.1138	0.09087	0.07624	0.03106
1979	0.4312	0.3893	0.2795	0.169	0.1342	0.04356
1980	0.1926	0.1741	0.128	0.09014	0.07157	0.02564
1981	0.2359	0.2103	0.1467	0.09764	0.07213	0.02539
1982	0.1209	0.1108	0.0834	0.05872	0.04641	0.02383
1983	0.208	0.188	0.1286	0.08643	0.07413	0.0373
1984	0.4652	0.4155	0.3054	0.185	0.1379	0.04703
1985	0.2052	0.1822	0.1205	0.07412	0.07476	0.02728
1986	0.2621	0.2364	0.166	0.1207	0.1185	0.0419
1987	0.1622	0.1457	0.1042	0.06978	0.05777	0.02738
1988	0.1627	0.152	0.1125	0.07276	0.05501	0.02272
1989	1.217	1.098	0.8413	0.5099	0.3856	0.1036
1990	2.132	1.973	1.346	0.7361	0.5448	0.1471

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly

0.032258064516129	2.132	1.973	1.346	0.7361	0.5448	0.1471
0.0645161290322581	1.217	1.098	0.8413	0.5099	0.3856	0.1036
0.0967741935483871	0.6289	0.572	0.4433	0.2931	0.2661	0.08257
0.129032258064516	0.5805	0.5251	0.3996	0.2425	0.1952	0.05657
0.161290322580645	0.4652	0.4155	0.3054	0.185	0.1491	0.04703
0.193548387096774	0.4312	0.3893	0.2812	0.1797	0.1379	0.04649
0.225806451612903	0.393	0.3543	0.2795	0.169	0.1342	0.04356
0.258064516129032	0.3678	0.3294	0.2571	0.1688	0.1265	0.0419
0.290322580645161	0.3352	0.3004	0.2232	0.1622	0.1263	0.04156
0.32258064516129	0.3267	0.2949	0.201	0.1407	0.1185	0.04046
0.354838709677419	0.296	0.2633	0.1771	0.1207	0.1049	0.03982
0.387096774193548	0.2621	0.2364	0.1731	0.1133	0.09359	0.03879
0.419354838709677	0.2359	0.2169	0.1692	0.1037	0.09132	0.03773
0.451612903225806	0.2269	0.2103	0.166	0.1024	0.09072	0.0373
0.483870967741936	0.2269	0.2084	0.1467	0.1017	0.08523	0.03452
0.516129032258065	0.208	0.188	0.1393	0.1001	0.07909	0.03368
0.548387096774194	0.2052	0.1843	0.1286	0.09888	0.07782	0.03278
0.580645161290323	0.2044	0.1822	0.128	0.09764	0.07624	0.03106
0.612903225806452	0.2007	0.1799	0.1236	0.09633	0.0753	0.02891
0.645161290322581	0.1926	0.1741	0.1217	0.09494	0.07499	0.02831
0.67741935483871	0.191	0.1719	0.1205	0.09087	0.07476	0.02773
0.709677419354839	0.1837	0.166	0.1198	0.09051	0.07413	0.02738
0.741935483870968	0.1826	0.1641	0.1165	0.09014	0.07378	0.02728
0.774193548387097	0.1708	0.1543	0.1138	0.08643	0.07213	0.02564
0.806451612903226	0.1627	0.152	0.1133	0.07412	0.07157	0.02539
0.838709677419355	0.1622	0.1457	0.1125	0.07276	0.05777	0.02383
0.870967741935484	0.1558	0.1411	0.1042	0.06978	0.05516	0.02341
0.903225806451613	0.1542	0.1406	0.09497	0.06704	0.05501	0.02288
0.935483870967742	0.1209	0.1108	0.0834	0.05872	0.04641	0.02272
0.967741935483871	0.1139	0.1029	0.07027	0.04884	0.04377	0.01888
0.1	0.62406	0.56731	0.43893	0.28804	0.25901	0.07997
					Average of yearly averages:	0.041296

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONIONFIP2
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name	Value	Units	Comments	
Molecular weight	mwt	437	g/mol		
Henry's Law Const.	henry		atm-m^3/mol		
Vapor Pressure	vapr		torr		
Solubility	sol	2.4	mg/L		
Kd	Kd		mg/L		
Koc	Koc	727	mg/L		
Photolysis half-life	kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism	kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism	kbacs	33.7	days	Halfife	
Aerobic Soil Metabolism	asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	8	integer	See PRZM manual	
Incorporation Depth:	DEPI	0.635	cm		
Application Rate:	TAPP	0.054	kg/ha		
Application Efficiency:	APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond		
Application Date	Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as GAONION9502.out
Chemical: MB45950
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.002804	0.002491	0.001711	0.001345	0.001219	0.0003075
1962	0.008875	0.008487	0.007513	0.007202	0.006954	0.005061
1963	0.01924	0.01827	0.0153	0.01349	0.01308	0.0107
1964	0.03164	0.03037	0.02718	0.02481	0.025	0.01945
1965	0.0281	0.02759	0.02641	0.0257	0.02551	0.0248
1966	0.03285	0.03205	0.03081	0.0297	0.02923	0.02799
1967	0.03581	0.03533	0.03344	0.03124	0.03113	0.03085
1968	0.03618	0.03553	0.03359	0.03221	0.03198	0.03117
1969	0.0478	0.04603	0.04156	0.03893	0.03766	0.03483
1970	0.04371	0.04308	0.04113	0.04038	0.03997	0.03862
1971	0.04933	0.04793	0.04493	0.04343	0.0431	0.04079
1972	0.04803	0.04722	0.04574	0.04362	0.0433	0.04288
1973	0.04951	0.04865	0.04677	0.04533	0.04512	0.04377
1974	0.04731	0.04657	0.04488	0.044	0.04367	0.04293
1975	0.04853	0.04773	0.04624	0.04501	0.04498	0.0437
1976	0.05388	0.05256	0.04959	0.04883	0.04834	0.04632
1977	0.04952	0.0492	0.04843	0.04774	0.04752	0.04664

US EPA ARCHIVE DOCUMENT

1978	0.04832	0.04794	0.0472	0.04697	0.04664	0.04553
1979	0.05485	0.0535	0.05071	0.04981	0.04908	0.04722
1980	0.05215	0.05154	0.0501	0.04895	0.04865	0.04717
1981	0.05357	0.05275	0.05	0.04808	0.04768	0.04614
1982	0.05277	0.05185	0.05021	0.04944	0.04905	0.04732
1983	0.05418	0.05329	0.05131	0.05022	0.04992	0.04878
1984	0.05859	0.05716	0.05374	0.05226	0.05156	0.05023
1985	0.05299	0.05228	0.05068	0.04952	0.04937	0.04872
1986	0.05312	0.05238	0.05072	0.04991	0.0497	0.04889
1987	0.05484	0.05397	0.05217	0.05105	0.05057	0.05002
1988	0.05345	0.05265	0.05144	0.05028	0.0499	0.0492
1989	0.06583	0.06345	0.05919	0.05523	0.05421	0.04979
1990	0.08627	0.08281	0.07108	0.06258	0.06002	0.05351

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.08627	0.08281	0.07108	0.06258	0.06002	0.05351
0.0645161290322581		0.06583	0.06345	0.05919	0.05523	0.05421	0.05023
0.0967741935483871		0.05859	0.05716	0.05374	0.05226	0.05156	0.05002
0.129032258064516		0.05485	0.05397	0.05217	0.05105	0.05057	0.04979
0.161290322580645		0.05484	0.0535	0.05144	0.05028	0.04992	0.0492
0.193548387096774		0.05418	0.05329	0.05131	0.05022	0.0499	0.04889
0.225806451612903		0.05388	0.05275	0.05072	0.04991	0.0497	0.04878
0.258064516129032		0.05357	0.05265	0.05071	0.04981	0.04937	0.04872
0.290322580645161		0.05345	0.05256	0.05068	0.04952	0.04908	0.04732
0.32258064516129		0.05312	0.05238	0.05021	0.04944	0.04905	0.04722
0.354838709677419		0.05299	0.05228	0.0501	0.04895	0.04865	0.04717
0.387096774193548		0.05277	0.05185	0.05	0.04883	0.04834	0.04664
0.419354838709677		0.05215	0.05154	0.04959	0.04808	0.04768	0.04632
0.451612903225806		0.04952	0.0492	0.04843	0.04774	0.04752	0.04614
0.483870967741936		0.04951	0.04865	0.0472	0.04697	0.04664	0.04553
0.516129032258065		0.04933	0.04794	0.04677	0.04533	0.04512	0.04377
0.548387096774194		0.04853	0.04793	0.04624	0.04501	0.04498	0.0437
0.580645161290323		0.04832	0.04773	0.04574	0.044	0.04367	0.04293
0.612903225806452		0.04803	0.04722	0.04493	0.04362	0.0433	0.04288
0.645161290322581		0.0478	0.04657	0.04488	0.04343	0.0431	0.04079
0.67741935483871		0.04731	0.04603	0.04156	0.04038	0.03997	0.03862
0.709677419354839		0.04371	0.04308	0.04113	0.03893	0.03766	0.03483
0.741935483870968		0.03618	0.03553	0.03359	0.03221	0.03198	0.03117
0.774193548387097		0.03581	0.03533	0.03344	0.03124	0.03113	0.03085
0.806451612903226		0.03285	0.03205	0.03081	0.0297	0.02923	0.02799
0.838709677419355		0.03164	0.03037	0.02718	0.0257	0.02551	0.0248
0.870967741935484		0.0281	0.02759	0.02641	0.02481	0.025	0.01945
0.903225806451613		0.01924	0.01827	0.0153	0.01349	0.01308	0.0107
0.935483870967742		0.008875	0.008487	0.007513	0.007202	0.006954	0.005061
0.967741935483871		0.002804	0.002491	0.001711	0.001345	0.001219	0.0003075
0.1	0.058216	0.056841	0.053583	0.052139	0.051461	0.049997	
					Average of yearly averages:		0.0387776166666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONION9502
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.635	cm		
Application Rate:		TAPP	0.0026	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as GAONION5132.out
Chemical: MB46513
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001815	0.001742	0.001503	0.001316	0.001137	0.0002848

US EPA ARCHIVE DOCUMENT

1962	0.004153	0.004081	0.003841	0.003615	0.003528	0.002746
1963	0.006662	0.00655	0.006255	0.006049	0.005888	0.004569
1964	0.01271	0.01252	0.01187	0.01079	0.01067	0.007849
1965	0.01164	0.01156	0.0113	0.01106	0.01091	0.01048
1966	0.01234	0.01227	0.01205	0.01189	0.01179	0.01141
1967	0.01416	0.01407	0.01389	0.01334	0.01312	0.01272
1968	0.01363	0.01357	0.01337	0.01321	0.01315	0.01267
1969	0.01809	0.01784	0.017	0.01625	0.01535	0.01375
1970	0.01654	0.01644	0.01608	0.01578	0.01573	0.01547
1971	0.01776	0.01763	0.01747	0.01713	0.01687	0.01584
1972	0.01811	0.01798	0.01756	0.01676	0.01675	0.0163
1973	0.01746	0.0174	0.01719	0.01709	0.01706	0.01645
1974	0.01708	0.017	0.01678	0.01656	0.01644	0.01614
1975	0.01772	0.01761	0.01732	0.01706	0.01686	0.01642
1976	0.0188	0.01868	0.0184	0.01789	0.01756	0.01679
1977	0.0182	0.01814	0.01796	0.01771	0.01759	0.01692
1978	0.01758	0.01753	0.0174	0.01723	0.01718	0.01669
1979	0.01859	0.01847	0.01818	0.01784	0.01773	0.017
1980	0.01834	0.01827	0.01809	0.01785	0.0177	0.01707
1981	0.01755	0.01746	0.01719	0.01708	0.01706	0.01666
1982	0.01775	0.01768	0.01746	0.01734	0.01724	0.01687
1983	0.01882	0.01873	0.01843	0.01817	0.01804	0.0174
1984	0.02005	0.0199	0.01954	0.01912	0.01892	0.01828
1985	0.01869	0.01865	0.01851	0.01838	0.01835	0.0179
1986	0.01918	0.01911	0.0188	0.0187	0.01863	0.01806
1987	0.02022	0.02011	0.01982	0.01952	0.01932	0.01826
1988	0.01869	0.01863	0.01846	0.01826	0.01823	0.01764
1989	0.02394	0.0236	0.0229	0.02208	0.02166	0.01824
1990	0.03388	0.03333	0.03107	0.02859	0.02713	0.0217

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.03388	0.03333	0.03107	0.02859	0.02713	0.0217
0.0645161290322581		0.02394	0.0236	0.0229	0.02208	0.02166	0.01828
0.0967741935483871		0.02022	0.02011	0.01982	0.01952	0.01932	0.01826
0.129032258064516		0.02005	0.0199	0.01954	0.01912	0.01892	0.01824
0.161290322580645		0.01918	0.01911	0.0188	0.0187	0.01863	0.01806
0.193548387096774		0.01882	0.01873	0.01851	0.01838	0.01835	0.0179
0.225806451612903		0.0188	0.01868	0.01846	0.01826	0.01823	0.01764
0.258064516129032		0.01869	0.01865	0.01843	0.01817	0.01804	0.0174
0.290322580645161		0.01869	0.01863	0.0184	0.01789	0.01773	0.01707
0.32258064516129		0.01859	0.01847	0.01818	0.01785	0.0177	0.017
0.354838709677419		0.01834	0.01827	0.01809	0.01784	0.01759	0.01692
0.387096774193548		0.0182	0.01814	0.01796	0.01771	0.01756	0.01687
0.419354838709677		0.01811	0.01798	0.01756	0.01734	0.01724	0.01679
0.451612903225806		0.01809	0.01784	0.01747	0.01723	0.01718	0.01669
0.483870967741936		0.01776	0.01768	0.01746	0.01713	0.01706	0.01666
0.516129032258065		0.01775	0.01763	0.0174	0.01709	0.01706	0.01645
0.548387096774194		0.01772	0.01761	0.01732	0.01708	0.01687	0.01642
0.580645161290323		0.01758	0.01753	0.01719	0.01706	0.01686	0.0163
0.612903225806452		0.01755	0.01746	0.01719	0.01676	0.01675	0.01614
0.645161290322581		0.01746	0.0174	0.017	0.01656	0.01644	0.01584
0.67741935483871		0.01708	0.017	0.01678	0.01625	0.01573	0.01547
0.709677419354839		0.01654	0.01644	0.01608	0.01578	0.01535	0.01375
0.741935483870968		0.01416	0.01407	0.01389	0.01334	0.01315	0.01272
0.774193548387097		0.01363	0.01357	0.01337	0.01321	0.01312	0.01267
0.806451612903226		0.01271	0.01252	0.01205	0.01189	0.01179	0.01141
0.838709677419355		0.01234	0.01227	0.01187	0.01106	0.01091	0.01048
0.870967741935484		0.01164	0.01156	0.0113	0.01079	0.01067	0.007849
0.903225806451613		0.006662	0.00655	0.006255	0.006049	0.005888	0.004569
0.935483870967742		0.004153	0.004081	0.003841	0.003615	0.003528	0.002746
0.967741935483871		0.001815	0.001742	0.001503	0.001316	0.001137	0.0002848
0.1	0.020203	0.020089	0.019792	0.01948	0.01928	0.018258	
					Average of yearly averages:		0.0146192933333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONION5132
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.635	cm		
Application Rate:		TAPP	0.0005	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					

US EPA ARCHIVE DOCUMENT

FEXTRC	0.5		
Flag for Index Res. Run	IR	Pond	
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)

MB46136

stored as GAONION1362.out
Chemical: MB46136
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.01279	0.01125	0.007543	0.005907	0.005358	0.001353
1962	0.04014	0.03798	0.03326	0.03187	0.03082	0.02244
1963	0.09063	0.08554	0.07018	0.05982	0.05787	0.04755
1964	0.1436	0.1371	0.1212	0.1104	0.1112	0.08659
1965	0.1235	0.121	0.1151	0.1116	0.1109	0.1086
1966	0.1453	0.1411	0.1345	0.1289	0.1266	0.1207
1967	0.1566	0.1543	0.1445	0.1338	0.1322	0.131
1968	0.1549	0.1515	0.1415	0.1348	0.1337	0.1298
1969	0.2067	0.1975	0.175	0.1623	0.1567	0.1445
1970	0.1857	0.1822	0.1719	0.1678	0.1656	0.1594
1971	0.2114	0.2038	0.1877	0.1785	0.1779	0.167
1972	0.1983	0.1942	0.187	0.1771	0.1762	0.1745
1973	0.2052	0.2006	0.1909	0.1838	0.1827	0.1764
1974	0.192	0.1881	0.1797	0.1754	0.1738	0.1704
1975	0.1956	0.1918	0.1849	0.1783	0.1785	0.1723
1976	0.2209	0.2139	0.1974	0.1941	0.1923	0.1829
1977	0.1972	0.1956	0.1916	0.1881	0.1869	0.1825
1978	0.1896	0.1876	0.1835	0.1823	0.1808	0.1758
1979	0.2207	0.2136	0.1992	0.1954	0.1917	0.1828
1980	0.2057	0.2026	0.1951	0.1895	0.188	0.1812
1981	0.2133	0.2088	0.1949	0.1851	0.183	0.1753
1982	0.2069	0.2021	0.1939	0.1903	0.1884	0.1801
1983	0.2125	0.2079	0.1982	0.1926	0.1911	0.1861
1984	0.2336	0.2261	0.2089	0.2014	0.1979	0.1917
1985	0.2049	0.2012	0.193	0.1872	0.1864	0.1838
1986	0.205	0.2011	0.1928	0.1887	0.1875	0.1842
1987	0.2132	0.2087	0.1996	0.194	0.1921	0.1894
1988	0.207	0.2028	0.1967	0.1907	0.1888	0.185
1989	0.2651	0.2529	0.2312	0.2122	0.2073	0.1871
1990	0.361	0.3428	0.2845	0.244	0.2323	0.203

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.361	0.3428	0.2845	0.244	0.2323	0.203
0.0645161290322581		0.2651	0.2529	0.2312	0.2122	0.2073	0.1917
0.0967741935483871		0.2336	0.2261	0.2089	0.2014	0.1979	0.1894
0.129032258064516		0.2209	0.2139	0.1996	0.1954	0.1923	0.1871
0.161290322580645		0.2207	0.2136	0.1992	0.1941	0.1921	0.1861
0.193548387096774		0.2133	0.2088	0.1982	0.194	0.1917	0.185
0.225806451612903		0.2132	0.2087	0.1974	0.1926	0.1911	0.1842
0.258064516129032		0.2125	0.2079	0.1967	0.1907	0.1888	0.1838
0.290322580645161		0.2114	0.2038	0.1951	0.1903	0.1884	0.1829
0.32258064516129		0.207	0.2028	0.1949	0.1895	0.188	0.1828
0.354838709677419		0.2069	0.2026	0.1939	0.1887	0.1875	0.1825
0.387096774193548		0.2067	0.2021	0.193	0.1881	0.1869	0.1812
0.419354838709677		0.2057	0.2012	0.1928	0.1872	0.1864	0.1801
0.451612903225806		0.2052	0.2011	0.1916	0.1851	0.183	0.1764
0.483870967741936		0.205	0.2006	0.1909	0.1838	0.1827	0.1758
0.516129032258065		0.2049	0.1975	0.1877	0.1823	0.1808	0.1753
0.548387096774194		0.1983	0.1956	0.187	0.1785	0.1785	0.1745
0.580645161290323		0.1972	0.1942	0.1849	0.1783	0.1779	0.1723
0.612903225806452		0.1956	0.1918	0.1835	0.1771	0.1762	0.1704
0.645161290322581		0.192	0.1881	0.1797	0.1754	0.1738	0.167
0.67741935483871		0.1896	0.1876	0.175	0.1678	0.1656	0.1594
0.709677419354839		0.1857	0.1822	0.1719	0.1623	0.1567	0.1445
0.741935483870968		0.1566	0.1543	0.1445	0.1348	0.1337	0.131
0.774193548387097		0.1549	0.1515	0.1415	0.1338	0.1322	0.1298
0.806451612903226		0.1453	0.1411	0.1345	0.1289	0.1266	0.1207
0.838709677419355		0.1436	0.1371	0.1212	0.1116	0.1112	0.1086
0.870967741935484		0.1235	0.121	0.1151	0.1104	0.1109	0.08659
0.903225806451613		0.09063	0.08554	0.07018	0.05982	0.05787	0.04755
0.935483870967742		0.04014	0.03798	0.03326	0.03187	0.03082	0.02244
0.967741935483871		0.01279	0.01125	0.007543	0.005907	0.005358	0.001353
0.1	0.23233	0.22488	0.20797	0.2008	0.19734	0.18917	
					Average of yearly averages:		0.1527811

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONION1362
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	453	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	0.16	mg/L	

Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.635	cm		
Application Rate:		TAPP	0.013	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Onion Seed (Maximum Seeding Rate)

Fipronil

stored as GAONIONFIP2.out
Chemical: Fipronil
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.381	0.3442	0.2563	0.1877	0.153	0.03915
1962	0.4162	0.373	0.2485	0.2051	0.1555	0.06984
1963	0.7628	0.6832	0.5332	0.3501	0.2624	0.08259
1964	1.204	1.089	0.9193	0.6078	0.5519	0.1712
1965	0.3963	0.3566	0.2525	0.1998	0.1768	0.08046
1966	0.3231	0.2917	0.197	0.1391	0.1144	0.04856
1967	0.4707	0.4499	0.3591	0.2151	0.1614	0.08391
1968	0.4239	0.3822	0.2888	0.2124	0.1881	0.05996
1969	1.305	1.187	0.8291	0.503	0.405	0.1174
1970	0.614	0.5461	0.3674	0.2349	0.1894	0.0862
1971	0.8149	0.7347	0.5832	0.3726	0.3091	0.09642
1972	0.4707	0.4323	0.351	0.2109	0.1941	0.06799
1973	0.2362	0.2134	0.1457	0.1013	0.09078	0.04746
1974	0.3787	0.3403	0.235	0.2077	0.1641	0.05752
1975	0.6952	0.623	0.4629	0.2919	0.2176	0.07159
1976	0.6778	0.6118	0.4169	0.3366	0.2621	0.07827
1977	0.3543	0.3201	0.2416	0.1969	0.1562	0.05872
1978	0.3199	0.2926	0.2359	0.1885	0.1581	0.06442
1979	0.8944	0.8076	0.5799	0.3506	0.2784	0.09036
1980	0.3995	0.3611	0.2654	0.1869	0.1484	0.05318
1981	0.4892	0.4361	0.3042	0.2025	0.1496	0.05266
1982	0.2509	0.2299	0.173	0.1218	0.09627	0.04944
1983	0.4314	0.3901	0.2668	0.1793	0.1538	0.07737
1984	0.9649	0.8617	0.6334	0.3836	0.286	0.09753
1985	0.4256	0.3778	0.2498	0.1537	0.1551	0.05658
1986	0.5436	0.4902	0.3442	0.2503	0.2457	0.08689
1987	0.3363	0.3021	0.2162	0.1447	0.1198	0.05678
1988	0.3375	0.3153	0.2334	0.1509	0.1141	0.04712
1989	2.524	2.278	1.745	1.058	0.7998	0.2149
1990	4.422	4.092	2.792	1.527	1.13	0.3051

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		4.422	4.092	2.792	1.527	1.13	0.3051
0.0645161290322581		2.524	2.278	1.745	1.058	0.7998	0.2149
0.0967741935483871		1.305	1.187	0.9193	0.6078	0.5519	0.1712
0.129032258064516		1.204	1.089	0.8291	0.503	0.405	0.1174
0.161290322580645		0.9649	0.8617	0.6334	0.3836	0.3091	0.09753
0.193548387096774		0.8944	0.8076	0.5832	0.3726	0.286	0.09642
0.225806451612903		0.8149	0.7347	0.5799	0.3506	0.2784	0.09036
0.258064516129032		0.7628	0.6832	0.5332	0.3501	0.2624	0.08689
0.290322580645161		0.6952	0.623	0.4629	0.3366	0.2621	0.0862
0.32258064516129		0.6778	0.6118	0.4169	0.2919	0.2457	0.08391
0.354838709677419		0.614	0.5461	0.3674	0.2503	0.2176	0.08259
0.387096774193548		0.5436	0.4902	0.3591	0.2349	0.1941	0.08046
0.419354838709677		0.4892	0.4499	0.351	0.2151	0.1894	0.07827
0.451612903225806		0.4707	0.4361	0.3442	0.2124	0.1881	0.07737
0.483870967741936		0.4707	0.4323	0.3042	0.2109	0.1768	0.07159
0.516129032258065		0.4314	0.3901	0.2888	0.2077	0.1641	0.06984
0.548387096774194		0.4256	0.3822	0.2668	0.2051	0.1614	0.06799
0.580645161290323		0.4239	0.3778	0.2654	0.2025	0.1581	0.06442
0.612903225806452		0.4162	0.373	0.2563	0.1998	0.1562	0.05996
0.645161290322581		0.3995	0.3611	0.2525	0.1969	0.1555	0.05872
0.67741935483871		0.3963	0.3566	0.2498	0.1885	0.1551	0.05752
0.709677419354839		0.381	0.3442	0.2485	0.1877	0.1538	0.05678
0.741935483870968		0.3787	0.3403	0.2416	0.1869	0.153	0.05658
0.774193548387097		0.3543	0.3201	0.2359	0.1793	0.1496	0.05318
0.806451612903226		0.3375	0.3153	0.235	0.1537	0.1484	0.05266
0.838709677419355		0.3363	0.3021	0.2334	0.1509	0.1198	0.04944
0.870967741935484		0.3231	0.2926	0.2162	0.1447	0.1144	0.04856

0.903225806451613	0.3199	0.2917	0.197	0.1391	0.1141	0.04746
0.935483870967742	0.2509	0.2299	0.173	0.1218	0.09627	0.04712
0.967741935483871	0.2362	0.2134	0.1457	0.1013	0.09078	0.03915
0.1	1.2949	1.1772	0.91028	0.59732	0.53721	0.16582

Average of yearly averages: 0.0856523333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONIONFIP2
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	33.7	days	Halfife	
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.635	cm		
Application Rate:		TAPP	0.112	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as GAONION9502.out
Chemical: MB45950
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.005931	0.005269	0.00362	0.002844	0.002578	0.0006505
1962	0.01878	0.01795	0.01589	0.01524	0.01471	0.01071
1963	0.0407	0.03865	0.03237	0.02853	0.02767	0.02263
1964	0.06691	0.06424	0.05749	0.05248	0.05286	0.04114
1965	0.05943	0.05836	0.05586	0.05436	0.05395	0.05245
1966	0.06947	0.06778	0.06517	0.06281	0.06181	0.0592
1967	0.07575	0.07473	0.07073	0.06608	0.06585	0.06525
1968	0.07653	0.07515	0.07106	0.06812	0.06765	0.06592
1969	0.1011	0.09736	0.0879	0.08233	0.07967	0.07366
1970	0.09246	0.09114	0.08699	0.08541	0.08455	0.08169
1971	0.1043	0.1014	0.09505	0.09186	0.09117	0.08629
1972	0.1016	0.09988	0.09675	0.09227	0.0916	0.09071
1973	0.1047	0.1029	0.09894	0.09589	0.09544	0.0926
1974	0.1001	0.09851	0.09494	0.09308	0.09237	0.0908
1975	0.1027	0.101	0.09781	0.09521	0.09515	0.09244
1976	0.114	0.1112	0.1049	0.1033	0.1022	0.09798
1977	0.1048	0.1041	0.1024	0.101	0.1005	0.09866
1978	0.1022	0.1014	0.09985	0.09936	0.09866	0.09631
1979	0.116	0.1132	0.1073	0.1054	0.1038	0.09988
1980	0.1103	0.109	0.106	0.1036	0.1029	0.09977
1981	0.1133	0.1116	0.1058	0.1017	0.1009	0.09761
1982	0.1116	0.1097	0.1062	0.1046	0.1038	0.1001
1983	0.1146	0.1127	0.1085	0.1062	0.1056	0.1032
1984	0.1239	0.1209	0.1137	0.1106	0.1091	0.1063
1985	0.1121	0.1106	0.1072	0.1048	0.1044	0.1031
1986	0.1124	0.1108	0.1073	0.1056	0.1051	0.1034
1987	0.116	0.1142	0.1104	0.108	0.107	0.1058
1988	0.1131	0.1114	0.1088	0.1064	0.1056	0.1041
1989	0.1393	0.1342	0.1252	0.1168	0.1147	0.1053
1990	0.1825	0.1752	0.1504	0.1324	0.127	0.1132

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.1825	0.1752	0.1504	0.1324	0.127	0.1132
0.0645161290322581		0.1393	0.1342	0.1252	0.1168	0.1147	0.1063
0.0967741935483871		0.1239	0.1209	0.1137	0.1106	0.1091	0.1058
0.129032258064516		0.116	0.1142	0.1104	0.108	0.107	0.1053
0.161290322580645		0.116	0.1132	0.1088	0.1064	0.1056	0.1041
0.193548387096774		0.1146	0.1127	0.1085	0.1062	0.1056	0.1034
0.225806451612903		0.114	0.1116	0.1073	0.1056	0.1051	0.1032
0.258064516129032		0.1133	0.1114	0.1073	0.1054	0.1044	0.1031
0.290322580645161		0.1131	0.1112	0.1072	0.1048	0.1038	0.1001
0.32258064516129		0.1124	0.1108	0.1062	0.1046	0.1038	0.09988

US EPA ARCHIVE DOCUMENT

0.354838709677419	0.1121	0.1106	0.106	0.1036	0.1029	0.09977
0.387096774193548	0.1116	0.1097	0.1058	0.1033	0.1022	0.09866
0.419354838709677	0.1103	0.109	0.1049	0.1017	0.1009	0.09798
0.451612903225806	0.1048	0.1041	0.1024	0.101	0.1005	0.09761
0.483870967741936	0.1047	0.1029	0.09985	0.09936	0.09866	0.09631
0.516129032258065	0.1043	0.1014	0.09894	0.09589	0.09544	0.0926
0.548387096774194	0.1027	0.1014	0.09781	0.09521	0.09515	0.09244
0.580645161290323	0.1022	0.101	0.09675	0.09308	0.09237	0.0908
0.612903225806452	0.1016	0.09988	0.09505	0.09227	0.0916	0.09071
0.645161290322581	0.1011	0.09851	0.09494	0.09186	0.09117	0.08629
0.67741935483871	0.1001	0.09736	0.0879	0.08541	0.08455	0.08169
0.709677419354839	0.09246	0.09114	0.08699	0.08233	0.07967	0.07366
0.741935483870968	0.07653	0.07515	0.07106	0.06812	0.06765	0.06592
0.774193548387097	0.07575	0.07473	0.07073	0.06608	0.06585	0.06525
0.806451612903226	0.06947	0.06778	0.06517	0.06281	0.06181	0.0592
0.838709677419355	0.06691	0.06424	0.05749	0.05436	0.05395	0.05245
0.870967741935484	0.05943	0.05836	0.05586	0.05248	0.05286	0.04114
0.903225806451613	0.0407	0.03865	0.03237	0.02853	0.02767	0.02263
0.935483870967742	0.01878	0.01795	0.01589	0.01524	0.01471	0.01071
0.967741935483871	0.005931	0.005269	0.00362	0.002844	0.002578	0.0006505

0.1	0.12311	0.12023	0.11337	0.11034	0.10889	0.10575

Average of yearly averages: 0.08202835

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONION9502
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.635	cm		
Application Rate:		TAPP	0.0055	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as GAONION5132.out
Chemical: MB46513
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.003992	0.003832	0.003307	0.002895	0.002501	0.0006264
1962	0.009137	0.008978	0.008451	0.007953	0.007762	0.006042
1963	0.01465	0.01441	0.01376	0.0133	0.01295	0.01005
1964	0.02796	0.02753	0.02611	0.02374	0.02346	0.01726
1965	0.02561	0.02543	0.02485	0.02434	0.02401	0.02304
1966	0.02714	0.02699	0.0265	0.02615	0.02594	0.0251
1967	0.03115	0.03095	0.03055	0.02935	0.02887	0.02797
1968	0.02997	0.02985	0.02942	0.02906	0.02894	0.02786
1969	0.0398	0.03924	0.03741	0.03576	0.03377	0.03024
1970	0.03639	0.03616	0.03538	0.03472	0.0346	0.03404
1971	0.03908	0.03878	0.03843	0.03768	0.0371	0.03484
1972	0.03983	0.03956	0.03863	0.03686	0.03684	0.03587
1973	0.03842	0.03828	0.03782	0.03759	0.03754	0.03618
1974	0.03757	0.03741	0.03692	0.03643	0.03617	0.0355
1975	0.03897	0.03875	0.03811	0.03752	0.03708	0.03613
1976	0.04136	0.0411	0.04048	0.03936	0.03863	0.03694
1977	0.04003	0.0399	0.03951	0.03895	0.03869	0.03722
1978	0.03868	0.03856	0.03828	0.0379	0.0378	0.03672
1979	0.04091	0.04064	0.04	0.03924	0.039	0.03739
1980	0.04035	0.04019	0.0398	0.03927	0.03893	0.03756
1981	0.03862	0.03841	0.03781	0.03757	0.03753	0.03666
1982	0.03905	0.03891	0.03842	0.03815	0.03792	0.03712
1983	0.0414	0.0412	0.04054	0.03998	0.03969	0.03828
1984	0.04411	0.04378	0.043	0.04207	0.04162	0.04021
1985	0.04111	0.04102	0.04073	0.04044	0.04037	0.03938
1986	0.04221	0.04204	0.04136	0.04114	0.04098	0.03974
1987	0.04449	0.04424	0.0436	0.04294	0.04251	0.04017

1988	0.04113	0.04098	0.04061	0.04017	0.04012	0.03881
1989	0.05267	0.05191	0.05039	0.04858	0.04766	0.04012
1990	0.07454	0.07334	0.06835	0.0629	0.05969	0.04774

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.07454	0.07334	0.06835	0.0629	0.05969	0.04774
0.0645161290322581		0.05267	0.05191	0.05039	0.04858	0.04766	0.04021
0.0967741935483871		0.04449	0.04424	0.0436	0.04294	0.04251	0.04017
0.129032258064516		0.04411	0.04378	0.043	0.04207	0.04162	0.04012
0.161290322580645		0.04221	0.04204	0.04136	0.04114	0.04098	0.03974
0.193548387096774		0.0414	0.0412	0.04073	0.04044	0.04037	0.03938
0.225806451612903		0.04136	0.0411	0.04061	0.04017	0.04012	0.03881
0.258064516129032		0.04113	0.04102	0.04054	0.03998	0.03969	0.03828
0.290322580645161		0.04111	0.04098	0.04048	0.03936	0.039	0.03756
0.32258064516129		0.04091	0.04064	0.04	0.03927	0.03893	0.03739
0.354838709677419		0.04035	0.04019	0.0398	0.03924	0.03869	0.03722
0.387096774193548		0.04003	0.0399	0.03951	0.03895	0.03863	0.03712
0.419354838709677		0.03983	0.03956	0.03863	0.03815	0.03792	0.03694
0.451612903225806		0.0398	0.03924	0.03843	0.0379	0.0378	0.03672
0.483870967741936		0.03908	0.03891	0.03842	0.03768	0.03754	0.03666
0.516129032258065		0.03905	0.03878	0.03828	0.03759	0.03753	0.03618
0.548387096774194		0.03897	0.03875	0.03811	0.03757	0.0371	0.03613
0.580645161290323		0.03868	0.03856	0.03782	0.03752	0.03708	0.03587
0.612903225806452		0.03862	0.03841	0.03781	0.03686	0.03684	0.0355
0.645161290322581		0.03842	0.03828	0.03741	0.03643	0.03617	0.03484
0.67741935483871		0.03757	0.03741	0.03692	0.03576	0.0346	0.03404
0.709677419354839		0.03639	0.03616	0.03538	0.03472	0.03377	0.03024
0.741935483870968		0.03115	0.03095	0.03055	0.02935	0.02894	0.02797
0.774193548387097		0.02997	0.02985	0.02942	0.02906	0.02887	0.02786
0.806451612903226		0.02796	0.02753	0.0265	0.02615	0.02594	0.0251
0.838709677419355		0.02714	0.02699	0.02611	0.02434	0.02401	0.02304
0.870967741935484		0.02561	0.02543	0.02485	0.02374	0.02346	0.01726
0.903225806451613		0.01465	0.01441	0.01376	0.0133	0.01295	0.01005
0.935483870967742		0.009137	0.008978	0.008451	0.007953	0.007762	0.006042
0.967741935483871		0.003992	0.003832	0.003307	0.002895	0.002501	0.0006264
0.1	0.044452	0.044194	0.04354	0.042853	0.042421	0.040165	
					Average of yearly averages:		0.03216028

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONION5132
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.635	cm		
Application Rate:		TAPP	0.0011	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as GAONION1362.out
Chemical: MB46136
PRZM environment: CAonion_NirrigC.txt modified Tueday, 8 June 2004 at 10:01:56
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w23155.dvf modified Wedday, 3 July 2002 at 08:04:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.003294	0.002886	0.002177	0.001201	0.0008008	0.0001975
1962	0.02384	0.02093	0.01657	0.01078	0.009146	0.005816
1963	0.03042	0.02695	0.0185	0.01353	0.01254	0.01031
1964	0.01807	0.01688	0.014	0.01206	0.0113	0.01062
1965	0.06078	0.04581	0.02035	0.01762	0.01556	0.01322
1966	0.07026	0.06366	0.0476	0.03376	0.02926	0.02501
1967	0.05132	0.04797	0.04401	0.03607	0.03297	0.03043

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1968	0.04543	0.04305	0.03851	0.03472	0.03321	0.03146
1969	0.04135	0.0402	0.03652	0.03474	0.034	0.03123
1970	0.08057	0.07304	0.05996	0.04174	0.0365	0.03066
1971	0.04903	0.04698	0.04191	0.03815	0.03697	0.03515
1972	0.05462	0.05176	0.04469	0.04028	0.03843	0.03537
1973	0.06079	0.05747	0.04934	0.04372	0.04343	0.03896
1974	0.1201	0.1083	0.0794	0.06391	0.06616	0.04425
1975	0.0615	0.06068	0.05864	0.05763	0.05713	0.05288
1976	0.0508	0.05048	0.04945	0.04844	0.04821	0.04553
1977	0.1069	0.09839	0.06177	0.05231	0.04991	0.04641
1978	0.2697	0.2408	0.1742	0.1235	0.1114	0.08634
1979	0.08268	0.08174	0.08036	0.07822	0.07753	0.07169
1980	0.07451	0.07346	0.07091	0.06847	0.06778	0.06276
1981	0.07555	0.07204	0.06344	0.0579	0.05764	0.05521
1982	0.07744	0.07339	0.0635	0.05525	0.05337	0.05168
1983	0.0824	0.07829	0.06818	0.06207	0.06021	0.05783
1984	0.07169	0.06988	0.0654	0.06217	0.06123	0.05695
1985	0.08863	0.08292	0.0699	0.06025	0.05595	0.05273
1986	0.05661	0.05529	0.05418	0.05367	0.05359	0.05059
1987	0.1212	0.1116	0.08801	0.07501	0.06703	0.0602
1988	0.06443	0.06421	0.0636	0.06288	0.06249	0.0585
1989	0.05788	0.05722	0.05557	0.0543	0.05403	0.05048
1990	0.04639	0.04637	0.04628	0.04606	0.04587	0.0429

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.2697	0.2408	0.1742	0.1235	0.1114	0.08634
0.0645161290322581		0.1212	0.1116	0.08801	0.07822	0.07753	0.07169
0.096774193548387 1		0.1201	0.1083	0.08036	0.07501	0.06778	0.06276
0.129032258064516		0.1069	0.09839	0.0794	0.06847	0.06703	0.0602
0.161290322580645		0.08863	0.08292	0.07091	0.06391	0.06616	0.0585
0.193548387096774		0.08268	0.08174	0.0699	0.06288	0.06249	0.05783
0.225806451612903		0.0824	0.07829	0.06818	0.06217	0.06123	0.05695
0.258064516129032		0.08057	0.07346	0.0654	0.06207	0.06021	0.05521
0.290322580645161		0.07744	0.07339	0.0636	0.06025	0.05764	0.05288
0.32258064516129		0.07555	0.07304	0.0635	0.0579	0.05713	0.05273
0.354838709677419		0.07451	0.07204	0.06344	0.05763	0.05595	0.05168
0.387096774193548		0.07169	0.06988	0.06177	0.05525	0.05403	0.05059
0.419354838709677		0.07026	0.06421	0.05996	0.0543	0.05359	0.05048
0.451612903225806		0.06443	0.06366	0.05864	0.05367	0.05337	0.04641
0.483870967741936		0.0615	0.06068	0.05557	0.05231	0.04991	0.04553
0.516129032258065		0.06079	0.05747	0.05418	0.04844	0.04821	0.04425
0.548387096774194		0.06078	0.05722	0.04945	0.04606	0.04587	0.0429
0.580645161290323		0.05788	0.05529	0.04934	0.04372	0.04343	0.03896
0.612903225806452		0.05661	0.05176	0.0476	0.04174	0.03843	0.03537
0.645161290322581		0.05462	0.05048	0.04628	0.04028	0.03697	0.03515
0.67741935483871		0.05132	0.04797	0.04469	0.03815	0.0365	0.03146
0.709677419354839		0.0508	0.04698	0.04401	0.03607	0.034	0.03123
0.741935483870968		0.04903	0.04637	0.04191	0.03474	0.03321	0.03066
0.774193548387097		0.04639	0.04581	0.03851	0.03472	0.03297	0.03043
0.806451612903226		0.04543	0.04305	0.03652	0.03376	0.02926	0.02501
0.838709677419355		0.04135	0.0402	0.02035	0.01762	0.01556	0.01322
0.870967741935484		0.03042	0.02695	0.0185	0.01353	0.01254	0.01062
0.903225806451613		0.02384	0.02093	0.01657	0.01206	0.0113	0.01031
0.935483870967742		0.01807	0.01688	0.014	0.01078	0.009146	0.005816
0.967741935483871		0.003294	0.002886	0.002177	0.001201	0.0008008	0.0001975
0.1	0.11878	0.107309	0.080264	0.074356	0.067705	0.062504	
					Average of yearly averages:		0.0415121166666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONION1362
Metfile: w23155.dvf
PRZM scenario: CAonion_NirrigC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.635	cm		
Application Rate:		TAPP	0.026	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd-mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

US EPA ARCHIVE DOCUMENT

In-Furrow Corn

Fipronil

stored as MSCORNFIP.out
Chemical: Fipronil
PRZM environment: MScornC.txt modified Satday, 12 October 2002 at 16:06:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w13893.dvf modified Wedday, 3 July 2002 at 09:06:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.1108	0.1008	0.07028	0.03881	0.02776	0.009742
1962	0.02597	0.02335	0.01751	0.01043	0.007888	0.003395
1963	0.04335	0.03914	0.02648	0.01353	0.009454	0.004192
1964	0.1275	0.1158	0.08631	0.04604	0.03294	0.009736
1965	0.07306	0.06539	0.04601	0.02458	0.0177	0.005835
1966	0.07869	0.07167	0.04934	0.02707	0.01908	0.006935
1967	0.02405	0.02171	0.01636	0.01028	0.007565	0.004075
1968	0.07605	0.06793	0.04615	0.02804	0.02208	0.007091
1969	0.07485	0.0677	0.05206	0.02719	0.01908	0.006535
1970	0.07702	0.06981	0.04994	0.0285	0.02016	0.007357
1971	0.01357	0.01249	0.009483	0.004142	0.003373	0.001663
1972	0.04637	0.04166	0.02894	0.02238	0.01843	0.006686
1973	0.2377	0.2221	0.1751	0.09378	0.06593	0.01872
1974	0.1191	0.1078	0.07459	0.04939	0.04174	0.01141
1975	0.01829	0.01644	0.01242	0.00904	0.008429	0.003689
1976	0.1111	0.09951	0.06585	0.03737	0.02956	0.008342
1977	0.03978	0.03707	0.02881	0.01715	0.0141	0.006148
1978	0.1234	0.1128	0.07561	0.03795	0.02631	0.008256
1979	0.2116	0.192	0.1477	0.08808	0.06259	0.017
1980	0.163	0.1476	0.1026	0.05484	0.03844	0.01271
1981	0.04244	0.0385	0.02895	0.01675	0.01207	0.003901
1982	0.07551	0.07087	0.05258	0.02767	0.01944	0.008632
1983	0.105	0.09501	0.06974	0.0475	0.03749	0.01134
1984	0.1446	0.1299	0.102	0.05318	0.03715	0.01085
1985	0.1336	0.1204	0.0807	0.04118	0.02875	0.00923
1986	0.07082	0.06768	0.05211	0.03743	0.027	0.007316
1987	0.2206	0.1988	0.1343	0.06843	0.04782	0.01726
1988	0.0221	0.01997	0.01469	0.009469	0.009099	0.005088
1989	0.03977	0.03575	0.02659	0.01809	0.01434	0.004428
1990	0.0437	0.03884	0.02802	0.01803	0.01356	0.007046

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.2377	0.2221	0.1751	0.09378	0.06593	0.01872
0.0645161290322581		0.2206	0.1988	0.1477	0.08808	0.06259	0.01726
0.0967741935483871		0.2116	0.192	0.1343	0.06843	0.04782	0.017
0.129032258064516		0.163	0.1476	0.1026	0.05484	0.04174	0.01271
0.161290322580645		0.1446	0.1299	0.102	0.05318	0.03844	0.01141
0.193548387096774		0.1336	0.1204	0.08631	0.04939	0.03749	0.01134
0.225806451612903		0.1275	0.1158	0.0807	0.0475	0.03715	0.01085
0.258064516129032		0.1234	0.1128	0.07561	0.04604	0.03294	0.009742
0.290322580645161		0.1191	0.1078	0.07459	0.04118	0.02956	0.009736
0.32258064516129		0.1111	0.1008	0.07028	0.03881	0.02875	0.00923
0.354838709677419		0.1108	0.09951	0.06974	0.03795	0.02776	0.008632
0.387096774193548		0.105	0.09501	0.06585	0.03743	0.027	0.008342
0.419354838709677		0.07869	0.07167	0.05258	0.03737	0.02631	0.008256
0.451612903225806		0.07702	0.07087	0.05211	0.0285	0.02208	0.007357
0.483870967741936		0.07605	0.06981	0.05206	0.02804	0.02016	0.007316
0.516129032258065		0.07551	0.06793	0.04994	0.02767	0.01944	0.007091
0.548387096774194		0.07485	0.0677	0.04934	0.02719	0.01908	0.007046
0.580645161290323		0.07306	0.06768	0.04615	0.02707	0.01908	0.006935
0.612903225806452		0.07082	0.06539	0.04601	0.02458	0.01843	0.006686
0.645161290322581		0.04637	0.04166	0.02895	0.02238	0.0177	0.006535
0.67741935483871		0.0437	0.03914	0.02894	0.01809	0.01434	0.006148
0.709677419354839		0.04335	0.03884	0.02881	0.01803	0.0141	0.005835
0.741935483870968		0.04244	0.0385	0.02802	0.01715	0.01356	0.005088
0.774193548387097		0.03978	0.03707	0.02659	0.01675	0.01207	0.004428
0.806451612903226		0.03977	0.03575	0.02648	0.01353	0.009454	0.004192
0.838709677419355		0.02597	0.02335	0.01751	0.01043	0.009099	0.004075
0.870967741935484		0.02405	0.02171	0.01636	0.01028	0.008429	0.003901
0.903225806451613		0.0221	0.01997	0.01469	0.009469	0.007888	0.003689
0.935483870967742		0.01829	0.01644	0.01242	0.00904	0.007565	0.003395
0.967741935483871		0.01357	0.01249	0.009483	0.004142	0.003373	0.001663
0.1	0.20674	0.18756	0.13113	0.067071	0.047212	0.016571	
					Average of yearly averages:		0.0081536

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: MSCORNFIP
Metfile: w13893.dvf
PRZM scenario: MScornC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	437	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	2.4	mg/L	
Kd	Kd		mg/L	

Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	5	integer	See PRZM manual		
Incorporation Depth:		DEPI	5	cm		
Application Rate:		TAPP	0.1456	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as MSCORN950.out
Chemical: MB45950
PRZM environment: MScornC.txt modified Satday, 12 October 2002 at 16:06:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w13893.dvf modified Wedday, 3 July 2002 at 09:06:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.002845	0.002594	0.00211	0.001632	0.001192	0.0004586
1962	0.00264	0.002482	0.002161	0.00192	0.001861	0.001583
1963	0.002794	0.002681	0.00244	0.002203	0.002166	0.002052
1964	0.005681	0.005372	0.004979	0.004048	0.003805	0.003317
1965	0.007318	0.006904	0.006012	0.005225	0.005015	0.004526
1966	0.006657	0.006403	0.005837	0.005423	0.005395	0.005178
1967	0.00756	0.00727	0.006718	0.005957	0.005797	0.005548
1968	0.009158	0.008717	0.007709	0.007097	0.007092	0.006403
1969	0.008651	0.008431	0.007983	0.007531	0.007378	0.007083
1970	0.008702	0.008531	0.008147	0.007812	0.007761	0.007575
1971	0.00903	0.008775	0.00826	0.007947	0.007859	0.007521
1972	0.01084	0.01056	0.009856	0.009322	0.008939	0.007821
1973	0.01263	0.01227	0.01138	0.01027	0.009941	0.009382
1974	0.01159	0.01137	0.01083	0.01052	0.01046	0.01004
1975	0.01114	0.01103	0.01063	0.01032	0.01022	0.009943
1976	0.01323	0.01272	0.01144	0.01071	0.01059	0.01003
1977	0.01138	0.01124	0.01076	0.01041	0.01039	0.01011
1978	0.01448	0.01394	0.013	0.01145	0.01097	0.01064
1979	0.01467	0.01423	0.01338	0.01262	0.01233	0.0117
1980	0.01417	0.01383	0.01302	0.01241	0.01221	0.01169
1981	0.01314	0.01279	0.01207	0.01157	0.01155	0.01119
1982	0.01442	0.01413	0.01321	0.01235	0.01203	0.01145
1983	0.01492	0.01451	0.01409	0.01312	0.01273	0.01241
1984	0.01519	0.01486	0.01427	0.01347	0.01321	0.01281
1985	0.01471	0.01442	0.01366	0.01305	0.01291	0.0125
1986	0.01609	0.01573	0.01425	0.0134	0.0128	0.01208
1987	0.01707	0.01675	0.01453	0.01406	0.01343	0.01288
1988	0.0172	0.01662	0.01586	0.01449	0.01423	0.0137
1989	0.0159	0.01563	0.01526	0.01494	0.01482	0.01419
1990	0.01586	0.01556	0.01497	0.01456	0.01445	0.01402

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0172	0.01675	0.01586	0.01494	0.01482	0.01419
0.0645161290322581		0.01707	0.01662	0.01526	0.01456	0.01445	0.01402
0.0967741935483871		0.01609	0.01573	0.01497	0.01449	0.01423	0.0137
0.129032258064516		0.0159	0.01563	0.01453	0.01406	0.01343	0.01288
0.161290322580645		0.01586	0.01556	0.01427	0.01347	0.01321	0.01281
0.193548387096774		0.01519	0.01486	0.01425	0.0134	0.01291	0.0125
0.225806451612903		0.01492	0.01451	0.01409	0.01312	0.0128	0.01241
0.258064516129032		0.01471	0.01442	0.01366	0.01305	0.01273	0.01208
0.290322580645161		0.01467	0.01423	0.01338	0.01262	0.01233	0.0117
0.32258064516129		0.01448	0.01413	0.01321	0.01241	0.01221	0.01169
0.354838709677419		0.01442	0.01394	0.01302	0.01235	0.01203	0.01145
0.387096774193548		0.01417	0.01383	0.013	0.01157	0.01155	0.01119
0.419354838709677		0.01323	0.01279	0.01207	0.01145	0.01097	0.01064
0.451612903225806		0.01314	0.01272	0.01144	0.01071	0.01059	0.01011
0.483870967741936		0.01263	0.01227	0.01138	0.01052	0.01046	0.01004
0.516129032258065		0.01159	0.01137	0.01083	0.01041	0.01039	0.01003
0.548387096774194		0.01138	0.01124	0.01076	0.01032	0.01022	0.009943
0.580645161290323		0.01114	0.01103	0.01063	0.01027	0.009941	0.009382
0.612903225806452		0.01084	0.01056	0.009856	0.009322	0.008939	0.007821
0.645161290322581		0.009158	0.008775	0.00826	0.007947	0.007859	0.007575
0.67741935483871		0.00903	0.008717	0.008147	0.007812	0.007761	0.007521
0.709677419354839		0.008702	0.008531	0.007983	0.007531	0.007378	0.007083
0.741935483870968		0.008651	0.008431	0.007709	0.007097	0.007092	0.006403
0.774193548387097		0.00756	0.00727	0.006718	0.005957	0.005797	0.005548
0.806451612903226		0.007318	0.006904	0.006012	0.005423	0.005395	0.005178
0.838709677419355		0.006657	0.006403	0.005837	0.005225	0.005015	0.004526
0.870967741935484		0.005681	0.005372	0.004979	0.004048	0.003805	0.003317
0.903225806451613		0.002845	0.002681	0.00244	0.002203	0.002166	0.002052

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0.935483870967742	0.002794	0.002594	0.002161	0.00192	0.001861	0.001583
0.967741935483871	0.00264	0.002482	0.00211	0.001632	0.001192	0.0004586

0.1	0.016071	0.01572	0.014926	0.014447	0.01415	0.013618

Average of yearly averages: 0.008994353333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: MSCORN950
Metfile: w13893.dvf
PRZM scenario: MScornC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	5	integer	See PRZM manual		
Incorporation Depth:		DEPI	5	cm		
Application Rate:		TAPP	0.0072	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as MSCORN513.out
Chemical: MB46513
PRZM environment: MScornC.txt modified Satday, 12 October 2002 at 16:06:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w13893.dvf modified Wedday, 3 July 2002 at 09:06:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.00125	0.001218	0.001132	0.0009338	0.000725	0.0003423
1962	0.00126	0.001238	0.001173	0.001112	0.00109	0.0009354
1963	0.001372	0.001357	0.001319	0.001237	0.001217	0.001138
1964	0.002428	0.002379	0.002234	0.002025	0.001934	0.001697
1965	0.002927	0.002873	0.002737	0.002525	0.002435	0.002055
1966	0.002913	0.002884	0.002791	0.002657	0.002597	0.002476
1967	0.002995	0.002973	0.002933	0.002752	0.002703	0.002617
1968	0.003729	0.003672	0.003515	0.003393	0.003368	0.002919
1969	0.003704	0.00368	0.003624	0.003502	0.003439	0.003294
1970	0.003901	0.003872	0.00379	0.003661	0.003598	0.003491
1971	0.003644	0.00362	0.003559	0.003485	0.003481	0.003364
1972	0.00421	0.00417	0.004098	0.004043	0.003941	0.00349
1973	0.005583	0.005501	0.005276	0.004932	0.004765	0.004295
1974	0.005163	0.005133	0.005026	0.004883	0.004864	0.004557
1975	0.004628	0.00461	0.004549	0.004518	0.004455	0.00438
1976	0.005501	0.005429	0.005188	0.004963	0.004933	0.004483
1977	0.005059	0.005025	0.004936	0.004799	0.00481	0.004649
1978	0.005493	0.005464	0.005315	0.005101	0.004995	0.004797
1979	0.006131	0.006066	0.00597	0.00579	0.005649	0.005188
1980	0.006052	0.006	0.005826	0.00559	0.005475	0.005225
1981	0.005497	0.005456	0.00538	0.005234	0.005222	0.00506
1982	0.005682	0.005656	0.005571	0.005362	0.005302	0.005137
1983	0.006271	0.006221	0.006052	0.005835	0.005718	0.005475
1984	0.006589	0.006531	0.006362	0.006105	0.005969	0.00565
1985	0.006338	0.006292	0.006134	0.005913	0.005805	0.005572
1986	0.006664	0.006611	0.006395	0.00613	0.005806	0.0054
1987	0.007071	0.007	0.006765	0.006441	0.006292	0.005994
1988	0.00678	0.006734	0.006624	0.006444	0.006387	0.006164
1989	0.006432	0.006415	0.006392	0.006332	0.006295	0.006101
1990	0.006364	0.006337	0.006246	0.0062	0.006146	0.006034

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129	0.007071	0.007	0.006765	0.006444	0.006387	0.006164	
0.0645161290322581	0.00678	0.006734	0.006624	0.006441	0.006295	0.006101	
0.0967741935483871	0.006664	0.006611	0.006395	0.006332	0.006292	0.006034	
0.129032258064516	0.006589	0.006531	0.006392	0.0062	0.006146	0.005994	
0.161290322580645	0.006432	0.006415	0.006362	0.00613	0.005969	0.00565	
0.193548387096774	0.006364	0.006337	0.006246	0.006105	0.005806	0.005572	
0.225806451612903	0.006338	0.006292	0.006134	0.005913	0.005805	0.005475	
0.258064516129032	0.006271	0.006221	0.006052	0.005835	0.005718	0.0054	
0.290322580645161	0.006131	0.006066	0.00597	0.00579	0.005649	0.005225	
0.32258064516129	0.006052	0.006	0.005826	0.00559	0.005475	0.005188	
0.354838709677419	0.005682	0.005656	0.005571	0.005362	0.005302	0.005137	

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0.387096774193548	0.005583	0.005501	0.00538	0.005234	0.005222	0.00506
0.419354838709677	0.005501	0.005464	0.005315	0.005101	0.004995	0.004797
0.451612903225806	0.005497	0.005456	0.005276	0.004963	0.004933	0.004649
0.483870967741936	0.005493	0.005429	0.005188	0.004932	0.004864	0.004557
0.516129032258065	0.005163	0.005133	0.005026	0.004883	0.00481	0.004483
0.548387096774194	0.005059	0.005025	0.004936	0.004799	0.004765	0.00438
0.580645161290323	0.004628	0.00461	0.004549	0.004518	0.004455	0.004295
0.612903225806452	0.00421	0.00417	0.004098	0.004043	0.003941	0.003491
0.645161290322581	0.003901	0.003872	0.00379	0.003661	0.003598	0.00349
0.67741935483871	0.003729	0.00368	0.003624	0.003502	0.003481	0.003364
0.709677419354839	0.003704	0.003672	0.003559	0.003485	0.003439	0.003294
0.741935483870968	0.003644	0.00362	0.003515	0.003393	0.003368	0.002919
0.774193548387097	0.002995	0.002973	0.002933	0.002752	0.002703	0.002617
0.806451612903226	0.002927	0.002884	0.002791	0.002657	0.002597	0.002476
0.838709677419355	0.002913	0.002873	0.002737	0.002525	0.002435	0.002055
0.870967741935484	0.002428	0.002379	0.002234	0.002025	0.001934	0.001697
0.903225806451613	0.001372	0.001357	0.001319	0.001237	0.001217	0.001138
0.935483870967742	0.00126	0.001238	0.001173	0.001112	0.00109	0.0009354
0.967741935483871	0.00125	0.001218	0.001132	0.0009338	0.000725	0.0003423

0.1	0.0066565	0.006603	0.0063947	0.0063188	0.0062774	0.00603
					Average of yearly averages:	0.00406599

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: MSCORN513
Metfile: w13893.dvf
PRZM scenario: MScornC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	5	integer	See PRZM manual		
Incorporation Depth:		DEPI	5	cm		
Application Rate:		TAPP	0.0014	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as MSCORN136.out
Chemical: MB46136
PRZM environment: MScornC.txt modified Satday, 12 October 2002 at 16:06:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w13893.dvf modified Wedday, 3 July 2002 at 09:06:20
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0127	0.01148	0.00922	0.007124	0.005187	0.001979
1962	0.01163	0.01086	0.009347	0.00821	0.007935	0.006758
1963	0.0121	0.01153	0.01027	0.009396	0.009212	0.008646
1964	0.02525	0.02362	0.02157	0.01722	0.01611	0.01402
1965	0.03218	0.03011	0.02575	0.02206	0.0211	0.01909
1966	0.0289	0.0276	0.02481	0.02264	0.02262	0.02147
1967	0.03207	0.03059	0.02781	0.0243	0.02359	0.02263
1968	0.03899	0.03678	0.03184	0.02894	0.02891	0.02601
1969	0.03604	0.03492	0.03275	0.03059	0.02989	0.0285
1970	0.03545	0.03461	0.0328	0.03125	0.0311	0.03016
1971	0.03655	0.03541	0.03307	0.03154	0.03109	0.02946
1972	0.0445	0.04307	0.03954	0.03704	0.03534	0.03038
1973	0.05195	0.0502	0.04598	0.04081	0.03932	0.03688
1974	0.0466	0.04549	0.04285	0.04149	0.04119	0.03934
1975	0.04466	0.04407	0.04192	0.0403	0.03984	0.03846
1976	0.05333	0.05081	0.0446	0.04126	0.04065	0.03832
1977	0.04423	0.04351	0.04121	0.03965	0.03946	0.03826
1978	0.0586	0.05582	0.0512	0.04399	0.0418	0.04029
1979	0.05889	0.05669	0.05246	0.04891	0.04765	0.04487
1980	0.05589	0.05421	0.05032	0.04763	0.04672	0.04435
1981	0.05102	0.04927	0.04574	0.04342	0.04333	0.04169
1982	0.05664	0.05521	0.05065	0.04674	0.04528	0.04262
1983	0.05873	0.05659	0.05436	0.04983	0.04799	0.04659
1984	0.05891	0.05729	0.05454	0.05085	0.04973	0.04797
1985	0.05661	0.05514	0.05149	0.0488	0.04822	0.04638
1986	0.06292	0.06116	0.05402	0.05015	0.04744	0.0442

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1987	0.06733	0.06578	0.05494	0.05285	0.04998	0.0475
1988	0.06773	0.06478	0.06078	0.05437	0.05332	0.0508
1989	0.06116	0.05976	0.05793	0.05636	0.05574	0.05279
1990	0.06058	0.05904	0.0562	0.05423	0.0537	0.0517

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.06773	0.06578	0.06078	0.05636	0.05574	0.05279
0.0645161290322581		0.06733	0.06478	0.05793	0.05437	0.0537	0.0517
0.096774193548387 1		0.06292	0.06116	0.0562	0.05423	0.05332	0.0508
0.129032258064516		0.06116	0.05976	0.05494	0.05285	0.04998	0.04797
0.161290322580645		0.06058	0.05904	0.05454	0.05085	0.04973	0.0475
0.193548387096774		0.05891	0.05729	0.05436	0.05015	0.04822	0.04659
0.225806451612903		0.05889	0.05669	0.05402	0.04983	0.04799	0.04638
0.258064516129032		0.05873	0.05659	0.05246	0.04891	0.04765	0.04487
0.290322580645161		0.0586	0.05582	0.05149	0.0488	0.04744	0.04435
0.32258064516129		0.05664	0.05521	0.0512	0.04763	0.04672	0.0442
0.354838709677419		0.05661	0.05514	0.05065	0.04674	0.04528	0.04262
0.387096774193548		0.05589	0.05421	0.05032	0.04399	0.04333	0.04169
0.419354838709677		0.05333	0.05081	0.04598	0.04342	0.0418	0.04029
0.451612903225806		0.05195	0.0502	0.04574	0.04149	0.04119	0.03934
0.483870967741936		0.05102	0.04927	0.0446	0.04126	0.04065	0.03846
0.516129032258065		0.0466	0.04549	0.04285	0.04081	0.03984	0.03832
0.548387096774194		0.04466	0.04407	0.04192	0.0403	0.03946	0.03826
0.580645161290323		0.0445	0.04351	0.04121	0.03965	0.03932	0.03688
0.612903225806452		0.04423	0.04307	0.03954	0.03704	0.03534	0.03038
0.645161290322581		0.03899	0.03678	0.03307	0.03154	0.0311	0.03016
0.67741935483871		0.03655	0.03541	0.0328	0.03125	0.03109	0.02946
0.709677419354839		0.03604	0.03492	0.03275	0.03059	0.02989	0.0285
0.741935483870968		0.03545	0.03461	0.03184	0.02894	0.02891	0.02601
0.774193548387097		0.03218	0.03059	0.02781	0.0243	0.02359	0.02263
0.806451612903226		0.03207	0.03011	0.02575	0.02264	0.02262	0.02147
0.838709677419355		0.0289	0.0276	0.02481	0.02206	0.0211	0.01909
0.870967741935484		0.02525	0.02362	0.02157	0.01722	0.01611	0.01402
0.903225806451613		0.0127	0.01153	0.01027	0.009396	0.009212	0.008646
0.935483870967742		0.0121	0.01148	0.009347	0.00821	0.007935	0.006758
0.967741935483871		0.01163	0.01086	0.00922	0.007124	0.005187	0.001979
0.1	0.062744	0.06102	0.056074	0.054092	0.052986	0.050517	
					Average of yearly averages:		0.0344037666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: MSCORN136
Metfile: w13893.dvf
PRZM scenario: MScornC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	5	integer	See PRZM manual		
Incorporation Depth:		DEPI	5	cm		
Application Rate:		TAPP	0.0349	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Sweet Potato/Potato

Fipronil

stored as NCSWPOTFIP.out
Chemical: Fipronil
PRZM environment: NCSweetPotatoC.txt modified Friday, 8 August 2003 at 07:25:48
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w13722.dvf modified Wedday, 3 July 2002 at 08:05:50
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly

US EPA ARCHIVE DOCUMENT

1961	0	0	0	0	0	0
1962	0	0	0	0	0	0
1963	0	0	0	0	0	0
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0	0	0	0	0	0
0.0645161290322581		0	0	0	0	0	0
0.096774193548387 1		0	0	0	0	0	0
0.129032258064516		0	0	0	0	0	0
0.161290322580645		0	0	0	0	0	0
0.193548387096774		0	0	0	0	0	0
0.225806451612903		0	0	0	0	0	0
0.258064516129032		0	0	0	0	0	0
0.290322580645161		0	0	0	0	0	0
0.32258064516129		0	0	0	0	0	0
0.354838709677419		0	0	0	0	0	0
0.387096774193548		0	0	0	0	0	0
0.419354838709677		0	0	0	0	0	0
0.451612903225806		0	0	0	0	0	0
0.483870967741936		0	0	0	0	0	0
0.516129032258065		0	0	0	0	0	0
0.548387096774194		0	0	0	0	0	0
0.580645161290323		0	0	0	0	0	0
0.612903225806452		0	0	0	0	0	0
0.645161290322581		0	0	0	0	0	0
0.67741935483871		0	0	0	0	0	0
0.709677419354839		0	0	0	0	0	0
0.741935483870968		0	0	0	0	0	0
0.774193548387097		0	0	0	0	0	0
0.806451612903226		0	0	0	0	0	0
0.838709677419355		0	0	0	0	0	0
0.870967741935484		0	0	0	0	0	0
0.903225806451613		0	0	0	0	0	0
0.935483870967742		0	0	0	0	0	0
0.967741935483871		0	0	0	0	0	0
0.1	0	0	0	0	0	0	
						Average of yearly averages:	0

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: NCSWPOTFIP
Metfile: w13722.dvf
PRZM scenario: NCSweetPotatoC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	10.16	cm		
Application Rate:		TAPP	0.112	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-5	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					

US EPA ARCHIVE DOCUMENT

PLDKRT			
FEXTRC	0.5		
Flag for Index Res. Run	IR	Pond	
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)

MB45950

stored as NCSWPOT950.out
Chemical: MB45950
PRZM environment: NCSweetPotatoC.txt modified Friday, 8 August 2003 at 07:25:48
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w13722.dvf modified Wedday, 3 July 2002 at 08:05:50
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0	0	0	0	0	0
1962	0	0	0	0	0	0
1963	0	0	0	0	0	0
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0	0	0	0	0	0
0.0645161290322581		0	0	0	0	0	0
0.0967741935483871		0	0	0	0	0	0
0.129032258064516		0	0	0	0	0	0
0.161290322580645		0	0	0	0	0	0
0.193548387096774		0	0	0	0	0	0
0.225806451612903		0	0	0	0	0	0
0.258064516129032		0	0	0	0	0	0
0.290322580645161		0	0	0	0	0	0
0.32258064516129		0	0	0	0	0	0
0.354838709677419		0	0	0	0	0	0
0.387096774193548		0	0	0	0	0	0
0.419354838709677		0	0	0	0	0	0
0.451612903225806		0	0	0	0	0	0
0.483870967741936		0	0	0	0	0	0
0.516129032258065		0	0	0	0	0	0
0.548387096774194		0	0	0	0	0	0
0.580645161290323		0	0	0	0	0	0
0.612903225806452		0	0	0	0	0	0
0.645161290322581		0	0	0	0	0	0
0.67741935483871		0	0	0	0	0	0
0.709677419354839		0	0	0	0	0	0
0.741935483870968		0	0	0	0	0	0
0.774193548387097		0	0	0	0	0	0
0.806451612903226		0	0	0	0	0	0
0.838709677419355		0	0	0	0	0	0
0.870967741935484		0	0	0	0	0	0
0.903225806451613		0	0	0	0	0	0
0.935483870967742		0	0	0	0	0	0
0.967741935483871		0	0	0	0	0	0
0.1	0	0	0	0	0	0	
						Average of yearly averages:	0

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: NCSWPOT950
Metfile: w13722.dvf
PRZM scenario: NCSweetPotatoC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	421	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	
Vapor Pressure	vapr		torr	

US EPA ARCHIVE DOCUMENT

Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	10.16	cm		
Application Rate:		TAPP	0.0055	kg ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-5	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as NCSWPOT513.out
Chemical: MB46513
PRZM environment: NCSweetPotatoC.txt modified Friday, 8 August 2003 at 07:25:48
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w13722.dvf modified Wedday, 3 July 2002 at 08:05:50
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0	0	0	0	0	0
1962	0	0	0	0	0	0
1963	0	0	0	0	0	0
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0	0	0	0	0	0
0.0645161290322581		0	0	0	0	0	0
0.0967741935483871		0	0	0	0	0	0
0.129032258064516		0	0	0	0	0	0
0.161290322580645		0	0	0	0	0	0
0.193548387096774		0	0	0	0	0	0
0.225806451612903		0	0	0	0	0	0
0.258064516129032		0	0	0	0	0	0
0.290322580645161		0	0	0	0	0	0
0.32258064516129		0	0	0	0	0	0
0.354838709677419		0	0	0	0	0	0
0.387096774193548		0	0	0	0	0	0
0.419354838709677		0	0	0	0	0	0
0.451612903225806		0	0	0	0	0	0
0.483870967741936		0	0	0	0	0	0
0.516129032258065		0	0	0	0	0	0
0.548387096774194		0	0	0	0	0	0
0.580645161290323		0	0	0	0	0	0
0.612903225806452		0	0	0	0	0	0
0.645161290322581		0	0	0	0	0	0
0.67741935483871		0	0	0	0	0	0
0.709677419354839		0	0	0	0	0	0
0.741935483870968		0	0	0	0	0	0
0.774193548387097		0	0	0	0	0	0
0.806451612903226		0	0	0	0	0	0
0.838709677419355		0	0	0	0	0	0
0.870967741935484		0	0	0	0	0	0
0.903225806451613		0	0	0	0	0	0

US EPA ARCHIVE DOCUMENT

0.935483870967742	0	0	0	0	0	0
0.967741935483871	0	0	0	0	0	0

0.1	0	0	0	0	0	0

Average of yearly averages: 0

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: NCSWPOT513
Metfile: w13722.dvf
PRZM scenario: NCSweetPotatoC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1320	days	Halfife	
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	10.16	cm		
Application Rate:		TAPP	0.0018	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-5	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as NCSWPOT136.out
Chemical: MB46136
PRZM environment: NCSweetPotatoC.txt modified Friday, 8 August 2003 at 07:25:48
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w13722.dvf modified Wedday, 3 July 2002 at 08:05:50
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0	0	0	0	0	0
1962	0	0	0	0	0	0
1963	0	0	0	0	0	0
1964	0	0	0	0	0	0
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0	0	0	0	0	0
0.064516129032258 1		0	0	0	0	0	0
0.0967741935483871		0	0	0	0	0	0
0.129032258064516		0	0	0	0	0	0
0.161290322580645		0	0	0	0	0	0
0.193548387096774		0	0	0	0	0	0

US EPA ARCHIVE DOCUMENT

0.225806451612903	0	0	0	0	0	0
0.258064516129032	0	0	0	0	0	0
0.290322580645161	0	0	0	0	0	0
0.32258064516129	0	0	0	0	0	0
0.354838709677419	0	0	0	0	0	0
0.387096774193548	0	0	0	0	0	0
0.419354838709677	0	0	0	0	0	0
0.451612903225806	0	0	0	0	0	0
0.483870967741936	0	0	0	0	0	0
0.516129032258065	0	0	0	0	0	0
0.548387096774194	0	0	0	0	0	0
0.580645161290323	0	0	0	0	0	0
0.612903225806452	0	0	0	0	0	0
0.645161290322581	0	0	0	0	0	0
0.67741935483871	0	0	0	0	0	0
0.709677419354839	0	0	0	0	0	0
0.741935483870968	0	0	0	0	0	0
0.774193548387097	0	0	0	0	0	0
0.806451612903226	0	0	0	0	0	0
0.838709677419355	0	0	0	0	0	0
0.870967741935484	0	0	0	0	0	0
0.903225806451613	0	0	0	0	0	0
0.935483870967742	0	0	0	0	0	0
0.967741935483871	0	0	0	0	0	0

0.1	0	0	0	0	0	0
					Average of yearly averages:	0

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: NCSWPOT136
Metfile: w13722.dvf
PRZM scenario: NCSweetPotatoC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name	Value	Units	Comments	
Molecular weight	mwt	453	g/mol		
Henry's Law Const.	henry		atm-m^3/mol		
Vapor Pressure	vapr		torr		
Solubility sol	0.16	mg/L			
Kd Kd		mg/L			
Koc Koc	4208	mg/L			
Photolysis half-life	kdp	7	days	Half-life	
Aerobic Aquatic Metabolism	kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife
Aerobic Soil Metabolism	asm	700	days	Halfife	
Hydrolysis: pH 7		days	Half-life		
Method: CAM	8	*integer*	See *PRZM manual*		
Incorporation Depth:	DEPI	10.16	cm		
Application Rate:	TAPP	0.0268	kg/ha		
Application Efficiency:	APPEFF	1.0	fraction		
Spray Drift DRFT		fraction of application rate applied to pond			
Application Date	Date	15-5	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17: FILTRA					
IPSCND					
UPTKF					
Record 18: PLVKRT					
PLDKRT					
FEXTRC	0.5				
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)		

US EPA ARCHIVE DOCUMENT

US EPA ARCHIVE DOCUMENT

Benthic Pore Water Data
Fire Ants (Over'N Out)
Fipronil

stored as FLTURFFIPben.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001146	0.001144	0.001113	0.0009306	0.0008086	0.0002675
1962	0.001904	0.001901	0.001849	0.00156	0.00135	0.0004304
1963	0.002543	0.00254	0.002459	0.002013	0.001688	0.0005631
1964	0.004187	0.004181	0.004054	0.00327	0.002878	0.0009828
1965	0.002468	0.002465	0.002387	0.001958	0.001592	0.0004774
1966	0.003685	0.003679	0.003555	0.003224	0.003096	0.001206
1967	0.001472	0.00147	0.001423	0.001178	0.001084	0.0004072
1968	0.004327	0.004317	0.004198	0.003552	0.002916	0.0008593
1969	0.001574	0.001572	0.001513	0.001243	0.001023	0.000447
1970	0.0006956	0.0006948	0.0006724	0.0005639	0.0004767	0.0001733
1971	0.001992	0.001989	0.001925	0.001804	0.001661	0.0007018
1972	0.002029	0.002026	0.001953	0.001567	0.00134	0.0005059
1973	0.0005925	0.0005919	0.0005724	0.0004722	0.0003853	0.0001984
1974	0.001023	0.001022	0.0009906	0.0008666	0.0007489	0.0002494
1975	0.0008508	0.0008496	0.0008192	0.0006709	0.0006405	0.0002426
1976	0.005889	0.005879	0.005737	0.005313	0.004753	0.00146
1977	0.001053	0.001051	0.001018	0.0008829	0.0007748	0.0003205
1978	0.002742	0.002738	0.002643	0.002365	0.002181	0.0007368
1979	0.002877	0.002874	0.002769	0.002234	0.001969	0.0006362
1980	0.0006343	0.0006335	0.0006151	0.0005396	0.0005146	0.0002091
1981	0.001115	0.001113	0.001078	0.0009016	0.0007614	0.0002849
1982	0.005585	0.005577	0.005403	0.004548	0.003968	0.001319
1983	0.001884	0.001881	0.001823	0.001482	0.001355	0.0005099
1984	0.00416	0.004154	0.004017	0.003709	0.003514	0.001173
1985	0.0007464	0.0007453	0.0007193	0.0005765	0.0005551	0.0002161
1986	0.001776	0.001773	0.001709	0.001386	0.001159	0.0003428
1987	0.0002312	0.0002308	0.0002219	0.0001806	0.0001625	8.912e-005
1988	0.0003318	0.0003313	0.0003193	0.0002572	0.0002122	0.0001168
1989	0.0006572	0.0006563	0.0006347	0.0005073	0.0004044	0.0002347
1990	0.0002933	0.0002828	0.0002475	0.0002018	0.0001751	9.729e-005

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.005889	0.005879	0.005737	0.005313	0.004753	0.00146
0.064516129032258 1		0.005585	0.005577	0.005403	0.004548	0.003968	0.001319
0.096774193548387 1		0.004327	0.004317	0.004198	0.003709	0.003514	0.001206
0.129032258064516		0.004187	0.004181	0.004054	0.003552	0.003096	0.001173
0.161290322580645		0.00416	0.004154	0.004017	0.00327	0.002916	0.0009828
0.193548387096774		0.003685	0.003679	0.003555	0.003224	0.002878	0.0008593
0.225806451612903		0.002877	0.002874	0.002769	0.002365	0.002181	0.0007368
0.258064516129032		0.002742	0.002738	0.002643	0.002234	0.001969	0.0007018
0.290322580645161		0.002543	0.00254	0.002459	0.002013	0.001688	0.0006362
0.32258064516129		0.002468	0.002465	0.002387	0.001958	0.001661	0.0005631
0.354838709677419		0.002029	0.002026	0.001953	0.001804	0.001592	0.0005099
0.387096774193548		0.001992	0.001989	0.001925	0.001567	0.001355	0.0005059
0.419354838709677		0.001904	0.001901	0.001849	0.00156	0.00135	0.0004774
0.451612903225806		0.001884	0.001881	0.001823	0.001482	0.00134	0.000447
0.483870967741936		0.001776	0.001773	0.001709	0.001386	0.001159	0.0004304
0.516129032258065		0.001574	0.001572	0.001513	0.001243	0.001084	0.0004072
0.548387096774194		0.001472	0.00147	0.001423	0.001178	0.001023	0.0003428
0.580645161290323		0.001146	0.001144	0.001113	0.0009306	0.0008086	0.0003205
0.612903225806452		0.001115	0.001113	0.001078	0.0009016	0.0007748	0.0002849
0.645161290322581		0.001053	0.001051	0.001018	0.0008829	0.0007614	0.0002675
0.67741935483871		0.001023	0.001022	0.0009906	0.0008666	0.0007489	0.0002494
0.709677419354839		0.0008508	0.0008496	0.0008192	0.0006709	0.0006405	0.0002426
0.741935483870968		0.0007464	0.0007453	0.0007193	0.0005765	0.0005551	0.0002347
0.774193548387097		0.0006956	0.0006948	0.0006724	0.0005639	0.0005146	0.0002161
0.806451612903226		0.0006572	0.0006563	0.0006347	0.0005396	0.0004767	0.0002091
0.838709677419355		0.0006343	0.0006335	0.0006151	0.0005073	0.0004044	0.0001984
0.870967741935484		0.0005925	0.0005919	0.0005724	0.0004722	0.0003853	0.0001733
0.903225806451613		0.0003318	0.0003313	0.0003193	0.0002572	0.0002122	0.0001168
0.935483870967742		0.0002933	0.0002828	0.0002475	0.0002018	0.0001751	9.729e-005
0.967741935483871		0.0002312	0.0002308	0.0002219	0.0001806	0.0001625	8.912e-005
0.1	0.004313	0.0043034	0.0041836	0.0036933	0.0034722	0.0012027	
					Average of yearly averages:		0.000515277

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURFFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	*Variable Name*	*Value*	*Units*	*Comments*
Molecular weight	mwt	437	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	2.4	mg/L	
Kd	Kd		mg/L	
Koc	Koc	727	mg/L	
Photolysis half-life	kdp	0.16	days	Half-life

Aerobic Aquatic Metabolism	kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	33.7	days	Halfife
Aerobic Soil Metabolism	asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	1	integer	See PRZM manual	
Incorporation Depth:		DEPI	0.1	cm	
Application Rate:		TAPP	0.01	kg/ha	
Application Efficiency:		APPEFF	1.0	fraction	
Spray Drift	DRFT		fraction of application rate applied to pond		
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm	
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	0.5			
Flag for Index Res. Run		IR	Pond		
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)	

MB45950

stored as FLTURF950ben.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001349	0.0001349	0.0001348	0.0001346	0.0001343	5.495e-005
1962	0.0003633	0.0003633	0.0003632	0.0003626	0.0003608	0.0002205
1963	0.0006468	0.0006466	0.0006418	0.0006071	0.0005966	0.0004688
1964	0.001033	0.001033	0.001032	0.001029	0.001027	0.0008103
1965	0.00105	0.00105	0.00105	0.001045	0.00104	0.001012
1966	0.001425	0.001425	0.001424	0.001419	0.001415	0.001209
1967	0.001396	0.001396	0.001395	0.001391	0.001386	0.00136
1968	0.00168	0.00168	0.001679	0.001675	0.001669	0.001497
1969	0.001776	0.001775	0.001771	0.001764	0.001757	0.001663
1970	0.001779	0.001779	0.001778	0.001777	0.001775	0.00169
1971	0.001717	0.001717	0.001716	0.001712	0.001698	0.001629
1972	0.001866	0.001866	0.001866	0.001842	0.001822	0.001731
1973	0.001863	0.001863	0.001859	0.001852	0.001846	0.001777
1974	0.001778	0.001778	0.001777	0.001771	0.001766	0.001688
1975	0.001751	0.00175	0.001745	0.001735	0.001728	0.00167
1976	0.001843	0.001843	0.001842	0.001832	0.001822	0.001722
1977	0.001817	0.001817	0.001817	0.001814	0.001809	0.001767
1978	0.001772	0.001772	0.001771	0.001766	0.001765	0.001748
1979	0.00194	0.00194	0.001939	0.001933	0.001922	0.001831
1980	0.001929	0.001928	0.001925	0.001918	0.001912	0.001832
1981	0.001728	0.001728	0.001726	0.00172	0.001719	0.001694
1982	0.001873	0.001873	0.001871	0.001865	0.00186	0.001789
1983	0.001899	0.001898	0.001885	0.001877	0.001865	0.001817
1984	0.001991	0.001991	0.001989	0.001983	0.001976	0.001943
1985	0.00195	0.00195	0.001946	0.001938	0.00193	0.001877
1986	0.001895	0.001895	0.001893	0.001885	0.001878	0.001846
1987	0.001819	0.001819	0.001816	0.001813	0.001812	0.001746
1988	0.001664	0.001664	0.001663	0.00166	0.001658	0.001602
1989	0.001786	0.001786	0.001785	0.001782	0.001744	0.001674
1990	0.001778	0.001777	0.001773	0.001764	0.001765	0.001696

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001991	0.001991	0.001989	0.001983	0.001976	0.001943
0.0645161290322581		0.00195	0.00195	0.001946	0.001938	0.00193	0.001877
0.0967741935483871		0.00194	0.00194	0.001939	0.001933	0.001922	0.001846
0.129032258064516		0.001929	0.001928	0.001925	0.001918	0.001912	0.001832
0.161290322580645		0.001899	0.001898	0.001893	0.001885	0.001878	0.001831
0.193548387096774		0.001895	0.001895	0.001885	0.001877	0.001865	0.001817
0.225806451612903		0.001873	0.001873	0.001871	0.001865	0.00186	0.001789
0.258064516129032		0.001866	0.001866	0.001866	0.001852	0.001846	0.001777
0.290322580645161		0.001863	0.001863	0.001859	0.001842	0.001822	0.001767
0.32258064516129		0.001843	0.001843	0.001842	0.001832	0.001822	0.001748
0.354838709677419		0.001819	0.001819	0.001817	0.001814	0.001812	0.001746
0.387096774193548		0.001817	0.001817	0.001816	0.001813	0.001809	0.001731
0.419354838709677		0.001786	0.001786	0.001785	0.001782	0.001775	0.001722
0.451612903225806		0.001779	0.001779	0.001778	0.001777	0.001766	0.001696
0.483870967741936		0.001778	0.001778	0.001777	0.001771	0.001765	0.001694
0.516129032258065		0.001778	0.001777	0.001773	0.001766	0.001765	0.00169
0.548387096774194		0.001776	0.001775	0.001771	0.001764	0.001757	0.001688
0.580645161290323		0.001772	0.001772	0.001771	0.001764	0.001744	0.001674
0.612903225806452		0.001751	0.00175	0.001745	0.001735	0.001728	0.00167
0.645161290322581		0.001728	0.001728	0.001726	0.00172	0.001719	0.001663
0.67741935483871		0.001717	0.001717	0.001716	0.001712	0.001698	0.001629
0.709677419354839		0.00168	0.00168	0.001679	0.001675	0.001669	0.001602
0.741935483870968		0.001664	0.001664	0.001663	0.00166	0.001658	0.001497
0.774193548387097		0.001425	0.001425	0.001424	0.001419	0.001415	0.00136
0.806451612903226		0.001396	0.001396	0.001395	0.001391	0.001386	0.001209
0.838709677419355		0.00105	0.00105	0.00105	0.001045	0.00104	0.001012
0.870967741935484		0.001033	0.001033	0.001032	0.001029	0.001027	0.0008103
0.903225806451613		0.0006468	0.0006466	0.0006418	0.0006071	0.0005966	0.0004688
0.935483870967742		0.0003633	0.0003633	0.0003632	0.0003626	0.0003608	0.0002205
0.967741935483871		0.0001349	0.0001349	0.0001348	0.0001346	0.0001343	5.495e-005
0.1	0.0019389	0.0019388	0.0019376	0.0019315	0.001921	0.0018446	
					Average of yearly averages:		0.00150215166666667

US EPA ARCHIVE DOCUMENT

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF950
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	5E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as FLTURF513ben.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	8.669e-006	8.669e-006	8.667e-006	8.642e-006	8.537e-006	3.438e-006
1962	1.918e-005	1.918e-005	1.917e-005	1.915e-005	1.902e-005	1.283e-005
1963	3.182e-005	3.182e-005	3.173e-005	3.141e-005	3.131e-005	2.456e-005
1964	4.893e-005	4.892e-005	4.891e-005	4.884e-005	4.873e-005	3.995e-005
1965	5.187e-005	5.187e-005	5.185e-005	5.172e-005	5.158e-005	4.929e-005
1966	7.032e-005	7.032e-005	7.03e-005	7.014e-005	6.996e-005	6.021e-005
1967	6.979e-005	6.979e-005	6.977e-005	6.965e-005	6.952e-005	6.773e-005
1968	8.14e-005	8.14e-005	8.137e-005	8.123e-005	8.11e-005	7.424e-005
1969	8.345e-005	8.345e-005	8.344e-005	8.336e-005	8.303e-005	7.968e-005
1970	8.342e-005	8.341e-005	8.335e-005	8.313e-005	8.286e-005	7.892e-005
1971	7.917e-005	7.917e-005	7.915e-005	7.902e-005	7.88e-005	7.622e-005
1972	8.324e-005	8.324e-005	8.322e-005	8.274e-005	8.243e-005	7.897e-005
1973	8.32e-005	8.319e-005	8.312e-005	8.286e-005	8.256e-005	7.952e-005
1974	7.612e-005	7.606e-005	7.583e-005	7.534e-005	7.498e-005	7.408e-005
1975	7.431e-005	7.427e-005	7.409e-005	7.365e-005	7.33e-005	7.117e-005
1976	8.291e-005	8.291e-005	8.288e-005	8.265e-005	8.237e-005	7.625e-005
1977	7.968e-005	7.966e-005	7.959e-005	7.936e-005	7.906e-005	7.761e-005
1978	8.187e-005	8.187e-005	8.185e-005	8.169e-005	8.166e-005	7.957e-005
1979	8.578e-005	8.578e-005	8.576e-005	8.57e-005	8.558e-005	8.223e-005
1980	8.395e-005	8.391e-005	8.375e-005	8.338e-005	8.306e-005	8.004e-005
1981	7.563e-005	7.56e-005	7.553e-005	7.546e-005	7.536e-005	7.385e-005
1982	8.671e-005	8.671e-005	8.668e-005	8.65e-005	8.627e-005	8.144e-005
1983	8.502e-005	8.502e-005	8.499e-005	8.483e-005	8.485e-005	8.36e-005
1984	9.203e-005	9.203e-005	9.199e-005	9.184e-005	9.162e-005	8.796e-005
1985	8.909e-005	8.906e-005	8.892e-005	8.854e-005	8.817e-005	8.539e-005
1986	8.315e-005	8.315e-005	8.312e-005	8.298e-005	8.279e-005	8.069e-005
1987	8.087e-005	8.084e-005	8.07e-005	8.036e-005	8.008e-005	7.641e-005
1988	7.232e-005	7.229e-005	7.217e-005	7.199e-005	7.18e-005	6.904e-005
1989	7.122e-005	7.122e-005	7.116e-005	7.059e-005	6.913e-005	6.802e-005
1990	7.122e-005	7.121e-005	7.113e-005	7.081e-005	7.057e-005	6.729e-005

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		9.203e-005	9.203e-005	9.199e-005	9.184e-005	9.162e-005	8.796e-005
0.0645161290322581		8.909e-005	8.906e-005	8.892e-005	8.854e-005	8.817e-005	8.539e-005
0.0967741935483871		8.671e-005	8.671e-005	8.668e-005	8.65e-005	8.627e-005	8.36e-005
0.129032258064516		8.578e-005	8.578e-005	8.576e-005	8.57e-005	8.558e-005	8.223e-005
0.161290322580645		8.502e-005	8.502e-005	8.499e-005	8.483e-005	8.485e-005	8.144e-005
0.193548387096774		8.395e-005	8.391e-005	8.375e-005	8.338e-005	8.306e-005	8.069e-005
0.225806451612903		8.345e-005	8.345e-005	8.344e-005	8.336e-005	8.303e-005	8.004e-005
0.258064516129032		8.342e-005	8.341e-005	8.335e-005	8.313e-005	8.286e-005	7.968e-005
0.290322580645161		8.324e-005	8.324e-005	8.322e-005	8.298e-005	8.279e-005	7.957e-005
0.32258064516129		8.32e-005	8.319e-005	8.312e-005	8.286e-005	8.256e-005	7.952e-005
0.354838709677419		8.315e-005	8.315e-005	8.312e-005	8.274e-005	8.243e-005	7.897e-005
0.387096774193548		8.291e-005	8.291e-005	8.288e-005	8.265e-005	8.237e-005	7.892e-005
0.419354838709677		8.187e-005	8.187e-005	8.185e-005	8.169e-005	8.166e-005	7.761e-005
0.451612903225806		8.14e-005	8.14e-005	8.137e-005	8.123e-005	8.11e-005	7.641e-005
0.483870967741936		8.087e-005	8.084e-005	8.07e-005	8.036e-005	8.008e-005	7.625e-005
0.516129032258065		7.968e-005	7.966e-005	7.959e-005	7.936e-005	7.906e-005	7.622e-005
0.548387096774194		7.917e-005	7.917e-005	7.915e-005	7.902e-005	7.88e-005	7.424e-005
0.580645161290323		7.612e-005	7.606e-005	7.583e-005	7.546e-005	7.536e-005	7.408e-005

US EPA ARCHIVE DOCUMENT

0.612903225806452	7.563e-005	7.56e-005	7.553e-005	7.534e-005	7.498e-005	7.385e-005
0.645161290322581	7.431e-005	7.427e-005	7.409e-005	7.365e-005	7.33e-005	7.117e-005
0.67741935483871	7.232e-005	7.229e-005	7.217e-005	7.199e-005	7.18e-005	6.904e-005
0.709677419354839	7.122e-005	7.122e-005	7.116e-005	7.081e-005	7.057e-005	6.802e-005
0.741935483870968	7.122e-005	7.121e-005	7.113e-005	7.059e-005	6.996e-005	6.773e-005
0.774193548387097	7.032e-005	7.032e-005	7.03e-005	7.014e-005	6.952e-005	6.729e-005
0.806451612903226	6.979e-005	6.979e-005	6.977e-005	6.965e-005	6.913e-005	6.021e-005
0.838709677419355	5.187e-005	5.187e-005	5.185e-005	5.172e-005	5.158e-005	4.929e-005
0.870967741935484	4.893e-005	4.892e-005	4.891e-005	4.884e-005	4.873e-005	3.995e-005
0.903225806451613	3.182e-005	3.182e-005	3.173e-005	3.141e-005	3.131e-005	2.456e-005
0.935483870967742	1.918e-005	1.918e-005	1.917e-005	1.915e-005	1.902e-005	1.283e-005
0.967741935483871	8.669e-006	8.669e-006	8.667e-006	8.642e-006	8.537e-006	3.438e-006

0.1	8.6617e-005	8.6617e-005	8.6588e-005	8.642e-005	8.6201e-005	8.3463e-005
					Average of yearly averages:	6.80066e-005

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	1E-5	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as FLTURF136ben.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0005777	0.0005776	0.0005772	0.0005753	0.0005732	0.0002359
1962	0.001553	0.001553	0.001553	0.00155	0.001543	0.0009382
1963	0.002758	0.002757	0.002739	0.002583	0.002537	0.001991
1964	0.004406	0.004406	0.004403	0.004389	0.004374	0.003442
1965	0.004395	0.004395	0.004391	0.004369	0.004344	0.004232
1966	0.005931	0.005931	0.005926	0.005907	0.005884	0.004996
1967	0.005689	0.005685	0.005668	0.005642	0.005626	0.005537
1968	0.006808	0.006808	0.006804	0.006781	0.006754	0.006027
1969	0.007106	0.007106	0.007092	0.007067	0.007043	0.006647
1970	0.007114	0.007114	0.007111	0.0071	0.007082	0.006673
1971	0.006671	0.006671	0.006666	0.006643	0.006583	0.006304
1972	0.007267	0.007267	0.007263	0.007163	0.00707	0.006684
1973	0.007244	0.007241	0.007223	0.007184	0.007149	0.006822
1974	0.006778	0.006778	0.006773	0.006745	0.006717	0.006373
1975	0.00663	0.006625	0.006603	0.006554	0.006516	0.006248
1976	0.006962	0.006961	0.006954	0.00691	0.006864	0.006426
1977	0.006822	0.006822	0.00682	0.006805	0.006781	0.006579
1978	0.006563	0.006563	0.006558	0.006533	0.006526	0.006452
1979	0.007292	0.007292	0.007288	0.007257	0.00721	0.0068
1980	0.007231	0.007227	0.007208	0.007171	0.007138	0.006774
1981	0.006283	0.006283	0.006278	0.006248	0.006243	0.006128
1982	0.00688	0.00688	0.006873	0.006844	0.006824	0.006514
1983	0.006988	0.006982	0.006921	0.006885	0.006833	0.00661
1984	0.007348	0.007348	0.007341	0.007312	0.007283	0.007147
1985	0.007158	0.007154	0.007137	0.007092	0.007053	0.006816
1986	0.006892	0.006891	0.006884	0.006847	0.006818	0.006673
1987	0.006553	0.00655	0.006537	0.006522	0.006513	0.006227
1988	0.005868	0.005868	0.005865	0.005849	0.005842	0.005602
1989	0.006463	0.006463	0.006458	0.00644	0.006275	0.005945
1990	0.006408	0.006404	0.006384	0.006341	0.006341	0.006043

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129	0.007348	0.007348	0.007341	0.007312	0.007283	0.007147	
0.0645161290322581	0.007292	0.007292	0.007288	0.007257	0.00721	0.006822	

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0.0967741935483871	0.007267	0.007267	0.007263	0.007184	0.007149	0.006816
0.129032258064516	0.007244	0.007241	0.007223	0.007171	0.007138	0.0068
0.161290322580645	0.007231	0.007227	0.007208	0.007163	0.007082	0.006774
0.193548387096774	0.007158	0.007154	0.007137	0.0071	0.00707	0.006684
0.225806451612903	0.007114	0.007114	0.007111	0.007092	0.007053	0.006673
0.258064516129032	0.007106	0.007106	0.007092	0.007067	0.007043	0.006673
0.290322580645161	0.006988	0.006982	0.006954	0.00691	0.006864	0.006647
0.32258064516129	0.006962	0.006961	0.006921	0.006885	0.006833	0.00661
0.354838709677419	0.006892	0.006891	0.006884	0.006847	0.006824	0.006579
0.387096774193548	0.00688	0.00688	0.006873	0.006844	0.006818	0.006514
0.419354838709677	0.006822	0.006822	0.00682	0.006805	0.006781	0.006452
0.451612903225806	0.006808	0.006808	0.006804	0.006781	0.006754	0.006426
0.483870967741936	0.006778	0.006778	0.006773	0.006745	0.006717	0.006373
0.516129032258065	0.006671	0.006671	0.006666	0.006643	0.006583	0.006304
0.548387096774194	0.00663	0.006625	0.006603	0.006554	0.006526	0.006248
0.580645161290323	0.006563	0.006563	0.006558	0.006533	0.006516	0.006227
0.612903225806452	0.006553	0.00655	0.006537	0.006522	0.006513	0.006128
0.645161290322581	0.006463	0.006463	0.006458	0.00644	0.006341	0.006043
0.67741935483871	0.006408	0.006404	0.006384	0.006341	0.006275	0.006027
0.709677419354839	0.006283	0.006283	0.006278	0.006248	0.006243	0.005945
0.741935483870968	0.005931	0.005931	0.005926	0.005907	0.005884	0.005602
0.774193548387097	0.005868	0.005868	0.005865	0.005849	0.005842	0.005537
0.806451612903226	0.005689	0.005685	0.005668	0.005642	0.005626	0.004996
0.838709677419355	0.004406	0.004406	0.004403	0.004389	0.004374	0.004232
0.870967741935484	0.004395	0.004395	0.004391	0.004369	0.004344	0.003442
0.903225806451613	0.002758	0.002757	0.002739	0.002583	0.002537	0.001991
0.935483870967742	0.001553	0.001553	0.001553	0.00155	0.001543	0.0009382
0.967741935483871	0.0005777	0.0005776	0.0005772	0.0005753	0.0005732	0.0002359

0.1	0.0072647	0.0072644	0.007259	0.0071827	0.0071479	0.0068144
					Average of yearly averages:	0.00566287

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0024	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Fire Ants (HG61743AE Residential)

Fipronil

stored as FLTURFFIPben.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0002292	0.0002288	0.0002225	0.0001861	0.0001617	5.35e-005
1962	0.0003808	0.0003803	0.0003699	0.0003121	0.0002701	8.611e-005
1963	0.0005087	0.000508	0.0004918	0.0004026	0.0003376	0.0001126
1964	0.0008372	0.0008361	0.0008107	0.0006539	0.0005755	0.0001965
1965	0.0004936	0.000493	0.0004774	0.0003915	0.0003183	9.547e-005
1966	0.000737	0.0007359	0.000711	0.0006448	0.0006192	0.0002412
1967	0.0002944	0.000294	0.0002845	0.0002354	0.0002168	8.141e-005

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1968	0.0008654	0.0008633	0.0008396	0.0007103	0.0005831	0.0001719
1969	0.0003148	0.0003143	0.0003026	0.0002485	0.0002046	8.939e-005
1970	0.0001391	0.000139	0.0001345	0.0001128	9.534e-005	3.466e-005
1971	0.0003984	0.0003978	0.0003851	0.0003609	0.0003322	0.0001403
1972	0.0004058	0.0004052	0.0003907	0.0003134	0.000268	0.0001012
1973	0.0001185	0.0001184	0.0001145	9.444e-005	7.705e-005	3.969e-005
1974	0.0002047	0.0002044	0.0001981	0.0001733	0.0001498	4.988e-005
1975	0.0001702	0.0001699	0.0001638	0.0001342	0.0001281	4.853e-005
1976	0.001178	0.001176	0.001147	0.001063	0.0009506	0.000292
1977	0.0002105	0.0002102	0.0002035	0.0001766	0.000155	6.41e-005
1978	0.0005483	0.0005475	0.0005284	0.000473	0.0004363	0.0001474
1979	0.0005754	0.0005746	0.0005537	0.0004467	0.0003937	0.0001272
1980	0.0001269	0.0001267	0.000123	0.0001079	0.0001029	4.182e-005
1981	0.000223	0.0002227	0.0002156	0.0001804	0.0001523	5.699e-005
1982	0.001117	0.001115	0.00108	0.0009093	0.0007935	0.0002638
1983	0.0003768	0.0003763	0.0003646	0.0002965	0.000271	0.000102
1984	0.0008321	0.0008309	0.0008035	0.0007417	0.0007028	0.0002346
1985	0.0001493	0.0001491	0.0001439	0.0001153	0.000111	4.322e-005
1986	0.0003552	0.0003546	0.0003418	0.0002773	0.0002318	6.856e-005
1987	4.625e-005	4.617e-005	4.439e-005	3.613e-005	3.251e-005	1.783e-005
1988	6.634e-005	6.625e-005	6.384e-005	5.142e-005	4.244e-005	2.336e-005
1989	0.0001315	0.0001313	0.000127	0.0001015	8.087e-005	4.695e-005
1990	5.866e-005	5.656e-005	4.951e-005	4.037e-005	3.503e-005	1.946e-005

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001178	0.001176	0.001147	0.001063	0.0009506	0.000292
0.0645161290322581		0.001117	0.001115	0.00108	0.0009093	0.0007935	0.0002638
0.0967741935483871		0.0008654	0.0008633	0.0008396	0.0007417	0.0007028	0.0002412
0.129032258064516		0.0008372	0.0008361	0.0008107	0.0007103	0.0006192	0.0002346
0.161290322580645		0.0008321	0.0008309	0.0008035	0.0006539	0.0005831	0.0001965
0.193548387096774		0.000737	0.0007359	0.000711	0.0006448	0.0005755	0.0001719
0.225806451612903		0.0005754	0.0005746	0.0005537	0.000473	0.0004363	0.0001474
0.258064516129032		0.0005483	0.0005475	0.0005284	0.0004467	0.0003937	0.0001403
0.290322580645161		0.0005087	0.000508	0.0004918	0.0004026	0.0003376	0.0001272
0.32258064516129		0.0004936	0.000493	0.0004774	0.0003915	0.0003322	0.0001126
0.354838709677419		0.0004058	0.0004052	0.0003907	0.0003609	0.0003183	0.000102
0.387096774193548		0.0003984	0.0003978	0.0003851	0.0003134	0.000271	0.0001012
0.419354838709677		0.0003808	0.0003803	0.0003699	0.0003121	0.0002701	9.547e-005
0.451612903225806		0.0003768	0.0003763	0.0003646	0.0002965	0.000268	8.939e-005
0.483870967741936		0.0003552	0.0003546	0.0003418	0.0002773	0.0002318	8.611e-005
0.516129032258065		0.0003148	0.0003143	0.0003026	0.0002485	0.0002168	8.141e-005
0.548387096774194		0.0002944	0.000294	0.0002845	0.0002354	0.0002046	6.856e-005
0.580645161290323		0.0002292	0.0002288	0.0002225	0.0001861	0.0001617	6.41e-005
0.612903225806452		0.000223	0.0002227	0.0002156	0.0001804	0.000155	5.699e-005
0.645161290322581		0.0002105	0.0002102	0.0002035	0.0001766	0.0001523	5.35e-005
0.67741935483871		0.0002047	0.0002044	0.0001981	0.0001733	0.0001498	4.988e-005
0.709677419354839		0.0001702	0.0001699	0.0001638	0.0001342	0.0001281	4.853e-005
0.741935483870968		0.0001493	0.0001491	0.0001439	0.0001153	0.000111	4.695e-005
0.774193548387097		0.0001391	0.000139	0.0001345	0.0001128	0.0001029	4.322e-005
0.806451612903226		0.0001315	0.0001313	0.000127	0.0001079	9.534e-005	4.182e-005
0.838709677419355		0.0001269	0.0001267	0.000123	0.0001015	8.087e-005	3.969e-005
0.870967741935484		0.0001185	0.0001184	0.0001145	9.444e-005	7.705e-005	3.466e-005
0.903225806451613		6.634e-005	6.625e-005	6.384e-005	5.142e-005	4.244e-005	2.336e-005
0.935483870967742		5.866e-005	5.656e-005	4.951e-005	4.037e-005	3.503e-005	1.946e-005
0.967741935483871		4.625e-005	4.617e-005	4.439e-005	3.613e-005	3.251e-005	1.783e-005
0.1	0.00086258	0.00086058	0.00083671	0.00073856	0.00069444	0.00024054	
					Average of yearly averages:		0.000103054333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURFFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.002	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as FLTURF950ben.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	2.698e-005	2.698e-005	2.697e-005	2.692e-005	2.685e-005	1.099e-005
1962	7.268e-005	7.268e-005	7.265e-005	7.254e-005	7.217e-005	4.41e-005
1963	0.0001294	0.0001293	0.0001284	0.0001214	0.0001193	9.376e-005
1964	0.0002065	0.0002065	0.0002064	0.0002059	0.0002054	0.0001621
1965	0.00021	0.00021	0.0002099	0.0002091	0.000208	0.0002024
1966	0.000285	0.000285	0.0002848	0.0002839	0.000283	0.0002418
1967	0.0002792	0.0002792	0.000279	0.0002781	0.0002772	0.0002721
1968	0.000336	0.0003359	0.0003358	0.0003351	0.0003338	0.0002993
1969	0.0003551	0.0003551	0.0003543	0.0003528	0.0003515	0.0003325
1970	0.0003558	0.0003558	0.0003557	0.0003555	0.0003549	0.0003381
1971	0.0003434	0.0003434	0.0003432	0.0003423	0.0003396	0.0003258
1972	0.0003733	0.0003733	0.0003731	0.0003685	0.0003643	0.0003462
1973	0.0003726	0.0003725	0.0003719	0.0003705	0.0003691	0.0003555
1974	0.0003556	0.0003556	0.0003554	0.0003543	0.0003533	0.0003376
1975	0.0003501	0.0003499	0.0003491	0.0003471	0.0003455	0.000334
1976	0.0003687	0.0003687	0.0003684	0.0003665	0.0003644	0.0003444
1977	0.0003634	0.0003634	0.0003633	0.0003628	0.0003618	0.0003534
1978	0.0003545	0.0003545	0.0003543	0.0003533	0.000353	0.0003497
1979	0.0003879	0.0003879	0.0003878	0.0003865	0.0003844	0.0003662
1980	0.0003858	0.0003857	0.000385	0.0003836	0.0003823	0.0003665
1981	0.0003455	0.0003455	0.0003453	0.000344	0.0003439	0.0003389
1982	0.0003745	0.0003745	0.0003742	0.000373	0.000372	0.0003579
1983	0.0003799	0.0003796	0.000377	0.0003753	0.000373	0.0003634
1984	0.0003981	0.0003981	0.0003978	0.0003966	0.0003953	0.0003886
1985	0.0003901	0.0003899	0.0003893	0.0003877	0.0003861	0.0003755
1986	0.000379	0.000379	0.0003787	0.000377	0.0003757	0.0003693
1987	0.0003638	0.0003637	0.0003632	0.0003626	0.0003623	0.0003491
1988	0.0003327	0.0003327	0.0003326	0.000332	0.0003317	0.0003204
1989	0.0003572	0.0003572	0.0003571	0.0003564	0.0003488	0.0003348
1990	0.0003556	0.0003555	0.0003547	0.0003529	0.0003529	0.0003391

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0003981	0.0003981	0.0003978	0.0003966	0.0003953	0.0003886
0.0645161290322581		0.0003901	0.0003899	0.0003893	0.0003877	0.0003861	0.0003755
0.0967741935483871		0.0003879	0.0003879	0.0003878	0.0003865	0.0003844	0.0003693
0.129032258064516		0.0003858	0.0003857	0.000385	0.0003836	0.0003823	0.0003665
0.161290322580645		0.0003799	0.0003796	0.0003787	0.000377	0.0003757	0.0003662
0.193548387096774		0.000379	0.000379	0.000377	0.0003753	0.000373	0.0003634
0.225806451612903		0.0003745	0.0003745	0.0003742	0.000373	0.000372	0.0003579
0.258064516129032		0.0003733	0.0003733	0.0003731	0.0003705	0.0003691	0.0003555
0.290322580645161		0.0003726	0.0003725	0.0003719	0.0003685	0.0003644	0.0003534
0.3225806451612 9		0.0003687	0.0003687	0.0003684	0.0003665	0.0003643	0.0003497
0.354838709677419		0.0003638	0.0003637	0.0003633	0.0003628	0.0003623	0.0003491
0.387096774193548		0.0003634	0.0003634	0.0003632	0.0003626	0.0003618	0.0003462
0.419354838709677		0.0003572	0.0003572	0.0003571	0.0003564	0.0003549	0.0003444
0.451612903225806		0.0003558	0.0003558	0.0003557	0.0003555	0.0003533	0.0003391
0.483870967741936		0.0003556	0.0003556	0.0003554	0.0003543	0.000353	0.0003389
0.516129032258065		0.0003556	0.0003555	0.0003547	0.0003533	0.0003529	0.0003381
0.548387096774194		0.0003551	0.0003551	0.0003543	0.0003529	0.0003515	0.0003376
0.580645161290323		0.0003545	0.0003545	0.0003543	0.0003528	0.0003488	0.0003348
0.612903225806452		0.0003501	0.0003499	0.0003491	0.0003471	0.0003455	0.000334
0.645161290322581		0.0003455	0.0003455	0.0003453	0.000344	0.0003439	0.0003325
0.67741935483871		0.0003434	0.0003434	0.0003432	0.0003423	0.0003396	0.0003258
0.709677419354839		0.000336	0.0003359	0.0003358	0.0003351	0.0003338	0.0003204
0.741935483870968		0.0003327	0.0003327	0.0003326	0.000332	0.0003317	0.0002993
0.774193548387097		0.000285	0.000285	0.0002848	0.0002839	0.000283	0.0002721
0.806451612903226		0.0002792	0.0002792	0.000279	0.0002781	0.0002772	0.0002418
0.838709677419355		0.00021	0.00021	0.0002099	0.0002091	0.000208	0.0002024
0.870967741935484		0.0002065	0.0002065	0.0002064	0.0002059	0.0002054	0.0001621
0.903225806451613		0.0001294	0.0001293	0.0001284	0.0001214	0.0001193	9.376e-005
0.935483870967742		7.268e-005	7.268e-005	7.265e-005	7.254e-005	7.217e-005	4.41e-005
0.967741935483871		2.698e-005	2.698e-005	2.697e-005	2.692e-005	2.685e-005	1.099e-005
0.1	0.00038769	0.00038768	0.00038752	0.00038621	0.00038419	0.00036902	
					Average of yearly averages:		0.000300448333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF950
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	421	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility sol	0.04	mg/L		
Kd Kd		mg/L		
Koc Koc	3911	mg/L		
Photolysis half-life	kdp		days	Half-life
Aerobic Aquatic Metabolism	kbacw	1400	days	Halfife
Anaerobic Aquatic Metabolism		kbacs	1400	days Halfife
Aerobic Soil Metabolism	asm	700	days	Halfife
Hydrolysis: pH 7		days	Half-life	

US EPA ARCHIVE DOCUMENT

Method:	CAM	1	integer	See PRZM manual
Incorporation Depth:		DEPI	0.1	cm
Application Rate:		TAPP	1E-4	kg/ha
Application Efficiency:		APPEFF	1.0	fraction
Spray Drift	DRFT		fraction of application rate applied to pond	
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run		IR	Pond	
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)

MB46513

stored as FLTURF513ben.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	1.734e-005	1.734e-005	1.733e-005	1.728e-005	1.707e-005	6.876e-006
1962	3.835e-005	3.835e-005	3.834e-005	3.829e-005	3.803e-005	2.567e-005
1963	6.364e-005	6.363e-005	6.345e-005	6.282e-005	6.261e-005	4.911e-005
1964	9.785e-005	9.784e-005	9.782e-005	9.767e-005	9.746e-005	7.989e-005
1965	0.0001037	0.0001037	0.0001037	0.0001034	0.0001031	9.857e-005
1966	0.0001406	0.0001406	0.0001406	0.0001403	0.0001399	0.0001204
1967	0.0001396	0.0001396	0.0001395	0.0001393	0.000139	0.0001355
1968	0.0001628	0.0001628	0.0001627	0.0001625	0.0001622	0.0001485
1969	0.0001669	0.0001669	0.0001669	0.0001667	0.0001661	0.0001594
1970	0.0001668	0.0001668	0.0001667	0.0001663	0.0001657	0.0001578
1971	0.0001583	0.0001583	0.0001583	0.000158	0.0001576	0.0001524
1972	0.0001665	0.0001665	0.0001664	0.0001655	0.0001649	0.0001579
1973	0.0001664	0.0001664	0.0001662	0.0001657	0.0001651	0.000159
1974	0.0001522	0.0001521	0.0001516	0.0001507	0.00015	0.0001481
1975	0.0001486	0.0001485	0.0001482	0.0001473	0.0001466	0.0001423
1976	0.0001658	0.0001658	0.0001657	0.0001653	0.0001647	0.0001525
1977	0.0001593	0.0001593	0.0001592	0.0001587	0.0001581	0.0001552
1978	0.0001637	0.0001637	0.0001637	0.0001634	0.0001633	0.0001591
1979	0.0001716	0.0001716	0.0001715	0.0001714	0.0001712	0.0001644
1980	0.0001679	0.0001678	0.0001675	0.0001668	0.0001661	0.0001601
1981	0.0001513	0.0001512	0.0001511	0.0001509	0.0001507	0.0001477
1982	0.0001734	0.0001734	0.0001734	0.000173	0.0001725	0.0001629
1983	0.00017	0.00017	0.00017	0.0001697	0.0001697	0.0001672
1984	0.0001841	0.0001841	0.000184	0.0001837	0.0001832	0.0001759
1985	0.0001782	0.0001781	0.0001778	0.0001771	0.0001763	0.0001708
1986	0.0001663	0.0001663	0.0001662	0.000166	0.0001656	0.0001614
1987	0.0001617	0.0001617	0.0001614	0.0001607	0.0001602	0.0001528
1988	0.0001446	0.0001446	0.0001444	0.000144	0.0001436	0.0001381
1989	0.0001424	0.0001424	0.0001423	0.0001412	0.0001383	0.000136
1990	0.0001424	0.0001424	0.0001423	0.0001416	0.0001411	0.0001346

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0001841	0.0001841	0.000184	0.0001837	0.0001832	0.0001759
0.0645161290322581		0.0001782	0.0001781	0.0001778	0.0001771	0.0001763	0.0001708
0.096774193548387 1		0.0001734	0.0001734	0.0001734	0.000173	0.0001725	0.0001672
0.129032258064516		0.0001716	0.0001716	0.0001715	0.0001714	0.0001712	0.0001644
0.161290322580645		0.00017	0.00017	0.00017	0.0001697	0.0001697	0.0001629
0.193548387096774		0.0001679	0.0001678	0.0001675	0.0001668	0.0001661	0.0001614
0.225806451612903		0.0001669	0.0001669	0.0001669	0.0001667	0.0001661	0.0001601
0.258064516129032		0.0001668	0.0001668	0.0001667	0.0001663	0.0001657	0.0001594
0.290322580645161		0.0001665	0.0001665	0.0001664	0.000166	0.0001656	0.0001591
0.32258064516129		0.0001664	0.0001664	0.0001662	0.0001657	0.0001651	0.000159
0.354838709677419		0.0001663	0.0001663	0.0001662	0.0001655	0.0001649	0.0001579
0.387096774193548		0.0001658	0.0001658	0.0001657	0.0001653	0.0001647	0.0001578
0.419354838709677		0.0001637	0.0001637	0.0001637	0.0001634	0.0001633	0.0001552
0.451612903225806		0.0001628	0.0001628	0.0001627	0.0001625	0.0001622	0.0001528
0.483870967741936		0.0001617	0.0001617	0.0001614	0.0001607	0.0001602	0.0001525
0.516129032258065		0.0001593	0.0001593	0.0001592	0.0001587	0.0001581	0.0001524
0.548387096774194		0.0001583	0.0001583	0.0001583	0.000158	0.0001576	0.0001485
0.580645161290323		0.0001522	0.0001521	0.0001516	0.0001509	0.0001507	0.0001481
0.612903225806452		0.0001513	0.0001512	0.0001511	0.0001507	0.00015	0.0001477
0.645161290322581		0.0001486	0.0001485	0.0001482	0.0001473	0.0001466	0.0001423
0.67741935483871		0.0001446	0.0001446	0.0001444	0.000144	0.0001436	0.0001381
0.709677419354839		0.0001424	0.0001424	0.0001423	0.0001416	0.0001411	0.000136
0.741935483870968		0.0001424	0.0001424	0.0001423	0.0001412	0.0001399	0.0001355
0.774193548387097		0.0001406	0.0001406	0.0001406	0.0001403	0.000139	0.0001346
0.806451612903226		0.0001396	0.0001396	0.0001395	0.0001393	0.0001383	0.0001204
0.838709677419355		0.0001037	0.0001037	0.0001037	0.0001034	0.0001031	9.857e-005
0.870967741935484		9.785e-005	9.784e-005	9.782e-005	9.767e-005	9.746e-005	7.989e-005
0.903225806451613		6.364e-005	6.363e-005	6.345e-005	6.282e-005	6.261e-005	4.911e-005
0.935483870967742		3.835e-005	3.835e-005	3.834e-005	3.829e-005	3.803e-005	2.567e-005
0.967741935483871		1.734e-005	1.734e-005	1.733e-005	1.728e-005	1.707e-005	6.876e-006
0.1	0.00017322	0.00017322	0.00017321	0.00017284	0.00017237	0.00016692	
					Average of yearly averages:		0.00013600386666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF513

US EPA ARCHIVE DOCUMENT

Metfile:	w12834.dvf					
PRZM scenario:		FLturfC.txt				
EXAMS environment file:		pond298.exv				
Chemical Name:		MB46513				
Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asin	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	2E-5	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as FLTURF136ben.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001204	0.0001204	0.0001203	0.0001199	0.0001194	4.914e-005
1962	0.0003236	0.0003236	0.0003236	0.0003229	0.0003214	0.0001954
1963	0.0005745	0.0005744	0.0005706	0.000538	0.0005284	0.0004148
1964	0.0009179	0.0009179	0.0009173	0.0009143	0.0009112	0.0007171
1965	0.0009156	0.0009156	0.0009148	0.0009102	0.0009048	0.0008815
1966	0.001236	0.001236	0.001235	0.001231	0.001226	0.001041
1967	0.001185	0.001184	0.001181	0.001175	0.001172	0.001153
1968	0.001418	0.001418	0.001417	0.001413	0.001407	0.001256
1969	0.00148	0.00148	0.001477	0.001472	0.001467	0.001385
1970	0.001482	0.001482	0.001481	0.001479	0.001475	0.00139
1971	0.00139	0.00139	0.001389	0.001384	0.001372	0.001313
1972	0.001514	0.001514	0.001513	0.001492	0.001473	0.001393
1973	0.001509	0.001508	0.001505	0.001497	0.001489	0.001421
1974	0.001412	0.001412	0.001411	0.001405	0.001399	0.001328
1975	0.001381	0.00138	0.001376	0.001366	0.001358	0.001302
1976	0.00145	0.00145	0.001449	0.00144	0.00143	0.001339
1977	0.001421	0.001421	0.001421	0.001418	0.001413	0.001371
1978	0.001367	0.001367	0.001366	0.001361	0.00136	0.001344
1979	0.001519	0.001519	0.001518	0.001512	0.001502	0.001417
1980	0.001506	0.001506	0.001502	0.001494	0.001487	0.001411
1981	0.001309	0.001309	0.001308	0.001302	0.001301	0.001277
1982	0.001433	0.001433	0.001432	0.001426	0.001422	0.001357
1983	0.001456	0.001455	0.001442	0.001434	0.001423	0.001377
1984	0.001531	0.001531	0.001529	0.001523	0.001517	0.001489
1985	0.001491	0.00149	0.001487	0.001478	0.001469	0.00142
1986	0.001436	0.001436	0.001434	0.001426	0.00142	0.00139
1987	0.001365	0.001365	0.001362	0.001359	0.001357	0.001297
1988	0.001222	0.001222	0.001222	0.001218	0.001217	0.001167
1989	0.001346	0.001346	0.001346	0.001342	0.001307	0.001239
1990	0.001335	0.001334	0.00133	0.001321	0.001321	0.001259

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001531	0.001531	0.001529	0.001523	0.001517	0.001489
0.0645161290322581		0.001519	0.001519	0.001518	0.001512	0.001502	0.001421
0.0967741935483871		0.001514	0.001514	0.001513	0.001497	0.001489	0.00142
0.129032258064516		0.001509	0.001508	0.001505	0.001494	0.001487	0.001417
0.161290322580645		0.001506	0.001506	0.001502	0.001492	0.001475	0.001411
0.193548387096774		0.001491	0.00149	0.001487	0.001479	0.001473	0.001393
0.225806451612903		0.001482	0.001482	0.001481	0.001478	0.001469	0.00139
0.258064516129032		0.00148	0.00148	0.001477	0.001472	0.001467	0.00139
0.290322580645161		0.001456	0.001455	0.001449	0.00144	0.00143	0.001385
0.32258064516129		0.00145	0.00145	0.001442	0.001434	0.001423	0.001377
0.354838709677419		0.001436	0.001436	0.001434	0.001426	0.001422	0.001371
0.387096774193548		0.001433	0.001433	0.001432	0.001426	0.00142	0.001357
0.419354838709677		0.001421	0.001421	0.001421	0.001418	0.001413	0.001344
0.451612903225806		0.001418	0.001418	0.001417	0.001413	0.001407	0.001339
0.483870967741936		0.001412	0.001412	0.001411	0.001405	0.001399	0.001328
0.51612903225806 5		0.00139	0.00139	0.001389	0.001384	0.001372	0.001313
0.548387096774194		0.001381	0.00138	0.001376	0.001366	0.00136	0.001302
0.580645161290323		0.001367	0.001367	0.001366	0.001361	0.001358	0.001297
0.612903225806452		0.001365	0.001365	0.001362	0.001359	0.001357	0.001277
0.645161290322581		0.001346	0.001346	0.001346	0.001342	0.001321	0.001259
0.67741935483871		0.001335	0.001334	0.00133	0.001321	0.001307	0.001256
0.709677419354839		0.001309	0.001309	0.001308	0.001302	0.001301	0.001239

0.741935483870968	0.001236	0.001236	0.001235	0.001231	0.001226	0.001167
0.774193548387097	0.001222	0.001222	0.001222	0.001218	0.001217	0.001153
0.806451612903226	0.001185	0.001184	0.001181	0.001175	0.001172	0.001041
0.838709677419355	0.0009179	0.0009179	0.0009173	0.0009143	0.0009112	0.0008815
0.870967741935484	0.0009156	0.0009156	0.0009148	0.0009102	0.0009048	0.0007171
0.903225806451613	0.0005745	0.0005744	0.0005706	0.000538	0.0005284	0.0004148
0.935483870967742	0.0003236	0.0003236	0.0003236	0.0003229	0.0003214	0.0001954
0.967741935483871	0.0001204	0.0001204	0.0001203	0.0001199	0.0001194	4.914e-005

0.1	0.0015135	0.0015134	0.0015122	0.0014967	0.0014888	0.0014197
					Average of yearly averages:	0.001179798

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name	Value	Units	Comments	
Molecular weight	mwt	453	g/mol		
Henry's Law Const.	henry		atm-m^3/mol		
Vapor Pressure	vapr		torr		
Solubility sol	0.16	mg/L			
Kd Kd		mg/L			
Koc Koc	4208	mg/L			
Photolysis half-life	kdp	7	days	Half-life	
Aerobic Aquatic Metabolism	kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism	kbacs	1400	days	Halfife	
Aerobic Soil Metabolism	asm	700	days	Halfife	
Hydrolysis: pH 7		days	Half-life		
Method: CAM	1	integer	See PRZM manual		
Incorporation Depth:	DEPI	0.1	cm		
Application Rate:	TAPP	5E-4	kg/ha		
Application Efficiency:	APPEFF	1.0	fraction		
Spray Drift DRFT		fraction of application rate applied to pond			
Application Date	Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17: FILTRA					
IPSCND					
UPTKF					
Record 18: PLVKRT					
PLDKRT					
FEXTRC	0.5				
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)		

Fire Ants (HG61743AE Sod Farm)

Fipronil

stored as FLTURFFIPben.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: ir298.exv modified Thuday, 29 August 2002 at 14:34:12
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0004976	0.0004971	0.0004841	0.0004202	0.0003736	0.0001328
1962	0.000927	0.000926	0.0009091	0.000789	0.0006901	0.0002455
1963	0.002616	0.002607	0.002395	0.001219	0.0008837	0.0005125
1964	0.002626	0.002625	0.002583	0.002321	0.002019	0.001172
1965	0.001092	0.001091	0.001065	0.0009137	0.0007668	0.0004077
1966	0.001754	0.001752	0.001706	0.001578	0.001521	0.0007501
1967	0.0006927	0.000692	0.0006756	0.0005817	0.0005323	0.0002763
1968	0.002493	0.002491	0.002458	0.002269	0.001776	0.0009488
1969	0.001851	0.001806	0.001663	0.001621	0.001455	0.0008394
1970	0.001619	0.001607	0.001551	0.001336	0.001148	0.0004623
1971	0.002833	0.002831	0.002787	0.002519	0.002029	0.00102
1972	0.003413	0.003411	0.003367	0.002609	0.001848	0.0009407
1973	0.003101	0.003055	0.002832	0.002311	0.001935	0.0007541
1974	0.0004965	0.000496	0.0004857	0.0004358	0.0003837	0.0001898
1975	0.0004245	0.0004241	0.0004139	0.0003551	0.0003412	0.0001872
1976	0.002828	0.002826	0.002817	0.002682	0.002434	0.0008359
1977	0.001449	0.001448	0.001435	0.001333	0.001193	0.0005602
1978	0.002231	0.002229	0.002188	0.001956	0.001614	0.0008329
1979	0.00373	0.003728	0.003698	0.003301	0.002574	0.00125
1980	0.003111	0.00305	0.002784	0.002253	0.001897	0.0006713
1981	0.0005076	0.0005071	0.0004953	0.0004319	0.0003785	0.000252
1982	0.002732	0.00273	0.00267	0.002339	0.002073	0.0008979
1983	0.003593	0.00359	0.00354	0.003368	0.002652	0.0009968
1984	0.003261	0.003247	0.003125	0.00265	0.002257	0.001326
1985	0.0006863	0.0006842	0.0006587	0.0005519	0.0004625	0.000297

US EPA ARCHIVE DOCUMENT

1986	0.001636	0.001635	0.001613	0.001467	0.001303	0.0006882
1987	0.0008951	0.0008946	0.0008843	0.0008032	0.0006181	0.0002932
1988	0.00236	0.002359	0.002277	0.001233	0.0008714	0.0004452
1989	0.008078	0.008072	0.007943	0.007255	0.006013	0.002322
1990	0.005409	0.005253	0.004629	0.003448	0.002806	0.0009297

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.008078	0.008072	0.007943	0.007255	0.006013	0.002322
0.0645161290322581		0.005409	0.005253	0.004629	0.003448	0.002806	0.001326
0.096774193548387 1		0.00373	0.003728	0.003698	0.003368	0.002652	0.00125
0.129032258064516		0.003593	0.00359	0.00354	0.003301	0.002574	0.001172
0.161290322580645		0.003413	0.003411	0.003367	0.002682	0.002434	0.00102
0.193548387096774		0.003261	0.003247	0.003125	0.00265	0.002257	0.0009968
0.225806451612903		0.003111	0.003055	0.002832	0.002609	0.002073	0.0009488
0.258064516129032		0.003101	0.00305	0.002817	0.002519	0.002029	0.0009407
0.290322580645161		0.002833	0.002831	0.002787	0.002339	0.002019	0.0009297
0.32258064516129		0.002828	0.002826	0.002784	0.002321	0.001935	0.0008979
0.354838709677419		0.002732	0.00273	0.00267	0.002311	0.001897	0.0008394
0.387096774193548		0.002626	0.002625	0.002583	0.002269	0.001848	0.0008359
0.419354838709677		0.002616	0.002607	0.002458	0.002253	0.001776	0.0008329
0.451612903225806		0.002493	0.002491	0.002395	0.001956	0.001614	0.0007541
0.483870967741936		0.00236	0.002359	0.002277	0.001621	0.001521	0.0007501
0.516129032258065		0.002231	0.002229	0.002188	0.001578	0.001455	0.0006882
0.548387096774194		0.001851	0.001806	0.001706	0.001467	0.001303	0.0006713
0.580645161290323		0.001754	0.001752	0.001663	0.001336	0.001193	0.0005602
0.612903225806452		0.001636	0.001635	0.001613	0.001333	0.001148	0.0005125
0.645161290322581		0.001619	0.001607	0.001551	0.001233	0.0008837	0.0004623
0.67741935483871		0.001449	0.001448	0.001435	0.001219	0.0008714	0.0004452
0.709677419354839		0.001092	0.001091	0.001065	0.0009137	0.0007668	0.0004077
0.741935483870968		0.000927	0.000926	0.0009091	0.0008032	0.0006901	0.000297
0.774193548387097		0.0008951	0.0008946	0.0008843	0.000789	0.0006181	0.0002932
0.806451612903226		0.0006927	0.000692	0.0006756	0.0005817	0.0005323	0.0002763
0.838709677419355		0.0006863	0.0006842	0.0006587	0.0005519	0.0004625	0.000252
0.870967741935484		0.0005076	0.0005071	0.0004953	0.0004358	0.0003837	0.0002455
0.903225806451613		0.0004976	0.0004971	0.0004857	0.0004319	0.0003785	0.0001898
0.935483870967742		0.0004965	0.000496	0.0004841	0.0004202	0.0003736	0.0001872
0.967741935483871		0.0004245	0.0004241	0.0004139	0.0003551	0.0003412	0.0001328
0.1	0.0037163	0.0037142	0.0036822	0.0033613	0.0026442	0.0012422	
					Average of yearly averages:		0.000714583333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURFFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: ir298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.002	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	IR			
Flag for runoff calc.		RUNOFF	total	none, monthly or total(average of entire run)		

MB45950

stored as FLTURF950ben.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	2.709e-005	2.709e-005	2.708e-005	2.702e-005	2.697e-005	1.102e-005
1962	9.853e-005	9.853e-005	9.849e-005	9.831e-005	9.762e-005	5.414e-005
1963	0.0002231	0.0002228	0.0002191	0.0001936	0.0001855	0.0001377
1964	0.0003416	0.0003416	0.0003415	0.0003407	0.0003399	0.000276
1965	0.0003465	0.0003465	0.0003463	0.0003448	0.0003432	0.000336
1966	0.0004624	0.0004624	0.0004621	0.0004607	0.0004601	0.0003977
1967	0.0004553	0.0004553	0.0004551	0.0004536	0.0004522	0.0004449
1968	0.0005753	0.0005753	0.0005751	0.0005738	0.000566	0.0004957

US EPA ARCHIVE DOCUMENT

1969	0.0006263	0.0006261	0.0006223	0.0006149	0.0006091	0.0005713
1970	0.0006337	0.0006337	0.0006335	0.0006322	0.0006314	0.0006029
1971	0.0006382	0.0006382	0.0006379	0.0006366	0.0006263	0.0005919
1972	0.0007162	0.0007162	0.0007159	0.0006992	0.000684	0.0006475
1973	0.0007157	0.0007155	0.0007145	0.0007121	0.0007096	0.0006811
1974	0.0006622	0.0006622	0.0006618	0.0006598	0.0006578	0.0006393
1975	0.0006518	0.0006515	0.00065	0.0006463	0.0006434	0.0006205
1976	0.0006671	0.0006671	0.0006665	0.000663	0.0006594	0.0006283
1977	0.0006802	0.0006802	0.00068	0.0006785	0.0006766	0.0006583
1978	0.0006617	0.0006617	0.0006613	0.0006592	0.0006555	0.0006471
1979	0.0007493	0.0007493	0.000749	0.0007429	0.0007301	0.0006914
1980	0.0007469	0.0007466	0.0007452	0.0007433	0.0007412	0.0007086
1981	0.000673	0.000673	0.0006728	0.000671	0.0006686	0.0006566
1982	0.0007059	0.0007059	0.0007053	0.0007034	0.0007016	0.0006818
1983	0.0007532	0.0007521	0.000741	0.0007313	0.0007194	0.0006904
1984	0.0007778	0.0007778	0.0007773	0.0007742	0.0007713	0.0007619
1985	0.0007541	0.0007538	0.0007527	0.0007496	0.0007465	0.0007229
1986	0.0007425	0.0007425	0.0007422	0.0007402	0.000738	0.0007263
1987	0.0007161	0.000716	0.0007157	0.0007148	0.0007144	0.0006914
1988	0.000668	0.000668	0.0006678	0.0006667	0.0006651	0.0006437
1989	0.0007997	0.0007997	0.0007994	0.0007978	0.000774	0.0007172
1990	0.0007971	0.0007967	0.000795	0.0007922	0.0007922	0.0007612

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0007997	0.0007997	0.0007994	0.0007978	0.0007922	0.0007619
0.0645161290322581		0.0007971	0.0007967	0.000795	0.0007922	0.000774	0.0007612
0.096774193548387 1		0.0007778	0.0007778	0.0007773	0.0007742	0.0007713	0.0007263
0.129032258064516		0.0007541	0.0007538	0.0007527	0.0007496	0.0007465	0.0007229
0.161290322580645		0.0007532	0.0007521	0.000749	0.0007433	0.0007412	0.0007172
0.193548387096774		0.0007493	0.0007493	0.0007452	0.0007429	0.000738	0.0007086
0.225806451612903		0.0007469	0.0007466	0.0007422	0.0007402	0.0007301	0.0006914
0.258064516129032		0.0007425	0.0007425	0.000741	0.0007313	0.0007194	0.0006914
0.290322580645161		0.0007162	0.0007162	0.0007159	0.0007148	0.0007144	0.0006904
0.32258064516129		0.0007161	0.000716	0.0007157	0.0007121	0.0007096	0.0006818
0.354838709677419		0.0007157	0.0007155	0.0007145	0.0007034	0.0007016	0.0006811
0.387096774193548		0.0007059	0.0007059	0.0007053	0.0006992	0.000684	0.0006583
0.419354838709677		0.0006802	0.0006802	0.00068	0.0006785	0.0006766	0.0006566
0.451612903225806		0.000673	0.000673	0.0006728	0.000671	0.0006686	0.0006475
0.483870967741936		0.000668	0.000668	0.0006678	0.0006667	0.0006651	0.0006471
0.516129032258065		0.0006671	0.0006671	0.0006665	0.000663	0.0006594	0.0006437
0.548387096774194		0.0006622	0.0006622	0.0006618	0.0006598	0.0006578	0.0006393
0.580645161290323		0.0006617	0.0006617	0.0006613	0.0006592	0.0006555	0.0006283
0.612903225806452		0.0006518	0.0006515	0.00065	0.0006463	0.0006434	0.0006205
0.645161290322581		0.0006382	0.0006382	0.0006379	0.0006366	0.0006314	0.0006029
0.6774193548387 1		0.0006337	0.0006337	0.0006335	0.0006322	0.0006263	0.0005919
0.709677419354839		0.0006263	0.0006261	0.0006223	0.0006149	0.0006091	0.0005713
0.741935483870968		0.0005753	0.0005753	0.0005751	0.0005738	0.000566	0.0004957
0.774193548387097		0.0004624	0.0004624	0.0004621	0.0004607	0.0004601	0.0004449
0.806451612903226		0.0004553	0.0004553	0.0004551	0.0004536	0.0004522	0.0003977
0.838709677419355		0.0003465	0.0003465	0.0003463	0.0003448	0.0003432	0.000336
0.870967741935484		0.0003416	0.0003416	0.0003415	0.0003407	0.0003399	0.000276
0.903225806451613		0.0002231	0.0002228	0.0002191	0.0001936	0.0001855	0.0001377
0.935483870967742		9.853e-005	9.853e-005	9.849e-005	9.831e-005	9.762e-005	5.414e-005
0.967741935483871		2.709e-005	2.709e-005	2.708e-005	2.702e-005	2.697e-005	1.102e-005
0.1	0.00077543	0.0007754	0.00077484	0.00077174	0.00076882	0.00072596	
					Average of yearly averages:		0.000563158666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF950
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	1E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

US EPA ARCHIVE DOCUMENT

MB46513

stored as FLTURF513ben.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	1.734e-005	1.734e-005	1.733e-005	1.728e-005	1.707e-005	6.876e-006
1962	3.835e-005	3.835e-005	3.834e-005	3.829e-005	3.803e-005	2.567e-005
1963	6.364e-005	6.363e-005	6.345e-005	6.282e-005	6.261e-005	4.911e-005
1964	9.785e-005	9.784e-005	9.782e-005	9.767e-005	9.746e-005	7.989e-005
1965	0.0001037	0.0001037	0.0001037	0.0001034	0.0001031	9.857e-005
1966	0.0001406	0.0001406	0.0001406	0.0001403	0.0001399	0.0001204
1967	0.0001396	0.0001396	0.0001395	0.0001393	0.000139	0.0001355
1968	0.0001628	0.0001628	0.0001627	0.0001625	0.0001622	0.0001485
1969	0.0001669	0.0001669	0.0001669	0.0001667	0.0001661	0.0001594
1970	0.0001668	0.0001668	0.0001667	0.0001663	0.0001657	0.0001578
1971	0.0001583	0.0001583	0.0001583	0.000158	0.0001576	0.0001524
1972	0.0001665	0.0001665	0.0001664	0.0001655	0.0001649	0.0001579
1973	0.0001664	0.0001664	0.0001662	0.0001657	0.0001651	0.000159
1974	0.0001522	0.0001521	0.0001516	0.0001507	0.00015	0.0001481
1975	0.0001486	0.0001485	0.0001482	0.0001473	0.0001466	0.0001423
1976	0.0001658	0.0001658	0.0001657	0.0001653	0.0001647	0.0001525
1977	0.0001593	0.0001593	0.0001592	0.0001587	0.0001581	0.0001552
1978	0.0001637	0.0001637	0.0001637	0.0001634	0.0001633	0.0001591
1979	0.0001716	0.0001716	0.0001715	0.0001714	0.0001712	0.0001644
1980	0.0001679	0.0001678	0.0001675	0.0001668	0.0001661	0.0001601
1981	0.0001513	0.0001512	0.0001511	0.0001509	0.0001507	0.0001477
1982	0.0001734	0.0001734	0.0001734	0.000173	0.0001725	0.0001629
1983	0.00017	0.00017	0.00017	0.0001697	0.0001697	0.0001672
1984	0.0001841	0.0001841	0.000184	0.0001837	0.0001832	0.0001759
1985	0.0001782	0.0001781	0.0001778	0.0001771	0.0001763	0.0001708
1986	0.0001663	0.0001663	0.0001662	0.000166	0.0001656	0.0001614
1987	0.0001617	0.0001617	0.0001614	0.0001607	0.0001602	0.0001528
1988	0.0001446	0.0001446	0.0001444	0.000144	0.0001436	0.0001381
1989	0.0001424	0.0001424	0.0001423	0.0001412	0.0001383	0.000136
1990	0.0001424	0.0001424	0.0001423	0.0001416	0.0001411	0.0001346

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0001841	0.0001841	0.000184	0.0001837	0.0001832	0.0001759
0.064516129032258 1		0.0001782	0.0001781	0.0001778	0.0001771	0.0001763	0.0001708
0.0967741935483871		0.0001734	0.0001734	0.0001734	0.000173	0.0001725	0.0001672
0.129032258064516		0.0001716	0.0001716	0.0001715	0.0001714	0.0001712	0.0001644
0.161290322580645		0.00017	0.00017	0.00017	0.0001697	0.0001697	0.0001629
0.193548387096774		0.0001679	0.0001678	0.0001675	0.0001668	0.0001661	0.0001614
0.225806451612903		0.0001669	0.0001669	0.0001669	0.0001667	0.0001661	0.0001601
0.258064516129032		0.0001668	0.0001668	0.0001667	0.0001663	0.0001657	0.0001594
0.290322580645161		0.0001665	0.0001665	0.0001664	0.000166	0.0001656	0.0001591
0.32258064516129		0.0001664	0.0001664	0.0001662	0.0001657	0.0001651	0.000159
0.354838709677419		0.0001663	0.0001663	0.0001662	0.0001655	0.0001649	0.0001579
0.387096774193548		0.0001658	0.0001658	0.0001657	0.0001653	0.0001647	0.0001578
0.419354838709677		0.0001637	0.0001637	0.0001637	0.0001634	0.0001633	0.0001552
0.451612903225806		0.0001628	0.0001628	0.0001627	0.0001625	0.0001622	0.0001528
0.483870967741936		0.0001617	0.0001617	0.0001614	0.0001607	0.0001602	0.0001525
0.516129032258065		0.0001593	0.0001593	0.0001592	0.0001587	0.0001581	0.0001524
0.548387096774194		0.0001583	0.0001583	0.0001583	0.000158	0.0001576	0.0001485
0.580645161290323		0.0001522	0.0001521	0.0001516	0.0001509	0.0001507	0.0001481
0.612903225806452		0.0001513	0.0001512	0.0001511	0.0001507	0.00015	0.0001477
0.645161290322581		0.0001486	0.0001485	0.0001482	0.0001473	0.0001466	0.0001423
0.67741935483871		0.0001446	0.0001446	0.0001444	0.000144	0.0001436	0.0001381
0.709677419354839		0.0001424	0.0001424	0.0001423	0.0001416	0.0001411	0.000136
0.741935483870968		0.0001424	0.0001424	0.0001423	0.0001412	0.0001399	0.0001355
0.774193548387097		0.0001406	0.0001406	0.0001406	0.0001403	0.000139	0.0001346
0.806451612903226		0.0001396	0.0001396	0.0001395	0.0001393	0.0001383	0.0001204
0.838709677419355		0.0001037	0.0001037	0.0001037	0.0001034	0.0001031	9.857e-005
0.870967741935484		9.785e-005	9.784e-005	9.782e-005	9.767e-005	9.746e-005	7.989e-005
0.903225806451613		6.364e-005	6.363e-005	6.345e-005	6.282e-005	6.261e-005	4.911e-005
0.935483870967742		3.835e-005	3.835e-005	3.834e-005	3.829e-005	3.803e-005	2.567e-005
0.967741935483871		1.734e-005	1.734e-005	1.733e-005	1.728e-005	1.707e-005	6.876e-006
0.1	0.00017322	0.00017322	0.00017321	0.00017284	0.00017237	0.00016692	
					Average of yearly averages:		0.000136003866666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments
Molecular weight		mwt	389	g/mol	
Henry's Law Const.		henry		atm-m^3/mol	
Vapor Pressure		vapr		torr	
Solubility	sol	0.95	mg/L		
Kd	Kd		mg/L		
Koc	Koc	1290	mg/L		
Photolysis half-life		kdp		days	Half-life
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife
Anaerobic Aquatic Metabolism			kbacs	1320	days Halfife

Aerobic Soil Metabolism		asm	660	days	Halfife
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	1	integer	See PRZM manual	
Incorporation Depth:		DEPI	0.1	cm	
Application Rate:		TAPP	2E-5	kg/ha	
Application Efficiency:		APPEFF	1.0	fraction	
Spray Drift	DRFT		fraction of application rate applied to pond		
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm	
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	0.5			
Flag for Index Res. Run		IR	Pond		
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)	

MB46136

stored as FLTURF136ben.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001204	0.0001204	0.0001203	0.0001199	0.0001194	4.914e-005
1962	0.0003236	0.0003236	0.0003236	0.0003229	0.0003214	0.0001954
1963	0.0005745	0.0005744	0.0005706	0.000538	0.0005284	0.0004148
1964	0.0009179	0.0009179	0.0009173	0.0009143	0.0009112	0.0007171
1965	0.0009156	0.0009156	0.0009148	0.0009102	0.0009048	0.0008815
1966	0.001236	0.001236	0.001235	0.001231	0.001226	0.001041
1967	0.001185	0.001184	0.001181	0.001175	0.001172	0.001153
1968	0.001418	0.001418	0.001417	0.001413	0.001407	0.001256
1969	0.00148	0.00148	0.001477	0.001472	0.001467	0.001385
1970	0.001482	0.001482	0.001481	0.001479	0.001475	0.00139
1971	0.00139	0.00139	0.001389	0.001384	0.001372	0.001313
1972	0.001514	0.001514	0.001513	0.001492	0.001473	0.001393
1973	0.001509	0.001508	0.001505	0.001497	0.001489	0.001421
1974	0.001412	0.001412	0.001411	0.001405	0.001399	0.001328
1975	0.001381	0.00138	0.001376	0.001366	0.001358	0.001302
1976	0.00145	0.00145	0.001449	0.00144	0.00143	0.001339
1977	0.001421	0.001421	0.001421	0.001418	0.001413	0.001371
1978	0.001367	0.001367	0.001366	0.001361	0.00136	0.001344
1979	0.001519	0.001519	0.001518	0.001512	0.001502	0.001417
1980	0.001506	0.001506	0.001502	0.001494	0.001487	0.001411
1981	0.001309	0.001309	0.001308	0.001302	0.001301	0.001277
1982	0.001433	0.001433	0.001432	0.001426	0.001422	0.001357
1983	0.001456	0.001455	0.001442	0.001434	0.001423	0.001377
1984	0.001531	0.001531	0.001529	0.001523	0.001517	0.001489
1985	0.001491	0.00149	0.001487	0.001478	0.001469	0.00142
1986	0.001436	0.001436	0.001434	0.001426	0.00142	0.00139
1987	0.001365	0.001365	0.001362	0.001359	0.001357	0.001297
1988	0.001222	0.001222	0.001222	0.001218	0.001217	0.001167
1989	0.001346	0.001346	0.001346	0.001342	0.001307	0.001239
1990	0.001335	0.001334	0.00133	0.001321	0.001321	0.001259

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001531	0.001531	0.001529	0.001523	0.001517	0.001489
0.064516129032258 1		0.001519	0.001519	0.001518	0.001512	0.001502	0.001421
0.096774193548387 1		0.001514	0.001514	0.001513	0.001497	0.001489	0.00142
0.129032258064516		0.001509	0.001508	0.001505	0.001494	0.001487	0.001417
0.161290322580645		0.001506	0.001506	0.001502	0.001492	0.001475	0.001411
0.193548387096774		0.001491	0.00149	0.001487	0.001479	0.001473	0.001393
0.225806451612903		0.001482	0.001482	0.001481	0.001478	0.001469	0.00139
0.258064516129032		0.00148	0.00148	0.001477	0.001472	0.001467	0.00139
0.290322580645161		0.001456	0.001455	0.001449	0.00144	0.00143	0.001385
0.32258064516129		0.00145	0.00145	0.001442	0.001434	0.001423	0.001377
0.354838709677419		0.001436	0.001436	0.001434	0.001426	0.001422	0.001371
0.387096774193548		0.001433	0.001433	0.001432	0.001426	0.00142	0.001357
0.419354838709677		0.001421	0.001421	0.001421	0.001418	0.001413	0.001344
0.451612903225806		0.001418	0.001418	0.001417	0.001413	0.001407	0.001339
0.483870967741936		0.001412	0.001412	0.001411	0.001405	0.001399	0.001328
0.516129032258065		0.00139	0.00139	0.001389	0.001384	0.001372	0.001313
0.548387096774194		0.001381	0.00138	0.001376	0.001366	0.00136	0.001302
0.580645161290323		0.001367	0.001367	0.001366	0.001361	0.001358	0.001297
0.612903225806452		0.001365	0.001365	0.001362	0.001359	0.001357	0.001277
0.645161290322581		0.001346	0.001346	0.001346	0.001342	0.001321	0.001259
0.67741935483871		0.001335	0.001334	0.00133	0.001321	0.001307	0.001256
0.709677419354839		0.001309	0.001309	0.001308	0.001302	0.001301	0.001239
0.741935483870968		0.001236	0.001236	0.001235	0.001231	0.001226	0.001167
0.774193548387097		0.001222	0.001222	0.001222	0.001218	0.001217	0.001153
0.806451612903226		0.001185	0.001184	0.001181	0.001175	0.001172	0.001041
0.838709677419355		0.0009179	0.0009179	0.0009173	0.0009143	0.0009112	0.0008815
0.870967741935484		0.0009156	0.0009156	0.0009148	0.0009102	0.0009048	0.0007171
0.903225806451613		0.0005745	0.0005744	0.0005706	0.000538	0.0005284	0.0004148
0.935483870967742		0.0003236	0.0003236	0.0003236	0.0003229	0.0003214	0.0001954
0.967741935483871		0.0001204	0.0001204	0.0001203	0.0001199	0.0001194	4.914e-005
0.1	0.0015135	0.0015134	0.0015122	0.0014967	0.0014888	0.0014197	

US EPA ARCHIVE DOCUMENT

Average of yearly averages: 0.001179798

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	5E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Fire Ants (Chipco Residential)

Fipronil

stored as FLTURFFIPben.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001605	0.001602	0.001558	0.001303	0.001132	0.0003745
1962	0.002666	0.002662	0.002589	0.002185	0.00189	0.0006027
1963	0.003561	0.003556	0.003443	0.002818	0.002363	0.0007884
1964	0.005862	0.005854	0.005676	0.004578	0.004029	0.001376
1965	0.003456	0.003451	0.003342	0.002741	0.002229	0.0006684
1966	0.005159	0.005151	0.004976	0.004514	0.004334	0.001688
1967	0.002061	0.002058	0.001992	0.001648	0.001518	0.00057
1968	0.006058	0.006043	0.005877	0.004972	0.004082	0.001203
1969	0.002204	0.0022	0.002118	0.001739	0.001432	0.0006257
1970	0.0009736	0.0009725	0.0009411	0.0007892	0.0006672	0.0002426
1971	0.002788	0.002784	0.002695	0.002526	0.002325	0.0009824
1972	0.002841	0.002837	0.002735	0.002194	0.001876	0.0007083
1973	0.0008298	0.0008289	0.0008016	0.0006613	0.0005395	0.0002779
1974	0.001433	0.001431	0.001387	0.001213	0.001049	0.0003492
1975	0.001191	0.001189	0.001147	0.0009391	0.0008965	0.0003397
1976	0.008247	0.008233	0.008034	0.00744	0.006656	0.002045
1977	0.001474	0.001472	0.001425	0.001236	0.001085	0.0004487
1978	0.003838	0.003832	0.003699	0.003311	0.003054	0.001031
1979	0.004028	0.004023	0.003876	0.003127	0.002756	0.0008906
1980	0.000888	0.0008868	0.0008611	0.0007555	0.0007204	0.0002928
1981	0.001561	0.001559	0.001509	0.001262	0.001066	0.0003989
1982	0.007822	0.007811	0.007568	0.006369	0.005557	0.001848
1983	0.002637	0.002633	0.002552	0.002075	0.001897	0.0007137
1984	0.005824	0.005816	0.005624	0.005192	0.004919	0.001642
1985	0.001045	0.001044	0.001007	0.0008072	0.0007771	0.0003025
1986	0.002486	0.002482	0.002392	0.001941	0.001623	0.0004799
1987	0.0003237	0.0003232	0.0003107	0.0002529	0.0002275	0.0001248
1988	0.0004645	0.0004638	0.000447	0.00036	0.0002971	0.0001635
1989	0.0009201	0.0009188	0.0008885	0.0007101	0.000566	0.0003285
1990	0.0004105	0.0003958	0.0003465	0.0002826	0.0002452	0.0001362

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.008247	0.008233	0.008034	0.00744	0.006656	0.002045
0.0645161290322581		0.007822	0.007811	0.007568	0.006369	0.005557	0.001848
0.0967741935483871		0.006058	0.006043	0.005877	0.005192	0.004919	0.001688
0.129032258064516		0.005862	0.005854	0.005676	0.004972	0.004334	0.001642
0.161290322580645		0.005824	0.005816	0.005624	0.004578	0.004082	0.001376
0.193548387096774		0.005159	0.005151	0.004976	0.004514	0.004029	0.001203
0.225806451612903		0.004028	0.004023	0.003876	0.003311	0.003054	0.001031
0.258064516129032		0.003838	0.003832	0.003699	0.003127	0.002756	0.0009824
0.290322580645161		0.003561	0.003556	0.003443	0.002818	0.002363	0.0008906
0.32258064516129		0.003456	0.003451	0.003342	0.002741	0.002325	0.0007884
0.354838709677419		0.002841	0.002837	0.002735	0.002526	0.002229	0.0007137
0.387096774193548		0.002788	0.002784	0.002695	0.002194	0.001897	0.0007083
0.419354838709677		0.002666	0.002662	0.002589	0.002185	0.00189	0.0006684
0.451612903225806		0.002637	0.002633	0.002552	0.002075	0.001876	0.0006257

0.483870967741936	0.002486	0.002482	0.002392	0.001941	0.001623	0.0006027
0.516129032258065	0.002204	0.0022	0.002118	0.001739	0.001518	0.00057
0.548387096774194	0.002061	0.002058	0.001992	0.001648	0.001432	0.0004799
0.580645161290323	0.001605	0.001602	0.001558	0.001303	0.001132	0.0004487
0.612903225806452	0.001561	0.001559	0.001509	0.001262	0.001085	0.0003989
0.645161290322581	0.001474	0.001472	0.001425	0.001236	0.001066	0.0003745
0.67741935483871	0.001433	0.001431	0.001387	0.001213	0.001049	0.0003492
0.709677419354839	0.001191	0.001189	0.001147	0.0009391	0.0008965	0.0003397
0.741935483870968	0.001045	0.001044	0.001007	0.0008072	0.0007771	0.0003285
0.774193548387097	0.0009736	0.0009725	0.0009411	0.0007892	0.0007204	0.0003025
0.806451612903226	0.0009201	0.0009188	0.0008885	0.0007555	0.0006672	0.0002928
0.838709677419355	0.000888	0.0008868	0.0008611	0.0007101	0.000566	0.0002779
0.870967741935484	0.0008298	0.0008289	0.0008016	0.0006613	0.0005395	0.0002426
0.903225806451613	0.0004645	0.0004638	0.000447	0.00036	0.0002971	0.0001635
0.935483870967742	0.0004105	0.0003958	0.0003465	0.0002826	0.0002452	0.0001362
0.967741935483871	0.0003237	0.0003232	0.0003107	0.0002529	0.0002275	0.0001248

0.1	0.0060384	0.0060241	0.0058569	0.00517	0.0048605	0.0016834
					Average of yearly averages:	0.00072143

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURFFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	33.7	days	Halfife	
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.014	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as FLTURF950ben.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001889	0.0001889	0.0001888	0.0001884	0.000188	7.694e-005
1962	0.0005088	0.0005088	0.0005086	0.0005078	0.0005052	0.0003087
1963	0.0009056	0.0009053	0.0008986	0.0008501	0.0008353	0.0006564
1964	0.001446	0.001446	0.001445	0.001441	0.001438	0.001134
1965	0.00147	0.00147	0.001469	0.001463	0.001456	0.001417
1966	0.001995	0.001995	0.001993	0.001987	0.001981	0.001693
1967	0.001954	0.001954	0.001953	0.001947	0.00194	0.001904
1968	0.002352	0.002352	0.002351	0.002345	0.002337	0.002095
1969	0.002486	0.002486	0.00248	0.00247	0.00246	0.002328
1970	0.00249	0.00249	0.00249	0.002488	0.002484	0.002366
1971	0.002404	0.002403	0.002402	0.002396	0.002377	0.002281
1972	0.002613	0.002613	0.002612	0.002579	0.00255	0.002423
1973	0.002608	0.002607	0.002603	0.002593	0.002584	0.002488
1974	0.002489	0.002489	0.002488	0.00248	0.002473	0.002363
1975	0.002451	0.002449	0.002443	0.00243	0.002419	0.002338
1976	0.002581	0.002581	0.002579	0.002565	0.002551	0.002411
1977	0.002544	0.002543	0.002543	0.002539	0.002533	0.002473
1978	0.002481	0.002481	0.00248	0.002473	0.002471	0.002448
1979	0.002715	0.002715	0.002714	0.002706	0.002691	0.002563
1980	0.002701	0.0027	0.002695	0.002685	0.002676	0.002565
1981	0.002419	0.002419	0.002417	0.002408	0.002407	0.002372
1982	0.002622	0.002622	0.00262	0.002611	0.002604	0.002505
1983	0.002659	0.002657	0.002639	0.002627	0.002611	0.002544
1984	0.002787	0.002787	0.002785	0.002776	0.002767	0.00272
1985	0.00273	0.002729	0.002725	0.002714	0.002703	0.002628
1986	0.002653	0.002653	0.002651	0.002639	0.00263	0.002585
1987	0.002547	0.002546	0.002542	0.002538	0.002536	0.002444
1988	0.002329	0.002329	0.002328	0.002324	0.002322	0.002243
1989	0.002501	0.002501	0.0025	0.002495	0.002441	0.002344

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1990	0.00249	0.002488	0.002483	0.00247	0.00247	0.002374

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.002787	0.002787	0.002785	0.002776	0.002767	0.00272
0.0645161290322581		0.00273	0.002729	0.002725	0.002714	0.002703	0.002628
0.0967741935483871		0.002715	0.002715	0.002714	0.002706	0.002691	0.002585
0.129032258064516		0.002701	0.0027	0.002695	0.002685	0.002676	0.002565
0.161290322580645		0.002659	0.002657	0.002651	0.002639	0.00263	0.002563
0.193548387096774		0.002653	0.002653	0.002639	0.002627	0.002611	0.002544
0.225806451612903		0.002622	0.002622	0.00262	0.002611	0.002604	0.002505
0.258064516129032		0.002613	0.002613	0.002612	0.002593	0.002584	0.002488
0.290322580645161		0.002608	0.002607	0.002603	0.002579	0.002551	0.002473
0.322580645161290		0.002581	0.002581	0.002579	0.002565	0.00255	0.002448
0.354838709677419		0.002547	0.002546	0.002543	0.002539	0.002536	0.002444
0.387096774193548		0.002544	0.002543	0.002542	0.002538	0.002533	0.002423
0.419354838709677		0.002501	0.002501	0.0025	0.002495	0.002484	0.002411
0.451612903225806		0.00249	0.00249	0.00249	0.002488	0.002473	0.002374
0.483870967741936		0.00249	0.002489	0.002488	0.00248	0.002471	0.002372
0.516129032258065		0.002489	0.002488	0.002483	0.002473	0.00247	0.002366
0.548387096774194		0.002486	0.002486	0.00248	0.00247	0.00246	0.002363
0.580645161290323		0.002481	0.002481	0.00248	0.00247	0.002441	0.002344
0.612903225806452		0.002451	0.002449	0.002443	0.00243	0.002419	0.002338
0.645161290322581		0.002419	0.002419	0.002417	0.002408	0.002407	0.002328
0.67741935483871		0.002404	0.002403	0.002402	0.002396	0.002377	0.002281
0.709677419354839		0.002352	0.002352	0.002351	0.002345	0.002337	0.002243
0.741935483870968		0.002329	0.002329	0.002328	0.002324	0.002322	0.002095
0.774193548387097		0.001995	0.001995	0.001993	0.001987	0.001981	0.001904
0.806451612903226		0.001954	0.001954	0.001953	0.001947	0.00194	0.001693
0.838709677419355		0.00147	0.00147	0.001469	0.001463	0.001456	0.001417
0.870967741935484		0.001446	0.001446	0.001445	0.001441	0.001438	0.001134
0.903225806451613		0.0009056	0.0009053	0.0008986	0.0008501	0.0008353	0.0006564
0.935483870967742		0.0005088	0.0005088	0.0005086	0.0005078	0.0005052	0.0003087
0.967741935483871		0.0001889	0.0001889	0.0001888	0.0001884	0.000188	7.694e-005
0.1	0.0027136	0.0027135	0.0027121	0.0027039	0.0026895	0.002583	
					Average of yearly averages:		0.00210303466666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF950
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife	
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0007	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as FLTURF513ben.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	8.669e-005	8.669e-005	8.667e-005	8.642e-005	8.537e-005	3.438e-005
1962	0.0001918	0.0001918	0.0001917	0.0001915	0.0001902	0.0001283
1963	0.0003182	0.0003182	0.0003173	0.0003141	0.0003131	0.0002456
1964	0.0004893	0.0004892	0.0004891	0.0004884	0.0004873	0.0003995
1965	0.0005187	0.0005187	0.0005185	0.0005172	0.0005158	0.0004929
1966	0.0007032	0.0007032	0.000703	0.0007014	0.0006996	0.0006021
1967	0.0006979	0.0006979	0.0006977	0.0006965	0.0006952	0.0006773
1968	0.000814	0.000814	0.0008137	0.0008123	0.000811	0.0007424
1969	0.0008345	0.0008345	0.0008344	0.0008336	0.0008303	0.0007968
1970	0.0008342	0.0008341	0.0008335	0.0008313	0.0008286	0.0007892
1971	0.0007917	0.0007917	0.0007915	0.0007902	0.000788	0.0007622
1972	0.0008324	0.0008324	0.0008322	0.0008274	0.0008243	0.0007897
1973	0.000832	0.0008319	0.0008312	0.0008286	0.0008256	0.0007952

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1974	0.0007612	0.0007606	0.0007583	0.0007534	0.0007498	0.0007408
1975	0.0007431	0.0007427	0.0007409	0.0007365	0.000733	0.0007117
1976	0.0008291	0.0008291	0.0008288	0.0008265	0.0008237	0.0007625
1977	0.0007968	0.0007966	0.0007959	0.0007936	0.0007906	0.0007761
1978	0.0008187	0.0008187	0.0008185	0.0008169	0.0008166	0.0007957
1979	0.0008578	0.0008578	0.0008576	0.000857	0.0008558	0.0008223
1980	0.0008395	0.0008391	0.0008375	0.0008338	0.0008306	0.0008004
1981	0.0007563	0.000756	0.0007553	0.0007546	0.0007536	0.0007385
1982	0.0008671	0.0008671	0.0008668	0.000865	0.0008627	0.0008144
1983	0.0008502	0.0008502	0.0008499	0.0008483	0.0008485	0.000836
1984	0.0009203	0.0009203	0.0009199	0.0009184	0.0009162	0.0008796
1985	0.0008909	0.0008906	0.0008892	0.0008854	0.0008817	0.0008539
1986	0.0008315	0.0008315	0.0008312	0.0008298	0.0008279	0.0008069
1987	0.0008087	0.0008084	0.000807	0.0008036	0.0008008	0.0007641
1988	0.0007232	0.0007229	0.0007217	0.0007199	0.000718	0.0006904
1989	0.0007122	0.0007122	0.0007116	0.0007059	0.0006913	0.0006802
1990	0.0007122	0.0007121	0.0007113	0.0007081	0.0007057	0.0006729

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0009203	0.0009203	0.0009199	0.0009184	0.0009162	0.0008796
0.0645161290322581		0.0008909	0.0008906	0.0008892	0.0008854	0.0008817	0.0008539
0.0967741935483871		0.0008671	0.0008671	0.0008668	0.000865	0.0008627	0.000836
0.129032258064516		0.0008578	0.0008578	0.0008576	0.000857	0.0008558	0.0008223
0.161290322580645		0.0008502	0.0008502	0.0008499	0.0008483	0.0008485	0.0008144
0.193548387096774		0.0008395	0.0008391	0.0008375	0.0008338	0.0008306	0.0008069
0.225806451612903		0.0008345	0.0008345	0.0008344	0.0008336	0.0008303	0.0008004
0.258064516129032		0.0008342	0.0008341	0.0008335	0.0008313	0.0008286	0.0007968
0.290322580645161		0.0008324	0.0008324	0.0008322	0.0008298	0.0008279	0.0007957
0.32258064516129		0.000832	0.0008319	0.0008312	0.0008286	0.0008256	0.0007952
0.354838709677419		0.0008315	0.0008315	0.0008312	0.0008274	0.0008243	0.0007897
0.387096774193548		0.0008291	0.0008291	0.0008288	0.0008265	0.0008237	0.0007892
0.419354838709677		0.0008187	0.0008187	0.0008185	0.0008169	0.0008166	0.0007761
0.451612903225806		0.000814	0.000814	0.0008137	0.0008123	0.000811	0.0007641
0.483870967741936		0.0008087	0.0008084	0.000807	0.0008036	0.0008008	0.0007625
0.516129032258065		0.0007968	0.0007966	0.0007959	0.0007936	0.0007906	0.0007622
0.548387096774194		0.0007917	0.0007917	0.0007915	0.0007902	0.000788	0.0007424
0.580645161290323		0.0007612	0.0007606	0.0007583	0.0007546	0.0007536	0.0007408
0.612903225806452		0.0007563	0.000756	0.0007553	0.0007534	0.0007498	0.0007385
0.645161290322581		0.0007431	0.0007427	0.0007409	0.0007365	0.000733	0.0007117
0.6774193548387 1		0.0007232	0.0007229	0.0007217	0.0007199	0.000718	0.0006904
0.709677419354839		0.0007122	0.0007122	0.0007116	0.0007081	0.0007057	0.0006802
0.741935483870968		0.0007122	0.0007121	0.0007113	0.0007059	0.0006996	0.0006773
0.774193548387097		0.0007032	0.0007032	0.000703	0.0007014	0.0006952	0.0006729
0.806451612903226		0.0006979	0.0006979	0.0006977	0.0006965	0.0006913	0.0006021
0.838709677419355		0.0005187	0.0005187	0.0005185	0.0005172	0.0005158	0.0004929
0.870967741935484		0.0004893	0.0004892	0.0004891	0.0004884	0.0004873	0.0003995
0.903225806451613		0.0003182	0.0003182	0.0003173	0.0003141	0.0003131	0.0002456
0.935483870967742		0.0001918	0.0001918	0.0001917	0.0001915	0.0001902	0.0001283
0.967741935483871		8.669e-005	8.669e-005	8.667e-005	8.642e-005	8.537e-005	3.438e-005
0.1	0.00086617	0.00086617	0.00086588	0.0008642	0.00086201	0.00083463	
					Average of yearly averages:		0.000680066

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1320	days		Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0001	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as FLTURF136ben.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28

US EPA ARCHIVE DOCUMENT

Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0007942	0.0007942	0.0007936	0.000791	0.0007881	0.0003243
1962	0.002136	0.002136	0.002136	0.002131	0.002121	0.00129
1963	0.003792	0.003791	0.003766	0.003551	0.003488	0.002738
1964	0.006059	0.006059	0.006055	0.006035	0.006015	0.004733
1965	0.006043	0.006043	0.006038	0.006007	0.005972	0.005818
1966	0.008155	0.008155	0.008149	0.008121	0.00809	0.00687
1967	0.007822	0.007817	0.007794	0.007757	0.007735	0.007613
1968	0.009361	0.00936	0.009355	0.009324	0.009286	0.008288
1969	0.009771	0.009771	0.009751	0.009717	0.009684	0.00914
1970	0.009782	0.009782	0.009777	0.009763	0.009737	0.009175
1971	0.009172	0.009172	0.009166	0.009134	0.009052	0.008668
1972	0.009992	0.009992	0.009986	0.009848	0.009722	0.009191
1973	0.009961	0.009956	0.009932	0.009878	0.009829	0.009379
1974	0.00932	0.00932	0.009312	0.009274	0.009236	0.008763
1975	0.009116	0.009109	0.00908	0.009012	0.008959	0.008591
1976	0.009572	0.009572	0.009561	0.009501	0.009438	0.008835
1977	0.009381	0.009381	0.009378	0.009357	0.009324	0.009047
1978	0.009024	0.009024	0.009018	0.008983	0.008973	0.008872
1979	0.01003	0.01003	0.01002	0.009979	0.009913	0.009349
1980	0.009943	0.009937	0.00991	0.00986	0.009815	0.009314
1981	0.008639	0.008639	0.008632	0.008591	0.008584	0.008426
1982	0.00946	0.00946	0.009451	0.009411	0.009383	0.008957
1983	0.009608	0.0096	0.009516	0.009466	0.009395	0.009089
1984	0.0101	0.0101	0.01009	0.01005	0.01001	0.009827
1985	0.009843	0.009837	0.009813	0.009752	0.009698	0.009372
1986	0.009476	0.009475	0.009466	0.009414	0.009374	0.009175
1987	0.00901	0.009007	0.008988	0.008967	0.008955	0.008562
1988	0.008068	0.008068	0.008064	0.008042	0.008033	0.007702
1989	0.008887	0.008887	0.008881	0.008855	0.008629	0.008175
1990	0.008812	0.008806	0.008779	0.00872	0.008719	0.00831

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0101	0.0101	0.01009	0.01005	0.01001	0.009827
0.064516129032258 1		0.01003	0.01003	0.01002	0.009979	0.009913	0.009379
0.096774193548387 1		0.009992	0.009992	0.009986	0.009878	0.009829	0.009372
0.129032258064516		0.009961	0.009956	0.009932	0.00986	0.009815	0.009349
0.161290322580645		0.009943	0.009937	0.00991	0.009848	0.009737	0.009314
0.193548387096774		0.009843	0.009837	0.009813	0.009763	0.009722	0.009191
0.225806451612903		0.009782	0.009782	0.009777	0.009752	0.009698	0.009175
0.258064516129032		0.009771	0.009771	0.009751	0.009717	0.009684	0.009175
0.290322580645161		0.009608	0.0096	0.009561	0.009501	0.009438	0.00914
0.32258064516129		0.009572	0.009572	0.009516	0.009466	0.009395	0.009089
0.354838709677419		0.009476	0.009475	0.009466	0.009414	0.009383	0.009047
0.387096774193548		0.00946	0.00946	0.009451	0.009411	0.009374	0.008957
0.419354838709677		0.009381	0.009381	0.009378	0.009357	0.009324	0.008872
0.451612903225806		0.009361	0.00936	0.009355	0.009324	0.009286	0.008835
0.483870967741936		0.00932	0.00932	0.009312	0.009274	0.009236	0.008763
0.516129032258065		0.009172	0.009172	0.009166	0.009134	0.009052	0.008668
0.548387096774194		0.009116	0.009109	0.00908	0.009012	0.008973	0.008591
0.580645161290323		0.009024	0.009024	0.009018	0.008983	0.008959	0.008562
0.612903225806452		0.00901	0.009007	0.008988	0.008967	0.008955	0.008426
0.645161290322581		0.008887	0.008887	0.008881	0.008855	0.008719	0.00831
0.67741935483871		0.008812	0.008806	0.008779	0.00872	0.008629	0.008288
0.709677419354839		0.008639	0.008639	0.008632	0.008591	0.008584	0.008175
0.741935483870968		0.008155	0.008155	0.008149	0.008121	0.00809	0.007702
0.774193548387097		0.008068	0.008068	0.008064	0.008042	0.008033	0.007613
0.806451612903226		0.007822	0.007817	0.007794	0.007757	0.007735	0.00687
0.838709677419355		0.006059	0.006059	0.006055	0.006035	0.006015	0.005818
0.870967741935484		0.006043	0.006043	0.006038	0.006007	0.005972	0.004733
0.903225806451613		0.003792	0.003791	0.003766	0.003551	0.003488	0.002738
0.935483870967742		0.002136	0.002136	0.002136	0.002131	0.002121	0.00129
0.967741935483871		0.0007942	0.0007942	0.0007936	0.000791	0.0007881	0.0003243
0.1	0.0099889	0.0099884	0.0099806	0.0098762	0.0098276	0.0093697	
					Average of yearly averages:		0.00778644333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name	Value	Units	Comments	
Molecular weight	mwt	453	g/mol		
Henry's Law Const.	henry		atm-m^3/mol		
Vapor Pressure	vapr		torr		
Solubility sol	0.16	mg/L			
Kd Kd		mg/L			
Koc Koc	4208	mg/L			
Photolysis half-life	kdp	7	days	Half-life	
Aerobic Aquatic Metabolism	kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife
Aerobic Soil Metabolism	asm	700	days	Halfife	
Hydrolysis: pH 7		days	Half-life		
Method: CAM	1	integer	See PRZM manual		
Incorporation Depth:	DEPI	0.1	cm		
Application Rate:	TAPP	0.0033	kg/ha		
Application Efficiency:	APPEFF	1.0	fraction		
Spray Drift DRFT		fraction of application rate applied to pond			
Application Date	Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17: FILTRA					

	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run		IR	Pond	
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)

Fire Ants (Chipco Sod Farm)

Fipronil

stored as FLTURFFIPben.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthie segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001605	0.001602	0.001558	0.001303	0.001132	0.0003854
1962	0.002975	0.002971	0.002889	0.002439	0.00211	0.0007044
1963	0.008003	0.007998	0.007688	0.003956	0.0028	0.001548
1964	0.007931	0.007851	0.00742	0.006246	0.005249	0.003147
1965	0.003568	0.003563	0.003451	0.00283	0.002301	0.001127
1966	0.00527	0.005261	0.005087	0.004661	0.004485	0.002125
1967	0.002164	0.002161	0.002091	0.001739	0.001611	0.0007554
1968	0.007709	0.007702	0.007549	0.006688	0.005216	0.002771
1969	0.00513	0.005126	0.005024	0.004673	0.004338	0.002249
1970	0.004347	0.00429	0.004055	0.003336	0.002793	0.001153
1971	0.008906	0.008897	0.008699	0.007578	0.006058	0.002959
1972	0.0106	0.01059	0.01039	0.008197	0.005757	0.002651
1973	0.0086	0.008394	0.007512	0.005785	0.004713	0.001874
1974	0.001574	0.001572	0.001523	0.001329	0.001152	0.0005149
1975	0.001368	0.001366	0.001317	0.001078	0.001018	0.0005335
1976	0.008995	0.00898	0.008762	0.008091	0.007218	0.002369
1977	0.004299	0.004296	0.004234	0.003841	0.003347	0.001537
1978	0.007053	0.007045	0.006866	0.005902	0.0048	0.002407
1979	0.0115	0.01149	0.01126	0.009838	0.00775	0.003533
1980	0.008076	0.007853	0.006946	0.005363	0.004411	0.001574
1981	0.001605	0.001603	0.001552	0.001299	0.001099	0.0007141
1982	0.008629	0.00861	0.008343	0.007013	0.006074	0.002527
1983	0.01123	0.01122	0.01099	0.009903	0.007956	0.002919
1984	0.00876	0.008689	0.008178	0.006596	0.005745	0.003432
1985	0.001997	0.001969	0.001817	0.00142	0.001154	0.0007991
1986	0.005031	0.005027	0.004925	0.004311	0.003708	0.001913
1987	0.002691	0.002688	0.002666	0.002399	0.001876	0.0008202
1988	0.007293	0.007287	0.007146	0.003993	0.002809	0.00127
1989	0.02558	0.02556	0.02502	0.02184	0.01786	0.00659
1990	0.01319	0.01272	0.01092	0.007812	0.006275	0.002115

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.02558	0.02556	0.02502	0.02184	0.01786	0.00659
0.0645161290322581		0.01319	0.01272	0.01126	0.009903	0.007956	0.003533
0.0967741935483871		0.0115	0.01149	0.01099	0.009838	0.00775	0.003432
0.129032258064516		0.01123	0.01122	0.01092	0.008197	0.007218	0.003147
0.161290322580645		0.0106	0.01059	0.01039	0.008091	0.006275	0.002959
0.193548387096774		0.008995	0.00898	0.008762	0.007812	0.006074	0.002919
0.225806451612903		0.008906	0.008897	0.008699	0.007578	0.006058	0.002771
0.258064516129032		0.00876	0.008689	0.008343	0.007013	0.005757	0.002651
0.290322580645161		0.008629	0.00861	0.008178	0.006688	0.005745	0.002527
0.32258064516129		0.0086	0.008394	0.007688	0.006596	0.005249	0.002407
0.354838709677419		0.008076	0.007998	0.007549	0.006246	0.005216	0.002369
0.387096774193548		0.008003	0.007853	0.007512	0.005902	0.0048	0.002249
0.419354838709677		0.007931	0.007851	0.00742	0.005785	0.004713	0.002125
0.451612903225806		0.007709	0.007702	0.007146	0.005363	0.004485	0.002115
0.483870967741936		0.007293	0.007287	0.006946	0.004673	0.004411	0.001913
0.516129032258065		0.007053	0.007045	0.006866	0.004661	0.004338	0.001874
0.548387096774194		0.00527	0.005261	0.005087	0.004311	0.003708	0.001574
0.580645161290323		0.00513	0.005126	0.005024	0.003993	0.003347	0.001548
0.612903225806452		0.005031	0.005027	0.004925	0.003956	0.002809	0.001537
0.645161290322581		0.004347	0.004296	0.004234	0.003841	0.0028	0.00127
0.67741935483871		0.004299	0.00429	0.004055	0.003336	0.002793	0.001153
0.709677419354839		0.003568	0.003563	0.003451	0.00283	0.002301	0.001127
0.741935483870968		0.002975	0.002971	0.002889	0.002439	0.00211	0.0008202
0.774193548387097		0.002691	0.002688	0.002666	0.002399	0.001876	0.0007991
0.806451612903226		0.002164	0.002161	0.002091	0.001739	0.001611	0.0007554
0.838709677419355		0.001997	0.001969	0.001817	0.00142	0.001154	0.0007141
0.870967741935484		0.001605	0.001603	0.001558	0.001329	0.001152	0.0007044
0.903225806451613		0.001605	0.001602	0.001552	0.001303	0.001132	0.0005335
0.935483870967742		0.001574	0.001572	0.001523	0.001299	0.001099	0.0005149
0.967741935483871		0.001368	0.001366	0.001317	0.001078	0.001018	0.0003854
0.1	0.011473	0.011463	0.010983	0.0096739	0.0076968	0.0034035	
					Average of yearly averages:		0.00196723333333333

Inputs generated by pe4.pl - 8-August-2003

US EPA ARCHIVE DOCUMENT

Data used for this run:
Output File: FLTURFFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	33.7	days	Halfife	
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.014	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as FLTURF950ben.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001896	0.0001896	0.0001895	0.0001891	0.0001888	7.714e-005
1962	0.0006897	0.0006897	0.0006894	0.0006882	0.0006833	0.000379
1963	0.001561	0.00156	0.001534	0.001355	0.001298	0.0009641
1964	0.002391	0.002391	0.00239	0.002385	0.00238	0.001932
1965	0.002425	0.002425	0.002424	0.002414	0.002402	0.002352
1966	0.003237	0.003237	0.003235	0.003225	0.003221	0.002784
1967	0.003187	0.003187	0.003186	0.003175	0.003165	0.003114
1968	0.004027	0.004027	0.004026	0.004017	0.003962	0.00347
1969	0.004384	0.004383	0.004356	0.004304	0.004263	0.003999
1970	0.004436	0.004436	0.004434	0.004425	0.00442	0.00422
1971	0.004467	0.004467	0.004465	0.004456	0.004384	0.004143
1972	0.005013	0.005013	0.005011	0.004894	0.004788	0.004533
1973	0.00501	0.005009	0.005002	0.004985	0.004967	0.004768
1974	0.004635	0.004635	0.004633	0.004618	0.004605	0.004475
1975	0.004563	0.00456	0.00455	0.004524	0.004504	0.004344
1976	0.00467	0.004669	0.004665	0.004641	0.004616	0.004398
1977	0.004761	0.004761	0.00476	0.00475	0.004736	0.004608
1978	0.004632	0.004632	0.004629	0.004615	0.004589	0.00453
1979	0.005245	0.005245	0.005243	0.0052	0.005111	0.00484
1980	0.005228	0.005226	0.005217	0.005203	0.005188	0.00496
1981	0.004711	0.004711	0.004709	0.004697	0.00468	0.004596
1982	0.004941	0.004941	0.004937	0.004924	0.004911	0.004773
1983	0.005272	0.005264	0.005187	0.005119	0.005036	0.004833
1984	0.005445	0.005444	0.005441	0.00542	0.005399	0.005333
1985	0.005278	0.005277	0.005269	0.005247	0.005226	0.00506
1986	0.005197	0.005197	0.005195	0.005182	0.005166	0.005084
1987	0.005012	0.005012	0.00501	0.005004	0.005001	0.00484
1988	0.004676	0.004676	0.004674	0.004667	0.004656	0.004506
1989	0.005598	0.005598	0.005596	0.005584	0.005418	0.00502
1990	0.005579	0.005577	0.005565	0.005545	0.005545	0.005329

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.005598	0.005598	0.005596	0.005584	0.005545	0.005333
0.0645161290322581		0.005579	0.005577	0.005565	0.005545	0.005418	0.005329
0.0967741935483871		0.005445	0.005444	0.005441	0.00542	0.005399	0.005084
0.129032258064516		0.005278	0.005277	0.005269	0.005247	0.005226	0.00506
0.161290322580645		0.005272	0.005264	0.005243	0.005203	0.005188	0.00502
0.193548387096774		0.005245	0.005245	0.005217	0.0052	0.005166	0.00496
0.225806451612903		0.005228	0.005226	0.005195	0.005182	0.005111	0.00484
0.258064516129032		0.005197	0.005197	0.005187	0.005119	0.005036	0.00484
0.290322580645161		0.005013	0.005013	0.005011	0.005004	0.005001	0.004833
0.32258064516129		0.005012	0.005012	0.00501	0.004985	0.004967	0.004773
0.354838709677419		0.00501	0.005009	0.005002	0.004924	0.004911	0.004768
0.387096774193548		0.004941	0.004941	0.004937	0.004894	0.004788	0.004608
0.419354838709677		0.004761	0.004761	0.00476	0.00475	0.004736	0.004596
0.451612903225806		0.004711	0.004711	0.004709	0.004697	0.00468	0.004533
0.483870967741936		0.004676	0.004676	0.004674	0.004667	0.004656	0.00453
0.51612903225806 5		0.00467	0.004669	0.004665	0.004641	0.004616	0.004506
0.548387096774194		0.004635	0.004635	0.004633	0.004618	0.004605	0.004475
0.580645161290323		0.004632	0.004632	0.004629	0.004615	0.004589	0.004398

0.612903225806452	0.004563	0.00456	0.00455	0.004524	0.004504	0.004344
0.645161290322581	0.004467	0.004467	0.004465	0.004456	0.00442	0.00422
0.6774193548387 1	0.004436	0.004436	0.004434	0.004425	0.004384	0.004143
0.709677419354839	0.004384	0.004383	0.004356	0.004304	0.004263	0.003999
0.741935483870968	0.004027	0.004027	0.004026	0.004017	0.003962	0.00347
0.774193548387097	0.003237	0.003237	0.003235	0.003225	0.003221	0.003114
0.806451612903226	0.003187	0.003187	0.003186	0.003175	0.003165	0.002784
0.838709677419355	0.002425	0.002425	0.002424	0.002414	0.002402	0.002352
0.870967741935484	0.002391	0.002391	0.00239	0.002385	0.00238	0.001932
0.903225806451613	0.001561	0.00156	0.001534	0.001355	0.001298	0.0009641
0.935483870967742	0.0006897	0.0006897	0.0006894	0.0006882	0.0006833	0.000379
0.967741935483871	0.0001896	0.0001896	0.0001895	0.0001891	0.0001888	7.714e-005

0.1	0.0054283	0.0054273	0.0054238	0.0054027	0.0053817	0.0050816

Average of yearly averages: 0.00394214133333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF950
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife	
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0007	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as FLTURF513ben.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	8.776e-005	8.776e-005	8.774e-005	8.717e-005	8.587e-005	3.45e-005
1962	0.0002439	0.0002439	0.0002439	0.0002428	0.0002404	0.0001502
1963	0.0005179	0.0005164	0.0004994	0.0004469	0.0004318	0.0003283
1964	0.000749	0.000749	0.0007488	0.0007477	0.0007439	0.0006479
1965	0.0007821	0.0007821	0.0007818	0.0007797	0.0007785	0.0007561
1966	0.001002	0.001002	0.001002	0.001001	0.001	0.0008903
1967	0.001002	0.001002	0.001002	0.001	0.0009984	0.0009799
1968	0.00128	0.00128	0.00128	0.001268	0.001245	0.001099
1969	0.001383	0.001382	0.001373	0.001355	0.001336	0.001275
1970	0.001402	0.001402	0.001402	0.0014	0.001398	0.001336
1971	0.001464	0.001464	0.001464	0.001451	0.00142	0.001334
1972	0.001623	0.001622	0.001613	0.001559	0.001526	0.001467
1973	0.001632	0.001632	0.001632	0.00163	0.001627	0.00156
1974	0.001488	0.001487	0.001482	0.001473	0.001466	0.001433
1975	0.001403	0.001402	0.001399	0.001391	0.001385	0.001336
1976	0.001446	0.001446	0.001445	0.001441	0.001436	0.00136
1977	0.001466	0.001466	0.001465	0.001462	0.001458	0.001424
1978	0.001474	0.001474	0.001474	0.00147	0.001454	0.001421
1979	0.00168	0.00168	0.001675	0.001641	0.001606	0.001532
1980	0.001682	0.001682	0.001682	0.001681	0.001678	0.001608
1981	0.001518	0.001518	0.001518	0.001515	0.001511	0.001483
1982	0.001609	0.001609	0.001608	0.001605	0.001601	0.001552
1983	0.00171	0.001708	0.00169	0.001661	0.001625	0.001565
1984	0.001807	0.001807	0.001807	0.001803	0.001798	0.001759
1985	0.001737	0.001737	0.001735	0.00173	0.001723	0.001661
1986	0.001674	0.001674	0.001673	0.001671	0.001667	0.001645
1987	0.001628	0.001628	0.001626	0.001623	0.001623	0.001562
1988	0.001509	0.001509	0.001508	0.001507	0.001504	0.001454
1989	0.001952	0.001951	0.001945	0.001906	0.00182	0.001654
1990	0.001953	0.001953	0.001953	0.001947	0.001945	0.001857

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001953	0.001953	0.001953	0.001947	0.001945	0.001857

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0.0645161290322581	0.001952	0.001951	0.001945	0.001906	0.00182	0.001759
0.0967741935483871	0.001807	0.001807	0.001807	0.001803	0.001798	0.001661
0.129032258064516	0.001737	0.001737	0.001735	0.00173	0.001723	0.001654
0.161290322580645	0.00171	0.001708	0.00169	0.001681	0.001678	0.001645
0.193548387096774	0.001682	0.001682	0.001682	0.001671	0.001667	0.001608
0.225806451612903	0.00168	0.00168	0.001675	0.001661	0.001627	0.001565
0.258064516129032	0.001674	0.001674	0.001673	0.001641	0.001625	0.001562
0.290322580645161	0.001632	0.001632	0.001632	0.00163	0.001623	0.00156
0.32258064516129	0.001628	0.001628	0.001626	0.001623	0.001606	0.001552
0.354838709677419	0.001623	0.001622	0.001613	0.001605	0.001601	0.001532
0.387096774193548	0.001609	0.001609	0.001608	0.001559	0.001526	0.001483
0.419354838709677	0.001518	0.001518	0.001518	0.001515	0.001511	0.001467
0.451612903225806	0.001509	0.001509	0.001508	0.001507	0.001504	0.001454
0.483870967741936	0.001488	0.001487	0.001482	0.001473	0.001466	0.001433
0.516129032258065	0.001474	0.001474	0.001474	0.00147	0.001458	0.001424
0.548387096774194	0.001466	0.001466	0.001465	0.001462	0.001454	0.001421
0.580645161290323	0.001464	0.001464	0.001464	0.001451	0.001436	0.00136
0.612903225806452	0.001446	0.001446	0.001445	0.001441	0.00142	0.001336
0.645161290322581	0.001403	0.001402	0.001402	0.0014	0.001398	0.001336
0.67741935483871	0.001402	0.001402	0.001399	0.001391	0.001385	0.001334
0.709677419354839	0.001383	0.001382	0.001373	0.001355	0.001336	0.001275
0.741935483870968	0.00128	0.00128	0.00128	0.001268	0.001245	0.001099
0.774193548387097	0.001002	0.001002	0.001002	0.001001	0.001	0.0009799
0.806451612903226	0.001002	0.001002	0.001002	0.001	0.0009984	0.0008903
0.838709677419355	0.0007821	0.0007821	0.0007818	0.0007797	0.0007785	0.0007561
0.870967741935484	0.000749	0.000749	0.0007488	0.0007477	0.0007439	0.0006479
0.903225806451613	0.0005179	0.0005164	0.0004994	0.0004469	0.0004318	0.0003283
0.935483870967742	0.0002439	0.0002439	0.0002439	0.0002428	0.0002404	0.0001502
0.967741935483871	8.776e-005	8.776e-005	8.774e-005	8.717e-005	8.587e-005	3.45e-005

0.1	0.0018	0.0018	0.0017998	0.0017957	0.0017905	0.0016603	
					Average of yearly averages:		0.00127214

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments
Molecular weight		mwt	389	g/mol	
Henry's Law Const.		henry		atm-m^3/mol	
Vapor Pressure		vapr		torr	
Solubility	sol	0.95	mg/L		
Kd	Kd		mg/L		
Koc	Koc	1290	mg/L		
Photolysis half-life		kdp		days	Half-life
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife
Anaerobic Aquatic Metabolism		kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	1	integer	See PRZM manual	
Incorporation Depth:		DEPI	0.1	cm	
Application Rate:		TAPP	0.0001	kg/ha	
Application Efficiency:		APPEFF	1.0	fraction	
Spray Drift	DRFT		fraction of application rate applied to pond		
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	180	days	Set to 0 or delete line for single app.	
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	*0.5*			
Flag for Index Res. Run		IR	Pond		
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)	

MB46136

stored as FLTURF136ben.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0007946	0.0007946	0.000794	0.0007933	0.0007915	0.0003252
1962	0.002903	0.002903	0.002901	0.002895	0.00288	0.001589
1963	0.006583	0.006578	0.006479	0.005704	0.00546	0.004043
1964	0.01008	0.01008	0.01007	0.01004	0.01002	0.008108
1965	0.01003	0.01003	0.01002	0.009968	0.00991	0.009717
1966	0.01331	0.01331	0.0133	0.01326	0.01322	0.01136
1967	0.01287	0.01286	0.01283	0.01275	0.01269	0.01252
1968	0.01614	0.01614	0.01613	0.01608	0.01586	0.01381
1969	0.01738	0.01738	0.01728	0.01707	0.01691	0.01582
1970	0.01755	0.01755	0.01754	0.0175	0.01748	0.01651
1971	0.01723	0.01723	0.01722	0.01717	0.01688	0.01591
1972	0.01939	0.01939	0.01938	0.0189	0.01844	0.01738
1973	0.01935	0.01935	0.0193	0.01921	0.01912	0.01817
1974	0.01745	0.01745	0.01743	0.01736	0.01729	0.01673
1975	0.01706	0.01705	0.01699	0.01687	0.01677	0.01604
1976	0.01733	0.01733	0.01731	0.0172	0.01709	0.01615
1977	0.01764	0.01764	0.01763	0.01759	0.01752	0.01693

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1978	0.01692	0.01692	0.01691	0.01684	0.01673	0.01648
1979	0.01951	0.01951	0.0195	0.01932	0.01894	0.01775
1980	0.0194	0.01939	0.01934	0.01926	0.01918	0.01814
1981	0.01695	0.01695	0.01694	0.01688	0.0168	0.01644
1982	0.01785	0.01785	0.01784	0.01778	0.01772	0.01712
1983	0.01923	0.0192	0.01886	0.01857	0.01822	0.01732
1984	0.01985	0.01985	0.01984	0.01974	0.01965	0.01939
1985	0.0191	0.01909	0.01904	0.01893	0.01882	0.0181
1986	0.01867	0.01867	0.01866	0.01859	0.01851	0.01814
1987	0.01779	0.01779	0.01777	0.01775	0.01774	0.01706
1988	0.01633	0.01633	0.01632	0.01628	0.01623	0.0156
1989	0.0203	0.0203	0.02029	0.02023	0.01955	0.01781
1990	0.02016	0.02014	0.02008	0.01996	0.01998	0.01903

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0203	0.0203	0.02029	0.02023	0.01998	0.01939
0.0645161290322581		0.02016	0.02014	0.02008	0.01996	0.01965	0.01903
0.0967741935483871		0.01985	0.01985	0.01984	0.01974	0.01955	0.01817
0.129032258064516		0.01951	0.01951	0.0195	0.01932	0.01918	0.01814
0.161290322580645		0.0194	0.01939	0.01938	0.01926	0.01912	0.01814
0.193548387096774		0.01939	0.01939	0.01934	0.01921	0.01894	0.0181
0.225806451612903		0.01935	0.01935	0.0193	0.01893	0.01882	0.01781
0.258064516129032		0.01923	0.0192	0.01904	0.0189	0.01851	0.01775
0.290322580645161		0.0191	0.01909	0.01886	0.01859	0.01844	0.01738
0.32258064516129		0.01867	0.01867	0.01866	0.01857	0.01822	0.01732
0.354838709677419		0.01785	0.01785	0.01784	0.01778	0.01774	0.01712
0.387096774193548		0.01779	0.01779	0.01777	0.01775	0.01772	0.01706
0.419354838709677		0.01764	0.01764	0.01763	0.01759	0.01752	0.01693
0.451612903225806		0.01755	0.01755	0.01754	0.0175	0.01748	0.01673
0.483870967741936		0.01745	0.01745	0.01743	0.01736	0.01729	0.01651
0.516129032258065		0.01738	0.01738	0.01731	0.0172	0.01709	0.01648
0.548387096774194		0.01733	0.01733	0.01728	0.01717	0.01691	0.01644
0.580645161290323		0.01723	0.01723	0.01722	0.01707	0.01688	0.01615
0.612903225806452		0.01706	0.01705	0.01699	0.01688	0.0168	0.01604
0.645161290322581		0.01695	0.01695	0.01694	0.01687	0.01677	0.01591
0.67741935483871		0.01692	0.01692	0.01691	0.01684	0.01673	0.01582
0.709677419354839		0.01633	0.01633	0.01632	0.01628	0.01623	0.0156
0.741935483870968		0.01614	0.01614	0.01613	0.01608	0.01586	0.01381
0.774193548387097		0.01331	0.01331	0.0133	0.01326	0.01322	0.01252
0.806451612903226		0.01287	0.01286	0.01283	0.01275	0.01269	0.01136
0.838709677419355		0.01008	0.01008	0.01007	0.01004	0.01002	0.009717
0.870967741935484		0.01003	0.01003	0.01002	0.009968	0.00991	0.008108
0.903225806451613		0.006583	0.006578	0.006479	0.005704	0.00546	0.004043
0.935483870967742		0.002903	0.002903	0.002901	0.002895	0.00288	0.001589
0.967741935483871		0.0007946	0.0007946	0.000794	0.0007933	0.0007915	0.0003252
0.1	0.019816	0.019816	0.019806	0.019698	0.019513	0.018167	
					Average of yearly averages:		0.01464974

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTURF136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0033	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

House Perimeter (Termidor Sod Farm)

<u>Fipronil</u>

US EPA ARCHIVE DOCUMENT

stored as PerimFIPben.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	6.876e-005	6.865e-005	6.675e-005	5.583e-005	4.851e-005	1.651e-005
1962	0.0001275	0.0001273	0.0001238	0.0001045	9.04e-005	3.019e-005
1963	0.0003429	0.0003427	0.0003294	0.0001695	0.00012	6.634e-005
1964	0.0003399	0.0003364	0.000318	0.0002677	0.0002249	0.0001349
1965	0.0001529	0.0001527	0.0001479	0.0001213	9.859e-005	4.831e-005
1966	0.0002259	0.0002255	0.000218	0.0001998	0.0001922	9.108e-005
1967	9.273e-005	9.261e-005	8.964e-005	7.452e-005	6.904e-005	3.238e-005
1968	0.0003304	0.0003301	0.0003235	0.0002866	0.0002236	0.0001187
1969	0.0002199	0.0002197	0.0002153	0.0002003	0.0001859	9.638e-005
1970	0.0001863	0.0001839	0.0001738	0.000143	0.0001197	4.94e-005
1971	0.0003817	0.0003813	0.0003728	0.0003248	0.0002596	0.0001268
1972	0.0004544	0.000454	0.0004455	0.0003513	0.0002467	0.0001136
1973	0.0003686	0.0003597	0.000322	0.0002479	0.000202	8.031e-005
1974	6.748e-005	6.738e-005	6.53e-005	5.696e-005	4.939e-005	2.207e-005
1975	5.862e-005	5.854e-005	5.642e-005	4.62e-005	4.364e-005	2.286e-005
1976	0.0003854	0.0003848	0.0003754	0.0003467	0.0003093	0.0001015
1977	0.0001842	0.0001841	0.0001814	0.0001646	0.0001434	6.585e-005
1978	0.0003023	0.000302	0.0002943	0.000253	0.0002057	0.0001031
1979	0.0004929	0.0004925	0.0004826	0.0004217	0.0003321	0.0001514
1980	0.0003461	0.0003365	0.0002977	0.0002298	0.000189	6.748e-005
1981	6.879e-005	6.868e-005	6.65e-005	5.565e-005	4.71e-005	3.061e-005
1982	0.0003699	0.0003691	0.0003577	0.0003006	0.0002604	0.0001083
1983	0.0004812	0.0004808	0.0004709	0.0004244	0.0003409	0.0001251
1984	0.0003754	0.0003724	0.0003505	0.0002827	0.0002462	0.0001471
1985	8.556e-005	8.437e-005	7.787e-005	6.086e-005	4.946e-005	3.424e-005
1986	0.0002156	0.0002154	0.000211	0.0001847	0.0001589	8.196e-005
1987	0.0001153	0.0001152	0.0001143	0.0001028	8.038e-005	3.515e-005
1988	0.0003125	0.0003123	0.0003063	0.0001711	0.0001204	5.441e-005
1989	0.001096	0.001095	0.001072	0.0009357	0.0007654	0.0002824
1990	0.0005651	0.0005449	0.0004679	0.0003348	0.0002689	9.064e-005

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001096	0.001095	0.001072	0.0009357	0.0007654	0.0002824
0.0645161290322581		0.0005651	0.0005449	0.0004826	0.0004244	0.0003409	0.0001514
0.0967741935483871		0.0004929	0.0004925	0.0004709	0.0004217	0.0003321	0.0001471
0.129032258064516		0.0004812	0.0004808	0.0004679	0.0003513	0.0003093	0.0001349
0.161290322580645		0.0004544	0.000454	0.0004455	0.0003467	0.0002689	0.0001268
0.193548387096774		0.0003854	0.0003848	0.0003754	0.0003348	0.0002604	0.0001251
0.225806451612903		0.0003817	0.0003813	0.0003728	0.0003248	0.0002596	0.0001187
0.258064516129032		0.0003754	0.0003724	0.0003577	0.0003006	0.0002467	0.0001136
0.290322580645161		0.0003699	0.0003691	0.0003505	0.0002866	0.0002462	0.0001083
0.32258064516129		0.0003686	0.0003597	0.0003294	0.0002827	0.0002249	0.0001031
0.354838709677419		0.0003461	0.0003427	0.0003235	0.0002677	0.0002236	0.0001015
0.387096774193548		0.0003429	0.0003365	0.000322	0.000253	0.0002057	9.638e-005
0.419354838709677		0.0003399	0.0003364	0.000318	0.0002479	0.000202	9.108e-005
0.451612903225806		0.0003304	0.0003301	0.0003063	0.0002298	0.0001922	9.064e-005
0.483870967741936		0.0003125	0.0003123	0.0002977	0.0002003	0.000189	8.196e-005
0.516129032258065		0.0003023	0.000302	0.0002943	0.0001998	0.0001859	8.031e-005
0.548387096774194		0.0002259	0.0002255	0.000218	0.0001847	0.0001589	6.748e-005
0.580645161290323		0.0002199	0.0002197	0.0002153	0.0001711	0.0001434	6.634e-005
0.612903225806452		0.0002156	0.0002154	0.000211	0.0001695	0.0001204	6.585e-005
0.645161290322581		0.0001863	0.0001841	0.0001814	0.0001646	0.00012	5.441e-005
0.67741935483871		0.0001842	0.0001839	0.0001738	0.000143	0.0001197	4.94e-005
0.709677419354839		0.0001529	0.0001527	0.0001479	0.0001213	9.859e-005	4.831e-005
0.741935483870968		0.0001275	0.0001273	0.0001238	0.0001045	9.04e-005	3.515e-005
0.774193548387097		0.0001153	0.0001152	0.0001143	0.0001028	8.038e-005	3.424e-005
0.806451612903226		9.273e-005	9.261e-005	8.964e-005	7.452e-005	6.904e-005	3.238e-005
0.838709677419355		8.556e-005	8.437e-005	7.787e-005	6.086e-005	4.946e-005	3.061e-005
0.870967741935484		6.879e-005	6.868e-005	6.675e-005	5.696e-005	4.939e-005	3.019e-005
0.903225806451613		6.876e-005	6.865e-005	6.65e-005	5.583e-005	4.851e-005	2.286e-005
0.935483870967742		6.748e-005	6.738e-005	6.53e-005	5.565e-005	4.71e-005	2.207e-005
0.967741935483871		5.862e-005	5.854e-005	5.642e-005	4.62e-005	4.364e-005	1.651e-005
0.1	0.00049173	0.00049133	0.0004706	0.00041466	0.00032982	0.00014588	
					Average of yearly averages:		8.43023333333333e-005

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: PerimFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		

Application Rate:		TAPP	6E-4	kg/ha
Application Efficiency:		APPEFF	1.0	fraction
Spray Drift	DRFT		fraction of application rate applied to pond	
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm
Interval 1	interval	180	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run		IR	Pond	
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)

MB45950

stored as perim9502ben.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12842.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	3.705e-005	3.616e-005	2.64e-005	2.202e-005	2.13e-005	8.413e-006
1962	0.0001987	0.0001987	0.0001986	0.0001982	0.0001954	9.563e-005
1963	0.0004656	0.0004654	0.0004623	0.0004117	0.0003721	0.0002727
1964	0.0007966	0.0007966	0.0007962	0.0007941	0.000793	0.0006459
1965	0.0008622	0.0008622	0.0008619	0.0008593	0.0008571	0.0008107
1966	0.0009355	0.0009355	0.0009347	0.0009327	0.0009305	0.0008832
1967	0.001027	0.001026	0.001026	0.001023	0.00102	0.0009367
1968	0.00119	0.00119	0.00119	0.001185	0.001166	0.001057
1969	0.001384	0.001383	0.00137	0.001347	0.001346	0.001264
1970	0.001394	0.001394	0.001394	0.001392	0.001391	0.001351
1971	0.001537	0.001537	0.001536	0.001531	0.001524	0.001397
1972	0.001588	0.001588	0.001587	0.001583	0.001581	0.001517
1973	0.001565	0.001565	0.001563	0.001556	0.00155	0.001526
1974	0.001722	0.001722	0.001721	0.001712	0.001704	0.001569
1975	0.00168	0.00168	0.001679	0.001676	0.001672	0.001618
1976	0.001779	0.001779	0.001778	0.001771	0.001768	0.0017
1977	0.001704	0.001703	0.001703	0.001698	0.001691	0.0016
1978	0.001506	0.001506	0.001505	0.001501	0.001497	0.001436
1979	0.002295	0.002295	0.002294	0.002285	0.002283	0.001942
1980	0.002243	0.002241	0.002236	0.002225	0.002217	0.002143
1981	0.002084	0.002084	0.002083	0.002077	0.00207	0.002046
1982	0.002156	0.002156	0.002155	0.002147	0.002142	0.002068
1983	0.00214	0.00214	0.002138	0.002134	0.00213	0.002097
1984	0.002062	0.002062	0.002061	0.002053	0.002045	0.001968
1985	0.001965	0.001965	0.001964	0.001958	0.001942	0.001849
1986	0.001955	0.001955	0.001951	0.001941	0.001937	0.001872
1987	0.001843	0.001843	0.001841	0.001834	0.001831	0.001794
1988	0.001851	0.00185	0.001849	0.001823	0.001819	0.001753
1989	0.00185	0.001849	0.001846	0.001835	0.001827	0.001759
1990	0.001695	0.001694	0.00169	0.001683	0.001679	0.001625

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.002295	0.002295	0.002294	0.002285	0.002283	0.002143
0.0645161290322581		0.002243	0.002241	0.002236	0.002225	0.002217	0.002097
0.0967741935483871		0.002156	0.002156	0.002155	0.002147	0.002142	0.002068
0.129032258064516		0.00214	0.00214	0.002138	0.002134	0.00213	0.002046
0.161290322580645		0.002084	0.002084	0.002083	0.002077	0.00207	0.001968
0.193548387096774		0.002062	0.002062	0.002061	0.002053	0.002045	0.001942
0.225806451612903		0.001965	0.001965	0.001964	0.001958	0.001942	0.001872
0.258064516129032		0.001955	0.001955	0.001951	0.001941	0.001937	0.001849
0.290322580645161		0.001851	0.00185	0.001849	0.001835	0.001831	0.001794
0.32258064516129		0.00185	0.001849	0.001846	0.001834	0.001827	0.001759
0.354838709677419		0.001843	0.001843	0.001841	0.001823	0.001819	0.001753
0.387096774193548		0.001779	0.001779	0.001778	0.001771	0.001768	0.0017
0.419354838709677		0.001722	0.001722	0.001721	0.001712	0.001704	0.001625
0.451612903225806		0.001704	0.001703	0.001703	0.001698	0.001691	0.001618
0.483870967741936		0.001695	0.001694	0.00169	0.001683	0.001679	0.0016
0.516129032258065		0.00168	0.00168	0.001679	0.001676	0.001672	0.001569
0.548387096774194		0.001588	0.001588	0.001587	0.001583	0.001581	0.001526
0.580645161290323		0.001565	0.001565	0.001563	0.001556	0.00155	0.001517
0.612903225806452		0.001537	0.001537	0.001536	0.001531	0.001524	0.001436
0.645161290322581		0.001506	0.001506	0.001505	0.001501	0.001497	0.001397
0.67741935483871		0.001394	0.001394	0.001394	0.001392	0.001391	0.001351
0.709677419354839		0.001384	0.001383	0.00137	0.001347	0.001346	0.001264
0.741935483870968		0.00119	0.00119	0.00119	0.001185	0.001166	0.001057
0.774193548387097		0.001027	0.001026	0.001026	0.001023	0.00102	0.0009367
0.806451612903226		0.0009355	0.0009355	0.0009347	0.0009327	0.0009305	0.0008832
0.838709677419355		0.0008622	0.0008622	0.0008619	0.0008593	0.0008571	0.0008107
0.870967741935484		0.0007966	0.0007966	0.0007962	0.0007941	0.000793	0.0006459
0.903225806451613		0.0004656	0.0004654	0.0004623	0.0004117	0.0003721	0.0002727
0.935483870967742		0.0001987	0.0001987	0.0001986	0.0001982	0.0001954	9.563e-005
0.967741935483871		3.705e-005	3.616e-005	2.64e-005	2.202e-005	2.13e-005	8.413e-006
0.1	0.0021544	0.0021544	0.0021533	0.0021457	0.0021408	0.0020658	
					Average of yearly averages:		0.00142014143333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:

Output File: perim9502
Metfile: w12842.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	3E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as Perim513ben.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	5.265e-005	5.265e-005	5.264e-005	5.23e-005	5.152e-005	2.07e-005
1962	0.0001464	0.0001464	0.0001463	0.0001457	0.0001443	9.009e-005
1963	0.0003107	0.0003098	0.0002996	0.0002681	0.0002591	0.0001969
1964	0.0004494	0.0004494	0.0004493	0.0004486	0.0004463	0.0003888
1965	0.0004692	0.0004692	0.000469	0.0004678	0.0004671	0.0004536
1966	0.0006011	0.0006011	0.000601	0.0006004	0.0006	0.0005342
1967	0.0006013	0.0006013	0.0006011	0.0006001	0.0005991	0.000588
1968	0.0007683	0.0007683	0.0007678	0.0007611	0.0007473	0.0006594
1969	0.0008297	0.0008292	0.000824	0.000813	0.0008019	0.0007652
1970	0.0008412	0.0008412	0.000841	0.0008398	0.0008386	0.0008018
1971	0.0008786	0.0008786	0.0008783	0.0008703	0.0008517	0.0008003
1972	0.0009737	0.0009733	0.0009676	0.0009353	0.0009153	0.0008801
1973	0.0009791	0.0009791	0.000979	0.0009781	0.0009761	0.000936
1974	0.0008926	0.000892	0.0008893	0.0008837	0.0008797	0.0008597
1975	0.0008417	0.0008413	0.0008394	0.0008347	0.0008309	0.0008017
1976	0.0008673	0.0008673	0.000867	0.0008645	0.0008614	0.0008162
1977	0.0008795	0.0008794	0.000879	0.0008771	0.0008749	0.0008541
1978	0.0008844	0.0008844	0.0008842	0.0008819	0.0008725	0.0008523
1979	0.001008	0.001008	0.001005	0.0009847	0.0009638	0.0009191
1980	0.001009	0.001009	0.001009	0.001009	0.001007	0.000965
1981	0.000911	0.000911	0.0009107	0.0009089	0.0009065	0.0008896
1982	0.0009653	0.0009653	0.0009649	0.0009631	0.0009608	0.000931
1983	0.001026	0.001025	0.001014	0.0009968	0.0009751	0.0009391
1984	0.001084	0.001084	0.001084	0.001082	0.001079	0.001055
1985	0.001042	0.001042	0.001041	0.001038	0.001034	0.0009965
1986	0.001004	0.001004	0.001004	0.001002	0.001	0.0009873
1987	0.000977	0.0009767	0.0009756	0.000974	0.0009736	0.0009373
1988	0.0009053	0.0009053	0.0009051	0.000904	0.0009027	0.0008722
1989	0.001171	0.001171	0.001167	0.001144	0.001092	0.0009923
1990	0.001172	0.001172	0.001172	0.001169	0.001167	0.001114

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001172	0.001172	0.001172	0.001169	0.001167	0.001114
0.0645161290322581		0.001171	0.001171	0.001167	0.001144	0.001092	0.001055
0.0967741935483871		0.001084	0.001084	0.001084	0.001082	0.001079	0.0009965
0.129032258064516		0.001042	0.001042	0.001041	0.001038	0.001034	0.0009923
0.161290322580645		0.001026	0.001025	0.001014	0.001009	0.001007	0.0009873
0.193548387096774		0.001009	0.001009	0.001009	0.001002	0.001	0.000965
0.225806451612903		0.001008	0.001008	0.001005	0.0009968	0.0009761	0.0009391
0.258064516129032		0.001004	0.001004	0.001004	0.0009847	0.0009751	0.0009373
0.290322580645161		0.0009791	0.0009791	0.000979	0.0009781	0.0009736	0.000936
0.32258064516129		0.000977	0.0009767	0.0009756	0.000974	0.0009638	0.000931
0.354838709677419		0.0009737	0.0009733	0.0009676	0.0009631	0.0009608	0.0009191
0.387096774193548		0.0009653	0.0009653	0.0009649	0.0009353	0.0009153	0.0008896
0.419354838709677		0.000911	0.000911	0.0009107	0.0009089	0.0009065	0.0008801
0.451612903225806		0.0009053	0.0009053	0.0009051	0.000904	0.0009027	0.0008722
0.483870967741936		0.0008926	0.000892	0.0008893	0.0008837	0.0008797	0.0008597
0.516129032258065		0.0008844	0.0008844	0.0008842	0.0008819	0.0008749	0.0008541
0.548387096774194		0.0008795	0.0008794	0.000879	0.0008771	0.0008725	0.0008523
0.580645161290323		0.0008786	0.0008786	0.0008783	0.0008703	0.0008614	0.0008162
0.612903225806452		0.0008673	0.0008673	0.000867	0.0008645	0.0008517	0.0008018
0.645161290322581		0.0008417	0.0008413	0.000841	0.0008398	0.0008386	0.0008017

0.67741935483871	0.0008412	0.0008412	0.0008394	0.0008347	0.0008309	0.0008003
0.709677419354839	0.0008297	0.0008292	0.000824	0.000813	0.0008019	0.0007652
0.741935483870968	0.0007683	0.0007683	0.0007678	0.0007611	0.0007473	0.0006594
0.774193548387097	0.0006013	0.0006013	0.0006011	0.0006004	0.0006	0.000588
0.806451612903226	0.0006011	0.0006011	0.000601	0.0006001	0.0005991	0.0005342
0.838709677419355	0.0004692	0.0004692	0.000469	0.0004678	0.0004671	0.0004536
0.870967741935484	0.0004494	0.0004494	0.0004493	0.0004486	0.0004463	0.0003888
0.903225806451613	0.0003107	0.0003098	0.0002996	0.0002681	0.0002591	0.0001969
0.935483870967742	0.0001464	0.0001464	0.0001463	0.0001457	0.0001443	9.009e-005
0.967741935483871	5.265e-005	5.265e-005	5.264e-005	5.23e-005	5.152e-005	2.07e-005

0.1	0.0010798	0.0010798	0.0010797	0.0010776	0.0010745	0.00099608
					Average of yearly averages:	0.000763249666666666

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	6E-5	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as Perim136ben.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0003372	0.0003372	0.0003369	0.0003366	0.0003358	0.000138
1962	0.001232	0.001232	0.001231	0.001228	0.001222	0.0006743
1963	0.002793	0.002791	0.002748	0.00242	0.002316	0.001715
1964	0.004274	0.004274	0.004273	0.004258	0.004249	0.003439
1965	0.004254	0.004254	0.00425	0.004229	0.004204	0.004122
1966	0.005646	0.005646	0.005642	0.005623	0.005609	0.00482
1967	0.005461	0.005457	0.005441	0.005408	0.005384	0.005311
1968	0.006846	0.006846	0.006842	0.00682	0.006727	0.005858
1969	0.007374	0.007372	0.007328	0.007241	0.007174	0.00671
1970	0.007443	0.007443	0.007439	0.007424	0.007414	0.007005
1971	0.007311	0.007311	0.007306	0.007285	0.00716	0.006748
1972	0.008224	0.008224	0.00822	0.008018	0.007824	0.007372
1973	0.00821	0.008207	0.008189	0.008148	0.008109	0.007708
1974	0.007402	0.007402	0.007396	0.007365	0.007334	0.007098
1975	0.007237	0.007232	0.007209	0.007156	0.007115	0.006804
1976	0.007351	0.007351	0.007343	0.007297	0.007248	0.00685
1977	0.007483	0.007483	0.007479	0.007461	0.007434	0.007182
1978	0.00718	0.007179	0.007174	0.007144	0.007097	0.00699
1979	0.008276	0.008276	0.008272	0.008198	0.008037	0.007532
1980	0.00823	0.008225	0.008204	0.008171	0.008137	0.007697
1981	0.00719	0.00719	0.007186	0.007161	0.007128	0.006975
1982	0.007575	0.007574	0.007567	0.007542	0.007518	0.007264
1983	0.008159	0.008145	0.008	0.007879	0.007729	0.007348
1984	0.008423	0.008423	0.008415	0.008374	0.008337	0.008226
1985	0.008103	0.008099	0.00808	0.00803	0.007986	0.007678
1986	0.00792	0.007919	0.007915	0.007886	0.007853	0.007696
1987	0.007546	0.007546	0.007541	0.007531	0.007526	0.007236
1988	0.006928	0.006928	0.006925	0.006907	0.006886	0.00662
1989	0.008614	0.008614	0.008608	0.008584	0.008292	0.007557
1990	0.008552	0.008546	0.00852	0.008468	0.008476	0.008073

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.008614	0.008614	0.008608	0.008584	0.008476	0.008226
0.0645161290322581		0.008552	0.008546	0.00852	0.008468	0.008337	0.008073
0.0967741935483871		0.008423	0.008423	0.008415	0.008374	0.008292	0.007708

0.129032258064516	0.008276	0.008276	0.008272	0.008198	0.008137	0.007697
0.161290322580645	0.00823	0.008225	0.00822	0.008171	0.008109	0.007696
0.193548387096774	0.008224	0.008224	0.008204	0.008148	0.008037	0.007678
0.225806451612903	0.00821	0.008207	0.008189	0.00803	0.007986	0.007557
0.258064516129032	0.008159	0.008145	0.00808	0.008018	0.007853	0.007532
0.290322580645161	0.008103	0.008099	0.008	0.007886	0.007824	0.007372
0.32258064516129	0.00792	0.007919	0.007915	0.007879	0.007729	0.007348
0.354838709677419	0.007575	0.007574	0.007567	0.007542	0.007526	0.007264
0.387096774193548	0.007546	0.007546	0.007541	0.007531	0.007518	0.007236
0.419354838709677	0.007483	0.007483	0.007479	0.007461	0.007434	0.007182
0.451612903225806	0.007443	0.007443	0.007439	0.007424	0.007414	0.007098
0.483870967741936	0.007402	0.007402	0.007396	0.007365	0.007334	0.007005
0.516129032258065	0.007374	0.007372	0.007343	0.007297	0.007248	0.00699
0.548387096774194	0.007351	0.007351	0.007328	0.007285	0.007174	0.006975
0.580645161290323	0.007311	0.007311	0.007306	0.007241	0.00716	0.00685
0.612903225806452	0.007237	0.007232	0.007209	0.007161	0.007128	0.006804
0.645161290322581	0.00719	0.00719	0.007186	0.007156	0.007115	0.006748
0.67741935483871	0.00718	0.007179	0.007174	0.007144	0.007097	0.00671
0.709677419354839	0.006928	0.006928	0.006925	0.006907	0.006886	0.00662
0.741935483870968	0.006846	0.006846	0.006842	0.00682	0.006727	0.005858
0.774193548387097	0.005646	0.005646	0.005642	0.005623	0.005609	0.005311
0.806451612903226	0.005461	0.005457	0.005441	0.005408	0.005384	0.00482
0.838709677419355	0.004274	0.004274	0.004273	0.004258	0.004249	0.004122
0.870967741935484	0.004254	0.004254	0.00425	0.004229	0.004204	0.003439
0.903225806451613	0.002793	0.002791	0.002748	0.00242	0.002316	0.001715
0.935483870967742	0.001232	0.001232	0.001231	0.001228	0.001222	0.0006743
0.967741935483871	0.0003372	0.0003372	0.0003369	0.0003366	0.0003358	0.000138

0.1	0.0084083	0.0084083	0.0084007	0.0083564	0.0082765	0.0077069

Average of yearly averages: 0.00621487666666666

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	1.4E-3	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

House Perimeter(Termidor Residential)

Fipronil

stored as PerimFIPben.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	6.876e-005	6.865e-005	6.675e-005	5.583e-005	4.851e-005	1.605e-005
1962	0.0001142	0.000114	0.0001109	9.36e-005	8.099e-005	2.582e-005
1963	0.0001526	0.0001524	0.0001476	0.0001208	0.0001013	3.379e-005
1964	0.0002512	0.0002509	0.0002433	0.0001962	0.0001727	5.897e-005
1965	0.0001481	0.0001479	0.0001432	0.0001175	9.55e-005	2.864e-005
1966	0.0002211	0.0002207	0.0002133	0.0001934	0.0001857	7.235e-005
1967	8.832e-005	8.82e-005	8.537e-005	7.064e-005	6.505e-005	2.443e-005
1968	0.0002596	0.000259	0.0002519	0.0002131	0.0001749	5.156e-005
1969	9.445e-005	9.43e-005	9.078e-005	7.455e-005	6.139e-005	2.682e-005
1970	4.173e-005	4.168e-005	4.034e-005	3.383e-005	2.86e-005	1.04e-005
1971	0.0001195	0.0001193	0.0001155	0.0001083	9.966e-005	4.211e-005
1972	0.0001218	0.0001216	0.0001172	9.404e-005	8.04e-005	3.035e-005
1973	3.555e-005	3.551e-005	3.434e-005	2.833e-005	2.312e-005	1.191e-005
1974	6.139e-005	6.131e-005	5.943e-005	5.199e-005	4.494e-005	1.496e-005
1975	5.105e-005	5.097e-005	4.915e-005	4.025e-005	3.843e-005	1.456e-005

US EPA ARCHIVE DOCUMENT

1976	0.0003533	0.0003527	0.0003442	0.0003188	0.0002852	8.761e-005
1977	6.316e-005	6.306e-005	6.106e-005	5.297e-005	4.648e-005	1.923e-005
1978	0.0001645	0.0001643	0.0001586	0.0001419	0.0001309	4.421e-005
1979	0.0001726	0.0001724	0.0001661	0.000134	0.0001181	3.816e-005
1980	3.806e-005	3.801e-005	3.69e-005	3.238e-005	3.087e-005	1.255e-005
1981	6.691e-005	6.681e-005	6.469e-005	5.411e-005	4.569e-005	1.71e-005
1982	0.0003351	0.0003346	0.0003242	0.0002728	0.0002381	7.916e-005
1983	0.000113	0.0001129	0.0001094	8.895e-005	8.13e-005	3.059e-005
1984	0.0002496	0.0002493	0.0002411	0.0002225	0.0002108	7.039e-005
1985	4.478e-005	4.471e-005	4.315e-005	3.459e-005	3.33e-005	1.296e-005
1986	0.0001065	0.0001064	0.0001025	8.32e-005	6.954e-005	2.057e-005
1987	1.387e-005	1.385e-005	1.331e-005	1.084e-005	9.75e-006	5.348e-006
1988	1.991e-005	1.988e-005	1.916e-005	1.543e-005	1.273e-005	7.009e-006
1989	3.944e-005	3.938e-005	3.808e-005	3.044e-005	2.426e-005	1.408e-005
1990	1.76e-005	1.697e-005	1.485e-005	1.211e-005	1.051e-005	5.837e-006

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.032258064516129		0.0003533	0.0003527	0.0003442	0.0003188	0.0002852	8.761e-005
0.0645161290322581		0.0003351	0.0003346	0.0003242	0.0002728	0.0002381	7.916e-005
0.0967741935483871		0.0002596	0.000259	0.0002519	0.0002225	0.0002108	7.235e-005
0.129032258064516		0.0002512	0.0002509	0.0002433	0.0002131	0.0001857	7.039e-005
0.161290322580645		0.0002496	0.0002493	0.0002411	0.0001962	0.0001749	5.897e-005
0.193548387096774		0.0002211	0.0002207	0.0002133	0.0001934	0.0001727	5.156e-005
0.225806451612903		0.0001726	0.0001724	0.0001661	0.0001419	0.0001309	4.421e-005
0.258064516129032		0.0001645	0.0001643	0.0001586	0.000134	0.0001181	4.211e-005
0.290322580645161		0.0001526	0.0001524	0.0001476	0.0001208	0.0001013	3.816e-005
0.32258064516129		0.0001481	0.0001479	0.0001432	0.0001175	9.966e-005	3.379e-005
0.354838709677419		0.0001218	0.0001216	0.0001172	0.0001083	9.55e-005	3.059e-005
0.387096774193548		0.0001195	0.0001193	0.0001155	9.404e-005	8.13e-005	3.035e-005
0.419354838709677		0.0001142	0.000114	0.0001109	9.36e-005	8.099e-005	2.864e-005
0.451612903225806		0.000113	0.0001129	0.0001094	8.895e-005	8.04e-005	2.682e-005
0.483870967741936		0.0001065	0.0001064	0.0001025	8.32e-005	6.954e-005	2.582e-005
0.516129032258065		9.445e-005	9.43e-005	9.078e-005	7.455e-005	6.505e-005	2.443e-005
0.548387096774194		8.832e-005	8.82e-005	8.537e-005	7.064e-005	6.139e-005	2.057e-005
0.580645161290323		6.876e-005	6.865e-005	6.675e-005	5.583e-005	4.851e-005	1.923e-005
0.612903225806452		6.691e-005	6.681e-005	6.469e-005	5.411e-005	4.648e-005	1.71e-005
0.645161290322581		6.316e-005	6.306e-005	6.106e-005	5.297e-005	4.569e-005	1.605e-005
0.67741935483871		6.139e-005	6.131e-005	5.943e-005	5.199e-005	4.494e-005	1.496e-005
0.709677419354839		5.105e-005	5.097e-005	4.915e-005	4.025e-005	3.843e-005	1.456e-005
0.741935483870968		4.478e-005	4.471e-005	4.315e-005	3.459e-005	3.33e-005	1.408e-005
0.774193548387097		4.173e-005	4.168e-005	4.034e-005	3.383e-005	3.087e-005	1.296e-005
0.806451612903226		3.944e-005	3.938e-005	3.808e-005	3.238e-005	2.86e-005	1.255e-005
0.838709677419355		3.806e-005	3.801e-005	3.69e-005	3.044e-005	2.426e-005	1.191e-005
0.870967741935484		3.555e-005	3.551e-005	3.434e-005	2.833e-005	2.312e-005	1.04e-005
0.903225806451613		1.991e-005	1.988e-005	1.916e-005	1.543e-005	1.273e-005	7.009e-006
0.935483870967742		1.76e-005	1.697e-005	1.485e-005	1.211e-005	1.051e-005	5.837e-006
0.967741935483871		1.387e-005	1.385e-005	1.331e-005	1.084e-005	9.75e-006	5.348e-006
0.1	0.00025876	0.00025819	0.00025104	0.00022156	0.00020829	7.2154e-005
					Average of yearly averages:	3.09174666666667e-005

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: PerimFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments
Molecular weight		mwt	437	g/mol	
Henry's Law Const.		henry		atm-m^3/mol	
Vapor Pressure		vapr		torr	
Solubility	sol	2.4	mg/L		
Kd	Kd		mg/L		
Koc	Koc	727	mg/L		
Photolysis half-life		kdp	0.16	days	Half-life
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife
Anaerobic Aquatic Metabolism			kbacs	33.7	days Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	1	integer	See PRZM manual	
Incorporation Depth:		DEPI	0.1	cm	
Application Rate:		TAPP	6E-4	kg/ha	
Application Efficiency:		APPEFF	1.0	fraction	
Spray Drift	DRFT		fraction of application rate applied to pond		
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval		days	Set to 0 or delete line for single app.	
Interval 2	interval		days	Set to 0 or delete line for single app.	
Interval 3	interval		days	Set to 0 or delete line for single app.	
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	0.5			
Flag for Index Res. Run		IR	Pond		
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)	

MB45950

stored as perim9502ben.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30

Metfile: w12842.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	2.504e-005	2.475e-005	2.164e-005	2.036e-005	2.019e-005	8.139e-006
1962	0.0001287	0.0001287	0.0001286	0.0001283	0.0001265	5.947e-005
1963	0.0002304	0.0002303	0.0002295	0.0002137	0.0002016	0.0001589
1964	0.0004297	0.0004297	0.0004295	0.0004284	0.0004272	0.0003291
1965	0.0004759	0.0004759	0.0004757	0.0004742	0.0004727	0.000439
1966	0.0005247	0.0005247	0.0005242	0.0005235	0.0005222	0.0004897
1967	0.0005778	0.0005778	0.0005774	0.0005767	0.0005757	0.0005255
1968	0.0006525	0.0006525	0.0006522	0.0006509	0.0006464	0.0005929
1969	0.0007514	0.0007513	0.0007508	0.0007487	0.0007469	0.0006935
1970	0.0007522	0.0007522	0.000752	0.0007511	0.0007496	0.0007297
1971	0.000841	0.000841	0.0008407	0.0008384	0.000836	0.0007621
1972	0.0008791	0.0008791	0.0008785	0.0008776	0.0008754	0.0008323
1973	0.0008618	0.0008615	0.00086	0.000856	0.0008527	0.0008361
1974	0.0009732	0.0009731	0.0009724	0.0009676	0.000963	0.0008738
1975	0.0009386	0.0009385	0.0009379	0.0009357	0.0009334	0.0009125
1976	0.001005	0.001005	0.001005	0.001	0.0009994	0.0009551
1977	0.0009638	0.0009635	0.0009625	0.0009592	0.0009554	0.0009043
1978	0.000846	0.0008457	0.0008442	0.0008426	0.0008427	0.0008055
1979	0.001369	0.001369	0.001368	0.001363	0.00136	0.001132
1980	0.001338	0.001337	0.001334	0.001328	0.001322	0.001279
1981	0.001216	0.001216	0.001216	0.001213	0.001211	0.001198
1982	0.00126	0.00126	0.00126	0.001255	0.001251	0.001203
1983	0.001245	0.001244	0.001243	0.001242	0.00124	0.001219
1984	0.001197	0.001197	0.001195	0.00119	0.001185	0.001142
1985	0.001122	0.001122	0.001121	0.001118	0.001117	0.001072
1986	0.001113	0.001113	0.001111	0.001105	0.001101	0.001055
1987	0.001004	0.001004	0.001003	0.0009979	0.0009959	0.0009815
1988	0.001002	0.001001	0.001001	0.0009973	0.0009981	0.0009499
1989	0.001	0.0009995	0.0009971	0.0009913	0.0009865	0.0009535
1990	0.0009208	0.0009203	0.0009181	0.0009131	0.0009098	0.0008813

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001369	0.001369	0.001368	0.001363	0.00136	0.001279
0.0645161290322581		0.001338	0.001337	0.001334	0.001328	0.001322	0.001219
0.0967741935483871		0.00126	0.00126	0.00126	0.001255	0.001251	0.001203
0.129032258064516		0.001245	0.001244	0.001243	0.001242	0.00124	0.001198
0.161290322580645		0.001216	0.001216	0.001216	0.001213	0.001211	0.001142
0.193548387096774		0.001197	0.001197	0.001195	0.00119	0.001185	0.001132
0.225806451612903		0.001122	0.001122	0.001121	0.001118	0.001117	0.001072
0.258064516129032		0.001113	0.001113	0.001111	0.001105	0.001101	0.001055
0.290322580645161		0.001005	0.001005	0.001005	0.001	0.0009994	0.0009815
0.32258064516129		0.001004	0.001004	0.001003	0.0009979	0.0009981	0.0009551
0.354838709677419		0.001002	0.001001	0.001001	0.0009973	0.0009959	0.0009535
0.387096774193548		0.001	0.0009995	0.0009971	0.0009913	0.0009865	0.0009499
0.419354838709677		0.0009732	0.0009731	0.0009724	0.0009676	0.000963	0.0009125
0.451612903225806		0.0009638	0.0009635	0.0009625	0.0009592	0.0009554	0.0009043
0.483870967741936		0.0009386	0.0009385	0.0009379	0.0009357	0.0009334	0.0008813
0.516129032258065		0.0009208	0.0009203	0.0009181	0.0009131	0.0009098	0.0008738
0.548387096774194		0.0008791	0.0008791	0.0008785	0.0008776	0.0008754	0.0008361
0.580645161290323		0.0008618	0.0008615	0.00086	0.000856	0.0008527	0.0008323
0.612903225806452		0.000846	0.0008457	0.0008442	0.0008426	0.0008427	0.0008055
0.645161290322581		0.000841	0.000841	0.0008407	0.0008384	0.000836	0.0007621
0.67741935483871		0.0007522	0.0007522	0.000752	0.0007511	0.0007496	0.0007297
0.709677419354839		0.0007514	0.0007513	0.0007508	0.0007487	0.0007469	0.0006935
0.741935483870968		0.0006525	0.0006525	0.0006522	0.0006509	0.0006464	0.0005929
0.774193548387097		0.0005778	0.0005778	0.0005774	0.0005767	0.0005757	0.0005255
0.806451612903226		0.0005247	0.0005247	0.0005242	0.0005235	0.0005222	0.0004897
0.838709677419355		0.0004759	0.0004759	0.0004757	0.0004742	0.0004727	0.000439
0.870967741935484		0.0004297	0.0004297	0.0004295	0.0004284	0.0004272	0.0003291
0.903225806451613		0.0002304	0.0002303	0.0002295	0.0002137	0.0002016	0.0001589
0.935483870967742		0.0001287	0.0001287	0.0001286	0.0001283	0.0001265	5.947e-005
0.967741935483871		2.504e-005	2.475e-005	2.164e-005	2.036e-005	2.019e-005	8.139e-006
0.1	0.0012585	0.0012584	0.0012583	0.0012537	0.0012499	0.0012025	
					Average of yearly averages:		0.000799126966666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: perim9502
Metfile: w12842.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	3E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd-mmm or dd-mm or dd-mmm		

US EPA ARCHIVE DOCUMENT

Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run		IR	Pond	
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)

MB46513

stored as Perim513ben.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	5.201e-005	5.201e-005	5.2e-005	5.185e-005	5.122e-005	2.063e-005
1962	0.000115	0.000115	0.000115	0.0001149	0.0001141	7.7e-005
1963	0.0001909	0.0001909	0.0001904	0.0001885	0.0001878	0.0001473
1964	0.0002935	0.0002935	0.0002935	0.000293	0.0002924	0.0002397
1965	0.0003112	0.0003112	0.0003111	0.0003103	0.0003094	0.0002957
1966	0.0004219	0.0004219	0.0004218	0.0004208	0.0004197	0.0003613
1967	0.0004187	0.0004187	0.0004186	0.0004179	0.0004171	0.0004063
1968	0.0004884	0.0004884	0.0004882	0.0004874	0.0004866	0.0004454
1969	0.0005007	0.0005007	0.0005006	0.0005002	0.0004982	0.0004781
1970	0.0005005	0.0005004	0.0005001	0.0004987	0.0004971	0.0004735
1971	0.000475	0.000475	0.0004749	0.0004741	0.0004728	0.0004573
1972	0.0004994	0.0004994	0.0004993	0.0004964	0.0004946	0.0004738
1973	0.0004992	0.0004991	0.0004987	0.0004971	0.0004953	0.0004771
1974	0.0004567	0.0004563	0.0004549	0.000452	0.0004499	0.0004444
1975	0.0004458	0.0004456	0.0004445	0.0004419	0.0004398	0.000427
1976	0.0004975	0.0004975	0.0004973	0.0004959	0.0004942	0.0004575
1977	0.0004781	0.0004779	0.0004775	0.0004761	0.0004744	0.0004657
1978	0.0004912	0.0004912	0.0004911	0.0004902	0.00049	0.0004774
1979	0.0005147	0.0005147	0.0005146	0.0005142	0.0005135	0.0004933
1980	0.0005037	0.0005034	0.0005025	0.0005003	0.0004983	0.0004803
1981	0.0004538	0.0004536	0.0004532	0.0004528	0.0004521	0.0004431
1982	0.0005203	0.0005203	0.0005201	0.000519	0.0005176	0.0004886
1983	0.0005101	0.0005101	0.0005099	0.000509	0.0005091	0.0005016
1984	0.0005522	0.0005522	0.0005519	0.000551	0.0005497	0.0005277
1985	0.0005346	0.0005344	0.0005335	0.0005312	0.000529	0.0005124
1986	0.0004989	0.0004989	0.0004987	0.0004979	0.0004967	0.0004842
1987	0.0004852	0.000485	0.0004842	0.0004822	0.0004805	0.0004585
1988	0.0004339	0.0004337	0.000433	0.0004319	0.0004308	0.0004142
1989	0.0004273	0.0004273	0.000427	0.0004235	0.0004148	0.0004081
1990	0.0004273	0.0004272	0.0004268	0.0004249	0.0004234	0.0004037

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0005522	0.0005522	0.0005519	0.000551	0.0005497	0.0005277
0.0645161290322581		0.0005346	0.0005344	0.0005335	0.0005312	0.000529	0.0005124
0.0967741935483871		0.0005203	0.0005203	0.0005201	0.000519	0.0005176	0.0005016
0.129032258064516		0.0005147	0.0005147	0.0005146	0.0005142	0.0005135	0.0004933
0.161290322580645		0.0005101	0.0005101	0.0005099	0.000509	0.0005091	0.0004886
0.193548387096774		0.0005037	0.0005034	0.0005025	0.0005003	0.0004983	0.0004842
0.225806451612903		0.0005007	0.0005007	0.0005006	0.0005002	0.0004982	0.0004803
0.258064516129032		0.0005005	0.0005004	0.0005001	0.0004987	0.0004971	0.0004781
0.290322580645161		0.0004994	0.0004994	0.0004993	0.0004979	0.0004967	0.0004774
0.32258064516129		0.0004992	0.0004991	0.0004987	0.0004971	0.0004953	0.0004771
0.354838709677419		0.0004989	0.0004989	0.0004987	0.0004964	0.0004946	0.0004738
0.387096774193548		0.0004975	0.0004975	0.0004973	0.0004959	0.0004942	0.0004735
0.419354838709677		0.0004912	0.0004912	0.0004911	0.0004902	0.00049	0.0004657
0.451612903225806		0.0004884	0.0004884	0.0004882	0.0004874	0.0004866	0.0004585
0.483870967741936		0.0004852	0.000485	0.0004842	0.0004822	0.0004805	0.0004575
0.516129032258065		0.0004781	0.0004779	0.0004775	0.0004761	0.0004744	0.0004573
0.548387096774194		0.000475	0.000475	0.0004749	0.0004741	0.0004728	0.0004454
0.580645161290323		0.0004567	0.0004563	0.0004549	0.0004528	0.0004521	0.0004444
0.612903225806452		0.0004538	0.0004536	0.0004532	0.000452	0.0004499	0.0004431
0.645161290322581		0.0004458	0.0004456	0.0004445	0.0004419	0.0004398	0.000427
0.67741935483871		0.0004339	0.0004337	0.000433	0.0004319	0.0004308	0.0004142
0.709677419354839		0.0004273	0.0004273	0.000427	0.0004249	0.0004234	0.0004081
0.741935483870968		0.0004273	0.0004272	0.0004268	0.0004235	0.0004197	0.0004063
0.774193548387097		0.0004219	0.0004219	0.0004218	0.0004208	0.0004171	0.0004037
0.806451612903226		0.0004187	0.0004187	0.0004186	0.0004179	0.0004148	0.0003613
0.838709677419355		0.0003112	0.0003112	0.0003111	0.0003103	0.0003094	0.0002957
0.870967741935484		0.0002935	0.0002935	0.0002935	0.000293	0.0002924	0.0002397
0.903225806451613		0.0001909	0.0001909	0.0001904	0.0001885	0.0001878	0.0001473
0.935483870967742		0.000115	0.000115	0.000115	0.0001149	0.0001141	7.7e-005
0.967741935483871		5.201e-005	5.201e-005	5.2e-005	5.185e-005	5.122e-005	2.063e-005
0.1	0.00051974	0.00051974	0.00051955	0.00051852	0.00051719	0.00050077	
					Average of yearly averages:		0.000408027666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name	Value	Units	Comments
Molecular weight	*mwt*	389	g/mol	

US EPA ARCHIVE DOCUMENT

Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	6E-5	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as Perim136ben.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.000337	0.000337	0.0003367	0.0003356	0.0003344	0.0001376
1962	0.0009062	0.0009062	0.0009061	0.0009042	0.0009001	0.0005473
1963	0.001609	0.001608	0.001598	0.001507	0.00148	0.001162
1964	0.002571	0.00257	0.002569	0.00256	0.002552	0.002008
1965	0.002564	0.002564	0.002562	0.002549	0.002534	0.002469
1966	0.00346	0.00346	0.003457	0.003446	0.003433	0.002915
1967	0.003319	0.003317	0.003307	0.003291	0.003282	0.00323
1968	0.003971	0.003971	0.003969	0.003956	0.00394	0.003516
1969	0.004146	0.004145	0.004137	0.004122	0.004109	0.003878
1970	0.00415	0.00415	0.004148	0.004142	0.004131	0.003893
1971	0.003892	0.003891	0.003889	0.003875	0.003841	0.003677
1972	0.004239	0.004239	0.004237	0.004178	0.004125	0.003899
1973	0.004226	0.004224	0.004214	0.004191	0.00417	0.003979
1974	0.003954	0.003954	0.003951	0.003934	0.003918	0.003718
1975	0.003867	0.003865	0.003852	0.003824	0.003801	0.003645
1976	0.004061	0.004061	0.004056	0.004031	0.004004	0.003749
1977	0.00398	0.00398	0.003978	0.00397	0.003956	0.003838
1978	0.003828	0.003828	0.003826	0.003811	0.003807	0.003764
1979	0.004254	0.004254	0.004251	0.004233	0.004206	0.003966
1980	0.004218	0.004216	0.004204	0.004183	0.004164	0.003951
1981	0.003665	0.003665	0.003662	0.003644	0.003642	0.003574
1982	0.004013	0.004013	0.004009	0.003992	0.00398	0.0038
1983	0.004076	0.004073	0.004037	0.004016	0.003986	0.003856
1984	0.004286	0.004286	0.004282	0.004265	0.004249	0.004169
1985	0.004176	0.004173	0.004163	0.004137	0.004114	0.003976
1986	0.00402	0.00402	0.004016	0.003994	0.003977	0.003892
1987	0.003823	0.003821	0.003813	0.003804	0.003799	0.003632
1988	0.003423	0.003423	0.003421	0.003412	0.003408	0.003268
1989	0.00377	0.00377	0.003767	0.003757	0.003661	0.003468
1990	0.003738	0.003736	0.003724	0.003699	0.003699	0.003525

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.004286	0.004286	0.004282	0.004265	0.004249	0.004169
0.0645161290322581		0.004254	0.004254	0.004251	0.004233	0.004206	0.003979
0.096774193548387 1		0.004239	0.004239	0.004237	0.004191	0.00417	0.003976
0.129032258064516		0.004226	0.004224	0.004214	0.004183	0.004164	0.003966
0.161290322580645		0.004218	0.004216	0.004204	0.004178	0.004131	0.003951
0.193548387096774		0.004176	0.004173	0.004163	0.004142	0.004125	0.003899
0.225806451612903		0.00415	0.00415	0.004148	0.004137	0.004114	0.003893
0.258064516129032		0.004146	0.004145	0.004137	0.004122	0.004109	0.003892
0.290322580645161		0.004076	0.004073	0.004056	0.004031	0.004004	0.003878
0.32258064516129		0.004061	0.004061	0.004037	0.004016	0.003986	0.003856
0.354838709677419		0.00402	0.00402	0.004016	0.003994	0.00398	0.003838
0.387096774193548		0.004013	0.004013	0.004009	0.003992	0.003977	0.0038
0.419354838709677		0.00398	0.00398	0.003978	0.00397	0.003956	0.003764
0.451612903225806		0.003971	0.003971	0.003969	0.003956	0.00394	0.003749
0.483870967741936		0.003954	0.003954	0.003951	0.003934	0.003918	0.003718
0.516129032258065		0.003892	0.003891	0.003889	0.003875	0.003841	0.003677
0.548387096774194		0.003867	0.003865	0.003852	0.003824	0.003807	0.003645
0.580645161290323		0.003828	0.003828	0.003826	0.003811	0.003801	0.003632
0.612903225806452		0.003823	0.003821	0.003813	0.003804	0.003799	0.003574
0.645161290322581		0.00377	0.00377	0.003767	0.003757	0.003699	0.003525
0.67741935483871		0.003738	0.003736	0.003724	0.003699	0.003661	0.003516
0.709677419354839		0.003665	0.003665	0.003662	0.003644	0.003642	0.003468
0.741935483870968		0.00346	0.00346	0.003457	0.003446	0.003433	0.003268
0.774193548387097		0.003423	0.003423	0.003421	0.003412	0.003408	0.00323
0.806451612903226		0.003319	0.003317	0.003307	0.003291	0.003282	0.002915
0.838709677419355		0.002571	0.00257	0.002569	0.00256	0.002552	0.002469
0.870967741935484		0.002564	0.002564	0.002562	0.002549	0.002534	0.002008
0.903225806451613		0.001609	0.001608	0.001598	0.001507	0.00148	0.001162

0.935483870967742		0.0009062	0.0009062	0.0009061	0.0009042	0.0009001	0.0005473
0.967741935483871		0.000337	0.000337	0.0003367	0.0003356	0.0003344	0.0001376
0.1	0.0042377	0.0042375	0.0042347	0.0041902	0.0041694	0.003975	
					Average of yearly averages:		0.00330339666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	1.4E-3	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval		days	Set to 0 or delete line for single app.		
Interval 2	interval		days	Set to 0 or delete line for single app.		
Interval 3	interval		days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

House Perimeter (BES 100 Sod Farm)

Fipronil

stored as PerimFIPben.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001489	0.001487	0.001446	0.001209	0.001051	0.0003578
1962	0.002763	0.002759	0.002683	0.002265	0.001959	0.0006541
1963	0.007431	0.007426	0.007138	0.003673	0.0026	0.001437
1964	0.007365	0.00729	0.00689	0.0058	0.004874	0.002922
1965	0.003313	0.003308	0.003204	0.002628	0.002136	0.001047
1966	0.004894	0.004885	0.004723	0.004329	0.004165	0.001973
1967	0.002009	0.002006	0.001942	0.001615	0.001496	0.0007014
1968	0.007158	0.007152	0.00701	0.00621	0.004844	0.002573
1969	0.004764	0.00476	0.004666	0.004339	0.004028	0.002088
1970	0.004037	0.003984	0.003765	0.003098	0.002594	0.00107
1971	0.008269	0.008261	0.008078	0.007036	0.005625	0.002748
1972	0.009846	0.009838	0.009652	0.007611	0.005346	0.002461
1973	0.007986	0.007795	0.006976	0.005372	0.004376	0.00174
1974	0.001462	0.00146	0.001415	0.001234	0.00107	0.0004781
1975	0.00127	0.001268	0.001222	0.001001	0.0009455	0.0004954
1976	0.008348	0.008334	0.008132	0.00751	0.0067	0.002199
1977	0.003991	0.003988	0.003931	0.003566	0.003107	0.001427
1978	0.00655	0.006542	0.006376	0.005481	0.004457	0.002235
1979	0.01068	0.01067	0.01046	0.009135	0.007196	0.003281
1980	0.007498	0.007291	0.00645	0.00498	0.004096	0.001462
1981	0.001491	0.001488	0.001441	0.001206	0.001021	0.0006632
1982	0.008013	0.007996	0.007748	0.006512	0.00564	0.002347
1983	0.01043	0.01042	0.0102	0.009195	0.007388	0.00271
1984	0.008134	0.008068	0.007594	0.006125	0.005335	0.003187
1985	0.001854	0.001828	0.001687	0.001319	0.001072	0.0007419
1986	0.004672	0.004668	0.004573	0.004003	0.003443	0.001776
1987	0.002499	0.002496	0.002476	0.002228	0.001742	0.0007617
1988	0.006772	0.006767	0.006636	0.003708	0.002609	0.001179
1989	0.02375	0.02373	0.02323	0.02028	0.01659	0.006119
1990	0.01224	0.01181	0.01014	0.007254	0.005827	0.001964

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.02375	0.02373	0.02323	0.02028	0.01659	0.006119
0.0645161290322581		0.01224	0.01181	0.01046	0.009195	0.007388	0.003281
0.0967741935483871		0.01068	0.01067	0.0102	0.009135	0.007196	0.003187

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0.129032258064516	0.01043	0.01042	0.01014	0.007611	0.0067	0.002922
0.161290322580645	0.009846	0.009838	0.009652	0.00751	0.005827	0.002748
0.193548387096774	0.008348	0.008334	0.008132	0.007254	0.00564	0.00271
0.225806451612903	0.008269	0.008261	0.008078	0.007036	0.005625	0.002573
0.258064516129032	0.008134	0.008068	0.007748	0.006512	0.005346	0.002461
0.290322580645161	0.008013	0.007996	0.007594	0.00621	0.005335	0.002347
0.32258064516129	0.007986	0.007795	0.007138	0.006125	0.004874	0.002235
0.354838709677419	0.007498	0.007426	0.00701	0.0058	0.004844	0.002199
0.387096774193548	0.007431	0.007291	0.006976	0.005481	0.004457	0.002088
0.419354838709677	0.007365	0.00729	0.00689	0.005372	0.004376	0.001973
0.451612903225806	0.007158	0.007152	0.006636	0.00498	0.004165	0.001964
0.483870967741936	0.006772	0.006767	0.00645	0.004339	0.004096	0.001776
0.516129032258065	0.00655	0.006542	0.006376	0.004329	0.004028	0.00174
0.548387096774194	0.004894	0.004885	0.004723	0.004003	0.003443	0.001462
0.580645161290323	0.004764	0.00476	0.004666	0.003708	0.003107	0.001437
0.612903225806452	0.004672	0.004668	0.004573	0.003673	0.002609	0.001427
0.645161290322581	0.004037	0.003988	0.003931	0.003566	0.0026	0.001179
0.67741935483871	0.003991	0.003984	0.003765	0.003098	0.002594	0.00107
0.709677419354839	0.003313	0.003308	0.003204	0.002628	0.002136	0.001047
0.741935483870968	0.002763	0.002759	0.002683	0.002265	0.001959	0.0007617
0.774193548387097	0.002499	0.002496	0.002476	0.002228	0.001742	0.0007419
0.806451612903226	0.002009	0.002006	0.001942	0.001615	0.001496	0.0007014
0.838709677419355	0.001854	0.001828	0.001687	0.001319	0.001072	0.0006632
0.870967741935484	0.001491	0.001488	0.001446	0.001234	0.00107	0.0006541
0.903225806451613	0.001489	0.001487	0.001441	0.001209	0.001051	0.0004954
0.935483870967742	0.001462	0.00146	0.001415	0.001206	0.001021	0.0004781
0.967741935483871	0.00127	0.001268	0.001222	0.001001	0.0009455	0.0003578
0.1 0.010655	0.010645	0.010194	0.0089826	0.0071464	0.0031605	
				Average of yearly averages:		0.00182662

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: PerimFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.013	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as perim9502ben.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001625	0.0001625	0.0001625	0.0001621	0.0001618	6.612e-005
1962	0.0005911	0.0005911	0.0005909	0.0005898	0.0005857	0.0003248
1963	0.001338	0.001337	0.001315	0.001161	0.001113	0.0008264
1964	0.00205	0.00205	0.002049	0.002044	0.00204	0.001656
1965	0.002079	0.002079	0.002078	0.002069	0.002059	0.002016
1966	0.002775	0.002775	0.002773	0.002764	0.00276	0.002386
1967	0.002732	0.002732	0.00273	0.002721	0.002713	0.002669
1968	0.003452	0.003452	0.003451	0.003443	0.003396	0.002975
1969	0.003758	0.003756	0.003734	0.003689	0.003654	0.003428
1970	0.003802	0.003802	0.003801	0.003793	0.003788	0.003617
1971	0.003829	0.003829	0.003827	0.00382	0.003758	0.003551
1972	0.004297	0.004297	0.004295	0.004195	0.004104	0.003885
1973	0.004294	0.004293	0.004287	0.004273	0.004258	0.004087
1974	0.003973	0.003973	0.003971	0.003959	0.003947	0.003836
1975	0.003911	0.003909	0.0039	0.003878	0.003861	0.003723
1976	0.004002	0.004002	0.003999	0.003978	0.003956	0.00377
1977	0.004081	0.004081	0.00408	0.004071	0.00406	0.00395
1978	0.00397	0.00397	0.003968	0.003955	0.003933	0.003883
1979	0.004496	0.004495	0.004494	0.004457	0.004381	0.004148

US EPA ARCHIVE DOCUMENT

1980	0.004481	0.004479	0.004471	0.00446	0.004447	0.004252
1981	0.004038	0.004038	0.004037	0.004026	0.004011	0.00394
1982	0.004235	0.004235	0.004232	0.00422	0.004209	0.004091
1983	0.004519	0.004512	0.004446	0.004388	0.004317	0.004143
1984	0.004667	0.004667	0.004664	0.004645	0.004628	0.004571
1985	0.004524	0.004523	0.004516	0.004497	0.004479	0.004338
1986	0.004455	0.004455	0.004453	0.004441	0.004428	0.004358
1987	0.004296	0.004296	0.004294	0.004289	0.004287	0.004148
1988	0.004008	0.004008	0.004007	0.004	0.003991	0.003862
1989	0.004798	0.004798	0.004797	0.004787	0.004644	0.004303
1990	0.004783	0.00478	0.00477	0.004753	0.004753	0.004567

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.004798	0.004798	0.004797	0.004787	0.004753	0.004571
0.0645161290322581		0.004783	0.00478	0.00477	0.004753	0.004644	0.004567
0.0967741935483871		0.004667	0.004667	0.004664	0.004645	0.004628	0.004358
0.129032258064516		0.004524	0.004523	0.004516	0.004497	0.004479	0.004338
0.161290322580645		0.004519	0.004512	0.004494	0.00446	0.004447	0.004303
0.193548387096774		0.004496	0.004495	0.004471	0.004457	0.004428	0.004252
0.225806451612903		0.004481	0.004479	0.004453	0.004441	0.004381	0.004148
0.258064516129032		0.004455	0.004455	0.004446	0.004388	0.004317	0.004148
0.290322580645161		0.004297	0.004297	0.004295	0.004289	0.004287	0.004143
0.32258064516129		0.004296	0.004296	0.004294	0.004273	0.004258	0.004091
0.354838709677419		0.004294	0.004293	0.004287	0.00422	0.004209	0.004087
0.387096774193548		0.004235	0.004235	0.004232	0.004195	0.004104	0.00395
0.419354838709677		0.004081	0.004081	0.00408	0.004071	0.00406	0.00394
0.451612903225806		0.004038	0.004038	0.004037	0.004026	0.004011	0.003885
0.483870967741936		0.004008	0.004008	0.004007	0.004	0.003991	0.003883
0.516129032258065		0.004002	0.004002	0.003999	0.003978	0.003956	0.003862
0.548387096774194		0.003973	0.003973	0.003971	0.003959	0.003947	0.003836
0.580645161290323		0.00397	0.00397	0.003968	0.003955	0.003933	0.00377
0.612903225806452		0.003911	0.003909	0.0039	0.003878	0.003861	0.003723
0.645161290322581		0.003829	0.003829	0.003827	0.00382	0.003788	0.003617
0.67741935483871		0.003802	0.003802	0.003801	0.003793	0.003758	0.003551
0.709677419354839		0.003758	0.003756	0.003734	0.003689	0.003654	0.003428
0.741935483870968		0.003452	0.003452	0.003451	0.003443	0.003396	0.002975
0.774193548387097		0.002775	0.002775	0.002773	0.002764	0.00276	0.002669
0.806451612903226		0.002732	0.002732	0.00273	0.002721	0.002713	0.002386
0.838709677419355		0.002079	0.002079	0.002078	0.002069	0.002059	0.002016
0.870967741935484		0.00205	0.00205	0.002049	0.002044	0.00204	0.001656
0.903225806451613		0.001338	0.001337	0.001315	0.001161	0.001113	0.0008264
0.935483870967742		0.0005911	0.0005911	0.0005909	0.0005898	0.0005857	0.0003248
0.967741935483871		0.0001625	0.0001625	0.0001625	0.0001621	0.0001618	6.612e-005
0.1	0.0046527	0.0046526	0.0046492	0.0046302	0.0046131	0.004356	
					Average of yearly averages:		0.00337901066666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: perim9502
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0006	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as Perim513ben.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	8.776e-005	8.776e-005	8.774e-005	8.717e-005	8.587e-005	3.45e-005
1962	0.0002439	0.0002439	0.0002439	0.0002428	0.0002404	0.0001502

US EPA ARCHIVE DOCUMENT

1963	0.0005179	0.0005164	0.0004994	0.0004469	0.0004318	0.0003283
1964	0.000749	0.000749	0.0007488	0.0007477	0.0007439	0.0006479
1965	0.0007821	0.0007821	0.0007818	0.0007797	0.0007785	0.0007561
1966	0.001002	0.001002	0.001002	0.001001	0.001	0.0008903
1967	0.001002	0.001002	0.001002	0.001	0.0009984	0.0009799
1968	0.00128	0.00128	0.00128	0.001268	0.001245	0.001099
1969	0.001383	0.001382	0.001373	0.001355	0.001336	0.001275
1970	0.001402	0.001402	0.001402	0.0014	0.001398	0.001336
1971	0.001464	0.001464	0.001464	0.001451	0.00142	0.001334
1972	0.001623	0.001622	0.001613	0.001559	0.001526	0.001467
1973	0.001632	0.001632	0.001632	0.00163	0.001627	0.00156
1974	0.001488	0.001487	0.001482	0.001473	0.001466	0.001433
1975	0.001403	0.001402	0.001399	0.001391	0.001385	0.001336
1976	0.001446	0.001446	0.001445	0.001441	0.001436	0.00136
1977	0.001466	0.001466	0.001465	0.001462	0.001458	0.001424
1978	0.001474	0.001474	0.001474	0.00147	0.001454	0.001421
1979	0.00168	0.00168	0.001675	0.001641	0.001606	0.001532
1980	0.001682	0.001682	0.001682	0.001681	0.001678	0.001608
1981	0.001518	0.001518	0.001518	0.001515	0.001511	0.001483
1982	0.001609	0.001609	0.001608	0.001605	0.001601	0.001552
1983	0.00171	0.001708	0.00169	0.001661	0.001625	0.001565
1984	0.001807	0.001807	0.001807	0.001803	0.001798	0.001759
1985	0.001737	0.001737	0.001735	0.00173	0.001723	0.001661
1986	0.001674	0.001674	0.001673	0.001671	0.001667	0.001645
1987	0.001628	0.001628	0.001626	0.001623	0.001623	0.001562
1988	0.001509	0.001509	0.001508	0.001507	0.001504	0.001454
1989	0.001952	0.001951	0.001945	0.001906	0.00182	0.001654
1990	0.001953	0.001953	0.001953	0.001947	0.001945	0.001857

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001953	0.001953	0.001953	0.001947	0.001945	0.001857
0.0645161290322581		0.001952	0.001951	0.001945	0.001906	0.00182	0.001759
0.0967741935483871		0.001807	0.001807	0.001807	0.001803	0.001798	0.001661
0.129032258064516		0.001737	0.001737	0.001735	0.00173	0.001723	0.001654
0.161290322580645		0.00171	0.001708	0.00169	0.001681	0.001678	0.001645
0.193548387096774		0.001682	0.001682	0.001682	0.001671	0.001667	0.001608
0.225806451612903		0.00168	0.00168	0.001675	0.001661	0.001627	0.001565
0.258064516129032		0.001674	0.001674	0.001673	0.001641	0.001625	0.001562
0.290322580645161		0.001632	0.001632	0.001632	0.00163	0.001623	0.00156
0.32258064516129		0.001628	0.001628	0.001626	0.001623	0.001606	0.001552
0.354838709677419		0.001623	0.001622	0.001613	0.001605	0.001601	0.001532
0.387096774193548		0.001609	0.001609	0.001608	0.001559	0.001526	0.001483
0.419354838709677		0.001518	0.001518	0.001518	0.001515	0.001511	0.001467
0.451612903225806		0.001509	0.001509	0.001508	0.001507	0.001504	0.001454
0.483870967741936		0.001488	0.001487	0.001482	0.001473	0.001466	0.001433
0.516129032258065		0.001474	0.001474	0.001474	0.00147	0.001458	0.001424
0.548387096774194		0.001466	0.001466	0.001465	0.001462	0.001454	0.001421
0.580645161290323		0.001464	0.001464	0.001464	0.001451	0.001436	0.00136
0.612903225806452		0.001446	0.001446	0.001445	0.001441	0.00142	0.001336
0.645161290322581		0.001403	0.001402	0.001402	0.0014	0.001398	0.001336
0.67741935483871		0.001402	0.001402	0.001399	0.001391	0.001385	0.001334
0.709677419354839		0.001383	0.001382	0.001373	0.001355	0.001336	0.001275
0.741935483870968		0.00128	0.00128	0.00128	0.001268	0.001245	0.001099
0.774193548387097		0.001002	0.001002	0.001002	0.001001	0.001	0.0009799
0.806451612903226		0.001002	0.001002	0.001002	0.001	0.0009984	0.0008903
0.838709677419355		0.0007821	0.0007821	0.0007818	0.0007797	0.0007785	0.0007561
0.870967741935484		0.000749	0.000749	0.0007488	0.0007477	0.0007439	0.0006479
0.903225806451613		0.0005179	0.0005164	0.0004994	0.0004469	0.0004318	0.0003283
0.935483870967742		0.0002439	0.0002439	0.0002439	0.0002428	0.0002404	0.0001502
0.967741935483871		8.776e-005	8.776e-005	8.774e-005	8.717e-005	8.587e-005	3.45e-005
0.1	0.0018	0.0018	0.0017998	0.0017957	0.0017905	0.0016603	
					Average of yearly averages:		0.00127214

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1320	days		Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0001	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	180	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					

US EPA ARCHIVE DOCUMENT

FEXTRC	0.5		
Flag for Index Res. Run	IR	Pond	
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)

MB46136

stored as Perim136ben.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0007465	0.0007465	0.000746	0.0007453	0.0007436	0.0003055
1962	0.002727	0.002727	0.002726	0.00272	0.002705	0.001493
1963	0.006184	0.006179	0.006086	0.005359	0.005129	0.003798
1964	0.009465	0.009465	0.009461	0.00943	0.009408	0.007616
1965	0.009421	0.00942	0.009412	0.009364	0.009309	0.009128
1966	0.0125	0.0125	0.01249	0.01245	0.01242	0.01067
1967	0.01209	0.01208	0.01205	0.01198	0.01192	0.01176
1968	0.01516	0.01516	0.01515	0.0151	0.0149	0.01297
1969	0.01633	0.01632	0.01623	0.01604	0.01589	0.01486
1970	0.01648	0.01648	0.01647	0.01644	0.01642	0.01551
1971	0.01619	0.01619	0.01618	0.01613	0.01586	0.01494
1972	0.01821	0.01821	0.0182	0.01775	0.01733	0.01632
1973	0.01818	0.01817	0.01813	0.01804	0.01796	0.01707
1974	0.01639	0.01639	0.01638	0.01631	0.01624	0.01572
1975	0.01603	0.01601	0.01596	0.01585	0.01575	0.01507
1976	0.01628	0.01628	0.01626	0.01616	0.01605	0.01517
1977	0.01657	0.01657	0.01656	0.01652	0.01646	0.0159
1978	0.0159	0.0159	0.01589	0.01582	0.01572	0.01548
1979	0.01833	0.01833	0.01832	0.01815	0.0178	0.01668
1980	0.01822	0.01821	0.01817	0.01809	0.01802	0.01704
1981	0.01592	0.01592	0.01591	0.01586	0.01578	0.01545
1982	0.01677	0.01677	0.01676	0.0167	0.01665	0.01608
1983	0.01807	0.01803	0.01771	0.01744	0.01711	0.01627
1984	0.01865	0.01865	0.01863	0.01854	0.01846	0.01821
1985	0.01794	0.01793	0.01789	0.01778	0.01768	0.017
1986	0.01754	0.01754	0.01753	0.01746	0.01739	0.01704
1987	0.01671	0.01671	0.0167	0.01668	0.01666	0.01602
1988	0.01534	0.01534	0.01533	0.01529	0.01525	0.01466
1989	0.01907	0.01907	0.01906	0.01901	0.01836	0.01673
1990	0.01894	0.01892	0.01887	0.01875	0.01877	0.01788

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.01907	0.01907	0.01906	0.01901	0.01877	0.01821
0.0645161290322581		0.01894	0.01892	0.01887	0.01875	0.01846	0.01788
0.0967741935483871		0.01865	0.01865	0.01863	0.01854	0.01836	0.01707
0.129032258064516		0.01833	0.01833	0.01832	0.01815	0.01802	0.01704
0.161290322580645		0.01822	0.01821	0.0182	0.01809	0.01796	0.01704
0.193548387096774		0.01821	0.01821	0.01817	0.01804	0.0178	0.017
0.225806451612903		0.01818	0.01817	0.01813	0.01778	0.01768	0.01673
0.258064516129032		0.01807	0.01803	0.01789	0.01775	0.01739	0.01668
0.290322580645161		0.01794	0.01793	0.01771	0.01746	0.01733	0.01632
0.32258064516129		0.01754	0.01754	0.01753	0.01744	0.01711	0.01627
0.354838709677419		0.01677	0.01677	0.01676	0.0167	0.01666	0.01608
0.387096774193548		0.01671	0.01671	0.0167	0.01668	0.01665	0.01602
0.419354838709677		0.01657	0.01657	0.01656	0.01652	0.01646	0.0159
0.451612903225806		0.01648	0.01648	0.01647	0.01644	0.01642	0.01572
0.483870967741936		0.01639	0.01639	0.01638	0.01631	0.01624	0.01551
0.516129032258065		0.01633	0.01632	0.01626	0.01616	0.01605	0.01548
0.548387096774194		0.01628	0.01628	0.01623	0.01613	0.01589	0.01545
0.580645161290323		0.01619	0.01619	0.01618	0.01604	0.01586	0.01517
0.612903225806452		0.01603	0.01601	0.01596	0.01586	0.01578	0.01507
0.645161290322581		0.01592	0.01592	0.01591	0.01585	0.01575	0.01494
0.67741935483871		0.0159	0.0159	0.01589	0.01582	0.01572	0.01486
0.709677419354839		0.01534	0.01534	0.01533	0.01529	0.01525	0.01466
0.741935483870968		0.01516	0.01516	0.01515	0.0151	0.0149	0.01297
0.774193548387097		0.0125	0.0125	0.01249	0.01245	0.01242	0.01176
0.806451612903226		0.01209	0.01208	0.01205	0.01198	0.01192	0.01067
0.838709677419355		0.009465	0.009465	0.009461	0.00943	0.009408	0.009128
0.870967741935484		0.009421	0.00942	0.009412	0.009364	0.009309	0.007616
0.903225806451613		0.006184	0.006179	0.006086	0.005359	0.005129	0.003798
0.935483870967742		0.002727	0.002727	0.002726	0.00272	0.002705	0.001493
0.967741935483871		0.0007465	0.0007465	0.000746	0.0007453	0.0007436	0.0003055
0.1	0.018618	0.018618	0.018599	0.018501	0.018326	0.017067	
					Average of yearly averages:		0.01376135

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	453	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	0.16	mg/L	
Kd	Kd		mg/L	
Koc	Koc	4208	mg/L	

US EPA ARCHIVE DOCUMENT

Photolysis half-life		kdp	7	days	Half-life
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	1	integer	See PRZM manual	
Incorporation Depth:		DEPI	0.1	cm	
Application Rate:		TAPP	0.0031	kg/ha	
Application Efficiency:		APPEFF	1.0	fraction	
Spray Drift	DRFT		fraction of application rate applied to pond		
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	180	days	Set to 0 or delete line for single app.	
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	0.5			
Flag for Index Res. Run		IR	Pond		
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)	

House Perimeter (BES 100 Residential)

Fipronil

stored as PerimFIPben.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001489	0.001487	0.001446	0.001209	0.001051	0.0003477
1962	0.002475	0.002472	0.002404	0.002028	0.001755	0.0005597
1963	0.003306	0.003302	0.003197	0.002617	0.002195	0.0007321
1964	0.005443	0.005436	0.005271	0.004251	0.003741	0.001278
1965	0.003209	0.003204	0.003103	0.002545	0.002069	0.0006206
1966	0.004791	0.004783	0.004621	0.004191	0.004025	0.001568
1967	0.001914	0.001911	0.00185	0.001531	0.001409	0.0005292
1968	0.005625	0.005611	0.005457	0.004616	0.00379	0.001117
1969	0.002046	0.002043	0.001967	0.001615	0.00133	0.0005811
1970	0.0009044	0.0009034	0.0008742	0.0007331	0.0006198	0.0002253
1971	0.002589	0.002586	0.002503	0.002346	0.002159	0.0009123
1972	0.002638	0.002634	0.00254	0.002037	0.001742	0.0006576
1973	0.0007703	0.0007695	0.0007442	0.0006139	0.0005009	0.000258
1974	0.00133	0.001328	0.001288	0.001126	0.0009735	0.0003242
1975	0.001106	0.001105	0.001065	0.0008723	0.0008327	0.0003155
1976	0.007657	0.007644	0.00746	0.006908	0.00618	0.001898
1977	0.001368	0.001366	0.001323	0.001148	0.001007	0.0004166
1978	0.003564	0.003559	0.003435	0.003074	0.002836	0.0009579
1979	0.00374	0.003735	0.003599	0.002903	0.002559	0.000827
1980	0.0008245	0.0008234	0.0007995	0.0007015	0.0006689	0.0002718
1981	0.00145	0.001448	0.001402	0.001172	0.00099	0.0003704
1982	0.007262	0.007252	0.007026	0.005914	0.00516	0.001716
1983	0.002449	0.002446	0.00237	0.001927	0.001761	0.0006628
1984	0.005408	0.005401	0.005223	0.004821	0.004568	0.001525
1985	0.0009702	0.0009688	0.000935	0.0007494	0.0007215	0.0002809
1986	0.002309	0.002305	0.002222	0.001803	0.001507	0.0004457
1987	0.0003007	0.0003001	0.0002885	0.0002349	0.0002113	0.0001159
1988	0.0004314	0.0004307	0.0004151	0.0003343	0.0002759	0.0001519
1989	0.0008547	0.0008535	0.0008253	0.0006596	0.0005257	0.0003052
1990	0.0003813	0.0003677	0.0003218	0.0002624	0.0002277	0.0001265

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.007657	0.007644	0.00746	0.006908	0.00618	0.001898
0.0645161290322581		0.007262	0.007252	0.007026	0.005914	0.00516	0.001716
0.0967741935483871		0.005625	0.005611	0.005457	0.004821	0.004568	0.001568
0.129032258064516		0.005443	0.005436	0.005271	0.004616	0.004025	0.001525
0.161290322580645		0.005408	0.005401	0.005223	0.004251	0.00379	0.001278
0.193548387096774		0.004791	0.004783	0.004621	0.004191	0.003741	0.001117
0.225806451612903		0.00374	0.003735	0.003599	0.003074	0.002836	0.0009579
0.258064516129032		0.003564	0.003559	0.003435	0.002903	0.002559	0.0009123
0.290322580645161		0.003306	0.003302	0.003197	0.002617	0.002195	0.000827
0.32258064516129		0.003209	0.003204	0.003103	0.002545	0.002159	0.0007321
0.354838709677419		0.002638	0.002634	0.00254	0.002346	0.002069	0.0006628
0.387096774193548		0.002589	0.002586	0.002503	0.002037	0.001761	0.0006576
0.419354838709677		0.002475	0.002472	0.002404	0.002028	0.001755	0.0006206
0.451612903225806		0.002449	0.002446	0.00237	0.001927	0.001742	0.0005811
0.483870967741936		0.002309	0.002305	0.002222	0.001803	0.001507	0.0005597
0.516129032258065		0.002046	0.002043	0.001967	0.001615	0.001409	0.0005292
0.548387096774194		0.001914	0.001911	0.00185	0.001531	0.00133	0.0004457
0.580645161290323		0.001489	0.001487	0.001446	0.001209	0.001051	0.0004166
0.612903225806452		0.00145	0.001448	0.001402	0.001172	0.001007	0.0003704
0.645161290322581		0.001368	0.001366	0.001323	0.001148	0.00099	0.0003477
0.67741935483871		0.00133	0.001328	0.001288	0.001126	0.0009735	0.0003242
0.709677419354839		0.001106	0.001105	0.001065	0.0008723	0.0008327	0.0003155

0.741935483870968	0.0009702	0.0009688	0.000935	0.0007494	0.0007215	0.0003052
0.774193548387097	0.0009044	0.0009034	0.0008742	0.0007331	0.0006689	0.0002809
0.806451612903226	0.0008547	0.0008535	0.0008253	0.0007015	0.0006198	0.0002718
0.838709677419355	0.0008245	0.0008234	0.0007995	0.0006596	0.0005257	0.000258
0.870967741935484	0.0007703	0.0007695	0.0007442	0.0006139	0.0005009	0.0002253
0.903225806451613	0.0004314	0.0004307	0.0004151	0.0003343	0.0002759	0.0001519
0.935483870967742	0.0003813	0.0003677	0.0003218	0.0002624	0.0002277	0.0001265
0.967741935483871	0.0003007	0.0003001	0.0002885	0.0002349	0.0002113	0.0001159

0.1	0.0056068	0.0055935	0.0054384	0.0048005	0.0045137	0.0015637
					Average of yearly averages:	0.00066993

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: PerimFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.013	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as perim9502ben.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0001619	0.0001619	0.0001618	0.0001615	0.0001611	6.595e-005
1962	0.0004361	0.0004361	0.0004359	0.0004353	0.0004331	0.0002646
1963	0.0007762	0.000776	0.0007702	0.0007286	0.000716	0.0005626
1964	0.001239	0.001239	0.001238	0.001235	0.001232	0.0009723
1965	0.00126	0.00126	0.001259	0.001254	0.001248	0.001214
1966	0.00171	0.00171	0.001708	0.001703	0.001698	0.001451
1967	0.001675	0.001675	0.001674	0.001669	0.001663	0.001632
1968	0.002016	0.002016	0.002015	0.00201	0.002003	0.001796
1969	0.00213	0.00213	0.002125	0.002117	0.002109	0.001995
1970	0.002134	0.002134	0.002134	0.002133	0.002129	0.002028
1971	0.00206	0.00206	0.002059	0.002054	0.002037	0.001955
1972	0.00224	0.00224	0.002239	0.002211	0.002186	0.002077
1973	0.002236	0.002235	0.002231	0.002223	0.002215	0.002133
1974	0.002133	0.002133	0.002132	0.002126	0.00212	0.002026
1975	0.002101	0.002099	0.002094	0.002082	0.002073	0.002004
1976	0.002212	0.002212	0.00221	0.002199	0.002187	0.002066
1977	0.00218	0.00218	0.00218	0.002177	0.002171	0.00212
1978	0.002127	0.002127	0.002126	0.00212	0.002118	0.002098
1979	0.002328	0.002327	0.002327	0.002319	0.002306	0.002197
1980	0.002315	0.002314	0.00231	0.002302	0.002294	0.002199
1981	0.002073	0.002073	0.002072	0.002064	0.002063	0.002033
1982	0.002247	0.002247	0.002245	0.002238	0.002232	0.002147
1983	0.002279	0.002278	0.002262	0.002252	0.002238	0.00218
1984	0.002389	0.002389	0.002387	0.002379	0.002372	0.002332
1985	0.00234	0.00234	0.002336	0.002326	0.002316	0.002253
1986	0.002274	0.002274	0.002272	0.002262	0.002254	0.002216
1987	0.002183	0.002182	0.002179	0.002176	0.002174	0.002095
1988	0.001996	0.001996	0.001996	0.001992	0.00199	0.001922
1989	0.002143	0.002143	0.002142	0.002139	0.002093	0.002009
1990	0.002134	0.002133	0.002128	0.002117	0.002117	0.002035

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.002389	0.002389	0.002387	0.002379	0.002372	0.002332
0.0645161290322581		0.00234	0.00234	0.002336	0.002326	0.002316	0.002253
0.0967741935483871		0.002328	0.002327	0.002327	0.002319	0.002306	0.002216
0.129032258064516		0.002315	0.002314	0.00231	0.002302	0.002294	0.002199
0.161290322580645		0.002279	0.002278	0.002272	0.002262	0.002254	0.002197
0.193548387096774		0.002274	0.002274	0.002262	0.002252	0.002238	0.00218

US EPA ARCHIVE DOCUMENT

0.225806451612903	0.002247	0.002247	0.002245	0.002238	0.002232	0.002147
0.258064516129032	0.00224	0.00224	0.002239	0.002223	0.002215	0.002133
0.290322580645161	0.002236	0.002235	0.002231	0.002211	0.002187	0.00212
0.32258064516129	0.002212	0.002212	0.00221	0.002199	0.002186	0.002098
0.354838709677419	0.002183	0.002182	0.00218	0.002177	0.002174	0.002095
0.387096774193548	0.00218	0.00218	0.002179	0.002176	0.002171	0.002077
0.419354838709677	0.002143	0.002143	0.002142	0.002139	0.002129	0.002066
0.451612903225806	0.002134	0.002134	0.002134	0.002133	0.00212	0.002035
0.483870967741936	0.002134	0.002133	0.002132	0.002126	0.002118	0.002033
0.516129032258065	0.002133	0.002133	0.002128	0.00212	0.002117	0.002028
0.548387096774194	0.00213	0.00213	0.002126	0.002117	0.002109	0.002026
0.580645161290323	0.002127	0.002127	0.002125	0.002117	0.002093	0.002009
0.612903225806452	0.002101	0.002099	0.002094	0.002082	0.002073	0.002004
0.645161290322581	0.002073	0.002073	0.002072	0.002064	0.002063	0.001995
0.67741935483871	0.00206	0.00206	0.002059	0.002054	0.002037	0.001955
0.709677419354839	0.002016	0.002016	0.002015	0.00201	0.002003	0.001922
0.741935483870968	0.001996	0.001996	0.001996	0.001992	0.00199	0.001796
0.774193548387097	0.00171	0.00171	0.001708	0.001703	0.001698	0.001632
0.806451612903226	0.001675	0.001675	0.001674	0.001669	0.001663	0.001451
0.838709677419355	0.00126	0.00126	0.001259	0.001254	0.001248	0.001214
0.870967741935484	0.001239	0.001239	0.001238	0.001235	0.001232	0.0009723
0.903225806451613	0.0007762	0.000776	0.0007702	0.0007286	0.000716	0.0005626
0.935483870967742	0.0004361	0.0004361	0.0004359	0.0004353	0.0004331	0.0002646
0.967741935483871	0.0001619	0.0001619	0.0001618	0.0001615	0.0001611	6.595e-005

0.1	0.0023267	0.0023257	0.0023253	0.0023173	0.0023048	0.0022143
					Average of yearly averages:	0.001802615

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: perim9502
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0006	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as Perim513ben.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	8.669e-005	8.669e-005	8.667e-005	8.642e-005	8.537e-005	3.438e-005
1962	0.0001918	0.0001918	0.0001917	0.0001915	0.0001902	0.0001283
1963	0.0003182	0.0003182	0.0003173	0.0003141	0.0003131	0.0002456
1964	0.0004893	0.0004892	0.0004891	0.0004884	0.0004873	0.0003995
1965	0.0005187	0.0005187	0.0005185	0.0005172	0.0005158	0.0004929
1966	0.0007032	0.0007032	0.000703	0.0007014	0.0006996	0.0006021
1967	0.0006979	0.0006979	0.0006977	0.0006965	0.0006952	0.0006773
1968	0.000814	0.000814	0.0008137	0.0008123	0.000811	0.0007424
1969	0.0008345	0.0008345	0.0008344	0.0008336	0.0008303	0.0007968
1970	0.0008342	0.0008341	0.0008335	0.0008313	0.0008286	0.0007892
1971	0.0007917	0.0007917	0.0007915	0.0007902	0.000788	0.0007622
1972	0.0008324	0.0008324	0.0008322	0.0008274	0.0008243	0.0007897
1973	0.000832	0.0008319	0.0008312	0.0008286	0.0008256	0.0007952
1974	0.0007612	0.0007606	0.0007583	0.0007534	0.0007498	0.0007408
1975	0.0007431	0.0007427	0.0007409	0.0007365	0.000733	0.0007117
1976	0.0008291	0.0008291	0.0008288	0.0008265	0.0008237	0.0007625
1977	0.0007968	0.0007966	0.0007959	0.0007936	0.0007906	0.0007761
1978	0.0008187	0.0008187	0.0008185	0.0008169	0.0008166	0.0007957
1979	0.0008578	0.0008578	0.0008576	0.000857	0.0008558	0.0008223
1980	0.0008395	0.0008391	0.0008375	0.0008338	0.0008306	0.0008004
1981	0.0007563	0.000756	0.0007553	0.0007546	0.0007536	0.0007385
1982	0.0008671	0.0008671	0.0008668	0.000865	0.0008627	0.0008144
1983	0.0008502	0.0008502	0.0008499	0.0008483	0.0008485	0.000836

US EPA ARCHIVE DOCUMENT

1984	0.0009203	0.0009203	0.0009199	0.0009184	0.0009162	0.0008796
1985	0.0008909	0.0008906	0.0008892	0.0008854	0.0008817	0.0008539
1986	0.0008315	0.0008315	0.0008312	0.0008298	0.0008279	0.0008069
1987	0.0008087	0.0008084	0.000807	0.0008036	0.0008008	0.0007641
1988	0.0007232	0.0007229	0.0007217	0.0007199	0.000718	0.0006904
1989	0.0007122	0.0007122	0.0007116	0.0007059	0.0006913	0.0006802
1990	0.0007122	0.0007121	0.0007113	0.0007081	0.0007057	0.0006729

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0009203	0.0009203	0.0009199	0.0009184	0.0009162	0.0008796
0.064516129032258 1		0.0008909	0.0008906	0.0008892	0.0008854	0.0008817	0.0008539
0.0967741935483871		0.0008671	0.0008671	0.0008668	0.000865	0.0008627	0.000836
0.129032258064516		0.0008578	0.0008578	0.0008576	0.000857	0.0008558	0.0008223
0.161290322580645		0.0008502	0.0008502	0.0008499	0.0008483	0.0008485	0.0008144
0.193548387096774		0.0008395	0.0008391	0.0008375	0.0008338	0.0008306	0.0008069
0.225806451612903		0.0008345	0.0008345	0.0008344	0.0008336	0.0008303	0.0008004
0.258064516129032		0.0008342	0.0008341	0.0008335	0.0008313	0.0008286	0.0007968
0.290322580645161		0.0008324	0.0008324	0.0008322	0.0008298	0.0008279	0.0007957
0.32258064516129		0.000832	0.0008319	0.0008312	0.0008286	0.0008256	0.0007952
0.354838709677419		0.0008315	0.0008315	0.0008312	0.0008274	0.0008243	0.0007897
0.387096774193548		0.0008291	0.0008291	0.0008288	0.0008265	0.0008237	0.0007892
0.419354838709677		0.0008187	0.0008187	0.0008185	0.0008169	0.0008166	0.0007761
0.451612903225806		0.000814	0.000814	0.0008137	0.0008123	0.000811	0.0007641
0.483870967741936		0.0008087	0.0008084	0.000807	0.0008036	0.0008008	0.0007625
0.516129032258065		0.0007968	0.0007966	0.0007959	0.0007936	0.0007906	0.0007622
0.548387096774194		0.0007917	0.0007917	0.0007915	0.0007902	0.000788	0.0007424
0.580645161290323		0.0007612	0.0007606	0.0007583	0.0007546	0.0007536	0.0007408
0.612903225806452		0.0007563	0.000756	0.0007553	0.0007534	0.0007498	0.0007385
0.645161290322581		0.0007431	0.0007427	0.0007409	0.0007365	0.000733	0.0007117
0.67741935483871		0.0007232	0.0007229	0.0007217	0.0007199	0.000718	0.0006904
0.709677419354839		0.0007122	0.0007122	0.0007116	0.0007081	0.0007057	0.0006802
0.741935483870968		0.0007122	0.0007121	0.0007113	0.0007059	0.0006996	0.0006773
0.774193548387097		0.0007032	0.0007032	0.000703	0.0007014	0.0006952	0.0006729
0.806451612903226		0.0006979	0.0006979	0.0006977	0.0006965	0.0006913	0.0006021
0.838709677419355		0.0005187	0.0005187	0.0005185	0.0005172	0.0005158	0.0004929
0.870967741935484		0.0004893	0.0004892	0.0004891	0.0004884	0.0004873	0.0003995
0.903225806451613		0.0003182	0.0003182	0.0003173	0.0003141	0.0003131	0.0002456
0.935483870967742		0.0001918	0.0001918	0.0001917	0.0001915	0.0001902	0.0001283
0.967741935483871		8.669e-005	8.669e-005	8.667e-005	8.642e-005	8.537e-005	3.438e-005
0.1	0.00086617	0.00086617	0.00086588	0.0008642	0.00086201	0.00083463	
					Average of yearly averages:		0.000680066

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments
Molecular weight		mwt	389	g/mol	
Henry's Law Const.		henry		atm-m^3/mol	
Vapor Pressure		vapr		torr	
Solubility	sol	0.95	mg/L		
Kd	Kd		mg/L		
Koc	Koc	1290	mg/L		
Photolysis half-life		kdp		days	Half-life
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife
Anaerobic Aquatic Metabolism			kbacs	1320	days Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	1	integer	See PRZM manual	
Incorporation Depth:		DEPI	0.1	cm	
Application Rate:		TAPP	1E-4	kg/ha	
Application Efficiency:		APPEFF	1.0	fraction	
Spray Drift	DRFT		fraction of application rate applied to pond		
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm	
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	0.5			
Flag for Index Res. Run		IR	Pond		
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)	

MB46136

stored as Perim136ben.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 12:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0007462	0.0007461	0.0007456	0.0007431	0.0007405	0.0003047
1962	0.002007	0.002007	0.002006	0.002002	0.001993	0.001212
1963	0.003562	0.003561	0.003538	0.003336	0.003277	0.002572
1964	0.005692	0.005692	0.005688	0.005669	0.00565	0.004446
1965	0.005677	0.005677	0.005672	0.005643	0.00561	0.005466
1966	0.007662	0.007662	0.007655	0.00763	0.007601	0.006454
1967	0.007349	0.007344	0.007322	0.007287	0.007267	0.007152

US EPA ARCHIVE DOCUMENT

1968	0.008794	0.008793	0.008788	0.00876	0.008724	0.007786
1969	0.009179	0.009179	0.00916	0.009128	0.009097	0.008586
1970	0.009189	0.009189	0.009185	0.009171	0.009147	0.008619
1971	0.008617	0.008616	0.008611	0.008581	0.008504	0.008143
1972	0.009387	0.009387	0.009382	0.009252	0.009133	0.008634
1973	0.009357	0.009352	0.00933	0.00928	0.009234	0.008811
1974	0.008755	0.008755	0.008748	0.008712	0.008676	0.008232
1975	0.008563	0.008557	0.00853	0.008466	0.008416	0.008071
1976	0.008992	0.008992	0.008982	0.008925	0.008866	0.0083
1977	0.008812	0.008812	0.008809	0.00879	0.008759	0.008498
1978	0.008477	0.008477	0.008471	0.008439	0.00843	0.008334
1979	0.009419	0.009419	0.009413	0.009374	0.009313	0.008783
1980	0.00934	0.009335	0.00931	0.009263	0.00922	0.008749
1981	0.008116	0.008116	0.008109	0.00807	0.008064	0.007915
1982	0.008887	0.008887	0.008878	0.008841	0.008814	0.008414
1983	0.009026	0.009018	0.00894	0.008893	0.008826	0.008538
1984	0.009491	0.009491	0.009483	0.009444	0.009408	0.009231
1985	0.009246	0.009241	0.009218	0.009161	0.00911	0.008804
1986	0.008902	0.008901	0.008892	0.008844	0.008806	0.008619
1987	0.008464	0.008461	0.008443	0.008424	0.008412	0.008043
1988	0.007579	0.007579	0.007575	0.007554	0.007546	0.007235
1989	0.008348	0.008348	0.008342	0.008319	0.008106	0.00768
1990	0.008278	0.008272	0.008247	0.008191	0.008191	0.007806

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.009491	0.009491	0.009483	0.009444	0.009408	0.009231
0.0645161290322581		0.009419	0.009419	0.009413	0.009374	0.009313	0.008811
0.0967741935483871		0.009387	0.009387	0.009382	0.00928	0.009234	0.008804
0.129032258064516		0.009357	0.009352	0.00933	0.009263	0.00922	0.008783
0.161290322580645		0.00934	0.009335	0.00931	0.009252	0.009147	0.008749
0.193548387096774		0.009246	0.009241	0.009218	0.009171	0.009133	0.008634
0.225806451612903		0.009189	0.009189	0.009185	0.009161	0.00911	0.008619
0.258064516129032		0.009179	0.009179	0.00916	0.009128	0.009097	0.008619
0.290322580645161		0.009026	0.009018	0.008982	0.008925	0.008866	0.008586
0.32258064516129		0.008992	0.008992	0.00894	0.008893	0.008826	0.008538
0.354838709677419		0.008902	0.008901	0.008892	0.008844	0.008814	0.008498
0.387096774193548		0.008887	0.008887	0.008878	0.008841	0.008806	0.008414
0.419354838709677		0.008812	0.008812	0.008809	0.00879	0.008759	0.008334
0.451612903225806		0.008794	0.008793	0.008788	0.00876	0.008724	0.0083
0.483870967741936		0.008755	0.008755	0.008748	0.008712	0.008676	0.008232
0.516129032258065		0.008617	0.008616	0.008611	0.008581	0.008504	0.008143
0.548387096774194		0.008563	0.008557	0.00853	0.008466	0.00843	0.008071
0.580645161290323		0.008477	0.008477	0.008471	0.008439	0.008416	0.008043
0.612903225806452		0.008464	0.008461	0.008443	0.008424	0.008412	0.007915
0.645161290322581		0.008348	0.008348	0.008342	0.008319	0.008191	0.007806
0.67741935483871		0.008278	0.008272	0.008247	0.008191	0.008106	0.007786
0.709677419354839		0.008116	0.008116	0.008109	0.00807	0.008064	0.00768
0.741935483870968		0.007662	0.007662	0.007655	0.00763	0.007601	0.007235
0.774193548387097		0.007579	0.007579	0.007575	0.007554	0.007546	0.007152
0.806451612903226		0.007349	0.007344	0.007322	0.007287	0.007267	0.006454
0.838709677419355		0.005692	0.005692	0.005688	0.005669	0.00565	0.005466
0.870967741935484		0.005677	0.005677	0.005672	0.005643	0.00561	0.004446
0.903225806451613		0.003562	0.003561	0.003538	0.003336	0.003277	0.002572
0.935483870967742		0.002007	0.002007	0.002006	0.002002	0.001993	0.001212
0.967741935483871		0.0007462	0.0007461	0.0007456	0.0007431	0.0007405	0.0003047
0.1	0.009384	0.0093835	0.0093768	0.0092783	0.0092326	0.0088019	
					Average of yearly averages:		0.00731459

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Perim136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife	
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.0031	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Fruit Fly Stations

Fipronil

stored as BaitFIPben.out
Chemical: Fipronil
PRZM environment: FLcitrusC.txt modified Satday, 12 October 2002 at 15:39:50
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w12842.dvf modified Wedday, 3 July 2002 at 09:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0006345	0.0006338	0.0006229	0.0005658	0.0004826	0.0003105
1962	0.0006467	0.0006461	0.0006328	0.0005762	0.0005126	0.0003482
1963	0.001357	0.001355	0.001302	0.001093	0.0009266	0.000643
1964	0.001805	0.001804	0.001788	0.001678	0.001513	0.001006
1965	0.001083	0.001082	0.001043	0.0008697	0.000774	0.0004105
1966	0.001065	0.001064	0.001043	0.0008675	0.0007781	0.0004758
1967	0.001357	0.001354	0.001313	0.001163	0.001081	0.0005129
1968	0.001427	0.001425	0.001382	0.001167	0.001022	0.0005604
1969	0.001386	0.001384	0.001345	0.001178	0.001071	0.0007819
1970	0.00101	0.001009	0.0009976	0.0009518	0.0009028	0.0005065
1971	0.0012	0.001197	0.001148	0.000918	0.0008196	0.0006529
1972	0.001236	0.001234	0.00119	0.001094	0.001021	0.0006321
1973	0.0008355	0.0008342	0.000819	0.0007436	0.0006423	0.0004283
1974	0.001372	0.00137	0.001323	0.001108	0.0009279	0.0003888
1975	0.001355	0.001353	0.001318	0.001179	0.001031	0.0005309
1976	0.001264	0.001263	0.001221	0.001142	0.001031	0.0005047
1977	0.000434	0.0004336	0.0004268	0.0004034	0.0003607	0.0002221
1978	0.0007181	0.0007175	0.0007038	0.0006142	0.0005338	0.0003318
1979	0.004395	0.004387	0.004213	0.003371	0.00277	0.001272
1980	0.0008052	0.0008039	0.000779	0.0007079	0.0006324	0.0003881
1981	0.001271	0.00127	0.001244	0.001101	0.0009366	0.0005717
1982	0.001863	0.00186	0.001795	0.001487	0.001265	0.0006331
1983	0.0008852	0.0008842	0.0008659	0.000844	0.0007891	0.0005338
1984	0.0006302	0.000629	0.0006197	0.0005999	0.0005568	0.0003796
1985	0.001001	0.0009994	0.0009677	0.0009245	0.0008753	0.0004769
1986	0.0006323	0.0006315	0.0006142	0.0005303	0.0005005	0.0004085
1987	0.001003	0.001002	0.0009818	0.0009343	0.0008485	0.0006101
1988	0.001078	0.001076	0.001038	0.0009096	0.0007878	0.000528
1989	0.0009052	0.0008824	0.000778	0.0006426	0.0005525	0.0003775
1990	0.00123	0.001228	0.001176	0.0009327	0.0007521	0.0004321

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.004395	0.004387	0.004213	0.003371	0.00277	0.001272
0.0645161290322581		0.001863	0.00186	0.001795	0.001678	0.001513	0.001006
0.0967741935483871		0.001805	0.001804	0.001788	0.001487	0.001265	0.0007819
0.129032258064516		0.001427	0.001425	0.001382	0.001179	0.001081	0.0006529
0.161290322580645		0.001386	0.001384	0.001345	0.001178	0.001071	0.000643
0.193548387096774		0.001372	0.00137	0.001323	0.001167	0.001031	0.0006331
0.225806451612903		0.001357	0.001355	0.001318	0.001163	0.001031	0.0006321
0.258064516129032		0.001357	0.001354	0.001313	0.001142	0.001022	0.0006101
0.290322580645161		0.001355	0.001353	0.001302	0.001108	0.001021	0.0005717
0.32258064516129		0.001271	0.00127	0.001244	0.001101	0.0009366	0.0005604
0.354838709677419		0.001264	0.001263	0.001221	0.001094	0.0009279	0.0005338
0.387096774193548		0.001236	0.001234	0.00119	0.001093	0.0009266	0.0005309
0.419354838709677		0.00123	0.001228	0.001176	0.0009518	0.0009028	0.000528
0.451612903225806		0.0012	0.001197	0.001148	0.0009343	0.0008753	0.0005129
0.483870967741936		0.001083	0.001082	0.001043	0.0009327	0.0008485	0.0005065
0.516129032258065		0.001078	0.001076	0.001043	0.0009245	0.0008196	0.0005047
0.548387096774194		0.001065	0.001064	0.001038	0.000918	0.0007891	0.0004769
0.580645161290323		0.00101	0.001009	0.0009976	0.0009096	0.0007878	0.0004758
0.612903225806452		0.001003	0.001002	0.0009818	0.0008697	0.0007781	0.0004321
0.645161290322581		0.001001	0.0009994	0.0009677	0.0008675	0.000774	0.0004283
0.67741935483871		0.0009052	0.0008842	0.0008659	0.000844	0.0007521	0.0004105
0.709677419354839		0.0008852	0.0008824	0.000819	0.0007436	0.0006423	0.0004085
0.741935483870968		0.0008355	0.0008342	0.000779	0.0007079	0.0006324	0.0003888
0.774193548387097		0.0008052	0.0008039	0.000778	0.0006426	0.0005568	0.0003881
0.806451612903226		0.0007181	0.0007175	0.0007038	0.0006142	0.0005525	0.0003796
0.838709677419355		0.0006467	0.0006461	0.0006328	0.0005999	0.0005338	0.0003775
0.870967741935484		0.0006345	0.0006338	0.0006229	0.0005762	0.0005126	0.0003482
0.903225806451613		0.0006323	0.0006315	0.0006197	0.0005658	0.0005005	0.0003318
0.935483870967742		0.0006302	0.000629	0.0006142	0.0005303	0.0004826	0.0003105
0.967741935483871		0.000434	0.0004336	0.0004268	0.0004034	0.0003607	0.0002221
0.1	0.0017672	0.0017661	0.0017474	0.0014562	0.0012466	0.000769	
					Average of yearly averages:		0.000528623333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: BaitFIP
Metfile: w12842.dvf
PRZM scenario: FLcitrusC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	437	g/mol	

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Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	0.001	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-1	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	90	days	Set to 0 or delete line for single app.		
Interval 2	interval	90	days	Set to 0 or delete line for single app.		
Interval 3	interval	90	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as bait9502ben.out
Chemical: MB45950
PRZM environment: FLcitrusC.txt modified Satday, 12 October 2002 at 14:39:50
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12842.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	6.952e-005	6.892e-005	6.2e-005	5.86e-005	5.811e-005	3.087e-005
1962	0.0002141	0.0002141	0.0002141	0.0002137	0.0002122	0.0001288
1963	0.0004205	0.0004203	0.0004183	0.0003988	0.0003834	0.0003032
1964	0.0007067	0.0007067	0.0007063	0.0007041	0.0007039	0.000577
1965	0.0007972	0.0007972	0.0007968	0.0007948	0.0007931	0.000735
1966	0.0008576	0.0008575	0.0008568	0.0008562	0.000855	0.0008211
1967	0.0009586	0.0009586	0.0009581	0.0009554	0.000953	0.0008746
1968	0.001057	0.001057	0.001057	0.001054	0.001045	0.0009723
1969	0.001236	0.001236	0.00123	0.001217	0.001217	0.001135
1970	0.001258	0.001258	0.001257	0.001255	0.001253	0.001233
1971	0.00134	0.00134	0.00134	0.001336	0.001331	0.001247
1972	0.001389	0.001388	0.001388	0.001386	0.001385	0.001338
1973	0.001391	0.001391	0.00139	0.001386	0.001383	0.00137
1974	0.001431	0.001431	0.001431	0.001426	0.001422	0.001376
1975	0.001443	0.001443	0.001443	0.001439	0.001436	0.001372
1976	0.001476	0.001476	0.001475	0.001473	0.001469	0.001435
1977	0.001444	0.001444	0.001444	0.001441	0.001437	0.001376
1978	0.001333	0.001333	0.001332	0.001328	0.001324	0.001291
1979	0.001654	0.001654	0.001653	0.001647	0.001641	0.001491
1980	0.001622	0.001621	0.001618	0.001613	0.001609	0.001584
1981	0.001576	0.001576	0.001575	0.001569	0.001564	0.001549
1982	0.00169	0.00169	0.001689	0.001683	0.001677	0.001602
1983	0.001697	0.001697	0.001697	0.001696	0.001694	0.001674
1984	0.001668	0.001668	0.001667	0.001663	0.001659	0.001612
1985	0.001612	0.001612	0.001611	0.001607	0.001604	0.001542
1986	0.001601	0.001601	0.0016	0.001595	0.001592	0.001558
1987	0.001561	0.001561	0.00156	0.001558	0.001555	0.001538
1988	0.001629	0.001629	0.001628	0.001614	0.001613	0.001544
1989	0.001628	0.001627	0.001624	0.001617	0.001611	0.001567
1990	0.001542	0.001541	0.001539	0.001534	0.001534	0.001504

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.001697	0.001697	0.001697	0.001696	0.001694	0.001674
0.0645161290322581		0.00169	0.00169	0.001689	0.001683	0.001677	0.001612
0.0967741935483871		0.001668	0.001668	0.001667	0.001663	0.001659	0.001602
0.129032258064516		0.001654	0.001654	0.001653	0.001647	0.001641	0.001584
0.161290322580645		0.001629	0.001629	0.001628	0.001617	0.001613	0.001567
0.193548387096774		0.001628	0.001627	0.001624	0.001614	0.001611	0.001558
0.225806451612903		0.001622	0.001621	0.001618	0.001613	0.001609	0.001549
0.258064516129032		0.001612	0.001612	0.001611	0.001607	0.001604	0.001544
0.290322580645161		0.001601	0.001601	0.0016	0.001595	0.001592	0.001542
0.32258064516129		0.001576	0.001576	0.001575	0.001569	0.001564	0.001538
0.354838709677419		0.001561	0.001561	0.00156	0.001558	0.001555	0.001504
0.387096774193548		0.001542	0.001541	0.001539	0.001534	0.001534	0.001491
0.419354838709677		0.001476	0.001476	0.001475	0.001473	0.001469	0.001435
0.451612903225806		0.001444	0.001444	0.001444	0.001441	0.001437	0.001376
0.483870967741936		0.001443	0.001443	0.001443	0.001439	0.001436	0.001376
0.516129032258065		0.001431	0.001431	0.001431	0.001426	0.001422	0.001372
0.548387096774194		0.001391	0.001391	0.00139	0.001386	0.001385	0.00137
0.580645161290323		0.001389	0.001388	0.001388	0.001386	0.001383	0.001338
0.612903225806452		0.00134	0.00134	0.00134	0.001336	0.001331	0.001291
0.645161290322581		0.001333	0.001333	0.001332	0.001328	0.001324	0.001247
0.67741935483871		0.001258	0.001258	0.001257	0.001255	0.001253	0.001233
0.709677419354839		0.001236	0.001236	0.00123	0.001217	0.001217	0.001135
0.741935483870968		0.001057	0.001057	0.001057	0.001054	0.001045	0.0009723
0.774193548387097		0.0009586	0.0009586	0.0009581	0.0009554	0.000953	0.0008746
0.806451612903226		0.0008576	0.0008575	0.0008568	0.0008562	0.000855	0.0008211

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0.838709677419355		0.0007972	0.0007972	0.0007968	0.0007948	0.0007931	0.000735
0.870967741935484		0.0007067	0.0007067	0.0007063	0.0007041	0.0007039	0.000577
0.903225806451613		0.0004205	0.0004203	0.0004183	0.0003988	0.0003834	0.0003032
0.935483870967742		0.0002141	0.0002141	0.0002141	0.0002137	0.0002122	0.0001288
0.967741935483871		6.952e-005	6.892e-005	6.2e-005	5.86e-005	5.811e-005	3.087e-005
0.1	0.0016666	0.0016666	0.0016656	0.0016614	0.0016572	0.0016002	
					Average of yearly averages:		0.00121269566666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: bait9502
Metfile: w12842.dvf
PRZM scenario: FLcitrusC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol		0.04	mg/L		
Kd	Kd			mg/L		
Koc	Koc		3911	mg/L		
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM		1	integer	See PRZM manual	
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	5E-5	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-1	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	90	days	Set to 0 or delete line for single app.		
Interval 2	interval	90	days	Set to 0 or delete line for single app.		
Interval 3	interval	90	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as Bait5132ben.out
Chemical: MB46513
PRZM environment: FLcitrusC.txt modified Satday, 12 October 2002 at 15:39:50
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w12842.dvf modified Wedday, 3 July 2002 at 09:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	4.801e-005	4.77e-005	4.493e-005	4.36e-005	4.313e-005	2.287e-005
1962	0.0001144	0.0001144	0.0001144	0.0001136	0.0001115	7.777e-005
1963	0.0002102	0.00021	0.0002078	0.0001978	0.000192	0.0001545
1964	0.000326	0.0003259	0.0003256	0.000325	0.0003245	0.000275
1965	0.0003614	0.0003614	0.0003613	0.0003608	0.0003603	0.0003364
1966	0.0003915	0.0003915	0.0003914	0.0003909	0.0003905	0.0003748
1967	0.0004351	0.0004351	0.000435	0.0004344	0.0004333	0.000399
1968	0.000479	0.0004789	0.0004788	0.0004761	0.0004717	0.0004416
1969	0.0005472	0.000547	0.0005451	0.0005422	0.0005421	0.0005103
1970	0.0005577	0.0005577	0.0005575	0.000557	0.0005562	0.0005467
1971	0.0005888	0.0005888	0.0005887	0.0005877	0.000585	0.0005539
1972	0.0006127	0.0006127	0.0006126	0.0006124	0.0006118	0.0005906
1973	0.0006123	0.0006123	0.0006121	0.0006121	0.0006111	0.0006028
1974	0.000615	0.000615	0.0006148	0.0006142	0.000613	0.000597
1975	0.0006265	0.0006265	0.0006265	0.0006257	0.000623	0.000596
1976	0.0006399	0.0006399	0.0006397	0.0006391	0.0006383	0.0006252
1977	0.0006299	0.0006298	0.0006298	0.0006292	0.0006276	0.0005996
1978	0.000578	0.000578	0.0005779	0.0005766	0.0005752	0.0005609
1979	0.0007052	0.0007052	0.0007049	0.0007037	0.0007028	0.0006408
1980	0.0006936	0.0006932	0.0006918	0.0006896	0.0006882	0.0006788
1981	0.0006793	0.0006793	0.0006791	0.0006781	0.0006769	0.0006697
1982	0.0007159	0.0007159	0.0007157	0.0007145	0.0007135	0.0006896
1983	0.0007136	0.0007136	0.0007134	0.0007129	0.0007125	0.0007068
1984	0.0006999	0.0006999	0.0006998	0.0006985	0.0006971	0.0006793
1985	0.0006784	0.0006784	0.0006783	0.000677	0.0006746	0.0006509
1986	0.0006778	0.0006778	0.0006777	0.0006761	0.0006747	0.000659
1987	0.0006511	0.0006511	0.000651	0.0006503	0.0006488	0.0006443
1988	0.0006713	0.0006712	0.0006699	0.0006649	0.0006633	0.0006444
1989	0.0006714	0.0006714	0.000671	0.0006695	0.0006675	0.0006483
1990	0.0006376	0.0006375	0.0006365	0.0006344	0.0006345	0.0006242

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.0007159	0.0007159	0.0007157	0.0007145	0.0007135	0.0007068
0.064516129032258 1		0.0007136	0.0007136	0.0007134	0.0007129	0.0007125	0.0006896
0.0967741935483871		0.0007052	0.0007052	0.0007049	0.0007037	0.0007028	0.0006793
0.129032258064516		0.0006999	0.0006999	0.0006998	0.0006985	0.0006971	0.0006788
0.161290322580645		0.0006936	0.0006932	0.0006918	0.0006896	0.0006882	0.0006697
0.193548387096774		0.0006793	0.0006793	0.0006791	0.0006781	0.0006769	0.000659

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0.225806451612903	0.0006784	0.0006784	0.0006783	0.000677	0.0006747	0.0006509
0.258064516129032	0.0006778	0.0006778	0.0006777	0.0006761	0.0006746	0.0006483
0.290322580645161	0.0006714	0.0006714	0.000671	0.0006695	0.0006675	0.0006444
0.32258064516129	0.0006713	0.0006712	0.0006699	0.0006649	0.0006633	0.0006443
0.354838709677419	0.0006511	0.0006511	0.000651	0.0006503	0.0006488	0.0006408
0.387096774193548	0.0006399	0.0006399	0.0006397	0.0006391	0.0006383	0.0006252
0.419354838709677	0.0006376	0.0006375	0.0006365	0.0006344	0.0006345	0.0006242
0.451612903225806	0.0006299	0.0006298	0.0006298	0.0006292	0.0006276	0.0006028
0.483870967741936	0.0006265	0.0006265	0.0006265	0.0006257	0.000623	0.0005996
0.516129032258065	0.000615	0.000615	0.0006148	0.0006142	0.000613	0.000597
0.548387096774194	0.0006127	0.0006127	0.0006126	0.0006124	0.0006118	0.000596
0.580645161290323	0.0006123	0.0006123	0.0006121	0.0006121	0.0006111	0.0005906
0.612903225806452	0.0005888	0.0005888	0.0005887	0.0005877	0.000585	0.0005609
0.645161290322581	0.000578	0.000578	0.0005779	0.0005766	0.0005752	0.0005539
0.67741935483871	0.0005577	0.0005577	0.0005575	0.000557	0.0005562	0.0005467
0.709677419354839	0.0005472	0.000547	0.0005451	0.0005422	0.0005421	0.0005103
0.741935483870968	0.000479	0.0004789	0.0004788	0.0004761	0.0004717	0.0004416
0.774193548387097	0.0004351	0.0004351	0.000435	0.0004344	0.0004333	0.000399
0.806451612903226	0.0003915	0.0003915	0.0003914	0.0003909	0.0003905	0.0003748
0.838709677419355	0.0003614	0.0003614	0.0003613	0.0003608	0.0003603	0.0003364
0.870967741935484	0.000326	0.0003259	0.0003256	0.000325	0.0003245	0.000275
0.903225806451613	0.0002102	0.00021	0.0002078	0.0001978	0.000192	0.0001545
0.935483870967742	0.0001144	0.0001144	0.0001144	0.0001136	0.0001115	7.777e-005
0.967741935483871	4.801e-005	4.77e-005	4.493e-005	4.36e-005	4.313e-005	2.287e-005

0.1	0.00070467	0.00070467	0.00070439	0.00070318	0.00070223	0.00067925
					Average of yearly averages:	0.000526701333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Bait5132
Metfile: w12842.dvf
PRZM scenario: FLcitrusC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name	Value	Units	Comments	
Molecular weight	mwt	389	g/mol		
Henry's Law Const.	henry		atm-m^3/mol		
Vapor Pressure	vapr		torr		
Solubility sol	0.95	mg/L			
Kd Kd		mg/L			
Koc Koc	1290	mg/L			
Photolysis half-life	kdp		days	Half-life	
Aerobic Aquatic Metabolism	kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1320	days	Halfife
Aerobic Soil Metabolism	asm	660	days	Halfife	
Hydrolysis: pH 7		days	Half-life		
Method: CAM	1	integer	See PRZM manual		
Incorporation Depth:	DEPI	0.1	cm		
Application Rate:	TAPP	9E-6	kg/ha		
Application Efficiency:	APPEFF	1.0	fraction		
Spray Drift DRFT		fraction of application rate applied to pond			
Application Date	Date	1-1	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1 interval	90	days	Set to 0 or delete line for single app.		
Interval 2 interval	90	days	Set to 0 or delete line for single app.		
Interval 3 interval	90	days	Set to 0 or delete line for single app.		
Record 17: FILTRA					
IPSCND					
UPTKF					
Record 18: PLVKRT					
PLDKRT					
FEXTRC	0.5				
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as Bait136ben.out
Chemical: MB46136
PRZM environment: FLcitrusC.txt modified Satday, 12 October 2002 at 14:39:50
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w12842.dvf modified Wedday, 3 July 2002 at 08:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0002475	0.0002454	0.00022	0.0002076	0.0002061	0.0001099
1962	0.0007612	0.0007612	0.0007609	0.0007593	0.0007549	0.0004565
1963	0.001483	0.001482	0.001476	0.001409	0.001353	0.001071
1964	0.002503	0.002503	0.002501	0.002492	0.002486	0.002037
1965	0.002775	0.002775	0.002773	0.002764	0.002754	0.002561
1966	0.002943	0.002943	0.00294	0.002935	0.002929	0.002815
1967	0.003243	0.003243	0.00324	0.003227	0.003218	0.002949
1968	0.003532	0.003532	0.00353	0.003518	0.003489	0.003243
1969	0.004122	0.004121	0.004102	0.004063	0.004061	0.003778
1970	0.004175	0.004175	0.004173	0.004169	0.004163	0.004073
1971	0.004391	0.004391	0.004388	0.004371	0.004353	0.004062
1972	0.004516	0.004516	0.004511	0.004506	0.0045	0.004335
1973	0.004479	0.004479	0.004476	0.004457	0.004444	0.004403
1974	0.004587	0.004587	0.004585	0.004565	0.004551	0.004382
1975	0.004586	0.004586	0.004583	0.00457	0.004557	0.004329
1976	0.004665	0.004665	0.004663	0.004652	0.004638	0.004516
1977	0.004524	0.004524	0.004522	0.004511	0.004493	0.00426
1978	0.004081	0.004081	0.004079	0.004064	0.004047	0.003933
1979	0.005269	0.005269	0.005265	0.005239	0.005214	0.004663
1980	0.005128	0.005125	0.00511	0.005087	0.005071	0.004968

1981	0.004895	0.004895	0.004891	0.004867	0.004846	0.004796
1982	0.005285	0.005284	0.00528	0.005255	0.005234	0.004955
1983	0.005284	0.005284	0.005282	0.005277	0.005268	0.005196
1984	0.005158	0.005158	0.005156	0.005135	0.005117	0.004939
1985	0.004932	0.004932	0.004928	0.00491	0.004899	0.004663
1986	0.004878	0.004877	0.004873	0.004848	0.004836	0.004708
1987	0.004714	0.004714	0.00471	0.004703	0.00469	0.004636
1988	0.004966	0.004966	0.004962	0.004916	0.004914	0.004649
1989	0.00496	0.004958	0.004943	0.004914	0.004887	0.004725
1990	0.004633	0.004631	0.004619	0.004599	0.0046	0.004494

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.005285	0.005284	0.005282	0.005277	0.005268	0.005196
0.0645161290322581		0.005284	0.005284	0.00528	0.005255	0.005234	0.004968
0.0967741935483871		0.005269	0.005269	0.005265	0.005239	0.005214	0.004955
0.129032258064516		0.005158	0.005158	0.005156	0.005135	0.005117	0.004939
0.161290322580645		0.005128	0.005125	0.00511	0.005087	0.005071	0.004796
0.193548387096774		0.004966	0.004966	0.004962	0.004916	0.004914	0.004725
0.225806451612903		0.00496	0.004958	0.004943	0.004914	0.004899	0.004708
0.258064516129032		0.004932	0.004932	0.004928	0.00491	0.004887	0.004663
0.290322580645161		0.004895	0.004895	0.004891	0.004867	0.004846	0.004663
0.32258064516129		0.004878	0.004877	0.004873	0.004848	0.004836	0.004649
0.354838709677419		0.004714	0.004714	0.00471	0.004703	0.00469	0.004636
0.387096774193548		0.004665	0.004665	0.004663	0.004652	0.004638	0.004516
0.419354838709677		0.004633	0.004631	0.004619	0.004599	0.0046	0.004494
0.451612903225806		0.004587	0.004587	0.004585	0.00457	0.004557	0.004403
0.483870967741936		0.004586	0.004586	0.004583	0.004565	0.004551	0.004382
0.516129032258065		0.004524	0.004524	0.004522	0.004511	0.0045	0.004335
0.548387096774194		0.004516	0.004516	0.004511	0.004506	0.004493	0.004329
0.580645161290323		0.004479	0.004479	0.004476	0.004457	0.004444	0.00426
0.612903225806452		0.004391	0.004391	0.004388	0.004371	0.004353	0.004073
0.645161290322581		0.004175	0.004175	0.004173	0.004169	0.004163	0.004062
0.67741935483871		0.004122	0.004121	0.004102	0.004064	0.004061	0.003933
0.709677419354839		0.004081	0.004081	0.004079	0.004063	0.004047	0.003778
0.741935483870968		0.003532	0.003532	0.00353	0.003518	0.003489	0.003243
0.774193548387097		0.003243	0.003243	0.00324	0.003227	0.003218	0.002949
0.806451612903226		0.002943	0.002943	0.00294	0.002935	0.002929	0.002815
0.838709677419355		0.002775	0.002775	0.002773	0.002764	0.002754	0.002561
0.870967741935484		0.002503	0.002503	0.002501	0.002492	0.002486	0.002037
0.903225806451613		0.001483	0.001482	0.001476	0.001409	0.001353	0.001071
0.935483870967742		0.0007612	0.0007612	0.0007609	0.0007593	0.0007549	0.0004565
0.967741935483871		0.0002475	0.0002454	0.00022	0.0002076	0.0002061	0.0001099
0.1	0.0052579	0.0052579	0.0052541	0.0052286	0.0052043	0.0049534	
					Average of yearly averages:		0.00382351333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: Bait136
Metfile: w12842.dvf
PRZM scenario: FLcitrusC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.1	cm		
Application Rate:		TAPP	2E-4	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	1-1	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	90	days	Set to 0 or delete line for single app.		
Interval 2	interval	90	days	Set to 0 or delete line for single app.		
Interval 3	interval	90	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Leaf Cutter Ants

Fipronil

stored as FLFIPben.out
Chemical: Fipronil
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 13:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 09:04:28

US EPA ARCHIVE DOCUMENT

Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.09396	0.09382	0.09108	0.07641	0.06738	0.02192
1962	0.1194	0.1192	0.116	0.09789	0.08476	0.02735
1963	0.1855	0.1853	0.1794	0.1471	0.1226	0.04061
1964	0.1203	0.1201	0.1168	0.1013	0.0977	0.044
1965	0.1545	0.1543	0.1495	0.1226	0.09967	0.03027
1966	0.2814	0.281	0.271	0.2258	0.1894	0.06091
1967	0.0863	0.08618	0.08342	0.06903	0.06358	0.02425
1968	0.2716	0.271	0.2636	0.2232	0.1834	0.05404
1969	0.09977	0.09961	0.09589	0.07878	0.06489	0.02862
1970	0.01234	0.01196	0.01051	0.007939	0.006443	0.003827
1971	0.09701	0.09686	0.09362	0.07559	0.06472	0.02672
1972	0.129	0.1288	0.1242	0.09966	0.08541	0.03272
1973	0.0287	0.02866	0.02781	0.02448	0.02132	0.008229
1974	0.06124	0.06116	0.05929	0.05192	0.04491	0.01518
1975	0.03463	0.03458	0.03388	0.02908	0.02463	0.01079
1976	0.1946	0.1944	0.1884	0.1537	0.1276	0.03826
1977	0.06659	0.06649	0.06435	0.05582	0.04902	0.02046
1978	0.12	0.1198	0.1153	0.09391	0.08494	0.03295
1979	0.1145	0.1143	0.1106	0.09075	0.08111	0.03277
1980	0.03085	0.03079	0.03011	0.02525	0.02161	0.008551
1981	0.06653	0.06644	0.06433	0.0538	0.04544	0.01712
1982	0.1375	0.1373	0.1325	0.1128	0.09395	0.03164
1983	0.1623	0.1621	0.1565	0.1246	0.1035	0.03426
1984	0.2422	0.2419	0.2341	0.1934	0.16	0.0482
1985	0.05159	0.05151	0.04969	0.03979	0.03224	0.01275
1986	0.108	0.1078	0.1039	0.08427	0.07045	0.02093
1987	0.01338	0.01336	0.01285	0.01055	0.009818	0.005061
1988	0.02203	0.022	0.0212	0.01708	0.01412	0.007953
1989	0.05495	0.05489	0.05374	0.0469	0.03855	0.01475
1990	0.02819	0.02718	0.02333	0.01665	0.01319	0.008038

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.2814	0.281	0.271	0.2258	0.1894	0.06091
0.0645161290322581		0.2716	0.271	0.2636	0.2232	0.1834	0.05404
0.0967741935483871		0.2422	0.2419	0.2341	0.1934	0.16	0.0482
0.129032258064516		0.1946	0.1944	0.1884	0.1537	0.1276	0.044
0.161290322580645		0.1855	0.1853	0.1794	0.1471	0.1226	0.04061
0.193548387096774		0.1623	0.1621	0.1565	0.1246	0.1035	0.03826
0.225806451612903		0.1545	0.1543	0.1495	0.1226	0.09967	0.03426
0.258064516129032		0.1375	0.1373	0.1325	0.1128	0.0977	0.03295
0.290322580645161		0.129	0.1288	0.1242	0.1013	0.09395	0.03277
0.32258064516129		0.1203	0.1201	0.1168	0.09966	0.08541	0.03272
0.354838709677419		0.12	0.1198	0.116	0.09789	0.08494	0.03164
0.387096774193548		0.1194	0.1192	0.1153	0.09391	0.08476	0.03027
0.419354838709677		0.1145	0.1143	0.1106	0.09075	0.08111	0.02862
0.451612903225806		0.108	0.1078	0.1039	0.08427	0.07045	0.02735
0.483870967741936		0.09977	0.09961	0.09589	0.07878	0.06738	0.02672
0.516129032258065		0.09701	0.09686	0.09362	0.07641	0.06489	0.02425
0.548387096774194		0.09396	0.09382	0.09108	0.07559	0.06472	0.02192
0.580645161290323		0.0863	0.08618	0.08342	0.06903	0.06358	0.02093
0.612903225806452		0.06659	0.06649	0.06435	0.05582	0.04902	0.02046
0.645161290322581		0.06653	0.06644	0.06433	0.0538	0.04544	0.01712
0.67741935483871		0.06124	0.06116	0.05929	0.05192	0.04491	0.01518
0.709677419354839		0.05495	0.05489	0.05374	0.0469	0.03855	0.01475
0.741935483870968		0.05159	0.05151	0.04969	0.03979	0.03224	0.01275
0.774193548387097		0.03463	0.03458	0.03388	0.02908	0.02463	0.01079
0.806451612903226		0.03085	0.03079	0.03011	0.02525	0.02161	0.008551
0.838709677419355		0.0287	0.02866	0.02781	0.02448	0.02132	0.008229
0.870967741935484		0.02819	0.02718	0.02333	0.01708	0.01412	0.008038
0.903225806451613		0.02203	0.022	0.0212	0.01665	0.01319	0.007953
0.935483870967742		0.01338	0.01336	0.01285	0.01055	0.009818	0.005061
0.967741935483871		0.01234	0.01196	0.01051	0.007939	0.006443	0.003827
0.1	0.23744	0.23715	0.22953	0.18943	0.15676	0.04778	
					Average of yearly averages:		0.0254376333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLFIP
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI		cm		
Application Rate:		TAPP	0.255	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	30	days	Set to 0 or delete line for single app.		

US EPA ARCHIVE DOCUMENT

Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run		IR	Pond	
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)

MB45950

stored as FLTF950ben.out
Chemical: MB45950
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 13:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 09:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.007424	0.007424	0.00742	0.007406	0.007388	0.003015
1962	0.01942	0.01942	0.01941	0.01938	0.01929	0.01191
1963	0.03459	0.03457	0.03432	0.03247	0.03191	0.02506
1964	0.05334	0.05334	0.05332	0.05317	0.05305	0.04192
1965	0.05439	0.05439	0.05436	0.05414	0.05388	0.05237
1966	0.07294	0.07294	0.07289	0.07265	0.07245	0.06167
1967	0.07171	0.07171	0.07167	0.07143	0.0712	0.06978
1968	0.08668	0.08668	0.08665	0.08646	0.08612	0.07708
1969	0.09177	0.09176	0.09155	0.09117	0.09082	0.08585
1970	0.09194	0.09194	0.09191	0.09187	0.09172	0.087
1971	0.08764	0.08764	0.08759	0.08738	0.0866	0.08301
1972	0.09602	0.09602	0.09599	0.09474	0.09364	0.08868
1973	0.09586	0.09583	0.09567	0.09531	0.09496	0.09125
1974	0.0917	0.0917	0.09165	0.09137	0.09111	0.0869
1975	0.0903	0.09025	0.09003	0.08952	0.08911	0.08596
1976	0.09078	0.09078	0.0907	0.09024	0.08974	0.08572
1977	0.09039	0.09039	0.09037	0.09023	0.08998	0.08812
1978	0.08833	0.08833	0.08828	0.08802	0.08785	0.08708
1979	0.09676	0.09675	0.09673	0.09637	0.09569	0.09072
1980	0.09628	0.09624	0.09607	0.09574	0.09543	0.09126
1981	0.08666	0.08666	0.08661	0.08629	0.08601	0.0847
1982	0.09069	0.09069	0.09062	0.09031	0.09005	0.08734
1983	0.09455	0.09447	0.09368	0.09311	0.09236	0.08883
1984	0.09788	0.09788	0.09781	0.09751	0.09735	0.09581
1985	0.09666	0.09662	0.09647	0.09606	0.09567	0.0932
1986	0.09531	0.09531	0.09523	0.09481	0.09449	0.09265
1987	0.09156	0.09153	0.0914	0.09127	0.0912	0.08791
1988	0.08389	0.08389	0.08386	0.08369	0.08361	0.08084
1989	0.09122	0.09122	0.09118	0.09101	0.08892	0.08498
1990	0.09084	0.09079	0.09059	0.09014	0.09016	0.08673

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.09788	0.09788	0.09781	0.09751	0.09735	0.09581
0.0645161290322581		0.09676	0.09675	0.09673	0.09637	0.09569	0.0932
0.0967741935483871		0.09666	0.09662	0.09647	0.09606	0.09567	0.09265
0.129032258064516		0.09628	0.09624	0.09607	0.09574	0.09543	0.09126
0.161290322580645		0.09602	0.09602	0.09599	0.09531	0.09496	0.09125
0.193548387096774		0.09586	0.09583	0.09567	0.09481	0.09449	0.09072
0.225806451612903		0.09531	0.09531	0.09523	0.09474	0.09364	0.08883
0.258064516129032		0.09455	0.09447	0.09368	0.09311	0.09236	0.08868
0.290322580645161		0.09194	0.09194	0.09191	0.09187	0.09172	0.08812
0.32258064516129		0.09177	0.09176	0.09165	0.09137	0.0912	0.08791
0.354838709677419		0.0917	0.0917	0.09155	0.09127	0.09111	0.08734
0.387096774193548		0.09156	0.09153	0.0914	0.09117	0.09082	0.08708
0.419354838709677		0.09122	0.09122	0.09118	0.09101	0.09016	0.087
0.451612903225806		0.09084	0.09079	0.0907	0.09031	0.09005	0.0869
0.483870967741936		0.09078	0.09078	0.09062	0.09024	0.08998	0.08673
0.516129032258065		0.09069	0.09069	0.09059	0.09023	0.08974	0.08596
0.548387096774194		0.09039	0.09039	0.09037	0.09014	0.08911	0.08585
0.580645161290323		0.0903	0.09025	0.09003	0.08952	0.08892	0.08572
0.612903225806452		0.08833	0.08833	0.08828	0.08802	0.08785	0.08498
0.645161290322581		0.08764	0.08764	0.08759	0.08738	0.0866	0.0847
0.67741935483871		0.08668	0.08668	0.08665	0.08646	0.08612	0.08301
0.709677419354839		0.08666	0.08666	0.08661	0.08629	0.08601	0.08084
0.741935483870968		0.08389	0.08389	0.08386	0.08369	0.08361	0.07708
0.774193548387097		0.07294	0.07294	0.07289	0.07265	0.07245	0.06978
0.806451612903226		0.07171	0.07171	0.07167	0.07143	0.0712	0.06167
0.838709677419355		0.05439	0.05439	0.05436	0.05414	0.05388	0.05237
0.870967741935484		0.05334	0.05334	0.05332	0.05317	0.05305	0.04192
0.903225806451613		0.03459	0.03457	0.03432	0.03247	0.03191	0.02506
0.935483870967742		0.01942	0.01942	0.01941	0.01938	0.01929	0.01191
0.967741935483871		0.007424	0.007424	0.00742	0.007406	0.007388	0.003015
0.1	0.096622	0.096582	0.09643	0.096028	0.095646	0.092511	
					Average of yearly averages:		0.0759115

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTF950
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	421	g/mol	

US EPA ARCHIVE DOCUMENT

Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI		cm		
Application Rate:		TAPP	0.0125	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	30	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as FLTF513ben.out
Chemical: MB46513
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 13:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 09:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.004281	0.004281	0.00428	0.004267	0.004213	0.001683
1962	0.008749	0.008749	0.008748	0.008737	0.008683	0.006045
1963	0.01461	0.01461	0.01456	0.0144	0.01435	0.01122
1964	0.02091	0.02091	0.0209	0.02087	0.02081	0.01716
1965	0.02221	0.02221	0.0222	0.02215	0.02209	0.02111
1966	0.02988	0.02988	0.02987	0.02981	0.02975	0.0252
1967	0.02965	0.02965	0.02964	0.02959	0.02953	0.02885
1968	0.0346	0.0346	0.03458	0.03453	0.03447	0.03154
1969	0.03555	0.03554	0.03554	0.0355	0.03536	0.0339
1970	0.03553	0.03553	0.03551	0.03541	0.0353	0.03329
1971	0.03271	0.03271	0.0327	0.03265	0.0325	0.03141
1972	0.03475	0.03475	0.03474	0.03452	0.03438	0.0328
1973	0.03474	0.03473	0.03471	0.0346	0.03448	0.03304
1974	0.03177	0.03175	0.03165	0.03145	0.03133	0.03094
1975	0.03105	0.03104	0.03096	0.03078	0.03063	0.02958
1976	0.03138	0.03138	0.03137	0.03128	0.03121	0.02953
1977	0.03072	0.03072	0.03071	0.03066	0.03061	0.03006
1978	0.03143	0.03143	0.03142	0.03135	0.03133	0.03068
1979	0.03308	0.03308	0.03307	0.03304	0.03301	0.03154
1980	0.03278	0.03277	0.03271	0.03257	0.03245	0.03112
1981	0.02973	0.02973	0.02973	0.0297	0.02966	0.02889
1982	0.03157	0.03157	0.03156	0.0315	0.03144	0.03016
1983	0.03251	0.03251	0.0325	0.03247	0.03243	0.03119
1984	0.03466	0.03466	0.03465	0.03459	0.03455	0.03335
1985	0.03427	0.03426	0.03421	0.03407	0.03393	0.03295
1986	0.03271	0.03271	0.0327	0.03265	0.03258	0.0316
1987	0.03186	0.03185	0.03179	0.03166	0.03155	0.0301
1988	0.02856	0.02855	0.0285	0.02844	0.02837	0.02734
1989	0.02922	0.02922	0.02918	0.02886	0.02811	0.02731
1990	0.02922	0.02922	0.02919	0.02908	0.02899	0.02772

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.03555	0.03554	0.03554	0.0355	0.03536	0.0339
0.064516129032258 1		0.03553	0.03553	0.03551	0.03541	0.0353	0.03335
0.096774193548387 1		0.03475	0.03475	0.03474	0.0346	0.03455	0.03329
0.129032258064516		0.03474	0.03473	0.03471	0.03459	0.03448	0.03304
0.161290322580645		0.03466	0.03466	0.03465	0.03453	0.03447	0.03295
0.193548387096774		0.0346	0.0346	0.03458	0.03452	0.03438	0.0328
0.225806451612903		0.03427	0.03426	0.03421	0.03407	0.03393	0.0316
0.258064516129032		0.03308	0.03308	0.03307	0.03304	0.03301	0.03154
0.290322580645161		0.03278	0.03277	0.03271	0.03265	0.03258	0.03154
0.32258064516129		0.03271	0.03271	0.0327	0.03265	0.0325	0.03141
0.354838709677419		0.03271	0.03271	0.0327	0.03257	0.03245	0.03119
0.387096774193548		0.03251	0.03251	0.0325	0.03247	0.03243	0.03112
0.419354838709677		0.03186	0.03185	0.03179	0.03166	0.03155	0.03094
0.451612903225806		0.03177	0.03175	0.03165	0.0315	0.03144	0.03068
0.483870967741936		0.03157	0.03157	0.03156	0.03145	0.03133	0.03016
0.516129032258065		0.03143	0.03143	0.03142	0.03135	0.03133	0.0301
0.548387096774194		0.03138	0.03138	0.03137	0.03128	0.03121	0.03006
0.580645161290323		0.03105	0.03104	0.03096	0.03078	0.03063	0.02958
0.612903225806452		0.03072	0.03072	0.03071	0.03066	0.03061	0.02953
0.645161290322581		0.02988	0.02988	0.02987	0.02981	0.02975	0.02889
0.67741935483871		0.02973	0.02973	0.02973	0.0297	0.02966	0.02885
0.709677419354839		0.02965	0.02965	0.02964	0.02959	0.02953	0.02772
0.741935483870968		0.02922	0.02922	0.02919	0.02908	0.02899	0.02734
0.774193548387097		0.02922	0.02922	0.02918	0.02886	0.02837	0.02731
0.806451612903226		0.02856	0.02855	0.0285	0.02844	0.02811	0.0252
0.838709677419355		0.02221	0.02221	0.0222	0.02215	0.02209	0.02111
0.870967741935484		0.02091	0.02091	0.0209	0.02087	0.02081	0.01716

0.903225806451613	0.01461	0.01461	0.01456	0.0144	0.01435	0.01122
0.935483870967742	0.008749	0.008749	0.008748	0.008737	0.008683	0.006045
0.967741935483871	0.004281	0.004281	0.00428	0.004267	0.004213	0.001683

0.1	0.034749	0.034748	0.034737	0.034599	0.034543	0.033265

Average of yearly averages: 0.0273769333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTF513
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI		cm		
Application Rate:		TAPP	0.002	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	30	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as FLTF136ben.out
Chemical: MB46136
PRZM environment: FLturfC.txt modified Monday, 16 June 2003 at 13:48:06
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w12834.dvf modified Wedday, 3 July 2002 at 09:04:28
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.03223	0.03222	0.0322	0.03209	0.03198	0.01312
1962	0.08425	0.08424	0.08423	0.08405	0.08368	0.05141
1963	0.1496	0.1496	0.1486	0.1402	0.1377	0.108
1964	0.231	0.231	0.2309	0.2301	0.2294	0.1807
1965	0.2311	0.2311	0.2309	0.2297	0.2284	0.2223
1966	0.3083	0.3083	0.308	0.3069	0.3058	0.2586
1967	0.296	0.2958	0.2956	0.2944	0.2934	0.2884
1968	0.357	0.357	0.3568	0.3557	0.3542	0.3154
1969	0.3733	0.3733	0.3725	0.3712	0.3699	0.3488
1970	0.3737	0.3737	0.3736	0.373	0.372	0.349
1971	0.3458	0.3458	0.3456	0.3444	0.3411	0.3262
1972	0.3801	0.38	0.3798	0.3744	0.3694	0.348
1973	0.3789	0.3787	0.3778	0.3758	0.3739	0.356
1974	0.3555	0.3555	0.3552	0.3537	0.3523	0.3335
1975	0.3477	0.3475	0.3464	0.3438	0.3418	0.327
1976	0.3466	0.3466	0.3463	0.3441	0.3418	0.3237
1977	0.3437	0.3437	0.3436	0.3429	0.3416	0.3326
1978	0.3318	0.3318	0.3315	0.3302	0.3294	0.3258
1979	0.3693	0.3693	0.3691	0.3674	0.3643	0.3416
1980	0.3664	0.3662	0.3652	0.3634	0.3618	0.3424
1981	0.3204	0.3204	0.3202	0.3186	0.3172	0.3111
1982	0.3371	0.3371	0.3368	0.3354	0.3342	0.3219
1983	0.3539	0.3535	0.3498	0.3473	0.344	0.3277
1984	0.3674	0.3674	0.367	0.3655	0.3646	0.358
1985	0.3608	0.3606	0.3597	0.3575	0.3555	0.3443
1986	0.3534	0.3534	0.353	0.3511	0.3496	0.3412
1987	0.3363	0.3362	0.3355	0.3347	0.3343	0.3198
1988	0.3018	0.3017	0.3016	0.3007	0.3004	0.2883
1989	0.3369	0.3369	0.3367	0.3357	0.3266	0.3079
1990	0.3341	0.3339	0.3329	0.3307	0.3308	0.3156

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129	0.3801	0.38	0.3798	0.3758	0.3739	0.358	
0.0645161290322581	0.3789	0.3787	0.3778	0.3744	0.372	0.356	
0.0967741935483871	0.3737	0.3737	0.3736	0.373	0.3699	0.349	
0.129032258064516	0.3733	0.3733	0.3725	0.3712	0.3694	0.3488	
0.161290322580645	0.3693	0.3693	0.3691	0.3674	0.3646	0.348	
0.193548387096774	0.3674	0.3674	0.367	0.3655	0.3643	0.3443	
0.225806451612903	0.3664	0.3662	0.3652	0.3634	0.3618	0.3424	
0.258064516129032	0.3608	0.3606	0.3597	0.3575	0.3555	0.3416	
0.290322580645161	0.357	0.357	0.3568	0.3557	0.3542	0.3412	
0.32258064516129	0.3555	0.3555	0.3552	0.3537	0.3523	0.3335	

US EPA ARCHIVE DOCUMENT

0.354838709677419	0.3539	0.3535	0.353	0.3511	0.3496	0.3326
0.387096774193548	0.3534	0.3534	0.3498	0.3473	0.344	0.3277
0.419354838709677	0.3477	0.3475	0.3464	0.3444	0.3418	0.327
0.451612903225806	0.3466	0.3466	0.3463	0.3441	0.3418	0.3262
0.483870967741936	0.3458	0.3458	0.3456	0.3438	0.3416	0.3258
0.516129032258065	0.3437	0.3437	0.3436	0.3429	0.3411	0.3237
0.548387096774194	0.3371	0.3371	0.3368	0.3357	0.3343	0.3219
0.580645161290323	0.3369	0.3369	0.3367	0.3354	0.3342	0.3198
0.612903225806452	0.3363	0.3362	0.3355	0.3347	0.3308	0.3156
0.645161290322581	0.3341	0.3339	0.3329	0.3307	0.3294	0.3154
0.67741935483871	0.3318	0.3318	0.3315	0.3302	0.3266	0.3111
0.709677419354839	0.3204	0.3204	0.3202	0.3186	0.3172	0.3079
0.741935483870968	0.3083	0.3083	0.308	0.3069	0.3058	0.2884
0.774193548387097	0.3018	0.3017	0.3016	0.3007	0.3004	0.2883
0.806451612903226	0.296	0.2958	0.2956	0.2944	0.2934	0.2586
0.838709677419355	0.2311	0.2311	0.2309	0.2301	0.2294	0.2223
0.870967741935484	0.231	0.231	0.2309	0.2297	0.2284	0.1807
0.903225806451613	0.1496	0.1496	0.1486	0.1402	0.1377	0.108
0.935483870967742	0.08425	0.08424	0.08423	0.08405	0.08368	0.05141
0.967741935483871	0.03223	0.03222	0.0322	0.03209	0.03198	0.01312

0.1	0.37366	0.37366	0.37349	0.37282	0.36985	0.34898

Average of yearly averages: 0.290944333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: FLTF136
Metfile: w12834.dvf
PRZM scenario: FLturfC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	1	integer	See PRZM manual		
Incorporation Depth:		DEPI		cm		
Application Rate:		TAPP	0.061	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1	interval	30	days	Set to 0 or delete line for single app.		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Onion Seed (Typical Seeding Rate)

Fipronil

stored as GAONIONFIP2ben.out
Chemical: Fipronil
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.04001	0.03997	0.03934	0.03655	0.02895	0.007168
1962	0.03954	0.03952	0.03912	0.03635	0.03445	0.02024
1963	0.06661	0.06656	0.06555	0.06098	0.05466	0.02132
1964	0.1235	0.1235	0.1217	0.1161	0.1033	0.03974
1965	0.1166	0.115	0.1066	0.08597	0.0734	0.03175
1966	0.04033	0.04002	0.03853	0.03639	0.03271	0.0153
1967	0.06084	0.0608	0.05998	0.05506	0.04914	0.02372
1968	0.04559	0.04557	0.04495	0.04244	0.0381	0.01562
1969	0.1104	0.1103	0.1097	0.09972	0.07385	0.02778
1970	0.1032	0.1017	0.09709	0.08269	0.07096	0.03224
1971	0.07633	0.07627	0.0749	0.06957	0.0571	0.02401
1972	0.05794	0.05681	0.05442	0.0431	0.037	0.01901
1973	0.05641	0.05621	0.05399	0.04682	0.041	0.01692
1974	0.04222	0.0422	0.04167	0.03883	0.03065	0.01439
1975	0.0556	0.05553	0.05439	0.04861	0.04392	0.0194
1976	0.07336	0.07332	0.07238	0.06274	0.04756	0.0187
1977	0.06845	0.06778	0.06509	0.05506	0.04638	0.02026
1978	0.04542	0.04525	0.04388	0.03886	0.03437	0.01819

US EPA ARCHIVE DOCUMENT

1979	0.06901	0.06894	0.06773	0.06081	0.05629	0.02512
1980	0.04592	0.04501	0.04105	0.0353	0.02998	0.01713
1981	0.04042	0.04038	0.03952	0.0352	0.03133	0.01546
1982	0.03316	0.03314	0.03261	0.03096	0.02846	0.01306
1983	0.04101	0.041	0.04079	0.03811	0.03529	0.02018
1984	0.07001	0.06993	0.0694	0.06421	0.05767	0.02538
1985	0.04039	0.04023	0.03851	0.03243	0.02773	0.01603
1986	0.05475	0.05472	0.05443	0.0497	0.04595	0.02077
1987	0.0578	0.05777	0.0571	0.05175	0.04504	0.01956
1988	0.03257	0.03255	0.03192	0.02848	0.0239	0.01376
1989	0.1958	0.1956	0.1917	0.1758	0.1613	0.04691
1990	0.297	0.2967	0.2933	0.2661	0.2198	0.07439

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.297	0.2967	0.2933	0.2661	0.2198	0.07439
0.0645161290322581		0.1958	0.1956	0.1917	0.1758	0.1613	0.04691
0.0967741935483871		0.1235	0.1235	0.1217	0.1161	0.1033	0.03974
0.129032258064516		0.1166	0.115	0.1097	0.09972	0.07385	0.03224
0.161290322580645		0.1104	0.1103	0.1066	0.08597	0.0734	0.03175
0.193548387096774		0.1032	0.1017	0.09709	0.08269	0.07096	0.02778
0.225806451612903		0.07633	0.07627	0.0749	0.06957	0.05767	0.02538
0.258064516129032		0.07336	0.07332	0.07238	0.06421	0.0571	0.02512
0.290322580645161		0.07001	0.06993	0.0694	0.06274	0.05629	0.02401
0.32258064516129		0.06901	0.06894	0.06773	0.06098	0.05466	0.02372
0.354838709677419		0.06845	0.06778	0.06555	0.06081	0.04914	0.02132
0.387096774193548		0.06661	0.06656	0.06509	0.05506	0.04756	0.02077
0.419354838709677		0.06084	0.0608	0.05998	0.05506	0.04638	0.02026
0.451612903225806		0.05794	0.05777	0.0571	0.05175	0.04595	0.02024
0.483870967741936		0.0578	0.05681	0.05443	0.0497	0.04504	0.02018
0.516129032258065		0.05641	0.05621	0.05442	0.04861	0.04392	0.01956
0.548387096774194		0.0556	0.05553	0.05439	0.04682	0.041	0.0194
0.580645161290323		0.05475	0.05472	0.05399	0.0431	0.0381	0.01901
0.612903225806452		0.04592	0.04557	0.04495	0.04244	0.037	0.0187
0.645161290322581		0.04559	0.04525	0.04388	0.03886	0.03529	0.01819
0.67741935483871		0.04542	0.04501	0.04167	0.03883	0.03445	0.01713
0.709677419354839		0.04222	0.0422	0.04105	0.03811	0.03437	0.01692
0.741935483870968		0.04101	0.041	0.04079	0.03655	0.03271	0.01603
0.774193548387097		0.04042	0.04038	0.03952	0.03639	0.03133	0.01562
0.806451612903226		0.04039	0.04023	0.03934	0.03635	0.03065	0.01546
0.838709677419355		0.04033	0.04002	0.03912	0.0353	0.02998	0.0153
0.870967741935484		0.04001	0.03997	0.03853	0.0352	0.02895	0.01439
0.903225806451613		0.03954	0.03952	0.03851	0.03243	0.02846	0.01376
0.935483870967742		0.03316	0.03314	0.03261	0.03096	0.02773	0.01306
0.967741935483871		0.03257	0.03255	0.03192	0.02848	0.0239	0.007168
0.1	0.12281	0.12265	0.1205	0.114462	0.100355	0.03899	
					Average of yearly averages:		0.0231169333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONIONFIP2
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name	Value	Units	Comments	
Molecular weight	mwt	437	g/mol		
Henry's Law Const.	henry		atm-m^3/mol		
Vapor Pressure	vapr		torr		
Solubility	sol	2.4	mg/L		
Kd	Kd		mg/L		
Koc	Koc	727	mg/L		
Photolysis half-life	kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism	kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	33.7	days	Halfife
Aerobic Soil Metabolism	asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	8	integer	See PRZM manual	
Incorporation Depth:	DEPI	0.635	cm		
Application Rate:	TAPP	0.054	kg/ha		
Application Efficiency:	APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond		
Application Date	Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as GAONION9502ben.out
Chemical: MB45950
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0008549	0.00085	0.0007859	0.0006863	0.0005158	0.0001275
1962	0.006114	0.006114	0.006113	0.006092	0.005974	0.003772

US EPA ARCHIVE DOCUMENT

1963	0.01171	0.01171	0.0117	0.01167	0.01149	0.009027
1964	0.02233	0.02232	0.02213	0.02128	0.02073	0.01633
1965	0.02401	0.024	0.0239	0.02374	0.02362	0.02308
1966	0.0268	0.0268	0.02679	0.02674	0.02668	0.02591
1967	0.02914	0.02914	0.02913	0.02907	0.02908	0.02867
1968	0.02991	0.02991	0.02989	0.02969	0.02957	0.02925
1969	0.03509	0.03509	0.03499	0.03456	0.034	0.03189
1970	0.03696	0.03695	0.03693	0.03687	0.03687	0.03605
1971	0.04001	0.04001	0.03997	0.03978	0.03946	0.03787
1972	0.04106	0.04106	0.04096	0.04049	0.04038	0.04023
1973	0.04216	0.04216	0.04212	0.04195	0.04189	0.04132
1974	0.04082	0.04082	0.04081	0.04074	0.04067	0.0405
1975	0.04181	0.04181	0.04179	0.0417	0.04163	0.04101
1976	0.04548	0.04548	0.04545	0.04505	0.04474	0.04299
1977	0.0457	0.0457	0.04569	0.04563	0.04554	0.04429
1978	0.04415	0.04415	0.04414	0.04411	0.04409	0.04318
1979	0.04564	0.04564	0.04563	0.04558	0.04553	0.04392
1980	0.04595	0.04595	0.04593	0.04581	0.04571	0.04482
1981	0.04396	0.04396	0.04394	0.04385	0.04381	0.04354
1982	0.04526	0.04526	0.04523	0.04511	0.04504	0.04442
1983	0.04661	0.0466	0.04659	0.04652	0.04647	0.04578
1984	0.04794	0.04794	0.04791	0.04782	0.04774	0.04707
1985	0.047	0.047	0.04699	0.04694	0.04687	0.04615
1986	0.04647	0.04646	0.04645	0.04642	0.04637	0.04585
1987	0.04756	0.04756	0.04754	0.0475	0.04746	0.04705
1988	0.047	0.047	0.04699	0.04694	0.04694	0.04651
1989	0.04933	0.04932	0.04916	0.04887	0.04856	0.04632
1990	0.05332	0.05332	0.05322	0.05303	0.05185	0.04958

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.05332	0.05332	0.05322	0.05303	0.05185	0.04958
0.0645161290322581		0.04933	0.04932	0.04916	0.04887	0.04856	0.04707
0.0967741935483871		0.04794	0.04794	0.04791	0.04782	0.04774	0.04705
0.129032258064516		0.04756	0.04756	0.04754	0.0475	0.04746	0.04651
0.161290322580645		0.047	0.047	0.04699	0.04694	0.04694	0.04632
0.193548387096774		0.047	0.047	0.04699	0.04694	0.04687	0.04615
0.225806451612903		0.04661	0.0466	0.04659	0.04652	0.04647	0.04585
0.258064516129032		0.04647	0.04646	0.04645	0.04642	0.04637	0.04578
0.290322580645161		0.04595	0.04595	0.04593	0.04581	0.04571	0.04482
0.32258064516129		0.0457	0.0457	0.04569	0.04563	0.04554	0.04442
0.354838709677419		0.04564	0.04564	0.04563	0.04558	0.04553	0.04429
0.387096774193548		0.04548	0.04548	0.04545	0.04511	0.04504	0.04392
0.419354838709677		0.04526	0.04526	0.04523	0.04505	0.04474	0.04354
0.451612903225806		0.04415	0.04415	0.04414	0.04411	0.04409	0.04318
0.483870967741936		0.04396	0.04396	0.04394	0.04385	0.04381	0.04299
0.516129032258065		0.04216	0.04216	0.04212	0.04195	0.04189	0.04132
0.548387096774194		0.04181	0.04181	0.04179	0.0417	0.04163	0.04101
0.580645161290323		0.04106	0.04106	0.04096	0.04074	0.04067	0.0405
0.612903225806452		0.04082	0.04082	0.04081	0.04049	0.04038	0.04023
0.645161290322581		0.04001	0.04001	0.03997	0.03978	0.03946	0.03787
0.67741935483871		0.03696	0.03695	0.03693	0.03687	0.03687	0.03605
0.709677419354839		0.03509	0.03509	0.03499	0.03456	0.034	0.03189
0.741935483870968		0.02991	0.02991	0.02989	0.02969	0.02957	0.02925
0.774193548387097		0.02914	0.02914	0.02913	0.02907	0.02908	0.02867
0.806451612903226		0.0268	0.0268	0.02679	0.02674	0.02668	0.02591
0.838709677419355		0.02401	0.024	0.0239	0.02374	0.02362	0.02308
0.870967741935484		0.02233	0.02232	0.02213	0.02128	0.02073	0.01633
0.903225806451613		0.01171	0.01171	0.0117	0.01167	0.01149	0.009027
0.935483870967742		0.006114	0.006114	0.006113	0.006092	0.005974	0.003772
0.967741935483871		0.0008549	0.00085	0.0007859	0.0006863	0.0005158	0.0001275
0.1	0.047902	0.047902	0.047873	0.047788	0.047712	0.046996	
					Average of yearly averages:		0.0362168833333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONION9502
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.635	cm		
Application Rate:		TAPP	0.0026	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				

Flag for Index Res. Run	IR	Pond	
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)

MB46513

stored as GAONION5132ben.out
Chemical: MB46513
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0008415	0.0008355	0.0007753	0.0006308	0.0004632	0.0001144
1962	0.003123	0.003121	0.003108	0.003037	0.002912	0.002212
1963	0.005188	0.005186	0.00516	0.005033	0.004825	0.004013
1964	0.009413	0.009394	0.00918	0.008576	0.008113	0.006761
1965	0.0104	0.01039	0.01032	0.01016	0.01005	0.009914
1966	0.01123	0.01123	0.01122	0.0112	0.01118	0.01089
1967	0.01226	0.01226	0.01226	0.01225	0.01223	0.01203
1968	0.01254	0.01254	0.01249	0.01232	0.01225	0.01215
1969	0.01443	0.01442	0.01428	0.01381	0.01341	0.0129
1970	0.01506	0.01506	0.01506	0.01504	0.01502	0.0148
1971	0.01583	0.01582	0.01575	0.0155	0.01529	0.01509
1972	0.01616	0.01616	0.01615	0.01613	0.01612	0.0157
1973	0.01638	0.01638	0.01637	0.01635	0.01634	0.0159
1974	0.01573	0.01573	0.01572	0.0157	0.01566	0.01551
1975	0.01599	0.01599	0.01598	0.01595	0.01588	0.01575
1976	0.01681	0.0168	0.01671	0.01637	0.01619	0.01605
1977	0.01708	0.01708	0.01708	0.01706	0.01703	0.0164
1978	0.01659	0.01659	0.01659	0.01658	0.01657	0.01611
1979	0.01673	0.01673	0.01669	0.01657	0.01642	0.01625
1980	0.01703	0.01703	0.01702	0.01699	0.01695	0.01653
1981	0.01641	0.01641	0.01641	0.0164	0.01639	0.01611
1982	0.01652	0.01652	0.01651	0.01649	0.01649	0.01624
1983	0.01721	0.01721	0.0172	0.01717	0.01713	0.01664
1984	0.01784	0.01784	0.01784	0.01781	0.01778	0.01738
1985	0.01786	0.01786	0.01786	0.01785	0.01783	0.01734
1986	0.01774	0.01774	0.01774	0.01772	0.01768	0.01727
1987	0.01841	0.01841	0.01841	0.01838	0.01836	0.01767
1988	0.01747	0.01747	0.01747	0.01746	0.01745	0.01706
1989	0.01958	0.01956	0.01944	0.01909	0.01865	0.01702
1990	0.02387	0.02385	0.02369	0.02305	0.02192	0.02004

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.02387	0.02385	0.02369	0.02305	0.02192	0.02004
0.0645161290322581		0.01958	0.01956	0.01944	0.01909	0.01865	0.01767
0.0967741935483871		0.01841	0.01841	0.01841	0.01838	0.01836	0.01738
0.129032258064516		0.01786	0.01786	0.01786	0.01785	0.01783	0.01734
0.161290322580645		0.01784	0.01784	0.01784	0.01781	0.01778	0.01727
0.193548387096774		0.01774	0.01774	0.01774	0.01772	0.01768	0.01706
0.225806451612903		0.01747	0.01747	0.01747	0.01746	0.01745	0.01702
0.258064516129032		0.01721	0.01721	0.0172	0.01717	0.01713	0.01664
0.290322580645161		0.01708	0.01708	0.01708	0.01706	0.01703	0.01653
0.32258064516129		0.01703	0.01703	0.01702	0.01699	0.01695	0.0164
0.354838709677419		0.01681	0.0168	0.01671	0.01658	0.01657	0.01625
0.387096774193548		0.01673	0.01673	0.01669	0.01657	0.01649	0.01624
0.419354838709677		0.01659	0.01659	0.01659	0.01649	0.01642	0.01611
0.451612903225806		0.01652	0.01652	0.01651	0.0164	0.01639	0.01611
0.483870967741936		0.01641	0.01641	0.01641	0.01637	0.01634	0.01605
0.516129032258065		0.01638	0.01638	0.01637	0.01635	0.01619	0.0159
0.548387096774194		0.01616	0.01616	0.01615	0.01613	0.01612	0.01575
0.580645161290323		0.01599	0.01599	0.01598	0.01595	0.01588	0.0157
0.612903225806452		0.01583	0.01582	0.01575	0.0157	0.01566	0.01551
0.645161290322581		0.01573	0.01573	0.01572	0.0155	0.01529	0.01509
0.67741935483871		0.01506	0.01506	0.01506	0.01504	0.01502	0.0148
0.709677419354839		0.01443	0.01442	0.01428	0.01381	0.01341	0.0129
0.741935483870968		0.01254	0.01254	0.01249	0.01232	0.01225	0.01215
0.774193548387097		0.01226	0.01226	0.01226	0.01225	0.01223	0.01203
0.806451612903226		0.01123	0.01123	0.01122	0.0112	0.01118	0.01089
0.838709677419355		0.0104	0.01039	0.01032	0.01016	0.01005	0.009914
0.870967741935484		0.009413	0.009394	0.00918	0.008576	0.008113	0.006761
0.903225806451613		0.005188	0.005186	0.00516	0.005033	0.004825	0.004013
0.935483870967742		0.003123	0.003121	0.003108	0.003037	0.002912	0.002212
0.967741935483871		0.0008415	0.0008355	0.0007753	0.0006308	0.0004632	0.0001144
0.1	0.018355	0.018355	0.018355	0.018327	0.018307	0.017376	
					Average of yearly averages:		0.0139281466666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONION5132
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	389	g/mol	
Henry's Law Const.	henry		atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	0.95	mg/L	
Kd	Kd		mg/L	
Koc	Koc	1290	mg/L	
Photolysis half-life	kdp		days	Half-life

US EPA ARCHIVE DOCUMENT

Aerobic Aquatic Metabolism	kbacw		1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.635	cm		
Application Rate:		TAPP	0.0005	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as GAONION1362ben.out
Chemical: MB46136
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.003741	0.00372	0.003437	0.003018	0.002274	0.000562
1962	0.02701	0.02701	0.027	0.02692	0.02644	0.01669
1963	0.05182	0.05182	0.0518	0.05168	0.05098	0.04002
1964	0.09918	0.09914	0.09839	0.09462	0.09232	0.07244
1965	0.1042	0.1042	0.1038	0.1033	0.1029	0.1013
1966	0.1158	0.1158	0.1157	0.1155	0.1152	0.1118
1967	0.1233	0.1232	0.1232	0.1229	0.1228	0.1218
1968	0.1238	0.1238	0.1237	0.1231	0.1229	0.1219
1969	0.1455	0.1455	0.1452	0.1435	0.1411	0.1319
1970	0.1525	0.1525	0.1525	0.1521	0.1518	0.1487
1971	0.1637	0.1637	0.1636	0.163	0.1617	0.1548
1972	0.1664	0.1664	0.1661	0.1643	0.1642	0.1636
1973	0.1704	0.1704	0.1702	0.1694	0.1691	0.1665
1974	0.1626	0.1625	0.1622	0.1618	0.1614	0.1608
1975	0.1651	0.1651	0.165	0.1645	0.1641	0.1614
1976	0.18	0.18	0.1799	0.1783	0.177	0.1691
1977	0.1806	0.1806	0.1806	0.1802	0.1796	0.1734
1978	0.1714	0.1714	0.1714	0.1712	0.171	0.1667
1979	0.1776	0.1776	0.1775	0.177	0.1768	0.1693
1980	0.1774	0.1774	0.1773	0.1767	0.1763	0.1723
1981	0.1675	0.1675	0.1674	0.167	0.1668	0.1653
1982	0.1729	0.1729	0.1727	0.1721	0.1718	0.1686
1983	0.1777	0.1777	0.1776	0.1773	0.1771	0.1743
1984	0.1831	0.1831	0.183	0.1825	0.1821	0.1792
1985	0.1782	0.1782	0.1781	0.1777	0.1772	0.174
1986	0.1745	0.1745	0.1744	0.1744	0.1742	0.1722
1987	0.1797	0.1797	0.1796	0.1795	0.1792	0.1777
1988	0.1769	0.1769	0.1768	0.1765	0.1764	0.1747
1989	0.1866	0.1866	0.186	0.1848	0.1836	0.1733
1990	0.2036	0.2036	0.2033	0.2027	0.1976	0.1873

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.2036	0.2036	0.2033	0.2027	0.1976	0.1873
0.0645161290322581		0.1866	0.1866	0.186	0.1848	0.1836	0.1792
0.0967741935483871		0.1831	0.1831	0.183	0.1825	0.1821	0.1777
0.129032258064516		0.1806	0.1806	0.1806	0.1802	0.1796	0.1747
0.161290322580645		0.18	0.18	0.1799	0.1795	0.1792	0.1743
0.193548387096774		0.1797	0.1797	0.1796	0.1783	0.1772	0.174
0.225806451612903		0.1782	0.1782	0.1781	0.1777	0.1771	0.1734
0.258064516129032		0.1777	0.1777	0.1776	0.1773	0.177	0.1733
0.290322580645161		0.1776	0.1776	0.1775	0.177	0.1768	0.1723
0.32258064516129		0.1774	0.1774	0.1773	0.1767	0.1764	0.1722
0.354838709677419		0.1769	0.1769	0.1768	0.1765	0.1763	0.1693
0.387096774193548		0.1745	0.1745	0.1744	0.1744	0.1742	0.1691
0.419354838709677		0.1729	0.1729	0.1727	0.1721	0.1718	0.1686
0.451612903225806		0.1714	0.1714	0.1714	0.1712	0.171	0.1667
0.483870967741936		0.1704	0.1704	0.1702	0.1694	0.1691	0.1665
0.516129032258065		0.1675	0.1675	0.1674	0.167	0.1668	0.1653
0.548387096774194		0.1664	0.1664	0.1661	0.1645	0.1642	0.1636
0.580645161290323		0.1651	0.1651	0.165	0.1643	0.1641	0.1614
0.612903225806452		0.1637	0.1637	0.1636	0.163	0.1617	0.1608
0.645161290322581		0.1626	0.1625	0.1622	0.1618	0.1614	0.1548
0.67741935483871		0.1525	0.1525	0.1525	0.1521	0.1518	0.1487
0.709677419354839		0.1455	0.1455	0.1452	0.1435	0.1411	0.1319
0.741935483870968		0.1238	0.1238	0.1237	0.1231	0.1229	0.1219
0.774193548387097		0.1233	0.1232	0.1232	0.1229	0.1228	0.1218
0.806451612903226		0.1158	0.1158	0.1157	0.1155	0.1152	0.1118
0.838709677419355		0.1042	0.1042	0.1038	0.1033	0.1029	0.1013
0.870967741935484		0.09918	0.09914	0.09839	0.09462	0.09232	0.07244
0.903225806451613		0.05182	0.05182	0.0518	0.05168	0.05098	0.04002
0.935483870967742		0.02701	0.02701	0.027	0.02692	0.02644	0.01669
0.967741935483871		0.003741	0.00372	0.003437	0.003018	0.002274	0.000562
0.1	0.18285	0.18285	0.18276	0.18227	0.18185	0.1774	

Average of yearly averages: 0.142387066666667

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Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONION1362
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife	
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.635	cm		
Application Rate:		TAPP	0.013	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Onion Seed (Maximum Seeding Rate)

Fipronil

stored as GAONIONFIP2ben.out
Chemical: Fipronil
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.08297	0.0829	0.08158	0.0758	0.06005	0.01487
1962	0.08202	0.08196	0.08114	0.0754	0.07145	0.04197
1963	0.1381	0.138	0.1359	0.1265	0.1134	0.04421
1964	0.2562	0.256	0.2523	0.2408	0.2141	0.08242
1965	0.2419	0.2385	0.221	0.1783	0.1522	0.06584
1966	0.08365	0.08301	0.07991	0.07547	0.06785	0.03172
1967	0.1262	0.1261	0.1244	0.1142	0.1019	0.04921
1968	0.09456	0.0945	0.09323	0.08802	0.07902	0.0324
1969	0.229	0.2289	0.2275	0.2069	0.1532	0.05763
1970	0.214	0.2111	0.2014	0.1715	0.1472	0.06687
1971	0.1583	0.1582	0.1553	0.1443	0.1184	0.0498
1972	0.1202	0.1178	0.1129	0.08937	0.07673	0.03942
1973	0.117	0.1166	0.112	0.0971	0.08504	0.03509
1974	0.08759	0.08753	0.08644	0.08055	0.06359	0.02985
1975	0.1153	0.1152	0.1128	0.1008	0.09109	0.04025
1976	0.1522	0.1521	0.1502	0.1302	0.09867	0.03879
1977	0.142	0.1406	0.135	0.1142	0.09622	0.04203
1978	0.09421	0.09385	0.09101	0.0806	0.07128	0.03773
1979	0.1432	0.143	0.1405	0.1261	0.1168	0.0521
1980	0.09525	0.09336	0.08514	0.07321	0.06217	0.03554
1981	0.08383	0.08375	0.08197	0.07301	0.06497	0.03207
1982	0.06879	0.06875	0.06765	0.06422	0.05904	0.02709
1983	0.08507	0.08504	0.08461	0.07905	0.07319	0.04185
1984	0.1452	0.145	0.1439	0.1332	0.1196	0.05263
1985	0.08376	0.08343	0.07987	0.06727	0.05752	0.03326
1986	0.1136	0.1135	0.1129	0.1031	0.09529	0.04308
1987	0.1199	0.1198	0.1184	0.1073	0.0934	0.04056
1988	0.06757	0.06751	0.06622	0.05906	0.04957	0.02854
1989	0.4061	0.4057	0.3977	0.3646	0.3346	0.09729
1990	0.6161	0.6155	0.6084	0.5521	0.456	0.1543

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.6161	0.6155	0.6084	0.5521	0.456	0.1543
0.0645161290322581		0.4061	0.4057	0.3977	0.3646	0.3346	0.09729
0.0967741935483871		0.2562	0.256	0.2523	0.2408	0.2141	0.08242
0.129032258064516		0.2419	0.2385	0.2275	0.2069	0.1532	0.06687
0.161290322580645		0.229	0.2289	0.221	0.1783	0.1522	0.06584
0.193548387096774		0.214	0.2111	0.2014	0.1715	0.1472	0.05763
0.225806451612903		0.1583	0.1582	0.1553	0.1443	0.1196	0.05263
0.258064516129032		0.1522	0.1521	0.1502	0.1332	0.1184	0.0521
0.290322580645161		0.1452	0.145	0.1439	0.1302	0.1168	0.0498
0.32258064516129		0.1432	0.143	0.1405	0.1265	0.1134	0.04921

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0.354838709677419	0.142	0.1406	0.1359	0.1261	0.1019	0.04421
0.387096774193548	0.1381	0.138	0.135	0.1142	0.09867	0.04308
0.419354838709677	0.1262	0.1261	0.1244	0.1142	0.09622	0.04203
0.451612903225806	0.1202	0.1198	0.1184	0.1073	0.09529	0.04197
0.483870967741936	0.1199	0.1178	0.1129	0.1031	0.0934	0.04185
0.516129032258065	0.117	0.1166	0.1129	0.1008	0.09109	0.04056
0.548387096774194	0.1153	0.1152	0.1128	0.0971	0.08504	0.04025
0.580645161290323	0.1136	0.1135	0.112	0.08937	0.07902	0.03942
0.612903225806452	0.09525	0.0945	0.09323	0.08802	0.07673	0.03879
0.645161290322581	0.09456	0.09385	0.09101	0.0806	0.07319	0.03773
0.67741935483871	0.09421	0.09336	0.08644	0.08055	0.07145	0.03554
0.709677419354839	0.08759	0.08753	0.08514	0.07905	0.07128	0.03509
0.741935483870968	0.08507	0.08504	0.08461	0.0758	0.06785	0.03326
0.774193548387097	0.08383	0.08375	0.08197	0.07547	0.06497	0.0324
0.806451612903226	0.08376	0.08343	0.08158	0.0754	0.06359	0.03207
0.838709677419355	0.08365	0.08301	0.08114	0.07321	0.06217	0.03172
0.870967741935484	0.08297	0.0829	0.07991	0.07301	0.06005	0.02985
0.903225806451613	0.08202	0.08196	0.07987	0.06727	0.05904	0.02854
0.935483870967742	0.06879	0.06875	0.06765	0.06422	0.05752	0.02709
0.967741935483871	0.06757	0.06751	0.06622	0.05906	0.04957	0.01487
0.1	0.25477	0.25425	0.24982	0.23741	0.20801	0.080865
					Average of yearly averages:	0.047947

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONIONFIP2
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.635	cm		
Application Rate:		TAPP	0.112	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as GAONION9502ben.out
Chemical: MB45950
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001808	0.001798	0.001662	0.001452	0.001091	0.0002696
1962	0.01293	0.01293	0.01293	0.01289	0.01264	0.007979
1963	0.02477	0.02476	0.02476	0.02468	0.0243	0.0191
1964	0.04723	0.04721	0.0468	0.04499	0.04384	0.03453
1965	0.05078	0.05076	0.05055	0.05021	0.04996	0.04882
1966	0.05668	0.05668	0.05666	0.05657	0.05642	0.0548
1967	0.06163	0.06163	0.06161	0.06149	0.0615	0.06064
1968	0.06327	0.06326	0.06322	0.0628	0.06254	0.06187
1969	0.07422	0.07422	0.07402	0.0731	0.07192	0.06745
1970	0.07818	0.07816	0.07812	0.07799	0.07799	0.07625
1971	0.08463	0.08463	0.08456	0.08415	0.08348	0.08011
1972	0.08685	0.08685	0.08665	0.08565	0.08542	0.0851
1973	0.08918	0.08917	0.0891	0.08874	0.08861	0.08741
1974	0.08636	0.08635	0.08632	0.08619	0.08602	0.08566
1975	0.08844	0.08844	0.0884	0.08821	0.08807	0.08674
1976	0.0962	0.0962	0.09614	0.09529	0.09464	0.09093
1977	0.09668	0.09668	0.09666	0.09652	0.09633	0.09368
1978	0.09339	0.09339	0.09337	0.0933	0.09327	0.09134
1979	0.09654	0.09654	0.09652	0.09641	0.09632	0.09291
1980	0.0972	0.0972	0.09716	0.0969	0.0967	0.09482
1981	0.093	0.093	0.09296	0.09276	0.09267	0.09211
1982	0.09575	0.09574	0.09568	0.09543	0.09528	0.09396
1983	0.09859	0.09859	0.09856	0.09841	0.09831	0.09685
1984	0.1014	0.1014	0.1014	0.1011	0.101	0.09958
1985	0.09942	0.09942	0.0994	0.09929	0.09914	0.09762
1986	0.09829	0.09829	0.09826	0.0982	0.0981	0.09698
1987	0.1006	0.1006	0.1006	0.1005	0.1004	0.09954

1988	0.09943	0.09943	0.09939	0.09931	0.09929	0.09838
1989	0.1044	0.1043	0.104	0.1034	0.1027	0.09798
1990	0.1128	0.1128	0.1126	0.1122	0.1097	0.1049

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.1128	0.1128	0.1126	0.1122	0.1097	0.1049
0.0645161290322581		0.1044	0.1043	0.104	0.1034	0.1027	0.09958
0.0967741935483871		0.1014	0.1014	0.1014	0.1011	0.101	0.09954
0.129032258064516		0.1006	0.1006	0.1006	0.1005	0.1004	0.09838
0.161290322580645		0.09943	0.09943	0.0994	0.09931	0.09929	0.09798
0.193548387096774		0.09942	0.09942	0.09939	0.09929	0.09914	0.09762
0.225806451612903		0.09859	0.09859	0.09856	0.09841	0.09831	0.09698
0.258064516129032		0.09829	0.09829	0.09826	0.0982	0.0981	0.09685
0.290322580645161		0.0972	0.0972	0.09716	0.0969	0.0967	0.09482
0.32258064516129		0.09668	0.09668	0.09666	0.09652	0.09633	0.09396
0.354838709677419		0.09654	0.09654	0.09652	0.09641	0.09632	0.09368
0.387096774193548		0.0962	0.0962	0.09614	0.09543	0.09528	0.09291
0.419354838709677		0.09575	0.09574	0.09568	0.09529	0.09464	0.09211
0.451612903225806		0.09339	0.09339	0.09337	0.0933	0.09327	0.09134
0.483870967741936		0.093	0.093	0.09296	0.09276	0.09267	0.09093
0.516129032258065		0.08918	0.08917	0.0891	0.08874	0.08861	0.08741
0.548387096774194		0.08844	0.08844	0.0884	0.08821	0.08807	0.08674
0.580645161290323		0.08685	0.08685	0.08665	0.08619	0.08602	0.08566
0.612903225806452		0.08636	0.08635	0.08632	0.08565	0.08542	0.0851
0.645161290322581		0.08463	0.08463	0.08456	0.08415	0.08348	0.08011
0.67741935483871		0.07818	0.07816	0.07812	0.07799	0.07799	0.07625
0.709677419354839		0.07422	0.07422	0.07402	0.0731	0.07192	0.06745
0.741935483870968		0.06327	0.06326	0.06322	0.0628	0.06254	0.06187
0.774193548387097		0.06163	0.06163	0.06161	0.06149	0.0615	0.06064
0.806451612903226		0.05668	0.05668	0.05666	0.05657	0.05642	0.0548
0.838709677419355		0.05078	0.05076	0.05055	0.05021	0.04996	0.04882
0.870967741935484		0.04723	0.04721	0.0468	0.04499	0.04384	0.03453
0.903225806451613		0.02477	0.02476	0.02476	0.02468	0.0243	0.0191
0.935483870967742		0.01293	0.01293	0.01293	0.01289	0.01264	0.007979
0.967741935483871		0.001808	0.001798	0.001662	0.001452	0.001091	0.0002696
0.1	0.10132	0.10132	0.10132	0.10104	0.10094	0.099424	
					Average of yearly averages:		0.0766102866666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONION9502
Metfile: w03822.dvf
PRZM scenario: GAOnionsC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days		Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	8	integer	See PRZM manual		
Incorporation Depth:		DEPI	0.635	cm		
Application Rate:		TAPP	0.0055	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as GAONION5132ben.out
Chemical: MB46513
PRZM environment: GAOnionsC.txt modified Tueday, 4 May 2004 at 11:18:36
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w03822.dvf modified Wedday, 3 July 2002 at 09:04:32
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001851	0.001838	0.001705	0.001388	0.001019	0.0002516
1962	0.00687	0.006866	0.006838	0.006681	0.006406	0.004867
1963	0.01141	0.0114	0.01135	0.01107	0.01061	0.008826
1964	0.02071	0.02066	0.02019	0.01886	0.01785	0.01487
1965	0.02287	0.02285	0.0227	0.02235	0.02211	0.02181
1966	0.0247	0.0247	0.02469	0.02465	0.0246	0.02396
1967	0.02697	0.02697	0.02697	0.02694	0.02691	0.02646
1968	0.02759	0.02758	0.02748	0.02711	0.02694	0.02673
1969	0.03174	0.03172	0.03142	0.03038	0.02949	0.02838
1970	0.03313	0.03313	0.03312	0.03308	0.03304	0.03255
1971	0.03482	0.0348	0.03464	0.03411	0.03363	0.0332

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1972	0.03555	0.03555	0.03553	0.03549	0.03546	0.03453
1973	0.03603	0.03602	0.03601	0.03598	0.03594	0.03498
1974	0.0346	0.0346	0.03459	0.03453	0.03446	0.03412
1975	0.03517	0.03517	0.03515	0.0351	0.03493	0.03466
1976	0.03698	0.03697	0.03677	0.03602	0.03561	0.03531
1977	0.03758	0.03758	0.03758	0.03753	0.03747	0.03608
1978	0.03649	0.03649	0.03649	0.03647	0.03645	0.03544
1979	0.03682	0.03681	0.03673	0.03646	0.03612	0.03574
1980	0.03746	0.03746	0.03745	0.03737	0.03729	0.03636
1981	0.0361	0.0361	0.03609	0.03608	0.03605	0.03544
1982	0.03634	0.03634	0.03633	0.03628	0.03627	0.03573
1983	0.03785	0.03785	0.03784	0.03778	0.03769	0.03661
1984	0.03925	0.03925	0.03925	0.03919	0.03911	0.03823
1985	0.03929	0.03929	0.03929	0.03926	0.03923	0.03816
1986	0.03903	0.03903	0.03902	0.03898	0.0389	0.03799
1987	0.0405	0.0405	0.04049	0.04045	0.04039	0.03887
1988	0.03844	0.03844	0.03843	0.03841	0.03838	0.03754
1989	0.04307	0.04304	0.04276	0.04201	0.04102	0.03745
1990	0.05251	0.05248	0.05212	0.05071	0.04823	0.04409

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.05251	0.05248	0.05212	0.05071	0.04823	0.04409
0.0645161290322581		0.04307	0.04304	0.04276	0.04201	0.04102	0.03887
0.0967741935483871		0.0405	0.0405	0.04049	0.04045	0.04039	0.03823
0.129032258064516		0.03929	0.03929	0.03929	0.03926	0.03923	0.03816
0.161290322580645		0.03925	0.03925	0.03925	0.03919	0.03911	0.03799
0.193548387096774		0.03903	0.03903	0.03902	0.03898	0.0389	0.03754
0.225806451612903		0.03844	0.03844	0.03843	0.03841	0.03838	0.03745
0.258064516129032		0.03785	0.03785	0.03784	0.03778	0.03769	0.03661
0.290322580645161		0.03758	0.03758	0.03758	0.03753	0.03747	0.03636
0.32258064516129		0.03746	0.03746	0.03745	0.03737	0.03729	0.03608
0.354838709677419		0.03698	0.03697	0.03677	0.03647	0.03645	0.03574
0.387096774193548		0.03682	0.03681	0.03673	0.03646	0.03627	0.03573
0.419354838709677		0.03649	0.03649	0.03649	0.03628	0.03612	0.03544
0.451612903225806		0.03634	0.03634	0.03633	0.03608	0.03605	0.03544
0.483870967741936		0.0361	0.0361	0.03609	0.03602	0.03594	0.03531
0.516129032258065		0.03603	0.03602	0.03601	0.03598	0.03561	0.03498
0.548387096774194		0.03555	0.03555	0.03553	0.03549	0.03546	0.03466
0.580645161290323		0.03517	0.03517	0.03515	0.0351	0.03493	0.03453
0.612903225806452		0.03482	0.0348	0.03464	0.03453	0.03446	0.03412
0.645161290322581		0.0346	0.0346	0.03459	0.03411	0.03363	0.0332
0.67741935483871		0.03313	0.03313	0.03312	0.03308	0.03304	0.03255
0.709677419354839		0.03174	0.03172	0.03142	0.03038	0.02949	0.02838
0.741935483870968		0.02759	0.02758	0.02748	0.02711	0.02694	0.02673
0.774193548387097		0.02697	0.02697	0.02697	0.02694	0.02691	0.02646
0.806451612903226		0.0247	0.0247	0.02469	0.02465	0.0246	0.02396
0.838709677419355		0.02287	0.02285	0.0227	0.02235	0.02211	0.02181
0.870967741935484		0.02071	0.02066	0.02019	0.01886	0.01785	0.01487
0.903225806451613		0.01141	0.0114	0.01135	0.01107	0.01061	0.008826
0.935483870967742		0.00687	0.006866	0.006838	0.006681	0.006406	0.004867
0.967741935483871		0.001851	0.001838	0.001705	0.001388	0.001019	0.0002516
0.1	0.040379	0.040379	0.04037	0.040331	0.040274	0.038223	
					Average of yearly averages:		0.0306411533333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONION5132
Metfile: w03822.dvf
PRZM scenario: *GAOnionsC.txt*
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name	Value	Units	Comments	
Molecular weight	mwt	389	g/mol		
Henry's Law Const.	henry		atm-m^3/mol		
Vapor Pressure	vapr		torr		
Solubility	sol	0.95	mg/L		
Kd	Kd		mg/L		
Koc	Koc	1290	mg/L		
Photolysis half-life	kdp		days	Half-life	
Aerobic Aquatic Metabolism	kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism	kbacs	1320	days	Halfife	
Aerobic Soil Metabolism	asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	8	integer	See PRZM manual	
Incorporation Depth:	DEPI	0.635	cm		
Application Rate:	TAPP	0.0011	kg/ha		
Application Efficiency:	APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond		
Application Date	Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA				
	IPSCND				
	UPTKF				
Record 18:	PLVKRT				
	PLDKRT				
	FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond			
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)		

MB46136

stored as GAONION1362ben.out

US EPA ARCHIVE DOCUMENT

Chemical: MB46136
PRZM environment: CAonion_NirrigC.txt modified Tueday, 8 June 2004 at 10:01:56
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w23155.dvf modified Wedday, 3 July 2002 at 08:04:20
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.0006983	0.0006952	0.0006436	0.0003223	0.0002149	5.298e-005
1962	0.005648	0.005648	0.005644	0.00562	0.005593	0.004652
1963	0.01064	0.01063	0.01063	0.01049	0.01035	0.008624
1964	0.01063	0.01063	0.01061	0.01056	0.01052	0.01005
1965	0.0143	0.01379	0.01321	0.01233	0.01202	0.0116
1966	0.02756	0.02749	0.02632	0.02268	0.02199	0.02109
1967	0.03095	0.03092	0.03055	0.02885	0.02886	0.02797
1968	0.03106	0.03106	0.03104	0.03094	0.03085	0.02972
1969	0.03146	0.03146	0.03143	0.03128	0.03118	0.0297
1970	0.03412	0.03408	0.03342	0.02905	0.02857	0.02761
1971	0.03472	0.03472	0.03469	0.03446	0.03435	0.03341
1972	0.03536	0.03536	0.03532	0.03438	0.03343	0.03265
1973	0.03913	0.03913	0.0391	0.03892	0.03878	0.03671
1974	0.05393	0.05387	0.05288	0.04912	0.04657	0.03786
1975	0.05451	0.05451	0.05448	0.05434	0.05428	0.05107
1976	0.04669	0.04666	0.04656	0.04643	0.04635	0.04384
1977	0.04531	0.0446	0.04441	0.04418	0.04397	0.04259
1978	0.08446	0.08445	0.08442	0.08413	0.08374	0.07562
1979	0.07445	0.07445	0.07442	0.07423	0.07406	0.06931
1980	0.06409	0.06409	0.06406	0.06398	0.06387	0.06045
1981	0.0555	0.05547	0.05536	0.05531	0.05522	0.05266
1982	0.05095	0.05092	0.05083	0.05058	0.05042	0.04866
1983	0.05662	0.05641	0.05539	0.05457	0.05444	0.05316
1984	0.0582	0.0582	0.05818	0.05803	0.05784	0.05444
1985	0.05243	0.05243	0.05241	0.05229	0.05211	0.04965
1986	0.05214	0.05213	0.05207	0.05184	0.05166	0.04869
1987	0.06092	0.06091	0.0606	0.0577	0.05577	0.05387
1988	0.06095	0.06095	0.06092	0.06068	0.06043	0.05669
1989	0.052	0.05198	0.05193	0.05186	0.0518	0.04882
1990	0.04501	0.04499	0.04489	0.04468	0.0445	0.04165

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.08446	0.08445	0.08442	0.08413	0.08374	0.07562
0.0645161290322581		0.07445	0.07445	0.07442	0.07423	0.07406	0.06931
0.0967741935483871		0.06409	0.06409	0.06406	0.06398	0.06387	0.06045
0.129032258064516		0.06095	0.06095	0.06092	0.06068	0.06043	0.05669
0.161290322580645		0.06092	0.06091	0.0606	0.05803	0.05784	0.05444
0.193548387096774		0.0582	0.0582	0.05818	0.0577	0.05577	0.05387
0.225806451612903		0.05662	0.05641	0.05539	0.05531	0.05522	0.05316
0.258064516129032		0.0555	0.05547	0.05536	0.05457	0.05444	0.05266
0.290322580645161		0.05451	0.05451	0.05448	0.05434	0.05428	0.05107
0.32258064516129		0.05393	0.05387	0.05288	0.05229	0.05211	0.04965
0.354838709677419		0.05243	0.05243	0.05241	0.05186	0.0518	0.04882
0.387096774193548		0.05214	0.05213	0.05207	0.05184	0.05166	0.04869
0.419354838709677		0.052	0.05198	0.05193	0.05058	0.05042	0.04866
0.451612903225806		0.05095	0.05092	0.05083	0.04912	0.04657	0.04384
0.483870967741936		0.04669	0.04666	0.04656	0.04643	0.04635	0.04259
0.516129032258065		0.04531	0.04499	0.04489	0.04468	0.0445	0.04165
0.548387096774194		0.04501	0.0446	0.04441	0.04418	0.04397	0.03786
0.580645161290323		0.03913	0.03913	0.0391	0.03892	0.03878	0.03671
0.612903225806452		0.03536	0.03536	0.03532	0.03446	0.03435	0.03341
0.645161290322581		0.03472	0.03472	0.03469	0.03438	0.03343	0.03265
0.67741935483871		0.03412	0.03408	0.03342	0.03128	0.03118	0.02972
0.709677419354839		0.03146	0.03146	0.03143	0.03094	0.03085	0.0297
0.741935483870968		0.03106	0.03106	0.03104	0.02905	0.02886	0.02797
0.774193548387097		0.03095	0.03092	0.03055	0.02885	0.02857	0.02761
0.806451612903226		0.02756	0.02749	0.02632	0.02268	0.02199	0.02109
0.838709677419355		0.0143	0.01379	0.01321	0.01233	0.01202	0.0116
0.870967741935484		0.01064	0.01063	0.01063	0.01056	0.01052	0.01005
0.903225806451613		0.01063	0.01063	0.01061	0.01049	0.01035	0.008624
0.935483870967742		0.005648	0.005648	0.005644	0.00562	0.005593	0.004652
0.967741935483871		0.0006983	0.0006952	0.0006436	0.0003223	0.0002149	5.298e-005
0.1	0.063776	0.063776	0.063746	0.06365	0.063526	0.060074	
					Average of yearly averages:		0.0387622993333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: GAONION1362
Metfile: w23155.dvf
PRZM scenario: CAonion_NirrigC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments
Molecular weight		mwt	453	g/mol	
Henry's Law Const.		henry		atm-m^3/mol	
Vapor Pressure		vapr		torr	
Solubility	sol	0.16	mg/L		
Kd	Kd		mg/L		
Koc	Koc	4208	mg/L		
Photolysis half-life		kdp	7	days	Half-life
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife
Hydrolysis:	pH 7		days	Half-life	
Method:	CAM	8	integer	See PRZM manual	
Incorporation Depth:		DEPI	0.635	cm	
Application Rate:		TAPP	0.026	kg/ha	

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Application Efficiency:		APPEFF	1.0	fraction
Spray Drift	DRFT		fraction of application rate applied to pond	
Application Date		Date	15-9	dd/mm or dd/mmm or dd-mm or dd-mmm
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run		IR	Pond	
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)

In-Furrow Corn

Fipronil

stored as MSCORNFIPben.out
Chemical: Fipronil
PRZM environment: MScornC.txt modified Satday, 12 October 2002 at 16:06:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w13893.dvf modified Wedday, 3 July 2002 at 09:06:20
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.01651	0.0165	0.01614	0.01379	0.01144	0.004128
1962	0.007471	0.007464	0.007255	0.006255	0.005389	0.002688
1963	0.005804	0.005797	0.005642	0.004602	0.003712	0.002039
1964	0.01974	0.01972	0.01918	0.01573	0.01266	0.004445
1965	0.01019	0.01018	0.009984	0.008878	0.007819	0.002944
1966	0.01199	0.01197	0.01167	0.0096	0.007716	0.003584
1967	0.004615	0.00461	0.00449	0.003694	0.003062	0.002076
1968	0.01147	0.01145	0.01122	0.01017	0.009586	0.003718
1969	0.01267	0.01265	0.01228	0.01018	0.008267	0.003869
1970	0.01223	0.01222	0.01188	0.009821	0.008001	0.003667
1971	0.002688	0.002654	0.002114	0.001527	0.001301	0.0008754
1972	0.009852	0.009848	0.009765	0.009235	0.008129	0.003339
1973	0.04044	0.0404	0.03941	0.0326	0.02626	0.009305
1974	0.01931	0.01929	0.0188	0.01699	0.01527	0.005128
1975	0.004544	0.004542	0.004495	0.004184	0.003604	0.001587
1976	0.01351	0.01349	0.01339	0.01286	0.01236	0.004512
1977	0.008266	0.008087	0.007459	0.006582	0.00627	0.003819
1978	0.01658	0.01655	0.0159	0.01271	0.01007	0.004068
1979	0.03644	0.0364	0.03553	0.03026	0.02505	0.007965
1980	0.02342	0.02339	0.02272	0.0188	0.01512	0.005512
1981	0.007063	0.007059	0.006954	0.006534	0.004963	0.002257
1982	0.01243	0.01241	0.01205	0.009916	0.008032	0.004438
1983	0.02042	0.02039	0.01968	0.01604	0.01386	0.005491
1984	0.02287	0.02285	0.02206	0.01754	0.01396	0.004888
1985	0.01716	0.01714	0.01669	0.01377	0.01109	0.004152
1986	0.01725	0.01724	0.01707	0.01439	0.01015	0.003096
1987	0.03122	0.03117	0.03006	0.02445	0.01968	0.00939
1988	0.008208	0.008193	0.007931	0.00685	0.005912	0.003346
1989	0.006937	0.00693	0.006808	0.006532	0.006153	0.002745
1990	0.007353	0.007346	0.007186	0.006392	0.005817	0.003736

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.04044	0.0404	0.03941	0.0326	0.02626	0.00939
0.0645161290322581		0.03644	0.0364	0.03553	0.03026	0.02505	0.009305
0.0967741935483871		0.03122	0.03117	0.03006	0.02445	0.01968	0.007965
0.129032258064516		0.02342	0.02339	0.02272	0.0188	0.01527	0.005512
0.161290322580645		0.02287	0.02285	0.02206	0.01754	0.01512	0.005491
0.193548387096774		0.02042	0.02039	0.01968	0.01699	0.01396	0.005128
0.225806451612903		0.01974	0.01972	0.01918	0.01604	0.01386	0.004888
0.258064516129032		0.01931	0.01929	0.0188	0.01573	0.01266	0.004512
0.290322580645161		0.01725	0.01724	0.01707	0.01439	0.01236	0.004445
0.32258064516129		0.01716	0.01714	0.01669	0.01379	0.01144	0.004438
0.354838709677419		0.01658	0.01655	0.01614	0.01377	0.01109	0.004152
0.387096774193548		0.01651	0.0165	0.0159	0.01286	0.01015	0.004128
0.419354838709677		0.01351	0.01349	0.01339	0.01271	0.01007	0.004068
0.451612903225806		0.01267	0.01265	0.01228	0.01018	0.009586	0.003869
0.483870967741936		0.01243	0.01241	0.01205	0.01017	0.008267	0.003819
0.516129032258065		0.01223	0.01222	0.01188	0.009916	0.008129	0.003736
0.548387096774194		0.01199	0.01197	0.01167	0.009821	0.008032	0.003718
0.580645161290323		0.01147	0.01145	0.01122	0.0096	0.008001	0.003667
0.612903225806452		0.01019	0.01018	0.009984	0.009235	0.007819	0.003584
0.645161290322581		0.009852	0.009848	0.009765	0.008878	0.007716	0.003346
0.67741935483871		0.008266	0.008193	0.007931	0.00685	0.00627	0.003339
0.709677419354839		0.008208	0.008087	0.007459	0.006582	0.006153	0.003096
0.741935483870968		0.007471	0.007464	0.007255	0.006534	0.005912	0.002944
0.774193548387097		0.007353	0.007346	0.007186	0.006532	0.005817	0.002745
0.806451612903226		0.007063	0.007059	0.006954	0.006392	0.005389	0.002688
0.838709677419355		0.006937	0.00693	0.006808	0.006255	0.004963	0.002257
0.870967741935484		0.005804	0.005797	0.005642	0.004602	0.003712	0.002076
0.903225806451613		0.004615	0.00461	0.004495	0.004184	0.003604	0.002039
0.935483870967742		0.004544	0.004542	0.00449	0.003694	0.003062	0.001587

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0.967741935483871	0.002688	0.002654	0.002114	0.001527	0.001301	0.0008754
0.1	0.03044	0.030392	0.029326	0.023885	0.019239	0.0077197
					Average of yearly averages:	0.00409358

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: MSCORNFIP
Metfile: w13893.dvf
PRZM scenario: MScornC.txt
EXAMS environment file: pond298.exv
Chemical Name: Fipronil

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	437	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	2.4	mg/L			
Kd	Kd		mg/L			
Koc	Koc	727	mg/L			
Photolysis half-life		kdp	0.16	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	33.7	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	33.7	days	Halfife
Aerobic Soil Metabolism		asm	128	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	5	integer	See PRZM manual		
Incorporation Depth:		DEPI	5	cm		
Application Rate:		TAPP	0.1456	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB45950

stored as MSCORN950ben.out
Chemical: MB45950
PRZM environment: MScornC.txt modified Satday, 12 October 2002 at 16:06:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w13893.dvf modified Wedday, 3 July 2002 at 09:06:20
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.001048	0.001038	0.0009147	0.0006344	0.0005086	0.0002354
1962	0.001611	0.001611	0.001611	0.001603	0.001585	0.001392
1963	0.002057	0.002056	0.002027	0.001976	0.001969	0.001854
1964	0.003573	0.003568	0.003483	0.003237	0.003162	0.002846
1965	0.004449	0.004449	0.004448	0.004439	0.00443	0.00412
1966	0.004985	0.004977	0.004973	0.00495	0.004922	0.004788
1967	0.005495	0.00549	0.005423	0.005248	0.00524	0.005153
1968	0.006501	0.006491	0.006423	0.006274	0.006209	0.005863
1969	0.006922	0.006922	0.006917	0.006888	0.006852	0.006645
1970	0.007274	0.007273	0.007269	0.007238	0.007205	0.007078
1971	0.00742	0.00742	0.007418	0.007404	0.007386	0.007128
1972	0.008185	0.008177	0.008063	0.007723	0.007498	0.007187
1973	0.0091	0.0091	0.009094	0.009047	0.008994	0.008694
1974	0.009707	0.009707	0.009698	0.009646	0.009629	0.009429
1975	0.009679	0.009679	0.009676	0.009656	0.009632	0.00939
1976	0.009703	0.009703	0.009702	0.009687	0.009621	0.00944
1977	0.009776	0.009775	0.009769	0.009761	0.009745	0.009528
1978	0.01044	0.01044	0.0103	0.01013	0.01009	0.009897
1979	0.01144	0.01144	0.01144	0.01139	0.01133	0.01094
1980	0.01146	0.01146	0.01145	0.0114	0.01134	0.01102
1981	0.01105	0.01105	0.01104	0.01103	0.01103	0.01066
1982	0.0113	0.01128	0.01109	0.01092	0.0109	0.01065
1983	0.01205	0.01204	0.01194	0.01188	0.01182	0.01158
1984	0.01249	0.01249	0.01248	0.01241	0.01234	0.0121
1985	0.01224	0.01224	0.01224	0.01218	0.01214	0.01188
1986	0.01191	0.0119	0.01185	0.01167	0.01166	0.01135
1987	0.01268	0.01264	0.01243	0.01237	0.01231	0.012
1988	0.0133	0.0133	0.0133	0.01328	0.01326	0.01283
1989	0.01387	0.01387	0.01387	0.01385	0.01382	0.01342
1990	0.01357	0.01357	0.01357	0.01355	0.01354	0.01321

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.01387	0.01387	0.01387	0.01385	0.01382	0.01342
0.0645161290322581		0.01357	0.01357	0.01357	0.01355	0.01354	0.01321
0.0967741935483871		0.0133	0.0133	0.0133	0.01328	0.01326	0.01283
0.129032258064516		0.01268	0.01264	0.01248	0.01241	0.01234	0.0121
0.161290322580645		0.01249	0.01249	0.01243	0.01237	0.01231	0.012
0.193548387096774		0.01224	0.01224	0.01224	0.01218	0.01214	0.01188
0.225806451612903		0.01205	0.01204	0.01194	0.01188	0.01182	0.01158
0.258064516129032		0.01191	0.0119	0.01185	0.01167	0.01166	0.01135
0.290322580645161		0.01146	0.01146	0.01145	0.0114	0.01134	0.01102
0.32258064516129		0.01144	0.01144	0.01144	0.01139	0.01133	0.01094
0.354838709677419		0.0113	0.01128	0.01109	0.01103	0.01103	0.01066
0.387096774193548		0.01105	0.01105	0.01104	0.01092	0.0109	0.01065
0.419354838709677		0.01044	0.01044	0.0103	0.01013	0.01009	0.009897

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0.451612903225806	0.009776	0.009775	0.009769	0.009761	0.009745	0.009528
0.483870967741936	0.009707	0.009707	0.009702	0.009687	0.009632	0.00944
0.516129032258065	0.009703	0.009703	0.009698	0.009656	0.009629	0.009429
0.548387096774194	0.009679	0.009679	0.009676	0.009646	0.009621	0.00939
0.580645161290323	0.0091	0.0091	0.009094	0.009047	0.008994	0.008694
0.612903225806452	0.008185	0.008177	0.008063	0.007723	0.007498	0.007187
0.645161290322581	0.00742	0.00742	0.007418	0.007404	0.007386	0.007128
0.67741935483871	0.007274	0.007273	0.007269	0.007238	0.007205	0.007078
0.709677419354839	0.006922	0.006922	0.006917	0.006888	0.006852	0.006645
0.741935483870968	0.006501	0.006491	0.006423	0.006274	0.006209	0.005863
0.774193548387097	0.005495	0.00549	0.005423	0.005248	0.00524	0.005153
0.806451612903226	0.004985	0.004977	0.004973	0.00495	0.004922	0.004788
0.838709677419355	0.004449	0.004449	0.004448	0.004439	0.00443	0.00412
0.870967741935484	0.003573	0.003568	0.003483	0.003237	0.003162	0.002846
0.903225806451613	0.002057	0.002056	0.002027	0.001976	0.001969	0.001854
0.935483870967742	0.001611	0.001611	0.001611	0.001603	0.001585	0.001392
0.967741935483871	0.001048	0.001038	0.0009147	0.0006344	0.0005086	0.0002354

0.1	0.013238	0.013234	0.013218	0.013193	0.013168	0.012757
					Average of yearly averages:	0.00841024666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: MSCORN950
Metfile: w13893.dvf
PRZM scenario: MScornC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB45950

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	421	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.04	mg/L			
Kd	Kd		mg/L			
Koc	Koc	3911	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1400	days	Halfife
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	5	integer	See PRZM manual		
Incorporation Depth:		DEPI	5	cm		
Application Rate:		TAPP	0.0072	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46513

stored as MSCORN513ben.out
Chemical: MB46513
PRZM environment: MScornC.txt modified Satday, 12 October 2002 at 16:06:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w13893.dvf modified Wedday, 3 July 2002 at 09:06:20
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.000659	0.0006531	0.0005928	0.0004543	0.0003924	0.0002044
1962	0.0009803	0.0009801	0.0009784	0.0009674	0.0009496	0.0008431
1963	0.001176	0.001175	0.00116	0.00114	0.001133	0.001061
1964	0.00177	0.001768	0.001744	0.001694	0.001675	0.001525
1965	0.00216	0.00216	0.00216	0.002153	0.00213	0.00191
1966	0.002459	0.002457	0.002443	0.002424	0.002409	0.002335
1967	0.002615	0.002612	0.002584	0.002529	0.002524	0.002499
1968	0.003107	0.003103	0.003075	0.003004	0.002946	0.002726
1969	0.003276	0.003276	0.003275	0.003266	0.003253	0.003165
1970	0.003408	0.003408	0.003407	0.003397	0.003384	0.003328
1971	0.003412	0.003412	0.003411	0.00341	0.003409	0.003283
1972	0.003675	0.003671	0.003635	0.003518	0.003421	0.003285
1973	0.004266	0.004266	0.004264	0.004251	0.004233	0.004037
1974	0.00453	0.00453	0.004528	0.004513	0.004497	0.004369
1975	0.004392	0.004392	0.004391	0.004387	0.00438	0.004249
1976	0.004582	0.004582	0.004576	0.004539	0.00448	0.004275
1977	0.004594	0.004594	0.004594	0.00459	0.004588	0.004478
1978	0.004735	0.004735	0.004733	0.004718	0.004697	0.004605
1979	0.005193	0.005193	0.005191	0.005175	0.005153	0.00495
1980	0.005167	0.005167	0.005164	0.005147	0.005123	0.005002
1981	0.005123	0.005123	0.005122	0.005119	0.005114	0.004918
1982	0.005081	0.005076	0.005038	0.005024	0.005007	0.004916
1983	0.00541	0.00541	0.005406	0.005387	0.005362	0.005232
1984	0.005597	0.005597	0.005594	0.005577	0.005554	0.005432
1985	0.005534	0.005533	0.00553	0.005512	0.00549	0.005392
1986	0.005517	0.005513	0.005467	0.005353	0.005346	0.005171
1987	0.005969	0.005961	0.005907	0.005866	0.005842	0.005691
1988	0.006157	0.006157	0.006155	0.006148	0.006139	0.005939
1989	0.00611	0.00611	0.006108	0.006101	0.006093	0.005912
1990	0.005935	0.005935	0.005934	0.005928	0.005922	0.005822

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Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.006157	0.006157	0.006155	0.006148	0.006139	0.005939
0.0645161290322581		0.00611	0.00611	0.006108	0.006101	0.006093	0.005912
0.0967741935483871		0.005969	0.005961	0.005934	0.005928	0.005922	0.005822
0.129032258064516		0.005935	0.005935	0.005907	0.005866	0.005842	0.005691
0.161290322580645		0.005597	0.005597	0.005594	0.005577	0.005554	0.005432
0.193548387096774		0.005534	0.005533	0.00553	0.005512	0.00549	0.005392
0.225806451612903		0.005517	0.005513	0.005467	0.005387	0.005362	0.005232
0.258064516129032		0.00541	0.00541	0.005406	0.005353	0.005346	0.005171
0.290322580645161		0.005193	0.005193	0.005191	0.005175	0.005153	0.005002
0.32258064516129		0.005167	0.005167	0.005164	0.005147	0.005123	0.00495
0.354838709677419		0.005123	0.005123	0.005122	0.005119	0.005114	0.004918
0.387096774193548		0.005081	0.005076	0.005038	0.005024	0.005007	0.004916
0.419354838709677		0.004735	0.004735	0.004733	0.004718	0.004697	0.004605
0.451612903225806		0.004594	0.004594	0.004594	0.00459	0.004588	0.004478
0.483870967741936		0.004582	0.004582	0.004576	0.004539	0.004497	0.004369
0.516129032258065		0.00453	0.00453	0.004528	0.004513	0.00448	0.004275
0.548387096774194		0.004392	0.004392	0.004391	0.004387	0.00438	0.004249
0.580645161290323		0.004266	0.004266	0.004264	0.004251	0.004233	0.004037
0.612903225806452		0.003675	0.003671	0.003635	0.003518	0.003421	0.003328
0.645161290322581		0.003412	0.003412	0.003411	0.00341	0.003409	0.003285
0.67741935483871		0.003408	0.003408	0.003407	0.003397	0.003384	0.003283
0.709677419354839		0.003276	0.003276	0.003275	0.003266	0.003253	0.003165
0.741935483870968		0.003107	0.003103	0.003075	0.003004	0.002946	0.002726
0.774193548387097		0.002615	0.002612	0.002584	0.002529	0.002524	0.002499
0.806451612903226		0.002459	0.002457	0.002443	0.002424	0.002409	0.002335
0.838709677419355		0.00216	0.00216	0.00216	0.002153	0.00213	0.00191
0.870967741935484		0.00177	0.001768	0.001744	0.001694	0.001675	0.001525
0.903225806451613		0.001176	0.001175	0.00116	0.00114	0.001133	0.001061
0.935483870967742		0.0009803	0.0009801	0.0009784	0.0009674	0.0009496	0.0008431
0.967741935483871		0.000659	0.0006531	0.0005928	0.0004543	0.0003924	0.0002044
0.1	0.0059656	0.0059584	0.0059313	0.0059218	0.005914	0.0058089	
					Average of yearly averages:		0.00388515

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: MSCORN513
Metfile: w13893.dvf
PRZM scenario: MScornC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46513

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	389	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.95	mg/L			
Kd	Kd		mg/L			
Koc	Koc	1290	mg/L			
Photolysis half-life		kdp		days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1320	days	Halfife	
Anaerobic Aquatic Metabolism			kbacs	1320	days	Halfife
Aerobic Soil Metabolism		asm	660	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	5	integer	See PRZM manual		
Incorporation Depth:		DEPI	5	cm		
Application Rate:		TAPP	0.0014	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

MB46136
stored as MSCORN136ben.out
Chemical: MB46136
PRZM environment: MScornC.txt modified Satday, 12 October 2002 at 16:06:02
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 16:33:30
Metfile: w13893.dvf modified Wedday, 3 July 2002 at 09:06:20
Benthic segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.004547	0.004506	0.00397	0.002744	0.002191	0.001009
1962	0.006837	0.006837	0.006834	0.006807	0.006737	0.005951
1963	0.008601	0.008594	0.008474	0.008259	0.008237	0.007814
1964	0.0151	0.01508	0.01471	0.0136	0.01327	0.01198
1965	0.01871	0.01871	0.0187	0.01864	0.01858	0.01738
1966	0.02075	0.02075	0.02073	0.02061	0.02047	0.01986
1967	0.02233	0.02232	0.02204	0.0215	0.02146	0.02102
1968	0.02637	0.02632	0.02603	0.02539	0.02514	0.02377
1969	0.02805	0.02805	0.02803	0.02788	0.0277	0.02674
1970	0.02909	0.02909	0.02907	0.02892	0.02877	0.02817
1971	0.02935	0.02935	0.02934	0.02926	0.02917	0.02794
1972	0.03211	0.03208	0.03158	0.03008	0.02909	0.0278
1973	0.03592	0.03592	0.0359	0.03568	0.03543	0.0341
1974	0.03815	0.03815	0.03811	0.03788	0.03782	0.03692
1975	0.03768	0.03768	0.03766	0.03755	0.03744	0.0363
1976	0.03699	0.03699	0.03698	0.03693	0.03668	0.03605

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1977	0.03711	0.03711	0.03709	0.03707	0.037	0.03602
1978	0.03972	0.03969	0.0391	0.03838	0.0382	0.03735
1979	0.0441	0.0441	0.04407	0.04384	0.04359	0.04184
1980	0.04373	0.04373	0.04369	0.04346	0.04317	0.04177
1981	0.04169	0.04168	0.04164	0.04153	0.04148	0.03978
1982	0.04236	0.04223	0.04138	0.04061	0.04051	0.03945
1983	0.04533	0.0453	0.04491	0.04463	0.04437	0.04335
1984	0.04699	0.04699	0.04694	0.04664	0.04632	0.04528
1985	0.04568	0.04568	0.04564	0.0454	0.04523	0.04405
1986	0.04383	0.04382	0.04361	0.04289	0.04284	0.04145
1987	0.04706	0.04686	0.04594	0.04567	0.04537	0.04408
1988	0.04966	0.04966	0.04964	0.04954	0.04943	0.04748
1989	0.05191	0.05191	0.05188	0.05181	0.05166	0.04984
1990	0.05022	0.05022	0.0502	0.05012	0.05008	0.04862

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly	
0.032258064516129		0.05191	0.05191	0.05188	0.05181	0.05166	0.04984
0.0645161290322581		0.05022	0.05022	0.0502	0.05012	0.05008	0.04862
0.0967741935483871		0.04966	0.04966	0.04964	0.04954	0.04943	0.04748
0.129032258064516		0.04706	0.04699	0.04694	0.04664	0.04632	0.04528
0.161290322580645		0.04699	0.04686	0.04594	0.04567	0.04537	0.04408
0.193548387096774		0.04568	0.04568	0.04564	0.0454	0.04523	0.04405
0.225806451612903		0.04533	0.0453	0.04491	0.04463	0.04437	0.04335
0.258064516129032		0.0441	0.0441	0.04407	0.04384	0.04359	0.04184
0.290322580645161		0.04383	0.04382	0.04369	0.04346	0.04317	0.04177
0.32258064516129		0.04373	0.04373	0.04361	0.04289	0.04284	0.04145
0.354838709677419		0.04236	0.04223	0.04164	0.04153	0.04148	0.03978
0.387096774193548		0.04169	0.04168	0.04138	0.04061	0.04051	0.03945
0.419354838709677		0.03972	0.03969	0.0391	0.03838	0.0382	0.03735
0.451612903225806		0.03815	0.03815	0.03811	0.03788	0.03782	0.03692
0.483870967741936		0.03768	0.03768	0.03766	0.03755	0.03744	0.0363
0.516129032258065		0.03711	0.03711	0.03709	0.03707	0.037	0.03605
0.548387096774194		0.03699	0.03699	0.03698	0.03693	0.03668	0.03602
0.580645161290323		0.03592	0.03592	0.0359	0.03568	0.03543	0.0341
0.612903225806452		0.03211	0.03208	0.03158	0.03008	0.02917	0.02817
0.645161290322581		0.02935	0.02935	0.02934	0.02926	0.02909	0.02794
0.67741935483871		0.02909	0.02909	0.02907	0.02892	0.02877	0.0278
0.709677419354839		0.02805	0.02805	0.02803	0.02788	0.0277	0.02674
0.741935483870968		0.02637	0.02632	0.02603	0.02539	0.02514	0.02377
0.774193548387097		0.02233	0.02232	0.02204	0.0215	0.02146	0.02102
0.806451612903226		0.02075	0.02075	0.02073	0.02061	0.02047	0.01986
0.838709677419355		0.01871	0.01871	0.0187	0.01864	0.01858	0.01738
0.87096774193548 4		0.0151	0.01508	0.01471	0.0136	0.01327	0.01198
0.903225806451613		0.008601	0.008594	0.008474	0.008259	0.008237	0.007814
0.935483870967742		0.006837	0.006837	0.006834	0.006807	0.006737	0.005951
0.967741935483871		0.004547	0.004506	0.00397	0.002744	0.002191	0.001009
0.1	0.0494	0.049393	0.04937	0.04925	0.049119	0.04726	
					Average of yearly averages:		0.0321054666666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: MSCORN136
Metfile: w13893.dvf
PRZM scenario: MScornC.txt
EXAMS environment file: pond298.exv
Chemical Name: MB46136

Description	Variable Name		Value	Units	Comments	
Molecular weight		mwt	453	g/mol		
Henry's Law Const.		henry		atm-m^3/mol		
Vapor Pressure		vapr		torr		
Solubility	sol	0.16	mg/L			
Kd	Kd		mg/L			
Koc	Koc	4208	mg/L			
Photolysis half-life		kdp	7	days	Half-life	
Aerobic Aquatic Metabolism		kbacw	1400	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	1400	days	Halfife	
Aerobic Soil Metabolism		asm	700	days	Halfife	
Hydrolysis:	pH 7		days	Half-life		
Method:	CAM	5	integer	See PRZM manual		
Incorporation Depth:		DEPI	5	cm		
Application Rate:		TAPP	0.0349	kg/ha		
Application Efficiency:		APPEFF	1.0	fraction		
Spray Drift	DRFT		fraction of application rate applied to pond			
Application Date		Date	11-4	dd/mm or dd/mmm or dd-mm or dd-mmm		
Record 17:	FILTRA					
	IPSCND					
	UPTKF					
Record 18:	PLVKRT					
	PLDKRT					
	FEXTRC	0.5				
Flag for Index Res. Run		IR	Pond			
Flag for runoff calc.		RUNOFF	none	none, monthly or total(average of entire run)		

Appendix C
TREX Calculations of LD50/ft^2 Risk Quotients

US EPA ARCHIVE DOCUMENT

Chemical: Fipronil Corn Seeed treatment (1% available)

LD50 ft-2

INPUTS	Do not overwrite these numbers.	
Application Rate:	0.000178	lbs / acre
% A.I.:	100.00%	
Avian LD50 (20g):	8.14	mg/kg bw
(100g)	10.39	
(1000g)	14.84	
Mammalian LD50 (15g):	213.19	mg/kg bw
(35g)	172.49	
(1000g)	74.61	
Row Spacing:	0	inches
Bandwidth:	0	inches
Unincorporation:		

Broadcast applications

Granular

Intermediate Calculations	
mg ai/ft2:	0.00

LD50 ft-2		
	wgt class	
Avian	20 g	0.01
	100 g	0.00
	1000 g	0.00
Mammal	15 g	0.00
	35 g	0.00
	1000 g	0.00

Formulas used in the calculations are in the User's Guide

US EPA ARCHIVE DOCUMENT

Chemical: Fipronil Onion seed(1% available)

LD50 ft-2

INPUTS	Do not overwrite these numbers.	
Application Rate:	0.0011	lbs/acre
% AI:	100.00%	
Avian LD50 (20g):	8.14	mg/kg-bw
(100g):	[illegible]	
(1000g):	[illegible]	
Mammalian LD50 (15g):	213.19	mg/kg-bw
(35g):	[illegible]	
(1000g):	[illegible]	
Row Spacing:	0	inches
Bandwidth:	0	inches
Unincorporation:		

Broadcast applications	
Granular	
Intermediate Calculations	
mg ai/ft2:	1.15E-02

LD50 ft-2		
	wgt class	
Avian	20 g	0.07
	100 g	0.01
	1000 g	0.00
Mammal	15 g	0.00
	35 g	0.00
	1000 g	0.00

US EPA ARCHIVE DOCUMENT

Chemical: Fipronil BES100 Texas Leafcutter Ant Bait(1 app. 100% available)

LD50 ft-2

INPUTS	Do not overwrite these numbers.	
Application Rate:	0.228	lbs / acre
% A.I.:	100.00%	
Avian LD50 (20g):	8.14	mg/kg bw
(100g)	10.35	
(1000g)	14.64	
Mammalian LD50 (15g):	213.19	mg/kg bw
(35g)	172.49	
(1000g)	74.61	
Row Spacing:	0	inches
Bandwidth:	0	inches
Unincorporation:	100%	

Broadcast applications		
Granular		
Intermediate Calculations		
mg ai/ft2:	2.37E+00	
LD50 ft-2		
	wgt class	
Avian	20 g	14.58
	100 g	2.29
	1000 g	0.16
Mammal	15 g	0.74
	35 g	0.39
	1000 g	0.03

US EPA ARCHIVE DOCUMENT

Chemical: MB45950 Texas Leafcutter Ant bait 5% of applied parent

LD50 ft-2

INPUTS	Do not overwrite these numbers.	
Application Rate:	0.0114	lbs / acre
% A.I.:	100.00%	
Avian LD50 (20g):	19.00	mg/kg bw
(100g)	24.57	
(1000g)	34.71	
Mammalian LD50 (15g):	182.42	mg/kg bw
(35g)	147.60	
(1000g)	63.84	
Row Spacing:	0	inches
Bandwidth:	0	inches
Unincorporation:	100%	

Broadcast applications

Granular

Intermediate Calculations	
mg ai/ft2:	0.12

LD50 ft-2		
	wgt class	
Avian	20 g	0.31
	100 g	0.05
	1000 g	0.00
Mammal	15 g	0.04
	35 g	0.02
	1000 g	0.00

US EPA ARCHIVE DOCUMENT

Chemical: MB46136Texas Leafcutter Ant bait 24% of applied parent

LD50 ft-2

INPUTS	Do not overwrite these numbers.
[illegible]	[illegible]
Broadcast applications	
Granular	
[illegible]	
kg ai/ha	0.57
LD50 ft-2	
[illegible]	
[illegible]	2.01
	0.32
	0.02
[illegible]	0.08
	0.04
	0.00

US EPA ARCHIVE DOCUMENT

Chemical: FipronilBES 1000 House Perimeter (within perimeter treatment)

LD50 ft-2

INPUTS	Do not overwrite these numbers.
Application Rate:	0.357 lbs / acre
% A.I.:	100.00%
Avian LD50 (2000):	9.14 mg/kg bw
(1000):	10.36
(100):	11.64
Mammalian LD50 (Sq):	13 mg/kg bw
(35):	172.4
(1000):	34.5
Row Spacing:	[illegible]
Bed Width:	[illegible]
% Incorporation:	100%

Broadcast applications	
Granular	
Intermediate Calculations	
mg/ft2:	3.72E+00
LD50 ft-2	
	mg/ft2
Avian (20 g)	22.83
(100 g)	3.59
(1000 g)	0.25
Mammal (35 g)	1.16
(35 g)	0.62
(1000 g)	0.05

US EPA ARCHIVE DOCUMENT

Chemical: MB46136BES1000 24% of applied parent within perimeter

LD50 ft-2

INPUTS	Do not overwrite these numbers.	
Application Rate:	0.0[illegible]	lbs ai/acre
% ai:	100.00%	
Avian LD50 (20g):	14.19	mg/kg bw
(100g)	18.07	
(1000g)	25.52	
Mammalian LD50 (15g):	479.13	mg/kg bw
(35g)	387.68	
(1000g)	167.68	
Row Spacing:	0	inches
Bandwidth:	0	inches
Unincorporation:	100%	

Broadcast applications

Granular

Intermediate Calculations	
mg ai/ft2:	0.89

LD50 ft-2		
	wgt class	
Avian	20 g	3.14
	100 g	0.49
	1000 g	0.03
Mammal	15 g	0.12
	35 g	0.07
	1000 g	0.01

US EPA ARCHIVE DOCUMENT

Chemical: MB45950 BES1000 5% of applied parent within perimeter

LD50 ft-2

INPUTS	Do not overwrite these numbers.
[redacted]	

Broadcast applications	
Granular	
[redacted]	
[redacted]	0.19
[redacted]	
[redacted]	
[redacted]	0.48
[redacted]	0.08
[redacted]	0.01
[redacted]	0.07
[redacted]	0.04
[redacted]	0.00

US EPA ARCHIVE DOCUMENT

The following applies to of parent fipronil for Chipco 61748A, TopChoice Select, and Chipcco Choice for fireant broadcast granular formulations. They are all the same label rate.

Chemical: Fipronil ChipcoChoice Fireant Broadcast Granular

LD50 ft-2

INPUTS	Do not overwrite these numbers.	
Application Rate:	0.0125	lbs / acre
% A.I.:	100.00%	
Avian LD50 (20g):	8.14	mg/kg bw
(100g)	10.36	
(1000g)	14.64	
Mammalian LD50 (15g):	248.19	mg/kg bw
(35g)	172.49	
(1000g)	74.61	
Row Spacing:	0	inches
Bandwidth:	0	inches
Unit conversion:	[illegible]	

Broadcast applications		
Granular		
Intermediate Calculations		
mg ai/ft2:	1.30E-01	
LD50 ft-2		
	wgt class	
Avian	20 g	0.80
	100 g	0.13
	1000 g	0.01
Mammal	15 g	0.04
	35 g	0.02
	1000 g	0.00

US EPA ARCHIVE DOCUMENT

The following applies to MB46136 (24% of parent applied) for Chipco 61748A, TopChoice Select, and Chipco Choice for fireant broadcast granular formulations. They are all the same label rate.

Chemical: MB46136 Chipco 61748A fire ant broadcast 24% of applied parent

LD50 ft-2

INPUTS	Do not overwrite these numbers.	
Application Rate:	0.003	lbs / acre
% A.I.:	100.00%	
Avian LD50 (20g):	14.19	mg/kg bw
(100g)	18.07	
(1000g)	25.52	
Mammalian LD50 (15g):	479.13	mg/kg bw
(35g)	397.66	
(1000g)	167.68	
Row Spacing:	0	inches
Bandwidth:	0	inches
Unincorporation:	100%	

Broadcast applications

Granular

Intermediate Calculations	
mg ai/ft2:	0.03

LD50 ft-2		
	wgt class	
Avian	20 g	0.11
	100 g	0.02
	1000 g	0.00
Mammal	15 g	0.00
	35 g	0.00
	1000 g	0.00

US EPA ARCHIVE DOCUMENT

The following applies to MB46950 (5% of parent applied) for Chipco 61748A, TopChoice Select, and Chipco Choice for fireant broadcast granular formulations. They are all the same label rate.

Chemical: MB45950 Chipco 61748A fire ant broadcast 5% of applied parent

LD50 ft-2

INPUTS	Do not overwrite these numbers.	
Application Rate:	0.000015	lbs / acre
% A.I.:	100.00%	
Avian LD50 (20g):	19.38	mg/kg bw
(100g)	24.37	
(1000g)	30.67	
Mammalian LD50 (15g):	152.42	mg/kg bw
(35g)	147.50	
(1000g)	142.75	
Row Spacing:	4	inches
Bandwidth:	0	inches
Unincorporation:	100%	

Broadcast applications

Granular

Intermediate Calculations	
mg ai/ft2:	0.01

LD50 ft-2		
	wgt class	
Avian	20 g	0.02
	100 g	0.00
	1000 g	0.00
Mammal	15 g	0.00
	35 g	0.00
	1000 g	0.00

US EPA ARCHIVE DOCUMENT

Chemical: Fipronil OverNOut Fireant Broadcast Granular

LD50 ft-2

INPUTS	Do not overwrite these numbers.	
Application Rate:	0.009	lbs / acre
% A.I.:	100.00%	
Avian LD50 (20g):	6.14	mg/kg bw
(100g)	10.36	
(1000g)	14.64	
Mammalian LD50 (15g):	213.19	mg/kg bw
(35g)	172.49	
(1000g)	74.51	
Row Spacing:	0	inches
Bandwidth:	0	inches
Unincorporation:	100%	

Broadcast applications		
Granular		
Intermediate Calculations		
mg ai/ft2:	0.09	
LD50 ft-2		
	wgt class	
Avian	20 g	0.58
	100 g	0.09
	1000 g	0.01
Mammal	15 g	0.03
	35 g	0.02
	1000 g	0.00

US EPA ARCHIVE DOCUMENT

Chemical: MB46136 Overnout 24% of applied parent

LD50 ft-2

INPUTS	Do not overwrite these numbers.
[illegible]	

Broadcast applications

Granular

Intermediate Calculations	
mg a.i./ft2:	0.02

LD50 ft-2	
[illegible]	
Avian	0.08
[illegible]	0.01
[illegible]	0.00
Mammalian	0.00
[illegible]	0.00
[illegible]	0.00

US EPA ARCHIVE DOCUMENT

Chemical: MB45950 Overnout 24% of applied parent

LD50 ft-2

INPUTS	Do not overwrite these numbers.
Application Rate:	0.00045 lbs / acre
% A.I.	90.00%
Avian LD50 (20g):	19.30 mg/kg bw
(100g)	24.[illegible]
(1000g)	34.71
Mammalian LD50 (15g):	92.42 mg/kg bw
(35g)	[illegible]
(1000g)	63.[illegible]
Row Spacing	0 inches
Bandwidth	[illegible]
Unincorporation	[illegible]

Broadcast applications

Granular

Intermediate Calculations	
mg a.i./ft2:	0.00

LD50 ft-2		
Avian	20 g	0.01
	100 g	0.00
	1000 g	0.00
Mammal	15 g	0.00
	35 g	0.00
	1000 g	0.00

US EPA ARCHIVE DOCUMENT

US EPA ARCHIVE DOCUMENT

Appendix D
TREX Calculations of Terrestrial Wildlife Residue Based Risk Quotients

Potato/Sweet Potato In-Furrow Spray with Regent 4 SC

Upper Bound Kenaga Residues For RQ Calculation

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signi figure issues in Excel.

Endpoints

Avian			
Mammals			

	2.40
	1.10
	1.35
	0.15

Avian Results

Large					

Dose-based EECs			
	2.73	1.56	0.70
	1.25	0.71	0.32
	1.64	0.88	0.39
	0.17	0.10	0.04

Dose-based RQs			
	0.34	0.15	0.06
	0.15	0.07	0.02
	0.19	0.08	0.03
	0.02	0.01	0.00

Dietary-based RQs		
	Acute	Chronic
	0.05	0.24
	0.02	0.11
	0.03	0.14
	0.00	0.02

fipronil potato/sweet potato infurrow spray Upper bound Kenaga Residues

Mammalian Results

Dose-based EECs						
	2.29	1.88	0.37			
	1.05	0.72	0.17			
	1.29	0.89	0.21			
	0.14	0.10	0.02	0.03	0.02	0.01

Dose-based RQs						
	Acute	Chronic	Acute	Chronic	Acute	Chronic
	0.01	0.39	0.01	0.34	0.00	0.18
	0.00	0.18	0.00	0.15	0.00	0.08
	0.01	0.22	0.01	0.19	0.00	0.10
	0.00	0.02	0.00	0.02	0.00	0.01
	0.00	0.01	0.00	0.00	0.00	0.00

Dietary-based RQs		
	Acute	Chronic
	#DIV/0!	0.08
	#DIV/0!	0.04
	#DIV/0!	0.05
	#DIV/0!	0.01

US EPA ARCHIVE DOCUMENT

Potato/Sweet Potato In-Furrow Spray with Regent 4 SC

MB46136 residues assuming 24% of applied parent

Upper Bound Kenaga Residues For RQ Calculation

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signf figure issues in Excel.

Endpoints

Avian	[illegible]	[illegible]	[illegible]
Mammals	[illegible]	[illegible]	[illegible]

Dietary-Based EECs (ppm)	Value
[illegible]	0.58
[illegible]	0.26
[illegible]	0.32
[illegible]	0.04

Avian Results

Class	Body Weight (g)	Ingestion Rate (g/day)	Acute LD50 (mg/kg-bw)	Chronic NOAEL (mg/kg-bw)	Acute NOAEC (ppm)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Avian RQ Values	Acute LD50
Weight (g)	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Dose-based EECs	[illegible]	[illegible]	[illegible]
[illegible]	50 g	100 g	1000 g
[illegible]	0.66	0.37	0.17
[illegible]	0.30	0.17	0.08
[illegible]	0.37	0.21	0.09
[illegible]	0.04	0.02	0.01

Dose-based RQs (Dose-based EEC/Acute LD50)	Avian Acute RQs		
	50 g	100 g	1000 g
[illegible]	0.05	0.02	0.01
[illegible]	0.02	0.01	0.00
[illegible]	0.03	0.01	0.00
[illegible]	0.00	0.00	0.00

Dietary-Based RQs (Diet-based EEC/Chronic NOAEL)	RQs	
	Acute	Chronic
[illegible]	0.01	0.06
[illegible]	0.00	0.03
[illegible]	0.00	0.03
[illegible]	0.00	0.00

MB46136 Potato/Sweet Potato In-Furrow Spr 0 Upper bound Kenaga Residues

Mammalian Results

Class	Body Weight (g)	Ingestion Rate (g/day)	Acute LD50 (mg/kg-bw)	Chronic NOAEL (mg/kg-bw)	Acute NOAEC (ppm)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Class	Body Weight (g)	Ingestion Rate (g/day)	Chronic NOAEC (ppm)
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Dose-Based EECs	[illegible]			[illegible]		
[illegible]	10 g	50 g	100 g	10 g	50 g	100 g
[illegible]	0.55	0.38	0.09	[illegible]	[illegible]	[illegible]
[illegible]	0.25	0.17	0.04	[illegible]	[illegible]	[illegible]
[illegible]	0.31	0.21	0.05	[illegible]	[illegible]	[illegible]
[illegible]	0.03	0.02	0.01	0.01	0.01	0.00

Dose-based RQs (Dose-based EEC/Acute LD50 or NOAEL)	[illegible]		[illegible]		[illegible]	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
[illegible]	0.00	0.09	0.00	0.08	0.00	0.04
[illegible]	0.00	0.04	0.00	0.04	0.00	0.02
[illegible]	0.00	0.05	0.00	0.05	0.00	0.02
[illegible]	0.00	0.01	0.00	0.01	0.00	0.00
[illegible]	0.00	0.00	0.00	0.00	0.00	0.00

Dietary-Based RQs (Diet-based EEC/Chronic NOAEL)	[illegible]	
	Acute	Chronic
[illegible]	#DIV/0!	0.02
[illegible]	#DIV/0!	0.01
[illegible]	#DIV/0!	0.01
[illegible]	#DIV/0!	0.00

US EPA ARCHIVE DOCUMENT

Potato/Sweet Potato In-Furrow Spray with Regent 4 SC

MB45950 residues assuming 5% of applied parent

Upper Bound Kenaga Residues For RQ Calculation

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signf figure issues in Excel.

Endpoints

Avian			
Mammalia			

	1.20
	0.55
	0.88
	0.08

Avian Results

	1.37	0.78	0.35
	0.63	0.36	0.16
	0.77	0.44	0.20
	0.09	0.05	0.02

	0.07	0.03	0.01
	0.03	0.01	0.00
	0.04	0.02	0.01
	0.00	0.00	0.00

	Acute	Chronic
	0.01	0.12
	0.00	0.06
	0.01	0.07
	0.00	0.01

MB45950 Potato Sweet Potato in furrow aprs 0 Upper bound Kenaga Residues

Mammalian Results

	1.14	0.79	0.18		
	0.52	0.36	0.08		
	0.64	0.44	0.10		
	0.07	0.05	0.01	0.02	0.01	0.00

	Acute	Chronic	Acute	Chronic	Acute	Chronic
	0.01	0.20	0.01	0.17	0.00	0.09
	0.00	0.09	0.00	0.06	0.00	0.04
	0.00	0.11	0.00	0.09	0.00	0.05
	0.00	0.01	0.00	0.01	0.00	0.01
	0.00	0.00	0.00	0.00	0.00	0.00

	Acute	Chronic
	#DIV/0!	0.04
	#DIV/0!	0.02
	#DIV/0!	0.02
	#DIV/0!	0.00

US EPA ARCHIVE DOCUMENT

Corn In-Furrow Spray with Regent 4 SC

Upper Bound Kenaga Residues For RQ Calculation

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signi figure issues in Excel.

Endpoints

Avian	[illegible]	[illegible]	[illegible]
Mammals	[illegible]	[illegible]	[illegible]

[illegible]	31.20
[illegible]	14.30
[illegible]	17.55
[illegible]	1.95

Avian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	36.53	20.26	9.07
[illegible]	16.29	9.29	4.16
[illegible]	19.89	11.40	5.10
[illegible]	2.22	1.27	0.57

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	4.38	1.96	0.82
[illegible]	2.00	0.90	0.28
[illegible]	2.48	1.10	0.35
[illegible]	0.27	0.12	0.04

[illegible]	Acute	Chronic
[illegible]	0.65	3.12
[illegible]	0.30	1.43
[illegible]	0.37	1.75
[illegible]	0.04	0.20

fipronil corn infurrow spray Upper bound Kenaga Residues

Mammalian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	29.75	20.56	4.77			
[illegible]	13.63	9.42	2.18			
[illegible]	16.73	11.56	2.68			
[illegible]	1.86	1.29	0.30	0.41	0.29	0.07

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Acute	Chronic	Acute	Chronic	Acute	Chronic
[illegible]	0.14	5.13	0.12	4.38	0.06	2.36
[illegible]	0.06	2.36	0.05	2.01	0.03	1.08
[illegible]	0.08	2.88	0.07	2.46	0.04	1.32
[illegible]	0.01	0.32	0.01	0.27	0.00	0.15
[illegible]	0.00	0.07	0.00	0.06	0.00	0.03

[illegible]	Acute	Chronic
[illegible]	#DIV/0!	1.04
[illegible]	#DIV/0!	0.48
[illegible]	#DIV/0!	0.59
[illegible]	#DIV/0!	0.07

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Corn In-Furrow Spray with Regent 4 SC

MB46136 residues assuming 24% of applied parent

Upper Bound Kenaga Residues For RQ Calculation

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signi figure issues in Excel.

Endpoints

Avian	[illegible]	[illegible]	[illegible]
Mammals	[illegible]	[illegible]	[illegible]

Dose-based EECs (ppm)	Acute
[illegible]	7.40
[illegible]	3.43
[illegible]	4.21
[illegible]	0.47

Avian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Dose-based EECs	[illegible]	[illegible]	[illegible]
[illegible]	8.53	4.86	2.18
[illegible]	3.91	2.23	1.00
[illegible]	4.90	2.74	1.22
[illegible]	0.53	0.30	0.14

Dose-based RQs	Avian Acute RQs		
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	0.60	0.27	0.09
[illegible]	0.28	0.12	0.04
[illegible]	0.34	0.16	0.05
[illegible]	0.04	0.02	0.01

Dietary-Based RQs [illegible]	Acute	Chronic
[illegible]	0.09	0.75
[illegible]	0.04	0.34
[illegible]	0.05	0.42
[illegible]	0.01	0.06

MB46136 Corn In-Furrow Spray 24% of parer 0 Upper bound Kenaga Residues

Mammalian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Dose-Based EECs						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	7.14	4.93	1.14			
[illegible]	3.27	2.26	0.52			
[illegible]	4.02	2.78	0.84			
[illegible]	0.45	0.31	0.07	0.10	0.07	0.02

Dose-Based RQs [illegible]	[illegible]		[illegible]		[illegible]	
[illegible]	Acute	Chronic	Acute	Chronic	Acute	Chronic
[illegible]	0.01	1.23	0.01	1.05	0.01	0.56
[illegible]	0.01	0.56	0.01	0.48	0.00	0.26
[illegible]	0.01	0.69	0.01	0.59	0.00	0.32
[illegible]	0.00	0.08	0.00	0.07	0.00	0.04
[illegible]	0.00	0.02	0.00	0.01	0.00	0.01

Dietary-Based RQs [illegible]	[illegible]	
[illegible]	Acute	Chronic
[illegible]	#DIV/0!	0.25
[illegible]	#DIV/0!	0.11
[illegible]	#DIV/0!	0.14
[illegible]	#DIV/0!	0.02

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Corn In-Furrow Spray with Regent 4 SC

MB45950 residues assuming 5% of applied parent

Upper Bound Kenaga Residues For RQ Calculation

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signi figure issues in Excel.

Endpoints

[illegible]	[illegible]	[illegible]
Avian	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
Mammals	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]

[illegible]	[illegible]
[illegible]	1.56
[illegible]	0.72
[illegible]	0.88
[illegible]	0.10

Avian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Dose-based EECs	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1.78	1.01	0.45
[illegible]	0.81	0.46	0.21
[illegible]	1.00	0.57	0.26
[illegible]	0.11	0.06	0.03

Dose-based RQs	[illegible]	[illegible]	[illegible]
[illegible]	25 g	100 g	1000 g
[illegible]	0.09	0.04	0.01
[illegible]	0.04	0.02	0.01
[illegible]	0.05	0.02	0.01
[illegible]	0.01	0.00	0.00

Dietary-based RQs	RQs	
[illegible]	Acute	Chronic
[illegible]	0.01	0.16
[illegible]	0.01	0.07
[illegible]	0.01	0.09
[illegible]	0.00	0.01

Corn In-Furrow Spray with Regent 4 SC" MB 0 Upper bound Kenaga Residues

Mammalian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Dose-based EECs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1.49	1.03	0.24	[illegible]	[illegible]	[illegible]
[illegible]	0.68	0.47	0.11	[illegible]	[illegible]	[illegible]
[illegible]	0.84	0.58	0.13	[illegible]	[illegible]	[illegible]
[illegible]	0.09	0.06	0.01	0.02	0.01	0.00

Dose-based RQs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Acute	Chronic	Acute	Chronic	Acute	Chronic
[illegible]	0.01	0.26	0.01	0.22	0.00	0.12
[illegible]	0.00	0.12	0.00	0.10	0.00	0.05
[illegible]	0.00	0.14	0.00	0.12	0.00	0.07
[illegible]	0.00	0.02	0.00	0.01	0.00	0.01
[illegible]	0.00	0.00	0.00	0.00	0.00	0.00

Dietary-based RQs	[illegible]	
[illegible]	Acute	Chronic
[illegible]	#DIV/0!	0.05
[illegible]	#DIV/0!	0.02
[illegible]	#DIV/0!	0.03
[illegible]	#DIV/0!	0.00

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House Perimeter Treatment Spray with Termidor SC

Within 1 Foot Treatment Area

Upper Bound Kenaga Residues For RQ Calculation

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signi figure issues in Excel.

Endpoints

Avian	[illegible]	[illegible]	[illegible]
Mammalian	[illegible]	[illegible]	[illegible]

Dietary-based EECs (ppm)	
[illegible]	78.00
[illegible]	35.75
[illegible]	43.88
[illegible]	4.88

Avian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Dose-based EECs			
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	88.83	50.88	22.68
[illegible]	40.72	23.22	10.39
[illegible]	49.97	28.48	12.79
[illegible]	5.55	3.17	1.42

Dose-based RQs	Avian Acute RQs		
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	10.51	4.60	1.58
[illegible]	5.00	2.24	0.71
[illegible]	6.14	2.75	0.87
[illegible]	0.68	0.31	0.10

Dietary-based RQs		
[illegible]	Acute	Chronic
[illegible]	1.63	7.80
[illegible]	0.74	3.68
[illegible]	0.91	4.39
[illegible]	0.10	0.49

fipronil — House perimeter spray (1 foot treatment) — Upper bound Kenaga Residues

Mammalian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Dose-based EECs						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	74.37	51.40	11.92			
[illegible]	34.08	23.56	5.46			
[illegible]	41.83	28.91	6.70			
[illegible]	4.65	3.21	0.74	1.03	0.71	0.17

Dose-based RQs						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Acute	Chronic	Acute	Chronic	Acute	Chronic
[illegible]	0.35	12.82	0.30	10.95	0.16	5.87
[illegible]	0.16	5.87	0.14	5.02	0.07	2.69
[illegible]	0.20	7.21	0.17	6.16	0.09	3.30
[illegible]	0.02	0.80	0.02	0.68	0.01	0.37
[illegible]	0.00	0.16	0.00	0.15	0.00	0.08

Dietary-based RQs		
[illegible]	Acute	Chronic
[illegible]	#DIV/0!	2.60
[illegible]	#DIV/0!	1.19
[illegible]	#DIV/0!	1.46
[illegible]	#DIV/0!	0.16

US EPA ARCHIVE DOCUMENT

House Perimeter Treatment Spray with Termidor SC

Within 1 Foot Treatment Area MB46136 24% of parent

Upper Bound Kenaga Residues For RQ Calculation

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signi figure issues in Excel.

Endpoints

Avian	[illegible]	[illegible]	[illegible]
Mammals	[illegible]	[illegible]	[illegible]

Dietary-based EECs (ppm)	[illegible]
[illegible]	18.72
[illegible]	8.58
[illegible]	10.53
[illegible]	1.17

Avian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Dose-based EECs	[illegible]	[illegible]	[illegible]
[illegible]	20 g	100 g	1000 g
[illegible]	21.32	12.16	5.44
[illegible]	9.77	5.57	2.49
[illegible]	11.99	6.84	3.06
[illegible]	1.33	0.76	0.34

Dose-based RQs	[illegible]	[illegible]	[illegible]
[illegible]	20 g	100 g	1000 g
[illegible]	1.50	0.67	0.21
[illegible]	0.69	0.31	0.10
[illegible]	0.84	0.38	0.12
[illegible]	0.09	0.04	0.01

Dietary-based RQs	[illegible]	
[illegible]	Acute	Chronic
[illegible]	0.22	1.67
[illegible]	0.10	0.86
[illegible]	0.13	1.05
[illegible]	0.01	0.12

MB46136 House Perimeter Treatment Spray 0 Upper bound Kenaga Residues

Mammalian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Dose-Based EECs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	17.65	12.34	2.56	[illegible]	[illegible]	[illegible]
[illegible]	8.18	5.65	1.31	[illegible]	[illegible]	[illegible]
[illegible]	10.04	6.94	1.61	[illegible]	[illegible]	[illegible]
[illegible]	1.12	0.77	0.18	0.26	0.17	0.04

Dose-based RQs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Acute	Chronic	Acute	Chronic	Acute	Chronic
[illegible]	0.04	3.08	0.03	2.63	0.02	1.41
[illegible]	0.02	1.41	0.01	1.20	0.01	0.65
[illegible]	0.02	1.73	0.02	1.48	0.01	0.79
[illegible]	0.00	0.19	0.00	0.16	0.00	0.09
[illegible]	0.00	0.04	0.00	0.04	0.00	0.02

Dietary-Based RQs	[illegible]	
[illegible]	Acute	Chronic
[illegible]	#DIV/0!	0.62
[illegible]	#DIV/0!	0.29
[illegible]	#DIV/0!	0.36
[illegible]	#DIV/0!	0.04

US EPA ARCHIVE DOCUMENT

House Perimeter Treatment Spray with Termidor SC

Within 1 Foot Treatment Area MB45950 5% of parent

Upper Bound Kenaga Residues For RQ Calculation

[redacted]

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signi figure issues in Excel.

Endpoints

[redacted]

[redacted]	3.90
[redacted]	1.79
[redacted]	2.19
[redacted]	0.24

Avian Results

[redacted]

[redacted]

[redacted]	4.44	2.53	1.13
[redacted]	2.04	1.16	0.52
[redacted]	2.50	1.42	0.64
[redacted]	0.28	0.16	0.07

[redacted]	0.23	0.10	0.03
[redacted]	0.11	0.05	0.01
[redacted]	0.13	0.06	0.02
[redacted]	0.01	0.01	0.00

[redacted]	Acute	Chronic
[redacted]	0.03	0.39
[redacted]	0.02	0.18
[redacted]	0.02	0.22
[redacted]	0.00	0.02

House Perimeter Treatment Spray with Term 0 Upper bound Kenaga Residues

Mammalian Results

[redacted]

[redacted]

[redacted]	3.72	2.57	0.80			
[redacted]	1.70	1.18	0.27			
[redacted]	2.09	1.45	0.34			
[redacted]	0.23	0.16	0.04	0.05	0.04	0.01

[redacted]	Acute	Chronic	Acute	Chronic	Acute	Chronic
[redacted]	0.02	0.54	0.02	0.55	0.01	0.29
[redacted]	0.01	0.29	0.01	0.35	0.00	0.13
[redacted]	0.01	0.38	0.01	0.31	0.01	0.17
[redacted]	0.00	0.04	0.00	0.03	0.00	0.02
[redacted]	0.00	0.01	0.00	0.01	0.00	0.00

[redacted]	Acute	Chronic
[redacted]	#DIV/0!	0.13
[redacted]	#DIV/0!	0.05
[redacted]	#DIV/0!	0.07
[redacted]	#DIV/0!	0.01

US EPA ARCHIVE DOCUMENT

House Perimeter Treatment Spray with Termidor SC

Within 1 Foot Treatment Area MB46513 45% of parent

Upper Bound Kenaga Residues For RQ Calculation

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signi figure issues in Excel.

Endpoints

Avian				
Mammals				

	35.10
	16.09
	19.74
	2.19

Avian Results

Dose-based EECs			
	39.98	22.80	10.21
	18.32	10.45	4.68
	22.49	12.82	5.74
	2.50	1.42	0.64

Dose-based RQs			
	11.10	4.57	1.58
	5.09	2.28	0.72
	6.24	2.80	0.89
	0.69	0.31	0.10

Dietary-based RQs		
	Acute	Chronic
	0.29	3.51
	0.13	1.61
	0.17	1.97
	0.02	0.22

Mammalian Results

Dose-Based EECs						
	33.47	23.13	5.36			
	15.34	10.60	2.46			
	18.82	13.01	3.02			
	2.09	1.45	0.34	0.46	0.32	0.07

Dose-based RQs						
	Acute	Chronic	Acute	Chronic	Acute	Chronic
	0.06	5.77	0.81	4.93	0.44	2.64
	0.44	2.64	0.37	2.28	0.20	1.21
	0.54	3.24	0.46	2.77	0.25	1.49
	0.06	0.36	0.05	0.31	0.03	0.17
	0.01	0.08	0.01	0.07	0.01	0.04

Dietary-based RQs		
	Acute	Chronic
	#DIV/0!	1.17
	#DIV/0!	0.54
	#DIV/0!	0.66
	#DIV/0!	0.07

US EPA ARCHIVE DOCUMENT

Broadcast Fireant Treatment Spray with HG 61743 Ae

Within 1 Foot Treatment Area

Upper Bound Kenaga Residues For RQ Calculation

[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signi figure issues in Excel.

Endpoints

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

[redacted]	[redacted]
[redacted]	28.14
[redacted]	11.98
[redacted]	14.70
[redacted]	1.63

Avian Results

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	29.77	16.97	7.50
[redacted]	13.84	7.78	3.48
[redacted]	16.74	9.55	4.27
[redacted]	1.86	1.06	0.47

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	3.08	1.64	0.52
[redacted]	1.68	0.75	0.24
[redacted]	2.06	0.92	0.29
[redacted]	0.23	0.10	0.03

[redacted]	[redacted]	[redacted]
[redacted]	Acute	Chronic
[redacted]	0.54	2.61
[redacted]	0.25	1.20
[redacted]	0.31	1.47
[redacted]	0.03	0.16

fipronil | Broadcast Fireant Spray (1 foot perimeter) | Upper bound Kenaga Residues

Mammalian Results

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	24.92	17.22	3.99	[redacted]	[redacted]	[redacted]
[redacted]	11.42	7.89	1.83	[redacted]	[redacted]	[redacted]
[redacted]	14.02	9.69	2.25	[redacted]	[redacted]	[redacted]
[redacted]	1.56	1.08	0.25	0.36	0.24	0.06

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	Acute	Chronic	Acute	Chronic	Acute	Chronic
[redacted]	0.12	4.29	0.10	3.87	0.05	1.97
[redacted]	0.05	1.97	0.05	1.88	0.02	0.90
[redacted]	0.07	2.42	0.06	2.06	0.03	1.11
[redacted]	0.01	0.27	0.01	0.23	0.00	0.12
[redacted]	0.00	0.06	0.00	0.05	0.00	0.03

[redacted]	[redacted]	[redacted]
[redacted]	Acute	Chronic
[redacted]	#DIV/0!	0.97
[redacted]	#DIV/0!	0.40
[redacted]	#DIV/0!	0.40
[redacted]	#DIV/0!	0.05

US EPA ARCHIVE DOCUMENT

Broadcast Fireant Treatment Spray with HG 61743 Ae

Within 1 Foot Treatment Area MB46136 24% of parent

Upper Bound Kenaga Residues For RQ Calculation

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signi figure issues in Excel.

Endpoints

Avian			
Mammalia			

Dietary-based EECs (ppm)	Kenaga Values
	8.26
	2.87
	3.52
	0.39

Avian Results

Dose-based EECs			
	7.13	4.07	1.82
	3.27	1.86	0.83
	4.01	2.29	1.02
	0.46	0.25	0.11

Dose-based RQs			
	0.50	0.23	0.07
	0.23	0.10	0.03
	0.28	0.13	0.04
	0.03	0.01	0.00

Dietary-based RQs	RQs	
	Acute	Chronic
	0.07	0.53
	0.03	0.39
	0.04	0.35
	0.00	0.04

MB46136 House Perimeter Treatment Spray 0 Upper bound Kenaga Residues

Mammalian Results

Dose-based EECs						
	5.97	4.13	0.96			
	2.74	1.89	0.44			
	3.36	2.32	0.54			
	0.37	0.26	0.06	0.08	0.06	0.01

Dose-based RQs						
	Acute	Chronic	Acute	Chronic	Acute	Chronic
	0.01	1.03	0.01	0.88	0.01	0.47
	0.01	0.47	0.00	0.40	0.00	0.22
	0.01	0.58	0.01	0.49	0.00	0.27
	0.00	0.06	0.00	0.05	0.00	0.03
	0.00	0.01	0.00	0.01	0.00	0.01

Dietary-based RQs		
	Acute	Chronic
	#DIV/0!	0.21
	#DIV/0!	0.10
	#DIV/0!	0.12
	#DIV/0!	0.01

US EPA ARCHIVE DOCUMENT

Broadcast Fireant Treatment Spray with HG 61743 Ae

Within 1 Foot Treatment Area MB45950 5% of parent

Upper Bound Kenaga Residues For RQ Calculation

Chemical Product	with HG at 1 oz Ae
Type	B
Formulation	B
Application Rate	0.0000 lbs ai/acre
Rate (lb)	0 lbs
Application Interval	0 days
Broadcast / Spot Treat	
Length of Simulation	1 year

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signi figure issues in Excel.

Endpoints

Avian	[illegible]	[illegible]	[illegible]
Mammals	[illegible]	[illegible]	[illegible]

Dietary-based EECs (ppm)	Value
[illegible]	1.31
[illegible]	0.60
[illegible]	0.74
[illegible]	0.06

Avian Results

Avian	Body Weight (g)	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Larvae	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Dose-based EECs	[illegible]		
	[illegible]	[illegible]	[illegible]
[illegible]	1.49	0.85	0.38
[illegible]	0.68	0.39	0.17
[illegible]	0.54	0.46	0.21
[illegible]	0.09	0.05	0.02

Dose-based RQs (Dose-based EEC/Adjusted LD50)	Avian Acute RQs		
	20 g	100 g	[illegible] g
[illegible]	0.08	0.03	0.01
[illegible]	0.04	0.02	0.01
[illegible]	0.04	0.02	0.01
[illegible]	0.00	0.00	0.00

Dietary-based RQs (Dietary-based EEC/LC50 or NOAEC)	Avian	
	Acute	Chronic
[illegible]	0.01	0.13
[illegible]	0.01	0.06
[illegible]	0.01	0.07
[illegible]	0.00	0.01

Broadcast Fireant Treatment Spray with HG 0 *Upper bound Kenaga Residues*

Mammalian Results

Mammals	Body Weight (g)	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Diet	Body Weight (g)	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Dose-based EECs	[illegible]					
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1.25	0.86	0.20			
[illegible]	0.57	0.39	0.09			
[illegible]	0.70	0.48	0.11			
[illegible]	0.08	0.05	0.01	0.02	0.01	0.00

Dose-based RQs (Dose-based EEC/Adjusted LD50)	[illegible]		[illegible]			
	Acute	Chronic	Acute	Chronic	Acute	Chronic
[illegible]	0.01	0.21	0.01	0.18	0.00	0.10
[illegible]	0.00	0.10	0.00	0.08	0.00	0.05
[illegible]	0.00	0.12	0.00	0.10	0.00	0.06
[illegible]	0.00	0.01	0.00	0.01	0.00	0.01
[illegible]	0.00	0.00	0.00	0.00	0.00	0.00

Dietary-based RQs (Dietary-based EEC/LC50 or NOAEC)	[illegible]	
	Acute	Chronic
[illegible]	#DIV/0!	0.04
[illegible]	#DIV/0!	0.02
[illegible]	#DIV/0!	0.02
[illegible]	#DIV/0!	0.00

US EPA ARCHIVE DOCUMENT

Broadcast Fireant Treatment Spray with HG 61743 Ae

Within 1 Foot Treatment Area MB46513 45% of parent

Upper Bound Kenaga Residues For RQ Calculation

[illegible]	[illegible]
[illegible]	0
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Acute and Chronic RQs are based on the Upper Bound Kenaga Residues.

The maximum single day residue estimation is used for both the acute and reproduction RQs.

RQs reported as "0.00" in the RQ tables below should be not <0.01 in your assessment. This is due to rounding and signi figure issues in Excel.

Endpoints

Avian	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
Mammals	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]

Dietary-based EECs (ppm)	[illegible]
[illegible]	[illegible]
[illegible]	11.76
[illegible]	5.39
[illegible]	6.62
[illegible]	0.74

Avian Results

Avian	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Dose-based EECs	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	13.39	7.64	3.42
[illegible]	6.14	3.50	1.57
[illegible]	7.53	4.30	1.92
[illegible]	0.84	0.48	0.21

Dose-based RQs	Avian Acute RQs		
[illegible]	[illegible] g	[illegible] g	[illegible] g
[illegible]	3.72	1.67	0.53
[illegible]	1.70	0.76	0.24
[illegible]	2.09	0.94	0.30
[illegible]	0.23	0.10	0.03

Dietary-based RQs	RQs	
[illegible]	Acute	Chronic
[illegible]	0.10	1.18
[illegible]	0.05	0.54
[illegible]	0.06	0.66
[illegible]	0.01	0.07

Broadcast Fireant Treatment Spray with HG 0 Upper bound Kenaga Residues

Mammalian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Dose-Based EECs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	11.21	7.75	1.90	[illegible]	[illegible]	[illegible]
[illegible]	5.14	3.55	0.92	[illegible]	[illegible]	[illegible]
[illegible]	6.31	4.36	1.01	[illegible]	[illegible]	[illegible]
[illegible]	0.70	0.48	0.11	0.16	0.11	0.02

Dose-based RQs	[illegible]		[illegible]			
[illegible]	Acute	Chronic	Acute	Chronic	Acute	Chronic
[illegible]	0.32	1.93	0.27	1.68	0.15	0.88
[illegible]	0.15	0.89	0.12	0.76	0.07	0.41
[illegible]	0.18	1.09	0.15	0.93	0.08	0.50
[illegible]	0.02	0.12	0.02	0.10	0.01	0.06
[illegible]	0.00	0.03	0.00	0.02	0.00	0.01

Dietary-based RQs	[illegible]	
[illegible]	Acute	Chronic
[illegible]	#DIV/0!	0.39
[illegible]	#DIV/0!	0.18
[illegible]	#DIV/0!	0.22
[illegible]	#DIV/0!	0.02

US EPA ARCHIVE DOCUMENT

Corn Seed Treatment

Fipronil 0.1 lb a.i. /100 lb seed (1000 mg/kg-seed)

Endpoints

Avian	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
Mammals	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]

Dietary-based EECs (ppm)	Fletcher [illegible]
[illegible]	#DIV/0!
[illegible]	#DIV/0!
[illegible]	#DIV/0!
[illegible]	1000.00

By substitution of Seed treatment rate for fletcher food item residues

Avian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Dose-based EECs	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	1138.90	649.46	290.77

Dose-based RQs (Dose-based EEC/Calculated LD50)	Avian Acute RQs		
	20 g	100 g	1000 g
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	139.90	62.67	19.86

Dietary-based RQs (Dietary-based EEC/LC50 or NOAEC)	RQs	
	Acute	Chronic
[illegible]	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!
[illegible]	20.83	100.00

Mammalian Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Dose-Based EECs	[illegible]					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!			
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!			
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!			
[illegible]	953.42	658.94	152.78	211.87	146.43	33.95

Dose-based RQs (Dose-based EEC/LD50 or NOAEL)	[illegible]		[illegible]		[illegible]	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	4.47	164.32	3.82	140.36	2.05	75.24
[illegible]	0.99	36.52	0.85	31.19	0.46	16.72

Dietary-based RQs (Dietary-based EEC/LC50 or [illegible])	[illegible]	
	Acute	Chronic
[illegible]	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	33.33

US EPA ARCHIVE DOCUMENT

Texas leafcutter Ant Bait BES 100 Treatment

Fipronil 0.003 % (30 mg/kg-seed)

Endpoints

Avian	[illegible]	[illegible]	[illegible]
Mammals	[illegible]	[illegible]	[illegible]

Dietary-based EECs (ppm)	Fletcher Plant
[illegible]	#DIV/0!
[illegible]	#DIV/0!
[illegible]	#DIV/0!
[illegible]	30.00

By substitution of bait concentration rate for Fletcher food item residues

Avian Results

Avian Class	Body Weight (g)	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Avian Body Weight (g)	Adjustment Factor (unitless)
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Dose-based EECs (mg/kg-bw)	[illegible]	[illegible]	[illegible]
	20 g	[illegible]	[illegible]
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	34.17	19.48	8.72

Dose-based RQs (Dose-based EEC/LD50 or NOAEL)	Avian Acute RQs		
	20 g	[illegible]	[illegible]
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	4.20	1.86	0.60

Dietary-based RQs (Dietary-based EEC/LC50 or NOAEC)	RQs	
	Acute	Chronic
[illegible]	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!
[illegible]	0.63	3.00

Mammalian Results

Mammalian Class	Body Weight (g)	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Mammalian Class	Body Weight (g)	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Dose-Based EECs (mg/kg-bw)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	15 g	[illegible]	[illegible]			
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!			
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!			
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!			
[illegible]	28.60	19.77	4.58	6.36	4.39	1.02

Dose-based RQs (Dose-based EEC/LD50 or NOAEL)	15 g [illegible]		[illegible]		[illegible]	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
[illegible]	0.13	4.93	0.11	4.21	0.06	2.26
[illegible]	0.03	1.10	0.03	0.94	0.01	0.50

Dietary-based RQs (Dietary-based EEC/LC50 or NOAEC)	[illegible]	
	Acute	Chronic
[illegible]	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	#DIV/0!
[illegible]	#DIV/0!	1.00

US EPA ARCHIVE DOCUMENT

Appendix F
TERRPLANT Calculations of Terrestrial Plant Risk Quotients

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TERRPLANT Run for BES 1000 House Perimeter Granular (0.357 lb/acre)

	Input Values
Application Rate (lb a.i./acre)	0.228
Runoff Value (0.01, 0.02, or 0.05 if chemical solubility <10, 10-100, or >100 ppm, respectively)	0.01
Minimum Incorporation Depth (cm)	0
Seed Emerg Monocot EC25 (lb a.i./acre)	0.025
Seed Emerg Dicot EC25 (lb a.i./acre)	0.025
Veg Vigor Monocot EC25 (lb a.i./acre)	0.025
Veg Vigor Dicot EC25 (lb a.i./acre)	0.025

Estimated Environmental Concentrations (EECs) for NON-GRANULAR formulation applications (lbs a.i./acre)			
Application Method	Total Loading to Adjacent Areas (EEC = Sheet Runoff +Drift)	Total Loading to Semi-aquatic Areas (EEC = Channelized Runoff + Drift)	DRIFT EEC (for ground: application rate x 0.01) (for aerial: application rate x 0.05)
Ground Unincorp.	0.0046	0.0251	0.0023
Ground Incorp	0.0046	0.0251	0.0023
Aerial, Airblast, Spray Chemigation	0.0137	0.0342	0.0114

Risk Quotients (RQs) for NON-GRANULAR formulation applications					
Emergence RQs, Adjacent Areas RQ = EEC/Seedling Emergence EC25		Emergence RQs, Semi-aquatic Areas RQ = EEC/Seedling Emergence EC25		Drift RQs RQ = Drift EEC/Vegetative Vigor EC25	
Monocot	Dicot	Monocot	Dicot	Monocot	Dicot
0.182	0.18	1.00	1.00	0.09	0.09
0.18	0.18	1.00	1.00	0.09	0.09
0.55	0.55	1.37	1.37	0.46	0.46

0.9

EECs for GRANULAR formulation applications (lbs a.i./acre)		
Application Method	Total Loading to Adjacent Areas (EEC = Sheet Runoff)	Total Loading to Semiaquatic Areas (EEC = Channelized Runoff)
Unincorp.	0.0023	0.0228
Incorp.	0.0023	0.0023

RQs for GRANULAR formulation applications			
Emergence RQs, Adjacent Areas RQ = EEC/Seedling Emergence EC25		Emergence RQs, Semiaquatic Areas RQ = EEC/Seedling Emergence EC25	
Monocot	Dicot	Monocot	Dicot
0.09	0.09	0.91	0.91
0.09	0.09	0.09	0.09

Note: Because the Toxicity values are actually NOEC values all EC25 estimates are in actuality >0.025. Subsequent RQ values are <X values for unlisted plants and true values for listed species. For granular/bait applications only the EECs and RQs for granular formulations apply.

US EPA ARCHIVE DOCUMENT

TERRPLANT Run for Regent 4 SC In-Furrow Corn Spray (0.130 lb/acre)

Input Values

Application Rate (lb a.i./acre)	0.13
Runoff Value (0.01, 0.02, or 0.05 if chemical solubility <10, 10-100, or >100 ppm, respectively)	0.01
Minimum Incorporation Depth (cm)	0
Seed Emerg Monocot EC25 (lb a.i./acre)	0.025
Seed Emerg Dicot EC25 (lb a.i./acre)	0.025
Veg Vigor Monocot EC25 (lb a.i./acre)	0.025
Veg Vigor Dicot EC25 (lb a.i./acre)	0.025

Estimated Environmental Concentrations (EECs) for NON-GRANULAR formulation applications (lbs a.i./acre)			
Application Method	Total Loading to Adjacent Areas (EEC = Sheet Runoff +Drift)	Total Loading to Semi-aquatic Areas (EEC = Channelized Runoff + Drift)	DRIFT EEC (for ground: application rate x 0.01) (for aerial: application rate x 0.05)
Ground Unincorp.	0.0026	0.0143	0.0013
Ground Incorp	0.0026	0.0143	0.0013
Aerial, Airblast, Spray Chemigation	0.0078	0.0195	0.0065

Risk Quotients (RQs) for NON-GRANULAR formulation applications					
Emergence RQs, Adjacent Areas RQ = EEC/Seedling Emergence EC25		Emergence RQs, Semi-aquatic Areas RQ = EEC/Seedling Emergence EC25		Drift RQs RQ = Drift EEC/Vegetative Vigor EC25	
Monocot	Dicot	Monocot	Dicot	Monocot	Dicot
0.104	0.10	0.57	0.57	0.05	0.05
0.10	0.10	0.57	0.57	0.05	0.05
0.31	0.31	0.78	0.78	0.26	0.26

0.9

EECs for GRANULAR formulation applications (lbs a.i./acre)		
Application Method	Total Loading to Adjacent Areas (EEC = Sheet Runoff)	Total Loading to Semiaquatic Areas (EEC = Channelized Runoff)
Unincorp.	0.0013	0.0130
Incorp.	0.0013	0.0013

RQs for GRANULAR formulation applications			
Emergence RQs, Adjacent Areas RQ = EEC/Seedling Emergence EC25		Emergence RQs, Semiaquatic Areas RQ = EEC/Seedling Emergence EC25	
Monocot	Dicot	Monocot	Dicot
0.05	0.05	0.52	0.52
0.05	0.05	0.05	0.05

Note: Because the Toxicity values are actually NOEC values all EC25 estimates are in actuality >0.025. Subsequent RQ values are <X values for unlisted plants and true values for listed species. . For spray applications only the EECs and RQs for non-granular formulations apply.

Appendix G
Calculations of Aquatic Organism Risk Quotients

US EPA ARCHIVE DOCUMENT

Freshwater Invertebrate						
Chemical	**Acute EEC**	**Chronic EEC**	**Acute RQ**	**Chronic RQ**	**Acute LOC Exceeded?**	**Chronic LOC Exceeded?**
Potato/Sweet Potato In-Furrow Spray						
Fipronil	0.00	0.00	0.00	0.00	no	no
MB 46136	0.00	0.00	0.00	0.00	no	no
MB46513	0.00	0.00	0.00	0.00	no	no
MB 45950	0.00	0.00	0.00	0.00	no	no
Corn In-Furrow Spray						
Fipronil	0.2067	0.1311	0.94	11.92	A,RU,LS	yes
MB 46136	0.0653	0.0595	0.09	1.61	LS	yes
MB46513	0.0060	0.0057	0.00	0.10	no	no
MB 45950	0.0150	0.0144	0.01	0.06	no	no
Corn Seed Treatment						
Fipronil	0.00	0.00	0.00	0.00	no	no
MB 46136	0.00	0.00	0.00	0.00	no	no
MB46513	0.00	0.00	0.00	0.00	no	no
MB 45950	0.00	0.00	0.00	0.00	no	no
Onion Seed Treatment (Maximum Application Rate)						
Fipronil	1.2949	0.9103	5.89	82.75	A,RU,LS	yes
MB 46136	0.4840	0.4332	0.67	11.71	A,RU,LS	yes
MB46513	0.0390	0.0387	0.00	0.68	no	no
MB 45950	0.1186	0.1092	0.06	0.46	LS	no
Onion Seed Treatment (Typical Application Rate)						
Fipronil	0.6241	0.4389	2.84	39.90	A,RU,LS	yes
MB 46136	0.2420	0.2167	0.34	5.86	RU,LS	yes
MB46513	0.0180	0.0176	0.00	0.31	no	no
MB 45950	0.0561	0.0516	0.03	0.22	no	no
Broadcast Bait Texas Leafcutter Ants						
Fipronil	1.5499	1.0445	7.05	94.95	A,RU,LS	yes
MB 46136	0.6306	0.4835	0.88	13.07	A,RU,LS	yes
MB46513	0.0387	0.0355	0.00	0.62	no	no
MB 45950	0.1387	0.1129	0.06	0.47	yes	no
Fruit Fly Station						
Fipronil	0.0109	0.0064	0.05	0.58	no	no
MB 46136	0.0075	0.0065	0.01	0.18	no	no
MB46513	0.0007	0.0007	0.00	0.01	no	no
MB 45950	0.0021	0.0021	0.00	0.01	no	no
Pine Seedling Root Injection						
Fipronil	0.00	0.00	0.00	0.00	no	no
MB 46136	0.00	0.00	0.00	0.00	no	no
MB46513	0.00	0.00	0.00	0.00	no	no
MB 45950	0.00	0.00	0.00	0.00	no	no
House Perimeter Residential BES1000						
Fipronil	0.0412	0.0267	0.19	2.43	RU,LS	yes
MB 46136	0.0154	0.0119	0.02	0.32	no	no
MB46513	0.0009	0.0009	0.00	0.02	no	no
MB 45950	0.0032	0.0027	0.00	0.01	no	no
House Perimeter Sod Farm BES1000						
Fipronil	0.0667	0.0413	0.30	3.75	RU,LS	yes
MB 46136	0.0288	0.0239	0.04	0.65	no	no
MB46513	0.0019	0.0018	0.00	0.03	no	no
MB 45950	0.0062	0.0053	0.00	0.02	no	no
House Perimeter Residential Termidor SC/WG						
Fipronil	0.0019	0.0012	0.01	0.11	no	no
MB 46136	0.0070	0.0054	0.01	0.15	no	no
MB46513	0.0005	0.0005	0.00	0.01	no	no
MB 45950	0.0016	0.0014	0.00	0.01	no	no
House Perimeter Sod Farm Termidor SC/WG						
Fipronil	0.0031	0.0019	0.01	0.17	no	no
MB 46136	0.0130	0.0107	0.02	0.29	no	no
MB46513	0.0011	0.0011	0.00	0.02	no	no
MB 45950	0.0028	0.0025	0.00	0.01	no	no
Broadcast Fire Ant Residential HG 61743AE						

Freshwater Invertebrate						
Chemical	Acute EEC	Chronic EEC	Acute RQ	Chronic RQ	Acute LOC Exceeded?	Chronic LOC Exceeded?
Fipronil	0.0063	0.0041	0.03	0.37	no	no
MB 46136	0.0025	0.0019	0.00	0.05	no	no
MB46513	0.0002	0.0002	0.00	0.00	no	no
MB 45950	0.0005	0.0005	0.00	0.00	no	no
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0443	0.0287	0.20	2.61	RU,LS	yes
MB 46136	0.0165	0.0127	0.02	0.34	no	no
MB46513	0.0009	0.0009	0.00	0.02	no	no
MB 45950	0.0037	0.0032	0.00	0.01	no	no
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0718	0.0445	0.33	4.05	RU,LS	yes
MB 46136	0.0307	0.0254	0.04	0.69	no	no
MB46513	0.0019	0.0017	0.00	0.00	no	no
MB 45950	0.0007	0.0006	0.00	0.00	no	no
Broadcast Fire Ant Residential Over'N Out						
Fipronil	0.0694	0.0400	0.32	3.64	RU,LS	yes
MB 46136	0.0120	0.0092	0.02	0.25	no	no
MB46513	0.0090	0.0090	0.00	0.16	no	no
MB 45950	0.0026	0.0022	0.00	0.01	no	no

Estuarine/Marine Invertebrate						
Chemical	Acute EEC	Chronic EEC	Acute RQ	Chronic RQ	Acute LOC Exceeded?	Chronic LOC Exceeded?
Potato/Sweet Potato In-Furrow Spray						
Fipronil	0.00	0.00	0.00	0.00	no	no
MB 46136	0.00	0.00	0.00	0.00	no	no
MB46513	0.00	0.00	0.00	0.00	no	no
MB 45950	0.00	0.00	0.00	0.00	no	no
Corn In-Furrow Spray						
Fipronil	0.2067	0.1311	1.48	26.22	A,RU,LS	yes
MB 46136	0.0653	0.0595	0.12	22.88	RU,LS	yes
MB46513	0.0060	0.0057	0.00	0.11	no	no
MB 45950	0.0150	0.0144	0.19	3.13	RU,LS	yes
Corn Seed Treatment						
Fipronil	0.00	0.00	0.00	0.00	no	no
MB 46136	0.00	0.00	0.00	0.00	no	no
MB46513	0.00	0.00	0.00	0.00	no	no
MB 45950	0.00	0.00	0.00	0.00	no	no
Onion Seed Treatment (Maximum Application Rate)						
Fipronil	1.2949	0.9103	9.25	182.06	A,RU,LS	yes
MB 46136	0.4840	0.4332	0.86	166.62	A,RU,LS	yes
MB46513	0.0390	0.0387	0.03	0.72	no	no
MB 45950	0.1186	0.1092	1.54	23.74	A,RU,LS	yes
Onion Seed Treatment (Typical Application Rate)						
Fipronil	0.6241	0.4389	4.46	87.78	A,RU,LS	yes
MB 46136	0.2420	0.2167	0.43	83.35	RU,LS	yes
MB46513	0.0180	0.0176	0.01	0.33	no	no
MB 45950	0.0561	0.0516	0.73	11.22	A,RU,LS	yes
Broadcast Bait Texas Leafcutter Ants						
Fipronil	1.5499	1.0445	11.07	208.90	A,RU,LS	yes
MB 46136	0.6306	0.4835	1.13	185.96	A,RU,LS	yes
MB46513	0.0387	0.0355	0.03	0.66	no	no
MB 45950	0.1387	0.1129	1.8	24.54	A,RU,LS	yes
Fruit Fly Station						
Fipronil	0.0109	0.0064	0.08	1.28	LS	yes
MB 46136	0.0075	0.0065	0.01	2.50	no	yes
MB46513	0.0007	0.0007	0.00	0.01	no	no
MB 45950	0.0021	0.0021	0.03	0.46	no	no
Pine Seedling Root Injection						
Fipronil	0.00	0.00	0.00	0.00	no	no
MB 46136	0.00	0.00	0.00	0.00	no	no
MB46513	0.00	0.00	0.00	0.00	no	no

Estuarine/Marine Invertebrate						
Chemical	Acute EEC	Chronic EEC	Acute RQ	Chronic RQ	Acute LOC Exceeded?	Chronic LOC Exceeded?
MB 45950	0.00	0.00	0.00	0.00	no	no
House Perimeter Residential BES1000						
Fipronil	0.0412	0.0267	0.29	5.34	RU,LS	yes
MB 46136	0.0154	0.0119	0.03	4.58	no	yes
MB46513	0.0009	0.0009	0.00	0.02	no	no
MB 45950	0.0032	0.0027	0.04	0.59	no	no
House Perimeter Sod Farm BES1000						
Fipronil	0.0667	0.0413	0.48	8.26	RU,LS	yes
MB 46136	0.0288	0.0239	0.05	9.19	LS	yes
MB46513	0.0019	0.0018	0.00	0.03	no	no
MB 45950	0.0062	0.0053	0.08	1.15	LS	yes
House Perimeter Residential Termidor SC/WG						
Fipronil	0.0019	0.0012	0.01	0.24	no	no
MB 46136	0.0070	0.0054	0.01	2.08	no	yes
MB46513	0.0005	0.0005	0.00	0.01	no	no
MB 45950	0.0016	0.0014	0.02	0.30	no	no
House Perimeter Sod Farm Termidor SC/WG						
Fipronil	0.0031	0.0019	0.02	0.38	no	no
MB 46136	0.0130	0.0107	0.02	4.12	no	yes
MB46513	0.0011	0.0011	0.00	0.02	no	no
MB 45950	0.0028	0.0025	0.04	0.54	no	no
Broadcast Fire Ant Residential HG 61743AE						
Fipronil	0.0063	0.0041	0.05	0.82	no	no
MB 46136	0.0025	0.0019	0.00	0.73	no	no
MB46513	0.0002	0.0002	0.00	0.00	no	no
MB 45950	0.0005	0.0005	0.01	0.11	no	no
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0443	0.0287	0.32	5.74	RU,LS	yes
MB 46136	0.0165	0.0127	0.03	4.88	no	yes
MB46513	0.0009	0.0009	0.00	0.02	no	no
MB 45950	0.0037	0.0032	0.05	0.70	no	no
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0718	0.0445	0.51	8.90	A,RU,LS	yes
MB 46136	0.0307	0.0254	0.05	9.77	LS	yes
MB46513	0.0019	0.0017	0.00	0.00	no	no
MB 45950	0.0007	0.0006	0.01	0.13	no	no
Broadcast Fire Ant Residential Over'N Out						
Fipronil	0.0694	0.0400	0.50	8.00	A,RU,LS	yes
MB 46136	0.0120	0.0092	0.02	3.53	no	yes
MB46513	0.0090	0.0090	0.01	0.17	no	no
MB 45950	0.0026	0.0022	0.03	0.48	no	no

Freshwater Fish						
Chemical	Acute EEC	Chronic EEC	Acute RQ	Chronic RQ	Acute LOC Exceeded?	Chronic LOC Exceeded?
Potato/Sweet Potato In-Furrow Spray						
Fipronil	0.00	0.00	0.00	0.00	no	no
MB 46136	0.00	0.00	0.00	0.00	no	no
MB46513	0.00	0.00	0.00	0.00	no	no
MB 45950	0.00	0.00	0.00	0.00	no	no
Corn In-Furrow Spray						
Fipronil	0.2067	0.0671	0.00	0.01	no	no
MB 46136	0.0653	0.0564	0.00	0.08	no	no
MB46513	0.0060	0.0056	0.00	0.01	no	no
MB 45950	0.0150	0.0139	0.00	0.00	no	no
Corn Seed Treatment						
Fipronil	0.00	0.00	0.00	0.00	no	no
MB 46136	0.00	0.00	0.00	0.00	no	no
MB46513	0.00	0.00	0.00	0.00	no	no

Freshwater Fish						
Chemical	Acute EEC	Chronic EEC	Acute RQ	Chronic RQ	Acute LOC Exceeded?	Chronic LOC Exceeded?
MB 45950	0.00	0.00	0.00	0.00	no	no
Onion Seed Treatment (Maximum Application Rate)						
Fipronil	1.2949	0.5973	0.02	0.09	no	no
MB 46136	0.4840	0.4184	0.02	0.62	no	no
MB46513	0.0390	0.0382	0.00	0.06	no	no
MB 45950	0.1186	0.1063	0.00	0.02	no	no
Onion Seed Treatment (Typical Application Rate)						
Fipronil	0.6241	0.2880	0.01	0.04	no	no
MB 46136	0.2420	0.2092	0.01	0.31	no	no
MB46513	0.0180	0.0173	0.00	0.03	no	no
MB 45950	0.0561	0.0502	0.00	0.01	no	no
Broadcast Bait Texas Leafcutter Ants						
Fipronil	1.5499	0.5959	0.02	0.09	no	no
MB 46136	0.6306	0.4360	0.03	0.65	no	no
MB46513	0.0387	0.0342	0.00	0.06	no	no
MB 45950	01387	0.1033	0.00	0.02	no	no
Fruit Fly Station						
Fipronil	0.0109	0.0042	0.00	0.00	no	no
MB 46136	0.0075	0.0060	0.00	0.01	no	no
MB46513	0.0007	0.0007	0.00	0.00	no	no
MB 45950	0.0021	0.0017	0.00	0.00	no	no
Pine Seedling Root Injection						
Fipronil	0.00	0.00	0.00	0.00	no	no
MB 46136	0.00	0.00	0.00	0.00	no	no
MB46513	0.00	0.00	0.00	0.00	no	no
MB 45950	0.00	0.00	0.00	0.00	no	no
House Perimeter Residential BES1000						
Fipronil	0.0412	0.0152	0.00	0.00	no	no
MB 46136	0.0154	0.0109	0.00	0.02	no	no
MB46513	0.0009	0.0008	0.00	0.00	no	no
MB 45950	0.0032	0.0024	0.00	0.00	no	no
House Perimeter Sod Farm BES1000						
Fipronil	0.0667	0.0235	0.00	0.00	no	no
MB 46136	0.0288	0.0215	0.00	0.03	no	no
MB46513	0.0019	0.0017	0.00	0.00	no	no
MB 45950	0.0062	0.0048	0.00	0.00	no	no
House Perimeter Residential Termidor SC/WG						
Fipronil	0.0019	0.0007	0.00	0.00	no	no
MB 46136	0.0070	0.0049	0.00	0.01	no	no
MB46513	0.0005	0.0005	0.00	0.00	no	no
MB 45950	0.0016	0.0013	0.00	0.00	no	no
House Perimeter Sod Farm Termidor SC/WG						
Fipronil	0.0031	0.0011	0.00	0.00	no	no
MB 46136	0.0130	0.0097	0.00	0.01	no	no
MB46513	0.0011	0.0011	0.00	0.00	no	no
MB 45950	0.0028	0.0023	0.00	0.00	no	no
Broadcast Fire Ant Residential HG 61743AE						
Fipronil	0.0063	0.0023	0.00	0.00	no	no
MB 46136	0.0025	0.0018	0.00	0.00	no	no
MB46513	0.0002	0.0002	0.00	0.00	no	no
MB 45950	0.0005	0.0004	0.00	0.00	no	no
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0443	0.0164	0.00	0.00	no	no
MB 46136	0.0165	0.0116	0.00	0.02	no	no
MB46513	0.0009	0.0008	0.00	0.00	no	no
MB 45950	0.0037	0.0029	0.00	0.00	no	no
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0718	0.0253	0.00	0.00	no	no
MB 46136	0.0307	0.0228	0.00	0.03	no	no
MB46513	0.0019	0.0017	0.00	0.00	no	no
MB 45950	0.0007	0.0006	0.00	0.00	no	no
Broadcast Fire Ant Residential Over'N Out						
Fipronil	0.0694	0.0238	0.00	0.00	no	no
MB 46136	0.0120	0.0084	0.00	0.01	no	no

Freshwater Fish						
Chemical	Acute EEC	Chronic EEC	Acute RQ	Chronic RQ	Acute LOC Exceeded?	Chronic LOC Exceeded?
MB46513	0.0090	0.00009	0.00	0.00	no	no
MB 45950	0.0026	0.0020	0.00	0.00	no	no

Estuarine/Marine Fish						
Chemical	Acute EEC	Chronic EEC	Acute RQ	Chronic RQ	Acute LOC Exceeded?	Chronic LOC Exceeded?
Potato/Sweet Potato In-Furrow Spray						
Fipronil	0.00	0.00	0.00	0.00	no	no
MB 46136	0.00	0.00	0.00	0.00	no	no
MB46513	0.00	0.00	0.00	0.00	no	no
MB 45950	0.00	0.00	0.00	0.00	no	no
Corn In-Furrow Spray						
Fipronil	0.2067	0.0671	0.00	0.28	no	no
MB 46136	0.0653	0.0564	0.00	1.45	no	yes
MB46513	0.0060	0.0056	0.00	0.10	no	no
MB 45950	0.0150	0.0139	0.00	0.06	no	no
Corn Seed Treatment						
Fipronil	0.00	0.00	0.00	0.00	no	no
MB 46136	0.00	0.00	0.00	0.00	no	no
MB46513	0.00	0.00	0.00	0.00	no	no
MB 45950	0.00	0.00	0.00	0.00	no	no
Onion Seed Treatment (Maximum Application Rate)						
Fipronil	1.2949	0.5973	0.01	2.49	no	yes
MB 46136	0.4840	0.4184	0.02	10.73	no	yes
MB46513	0.0390	0.0382	0.00	0.67	no	no
MB 45950	0.1186	0.1063	0.00	0.44	no	no
Onion Seed Treatment (Typical Application Rate)						
Fipronil	0.6241	0.2880	0.00	1.20	no	yes
MB 46136	0.2420	0.2092	0.01	5.36	no	yes
MB46513	0.0180	0.0173	0.00	0.30	no	no
MB 45950	0.0561	0.0502	0.00	0.21	no	no
Broadcast Bait Texas Leafcutter Ants						
Fipronil	1.5499	0.5959	0.01	2.48	no	yes
MB 46136	0.6306	0.4360	0.03	11.18	no	yes
MB46513	0.0387	0.0342	0.00	0.60	no	no
MB 45950	0.1387	0.1033	0.00	0.43	no	no
Fruit Fly Station						
Fipronil	0.0109	0.0042	0.00	0.02	no	no
MB 46136	0.0075	0.0060	0.00	0.15	no	no
MB46513	0.0007	0.0007	0.00	0.01	no	no
MB 45950	0.0021	0.0017	0.00	0.01	no	no
Pine Seedling Root Injection						
Fipronil	0.00	0.00	0.00	0.00	no	no
MB 46136	0.00	0.00	0.00	0.00	no	no
MB46513	0.00	0.00	0.00	0.00	no	no
MB 45950	0.00	0.00	0.00	0.00	no	no
House Perimeter Residential BES1000						
Fipronil	0.0412	0.0152	0.00	0.06	no	no
MB 46136	0.0154	0.0109	0.00	0.28	no	no
MB46513	0.0009	0.0008	0.00	0.01	no	no
MB 45950	0.0032	0.0024	0.00	0.01	no	no
House Perimeter Sod Farm BES1000						
Fipronil	0.0667	0.0235	0.00	0.10	no	no
MB 46136	0.0288	0.0215	0.00	0.55	no	no
MB46513	0.0019	0.0017	0.00	0.03	no	no
MB 45950	0.0062	0.0048	0.00	0.02	no	no
House Perimeter Residential Termidor SC/WG						
Fipronil	0.0019	0.0007	0.00	0.00	no	no
MB 46136	0.0070	0.0049	0.00	0.13	no	no
MB46513	0.0005	0.0005	0.00	0.01	no	no

Estuarine/Marine Fish						
Chemical	Acute EEC	Chronic EEC	Acute RQ	Chronic RQ	Acute LOC Exceeded?	Chronic LOC Exceeded?
MB 45950	0.0016	0.0013	0.00	0.01	no	no
House Perimeter Sod Farm Termidor SC/WG						
Fipronil	0.0031	0.0011	0.00	0.00	no	no
MB 46136	0.0130	0.0097	0.00	0.25	no	no
MB46513	0.0011	0.0011	0.00	0.02	no	no
MB 45950	0.0028	0.0023	0.00	0.01	no	no
Broadcast Fire Ant Residential HG 61743AE						
Fipronil	0.0063	0.0023	0.00	0.01	no	no
MB 46136	0.0025	0.0018	0.00	0.05	no	no
MB46513	0.0002	0.0002	0.00	0.00	no	no
MB 45950	0.0005	0.0004	0.00	0.00	no	no
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0443	0.0164	0.00	0.07	no	no
MB 46136	0.0165	0.0116	0.00	0.30	no	no
MB46513	0.0009	0.0008	0.00	0.01	no	no
MB 45950	0.0037	0.0029	0.00	0.01	no	no
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0718	0.0253	0.00	0.11	no	no
MB 46136	0.0307	0.0228	0.00	0.58	no	no
MB46513	0.0019	0.0017	0.00	0.03	no	no
MB 45950	0.0007	0.0006	0.00	0.00	no	no
Broadcast Fire Ant Residential Over'N Out						
Fipronil	0.0694	0.0238	0.00	0.10	no	no
MB 46136	0.0120	0.0084	0.00	0.22	no	no
MB46513	0.0090	0.00009	0.00	0.00	no	no
MB 45950	0.0026	0.0020	0.00	0.01	no	no

Aquatic Plants						
Chemical	**Acute EEC**	**Non-listed FW RQ (algae and vascular)**	**Listed FW RQ (algae and vascular)**	**Estuarine /marine RQ Listed and non listed**	**Any FW Plant LOC Exceeded?**	**Any Estuarine/ Marine Plant LOC Exceeded?**
Potato/Sweet Potato In-Furrow Spray						
Fipronil	0.00	<1	<1	<1	no	no
MB 46136	0.00	<1	<1	<1	no	no
MB46513	0.00	<1	<1	<1	no	no
MB 45950	0.00	<1	<1	<1	no	no
Corn In-Furrow Spray						
Fipronil	0.2067	<1	<1	<1	no	no
MB 46136	0.0653	<1	<1	<1	no	no
MB46513	0.0060	<1	<1	<1	no	no
MB 45950	0.0150	<1	<1	<1	no	no
Corn Seed Treatment						
Fipronil	0.00	<1	<1	<1	no	no
MB 46136	0.00	<1	<1	<1	no	no
MB46513	0.00	<1	<1	<1	no	no
MB 45950	0.00	<1	<1	<1	no	no
Onion Seed Treatment (Maximum Application Rate)						
Fipronil	1.2949	<1	<1	<1	no	no
MB 46136	0.4840	<1	<1	<1	no	no
MB46513	0.0390	<1	<1	<1	no	no
MB 45950	0.1186	<1	<1	<1	no	no
Onion Seed Treatment (Typical Application Rate)						
Fipronil	0.6241	<1	<1	<1	no	no
MB 46136	0.2420	<1	<1	<1	no	no
MB46513	0.0180	<1	<1	<1	no	no
MB 45950	0.0561	<1	<1	<1	no	no
Broadcast Bait Texas Leafcutter Ants						
Fipronil	1.5499	<1	<1	<1	no	no
MB 46136	0.6306	<1	<1	<1	no	no
MB46513	0.0387	<1	<1	<1	no	no
MB 45950	0.1387	<1	<1	<1	no	no
Fruit Fly Station						
Fipronil	0.0109	<1	<1	<1	no	no
MB 46136	0.0075	<1	<1	<1	no	no
MB46513	0.0007	<1	<1	<1	no	no
MB 45950	0.0021	<1	<1	<1	no	no
Pine Seedling Root Injection						
Fipronil	0.00	<1	<1	<1	no	no
MB 46136	0.00	<1	<1	<1	no	no
MB46513	0.00	<1	<1	<1	no	no
MB 45950	0.00	<1	<1	<1	no	no
House Perimeter Residential BES1000						
Fipronil	0.0412	<1	<1	<1	no	no
MB 46136	0.0154	<1	<1	<1	no	no
MB46513	0.0009	<1	<1	<1	no	no
MB 45950	0.0032	<1	<1	<1	no	no
House Perimeter Sod Farm BES1000						
Fipronil	0.0667	<1	<1	<1	no	no
MB 46136	0.0288	<1	<1	<1	no	no
MB46513	0.0019	<1	<1	<1	no	no
MB 45950	0.0062	<1	<1	<1	no	no
House Perimeter Residential Termidor SC/WG						
Fipronil	0.0019	<1	<1	<1	no	no
MB 46136	0.0070	<1	<1	<1	no	no
MB46513	0.0005	<1	<1	<1	no	no
MB 45950	0.0016	<1	<1	<1	no	no
House Perimeter Sod Farm Termidor SC/WG						

Aquatic Plants						
Chemical	**Acute EEC**	**Non-listed FW RQ (algae and vascular)**	**Listed FW RQ (algae and vascular)**	**Estuarine /marine RQ Listed and non listed**	**Any FW Plant LOC Exceeded?**	**Any Estuarine/ Marine Plant LOC Exceeded?**
Fipronil	0.0031	<1	<1	<1	no	no
MB 46136	0.0130	<1	<1	<1	no	no
MB46513	0.0011	<1	<1	<1	no	no
MB 45950	0.0028	<1	<1	<1	no	no
Broadcast Fire Ant Residential HG 61743AE						
Fipronil	0.0063	<1	<1	<1	no	no
MB 46136	0.0025	<1	<1	<1	no	no
MB46513	0.0002	<1	<1	<1	no	no
MB 45950	0.0005	<1	<1	<1	no	no
Broadcast Fire Ant Residential Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0443	<1	<1	<1	no	no
MB 46136	0.0165	<1	<1	<1	no	no
MB46513	0.0009	<1	<1	<1	no	no
MB 45950	0.0037	<1	<1	<1	no	no
Broadcast Fire Ant Sod Farm Chipco TopChoice, Chipco 61748A, Topchoice Select						
Fipronil	0.0718	<1	<1	<1	no	no
MB 46136	0.0307	<1	<1	<1	no	no
MB46513	0.0019	<1	<1	<1	no	no
MB 45950	0.0007	<1	<1	<1	no	no
Broadcast Fire Ant Residential Over'N Out						
Fipronil	0.0694	<1	<1	<1	no	no
MB 46136	0.0120	<1	<1	<1	no	no
MB46513	0.0090	<1	<1	<1	no	no
MB 45950	0.0026	<1	<1	<1	no	no

Appendix H
Calculations of Sediment Organism Risk Quotients

US EPA ARCHIVE DOCUMENT

Sediment Organism Acute Risk Quotients for Fipronil Use Based on Residues in Pore Water				
Chemical	**Sediment Pore Water Concentration (ug/L)***	**Toxicity Endpoint (ug/L)**	**Acute RQ****	**Acute LOC Exceeded*****
Potato/Sweet Potato				
Fipronil	0	0.41	<0.05	--
MB46136	0	0.41	<0.05	--
MB46513	0	0.72	<0.05	--
MB45950	0	2.13	<0.05	--
In-furrow Corn				
Fipronil	0.0293	0.41	0.07	LS
MB46136	0.0515	0.41	0.12	LS
MB46513	0.0053	0.72	<0.05	--
MB45950	0.0127	2.13	<0.05	--
Seed Corn Ttreatment				
Fipronil	0	0.41	<0.05	--
MB46136	0	0.41	<0.05	--
MB46513	0	0.72	<0.05	--
MB45950	0	2.13	<0.05	--
Onion Seed Treatment (Max App Rate)				
Fipronil	0.2498	0.41	0.61	A,LS
MB46136	0.3807	0.41	0.935	A,LS
MB46513	0.0360	0.72	0.05	LS
MB45950	0.0976	2.13	<0.05	--
Onion Seed Treatment (Typical App Rate)				
Fipronil	0.1205	0.41	0.29	LS
MB46136	0.1904	0.41	0.46	LS
MB46513	0.0164	0.72	<0.05	--
MB45950	0.0461	2.13	<0.05	--
Broadcast Bait Texas Leafcutter Ants				
Fipronil	0.2295	0.41	0.56	A,LS
MB46136	0.3891	0.41	0.95	A,LS
MB46513	0.0309	0.72	<0.05	--
MB45950	0.0929	2.13	<0.05	--
Fruit Fly Stations				
Fipronil	0.0017	0.41	<0.05	--
MB46136	0.0055	0.41	<0.05	--
MB46513	0.0006	0.72	<0.05	--
MB45950	0.0016	2.13	<0.05	--
Pine Seedling				
Fipronil	0	0.41	<0.05	--
MB46136	0	0.41	<0.05	--
MB46513	0	0.72	<0.05	--
MB45950	0	2.13	<0.05	--
House Perimeter Residential BES 1000				
Fipronil	0.0054	0.41	<0.05	--
MB46136	0.0098	0.41	<0.05	--
MB46513	0.0008	0.72	<0.05	--
MB45950	0.0022	2.13	<0.05	--
House Perimeter Sod Farm BES 1000				
Fipronil	0.0102	0.41	<0.05	--
MB46136	0.0194	0.41	<0.05	--
MB46513	0.0016	0.72	<0.05	--

Sediment Organism Acute Risk Quotients for Fipronil Use Based on Residues in Pore Water				
Chemical	**Sediment Pore Water Concentration (ug/L)***	**Toxicity Endpoint (ug/L)**	**Acute RQ****	**Acute LOC Exceeded*****
MB45950	0.0044	2.13	<0.05	--
House Perimeter Residential Termidor SC/WG				
Fipronil	0.0003	0.41	<0.05	--
MB46136	0.0044	0.41	<0.05	--
MB46513	0.0004	0.72	<0.05	--
MB45950	0.0013	2.13	<0.05	--
House Perimeter Sod Farm Termidor SC/WG				
Fipronil	0.0005	0.41	<0.05	--
MB46136	0.0088	0.41	<0.05	--
MB46513	0.0010	0.72	<0.05	--
MB45950	0.0021	2.13	<0.05	--
Broadcast Fire Ant Residential HG 61743AE				
Fipronil	0.0008	0.41	<0.05	--
MB46136	0.0016	0.41	<0.05	--
MB46513	0.0002	0.72	<0.05	--
MB45950	0.0004	2.13	<0.05	--
Broadcast Fire Ant- Residential Chipco TopChoice Chipco 61748A TopChoice Select				
Fipronil	0.0059	0.41	<0.05	--
MB46136	0.0104	0.41	<0.05	--
MB46513	0.0008	0.72	<0.05	--
MB45950	0.0026	2.13	<0.05	--
Broadcast Fire Ant- Sod farm Chipco TopChoice Chipco 61748A TopChoice Select				
Fipronil	0.011	0.41	<0.05	--
MB46136	0.0206	0.41	0.050243902	LS
MB46513	0.0016	0.72	<0.05	--
MB45950	0.0052	2.13	<0.05	--
Broadcast Fire Ant- Residential Over'N Out				
Fipronil	0.0042	0.41	<0.05	--
MB46136	0.0076	0.41	<0.05	--
MB46513	0.00008	0.72	<0.05	--
MB45950	0.0018	2.13	<0.05	--

* Peak 21-day 1 in 10 year return frequency
** RQ = EEC/toxicity endpoint
*** A= Acute LOC, LS = Listed LOC, -- no LOC exceeded

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Appendix I
Listed Species Initial Co-Location Analysis

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Locates V 2.10.3 Species Occurrence in Fire Ant Quarantine States

STATE NAME	Species Number	Taxonomic Group	Common Name	Scientific name	Status	Habitat Type	Critical habitat designated?
Alabama	(92) species:						
		Amphibian					
			Salamander, Flatwoods	*Ambystoma cingulatum*	Threatened	Freshwater, Vernal pool, Terrestrial	No
			Salamander, Red Hills	*Phaeognathus hubrichti*	Threatened	Freshwater, Terrestrial	No
		Bird					
			Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
			Plover, Piping	*Charadrius melodus*	Endangered	Terrestrial	Yes
			Stork, Wood	*Mycteria americana*	Endangered	Terrestrial	No
			Woodpecker, Red-cockaded	*Picoides borealis*	Endangered	Terrestrial	No
		Bivalve					
			Combshell, Southern (=Penitent mussel)	*Epioblasma penita*	Endangered	Freshwater	No
			Combshell, Upland	*Epioblasma metastriata*	Endangered	Freshwater	Yes
			Kidneyshell, Triangular	*Ptychobranchus greenii*	Endangered	Freshwater	Yes
			Mucket, Orangenacre	*Lampsilis perovalis*	Threatened	Freshwater	Yes
			Mucket, Pink (Pearlymussel)	*Lampsilis abrupta*	Endangered	Freshwater	No
			Mussel, Acornshell Southern	*Epioblasma othcaloogensis*	Endangered	Freshwater	Yes
			Mussel, Alabama Moccasinshell	*Medionidus acutissimus*	Threatened	Freshwater	Yes
			Mussel, Coosa Moccasinshell	*Medionidus parvulus*	Endangered	Freshwater	Yes
			Mussel, Cumberland Combshell	*Epioblasma brevidens*	Endangered	Freshwater	Yes
			Mussel, Dark Pigtoe	*Pleurobema furvum*	Endangered	Freshwater	Yes
			Mussel, Fine-lined Pocketbook	*Lampsilis altilis*	Threatened	Freshwater	Yes
			Mussel, Fine-rayed Pigtoe	*Fusconaia cuneolus*	Endangered	Freshwater	No
			Mussel, Flat Pigtoe (=Marshall's Mussel)	*Pleurobema marshalli*	Endangered	Freshwater	No
			Mussel, Heavy Pigtoe (=Judge Tait's Mussel)	*Pleurobema taitianum*	Endangered	Freshwater	No
			Mussel, Heelsplitter Inflated	*Potamilus inflatus*	Threatened	Freshwater	No
			Mussel, Ovate Clubshell	*Pleurobema perovatum*	Endangered	Freshwater	Yes
			Mussel, Ring Pink (=Golf Stick Pearly)	*Obovaria retusa*	Endangered	Freshwater	No
			Mussel, Rough Pigtoe	*Pleurobema plenum*	Endangered	Freshwater	No
			Mussel, Shiny Pigtoe	*Fusconaia cor*	Endangered	Freshwater	No
			Mussel, Shiny-rayed Pocketbook	*Lampsilis subangulata*	Endangered	Freshwater	No
			Mussel, Southern Clubshell	*Pleurobema decisum*	Endangered	Freshwater	Yes
			Mussel, Southern Pigtoe	*Pleurobema georgianum*	Endangered	Freshwater	Yes
			Pearlymussel, Alabama Lamp	*Lampsilis virescens*	Endangered	Freshwater	No
			Pearlymussel, Cracking	*Hemistena lata*	Endangered	Freshwater	No
			Pearlymussel, Cumberland Monkeyface	*Quadrula intermedia*	Endangered	Freshwater	No
			Pearlymussel, Orange-footed	*Plethobasus cooperianus*	Endangered	Freshwater	No
			Pearlymussel, Pale Lilliput	*Toxolasma cylindrellus*	Endangered	Freshwater	No
			Pearlymussel, Turgid-blossom	*Epioblasma turgidula*	Endangered	Freshwater	No
			Pearlymussel, White Wartyback	*Plethobasus cicatricosus*	Endangered	Freshwater	No
			Stirrupshell	*Quadrula stapes*	Endangered	Freshwater	No
		Crustacean					
			Shrimp, Alabama Cave	*Palaemonias alabamae*	Endangered	Freshwater	No
		Dicot					
			Amphianthus, Little	*Amphianthus pusillus*	Threatened	Freshwater	No

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	Barbara Buttons, Mohr's	*Marshallia mohrii*	Threatened	Terrestrial	No
	Bladderpod, Lyrate	*Lesquerella lyrata*	Threatened	Terrestrial	No
	Clover, Leafy Prairie	*Dalea foliosa*	Endangered	Terrestrial	No
	Harperella	*Ptilimnium nodosum*	Endangered	Freshwater	No
	Leather-flower, Alabama	*Clematis socialis*	Endangered	Terrestrial	No
	Leather-flower, Morefield's	*Clematis morefieldii*	Endangered	Terrestrial	No
	Pitcher-plant, Alabama Canebrake	*Sarracenia rubra alabamensis*	Endangered	Freshwater, Terrestrial	No
	Pitcher-plant, Green	*Sarracenia oreophila*	Endangered	Terrestrial, Freshwater	No
	Potato-bean, Price's	*Apios priceana*	Threatened	Terrestrial	No
Ferns					
	Fern, Alabama Streak-sorus	*Thelypteris pilosa var. alabamensis*	Threatened	Terrestrial	No
	Fern, American hart's-tongue	*Asplenium scolopendrium var. americanum*	Threatened	Terrestrial	No
	Quillwort, Louisiana	*Isoetes louisianensis*	Endangered	Freshwater, Terrestrial	No
Fish					
	Cavefish, Alabama	*Speoplatyrhinus poulsoni*	Endangered	Freshwater	Yes
	Chub, Spotfin	*Erimonax monachus*	Threatened	Freshwater	Yes
	Darter, Boulder	*Etheostoma wapiti*	Endangered	Freshwater	No
	Darter, Goldline	*Percina aurolineata*	Threatened	Freshwater	No
	Darter, Slackwater	*Etheostoma boschungi*	Threatened	Freshwater	Yes
	Darter, Snail	*Percina tanasi*	Threatened	Freshwater	No
	Darter, Vermilion	*Etheostoma chermocki*	Endangered	Freshwater	No
	Darter, Watercress	*Etheostoma nuchale*	Endangered	Freshwater	No
	Madtom, Yellowfin	*Noturus flavipinnis*	Threatened	Freshwater	Yes
	Sculpin, Pygmy	*Cottus paulus (=pygmaeus)*	Threatened	Freshwater	No
	Shiner, Blue	*Cyprinella caerulea*	Threatened	Freshwater	No
	Shiner, Cahaba	*Notropis cahabae*	Endangered	Freshwater	No
	Shiner, Palezone	*Notropis albizonatus*	Endangered	Freshwater	No
	Sturgeon, Alabama	*Scaphirhynchus suttkusi*	Endangered	Freshwater	No
	Sturgeon, Gulf	*Acipenser oxyrinchus desotoi*	Threatened	Saltwater, Freshwater	Yes
Gastropod					
	Campeloma, Slender	*Campeloma decampi*	Endangered	Freshwater	No
	Elimia, Lacy	*Elimia crenatella*	Threatened	Freshwater	No
	Pebblesnail, Flat	*Lepyrium showalteri*	Endangered	Freshwater	No
	Riversnail, Anthony's	*Athearnia anthonyi*	Endangered	Freshwater	No
	Rocksnail, Painted	*Leptoxis taeniata*	Threatened	Freshwater	No
	Rocksnail, Plicate	*Leptoxis plicata*	Endangered	Freshwater	No
	Rocksnail, Round	*Leptoxis ampla*	Threatened	Freshwater	No
	Snail, Armored	*Pyrgulopsis (=Marstonia) pachyta*	Endangered	Freshwater	No
	Snail, Lioplax Cylindrical	*Lioplax cyclostomaformis*	Endangered	Freshwater	No
	Snail, Tulotoma	*Tulotoma magnifica*	Endangered	Terrestrial	No
Mammal					
	Bat, Gray	*Myotis grisescens*	Endangered	Subterraneous, Terrestrial	No
	Bat, Indiana	*Myotis sodalis*	Endangered	Subterraneous, Terrestrial	Yes
	Mouse, Alabama Beach	*Peromyscus polionotus ammobates*	Endangered	Terrestrial, Coastal (neritic)	Yes
	Mouse, Perdido Key Beach	*Peromyscus polionotus trissyllepsis*	Endangered	Coastal (neritic)	Yes
Marine mml					
	Whale, Finback	*Balaenoptera physalus*	Endangered	Saltwater	No
	Whale, Humpback	*Megaptera novaeangliae*	Endangered	Saltwater	No
Monocot					

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			Grass, Tennessee Yellow-eyed	*Xyris tennesseensis*	Endangered	Terrestrial	No
			Trillium, Relict	*Trillium reliquum*	Endangered	Terrestrial	No
			Water-plantain, Kral's	*Sagittaria secundifolia*	Threatened	Freshwater	No
		Reptile					
			Sea turtle, hawksbill	*Eretmochelys imbricata*	Endangered	Saltwater	Yes
			Sea turtle, Kemp's ridley	*Lepidochelys kempii*	Endangered	Saltwater	No
			Sea turtle, leatherback	*Dermochelys coriacea*	Endangered	Saltwater	Yes
			Sea turtle, loggerhead	*Caretta caretta*	Threatened	Saltwater	No
			Snake, Eastern Indigo	*Drymarchon corais couperi*	Threatened	Terrestrial	No
			Tortoise, Gopher	*Gopherus polyphemus*	Threatened	Terrestrial	No
			Turtle, Alabama Red-bellied	*Pseudemys alabamensis*	Endangered	Terrestrial, Freshwater	No
			Turtle, Flattened Musk	*Sternotherus depressus*	Threatened	Freshwater, Terrestrial	No
Arizona	(58) species:						
		Amphibian					
			Frog, Chiricahua Leopard	*Rana chiricahuensis*	Threatened	Freshwater, Terrestrial	No
			Salamander, Sonora Tiger	*Ambystoma tigrinum stebbinsi*	Endangered	Vernal pool, Freshwater, Terrestrial	No
		Bird					
			Bobwhite, Masked	*Colinus virginianus ridgwayi*	Endangered	Terrestrial	No
			Condor, California	*Gymnogyps californianus*	Endangered	Terrestrial	Yes
			Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
			Falcon, Northern Aplomado	*Falco femoralis septentrionalis*	Endangered	Terrestrial	No
			Flycatcher, Southwestern Willow	*Empidonax traillii extimus*	Endangered	Terrestrial	Yes
			Owl, Mexican Spotted	*Strix occidentalis lucida*	Threatened	Terrestrial	Yes
			Pygmy-owl, Cactus Ferruginous	*Glaucidium brasilianum cactorum*	Endangered	Terrestrial	No
			Rail, Yuma Clapper	*Rallus longirostris yumanensis*	Endangered	Terrestrial	No
		Dicot					
			Blue-star, Kearney's	*Amsonia kearneyana*	Endangered	Terrestrial	No
			Cactus, Arizona Hedgehog	*Echinocereus triglochidiatus var. arizonicus*	Endangered	Terrestrial	No
			Cactus, Brady Pincushion	*Pediocactus bradyi*	Endangered	Terrestrial	No
			Cactus, Cochise Pincushion	*Coryphantha robbinsorum*	Threatened	Terrestrial	No
			Cactus, Nichol's Turk's Head	*Echinocactus horizonthalonius var. nicholii*	Endangered	Terrestrial	No
			Cactus, Peebles Navajo	*Pediocactus peeblesianus peeblesianus*	Endangered	Terrestrial	No
			Cactus, Pima Pineapple	*Coryphantha scheeri var. robustispina*	Endangered	Terrestrial	No
			Cactus, Siler Pincushion	*Pediocactus (=Echinocactus,=Utahia) sileri*	Threatened	Terrestrial	No
			Cliffrose, Arizona	*Purshia (=cowania) subintegra*	Endangered	Terrestrial	No
			Cycladenia, Jones	*Cycladenia jonesii (=humilis)*	Threatened	Terrestrial	No
			Fleabane, Zuni	*Erigeron rhizomatus*	Threatened	Terrestrial	No
			Groundsel, San Francisco Peaks	*Senecio franciscanus*	Threatened	Terrestrial	Yes
			Milk-vetch, Holmgren	*Astragalus holmgreniorum*	Endangered	Terrestrial	No
			Milk-vetch, Sentry	*Astragalus cremnophylax var. cremnophylax*	Endangered	Terrestrial	No
			Milkweed, Welsh's	*Asclepias welshii*	Threatened	Terrestrial	Yes
			Umbel, Huachuca Water	*Lilaeopsis schaffneriana var. recurva*	Endangered	Terrestrial, Freshwater	Yes
		Fish					
			Catfish, Yaqui	*Ictalurus pricei*	Threatened	Freshwater	Yes
			Chub, Bonytail	*Gila elegans*	Endangered	Freshwater	Yes

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			Chub, Gila	*Gila intermedia*	Endangered	Freshwater	Yes
			Chub, Humpback	*Gila cypha*	Endangered	Freshwater	Yes
			Chub, Sonora	*Gila ditaenia*	Threatened	Freshwater	Yes
			Chub, Virgin River	*Gila seminuda (=robusta)*	Endangered	Freshwater	Yes
			Chub, Yaqui	*Gila purpurea*	Endangered	Freshwater	Yes
			Minnow, Loach	*Tiaroga cobitis*	Threatened	Freshwater	Yes
			Pupfish, Desert	*Cyprinodon macularius*	Endangered	Freshwater	Yes
			Shiner, Beautiful	*Cyprinella formosa*	Threatened	Freshwater	Yes
			Spikedace	*Meda fulgida*	Threatened	Freshwater	Yes
			Spinedace, Little Colorado	*Lepidomeda vittata*	Threatened	Freshwater	Yes
			Squawfish, Colorado	*Ptychocheilus lucius*	Endangered	Freshwater	Yes
			Sucker, Razorback	*Xyrauchen texanus*	Endangered	Freshwater	Yes
			Topminnow, Gila (Yaqui)	*Poeciliopsis occidentalis*	Endangered	Freshwater	No
			Trout, Apache	*Oncorhynchus apache*	Threatened	Freshwater	No
			Trout, Gila	*Oncorhynchus gilae*	Endangered	Freshwater	No
			Woundfin	*Plagopterus argentissimus*	Endangered	Freshwater	Yes
		Gastropod					
			Ambersnail, Kanab	*Oxyloma haydeni kanabensis*	Endangered	Freshwater, Terrestrial	No
		Mammal					
			Bat, Lesser (=Sanborn's) Long-nosed	*Leptonycteris curasoae yerbabuenae*	Endangered	Subterraneous, Terrestrial	No
			Ferret, Black-footed	*Mustela nigripes*	Endangered	Terrestrial	No
			Jaguar	*Panthera onca*	Endangered	Terrestrial	No
			Jaguarundi, Sinaloan	*Herpailurus (=Felis) yagouaroundi tolteca*	Endangered	Terrestrial	No
			Ocelot	*Leopardus (=Felis) pardalis*	Endangered	Terrestrial	No
			Pronghorn, Sonoran	*Antilocapra americana sonoriensis*	Endangered	Terrestrial	No
			Squirrel, Mount Graham Red	*Tamiasciurus hudsonicus grahamensis*	Endangered	Terrestrial	Yes
			Vole, Hualapai Mexican	*Microtus mexicanus hualpaiensis*	Endangered	Terrestrial	No
			Wolf, Gray	*Canis lupus*	Endangered	Terrestrial	Yes
		Monocot					
			Ladies'-tresses, Canelo Hills	*Spiranthes delitescens*	Endangered	Terrestrial	No
			Sedge, Navajo	*Carex specuicola*	Threatened	Terrestrial	Yes
		Reptile					
			Rattlesnake, New Mexican Ridge-nosed	*Crotalus willardi obscurus*	Threatened	Terrestrial	Yes
			Tortoise, Desert	*Gopherus agassizii*	Threatened	Terrestrial	Yes
Arkansas	(23) species:						
		Bird					
			Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
			Tern, Interior (population) Least	*Sterna antillarum*	Endangered	Terrestrial	No
			Woodpecker, Red-cockaded	*Picoides borealis*	Endangered	Terrestrial	No
		Bivalve					
			Fatmucket, Arkansas	*Lampsilis powelli*	Threatened	Freshwater	No
			Mucket, Pink (Pearlymussel)	*Lampsilis abrupta*	Endangered	Freshwater	No
			Mussel, Scaleshell	*Leptodea leptodon*	Endangered	Freshwater	No
			Mussel, Speckled Pocketbook	*Lampsilis streckeri*	Endangered	Freshwater	No
			Pearlymussel, Fat Pocketbook	*Potamilus capax*	Endangered	Freshwater	No
			Rock-pocketbook, Ouachita (=Wheeler's pm)	*Arkansia wheeleri*	Endangered	Freshwater	No
		Crustacean					
			Crayfish, Cave (Cambarus aculabrum)	*Cambarus aculabrum*	Endangered	Freshwater	No

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			Crayfish, Cave (Cambarus zophonastes)	*Cambarus zophonastes*	Endangered	Freshwater	No
		Dicot					
			Bladderpod, Missouri	*Lesquerella filiformis*	Threatened	Terrestrial	No
			Fruit, Earth (=geocarpon)	*Geocarpon minimum*	Threatened	Terrestrial	No
			Harperella	*Ptilimnium nodosum*	Endangered	Freshwater	No
			Pondberry	*Lindera melissifolia*	Endangered	Terrestrial	No
		Fish					
			Cavefish, Ozark	*Amblyopsis rosae*	Threatened	Freshwater	No
			Darter, Leopard	*Percina pantherina*	Threatened	Freshwater	Yes
			Sturgeon, Pallid	*Scaphirhynchus albus*	Endangered	Freshwater	No
		Gastropod					
			Shagreen, Magazine Mountain	*Mesodon magazinensis*	Threatened	Terrestrial	No
		Insect					
			Beetle, American Burying	*Nicrophorus americanus*	Endangered	Terrestrial	No
		Mammal					
			Bat, Gray	*Myotis grisescens*	Endangered	Subterraneous, Terrestrial	No
			Bat, Indiana	*Myotis sodalis*	Endangered	Subterraneous, Terrestrial	Yes
			Bat, Ozark Big-eared	*Corynorhinus (=Plecotus) townsendii ingens*	Endangered	Terrestrial, Subterraneous	No
California	(302) species:						
		Amphibian					
			Frog, California Red-legged	*Rana aurora draytonii*	Threatened	Terrestrial, Freshwater	Yes
			Frog, Mountain Yellow-legged	*Rana muscosa*	Endangered	Terrestrial, Freshwater	No
			Salamander, California Tiger	*Ambystoma californiense*	Endangered	Terrestrial, Vernal pool	No
			Salamander, Desert Slender	*Batrachoseps aridus*	Endangered	Freshwater, Terrestrial	No
			Salamander, Santa Cruz Long-toed	*Ambystoma macrodactylum croceum*	Endangered	Freshwater, Vernal pool, Terrestrial	No
			Toad, Arroyo Southwestern	*Bufo californicus (=microscaphus)*	Endangered	Freshwater, Terrestrial	Yes
		Bird					
			Condor, California	*Gymnogyps californianus*	Endangered	Terrestrial	Yes
			Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
			Flycatcher, Southwestern Willow	*Empidonax traillii extimus*	Endangered	Terrestrial	Yes
			Gnatcatcher, Coastal California	*Polioptila californica californica*	Threatened	Terrestrial	Yes
			Murrelet, Marbled	*Brachyramphus marmoratus marmoratus*	Threatened	Freshwater, Terrestrial, Saltwater	Yes
			Owl, Northern Spotted	*Strix occidentalis caurina*	Threatened	Terrestrial	Yes
			Pelican, Brown	*Pelecanus occidentalis*	Endangered	Terrestrial	No
			Plover, Western Snowy	*Charadrius alexandrinus nivosus*	Threatened	Terrestrial	Yes
			Rail, California Clapper	*Rallus longirostris obsoletus*	Endangered	Terrestrial	No
			Rail, Light-footed Clapper	*Rallus longirostris levipes*	Endangered	Terrestrial	No
			Rail, Yuma Clapper	*Rallus longirostris yumanensis*	Endangered	Terrestrial	No
			Shrike, San Clemente Loggerhead	*Lanius ludovicianus mearnsi*	Endangered	Terrestrial	No
			Sparrow, San Clemente Sage	*Amphispiza belli clementeae*	Threatened	Terrestrial	No
			Tern, California Least	*Sterna antillarum browni*	Endangered	Terrestrial	No
			Towhee, Inyo Brown	*Pipilo crissalis eremophilus*	Threatened	Terrestrial	Yes
			Vireo, Least Bell's	*Vireo bellii pusillus*	Endangered	Terrestrial	Yes
		Conf/cycds					
			Cypress, Gowen	*Cupressus goveniana ssp. goveniana*	Threatened	Terrestrial	No
			Cypress, Santa Cruz	*Cupressus abramsiana*	Endangered	Terrestrial	No

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Crustacean					
	Abalone, White	*Haliotis sorenseni*	Endangered	Saltwater	No
	Crayfish, Shasta	*Pacifastacus fortis*	Endangered	Freshwater	No
	Fairy Shrimp, Conservancy Fairy	*Branchinecta conservatio*	Endangered	Vernal pool	Yes
	Fairy Shrimp, Longhorn	*Branchinecta longiantenna*	Endangered	Vernal pool	Yes
	Fairy Shrimp, Riverside	*Streptocephalus woottoni*	Endangered	Vernal pool	Yes
	Fairy Shrimp, San Diego	*Branchinecta sandiegonensis*	Endangered	Vernal pool	Yes
	Fairy Shrimp, Vernal Pool	*Branchinecta lynchi*	Threatened	Vernal pool	Yes
	Shrimp, California Freshwater	*Syncaris pacifica*	Endangered	Freshwater	No
	Tadpole Shrimp, Vernal Pool	*Lepidurus packardi*	Endangered	Vernal pool	Yes
Dicot					
	Adobe Sunburst, San Joaquin	*Pseudobahia peirsonii*	Threatened	Terrestrial	No
	Allocarya, Calistoga	*Plagiobothrys strictus*	Endangered	Vernal pool	No
	Ambrosia, San Diego	*Ambrosia pumila*	Endangered	Terrestrial	No
	Baccharis, Encinitas	*Baccharis vanessae*	Threatened	Terrestrial	No
	Barberry, Island	*Berberis pinnata ssp. insularis*	Endangered	Terrestrial	No
	Barberry, Nevin's	*Berberis nevinii*	Endangered	Terrestrial	No
	Bedstraw, El Dorado	*Galium californicum ssp. sierrae*	Endangered	Terrestrial	No
	Bedstraw, Island	*Galium buxifolium*	Endangered	Terrestrial	No
	Bird's-beak, Palmate-bracted	*Cordylanthus palmatus*	Endangered	Terrestrial	No
	Bird's-beak, Pennell's	*Cordylanthus tenuis ssp. capillaris*	Endangered	Terrestrial	No
	Bird's-beak, salt marsh	*Cordylanthus maritimus ssp. maritimus*	Endangered	Saltwater	No
	Bird's-beak, Soft	*Cordylanthus mollis ssp. mollis*	Endangered	Brackish, Saltwater	No
	Bladderpod, San Bernardino Mountains	*Lesquerella kingii ssp. bernardina*	Endangered	Terrestrial	Yes
	Bluecurls, Hidden Lake	*Trichostema austromontanum ssp. compactum*	Threatened	Terrestrial	No
	Broom, San Clemente Island	*Lotus dendroideus ssp. traskiae*	Endangered	Terrestrial	No
	Buckwheat, Cushenbury	*Eriogonum ovalifolium var. vineum*	Endangered	Terrestrial	Yes
	Buckwheat, Ione (incl. Irish Hill)	*Eriogonum apricum (incl. var. prostratum)*	Endangered	Terrestrial	No
	Buckwheat, Southern Mountain Wild	*Eriogonum kennedyi var. austromontanum*	Threatened	Terrestrial	No
	Bush-mallow, San Clemente Island	*Malacothamnus clementinus*	Endangered	Terrestrial	No
	Bush-mallow, Santa Cruz Island	*Malacothamnus fasciculatus var. nesioticus*	Endangered	Terrestrial	No
	Butterweed, Layne's	*Senecio layneae*	Threatened	Terrestrial	No
	Button-celery, San Diego	*Eryngium aristulatum var. parishii*	Endangered	Terrestrial	No
	Cactus, Bakersfield	*Opuntia treleasei*	Endangered	Terrestrial	No
	Ceanothus, Coyote	*Ceanothus ferrisae*	Endangered	Terrestrial	No
	Ceanothus, Pine Hill	*Ceanothus roderickii*	Endangered	Terrestrial	No
	Ceanothus, Vail Lake	*Ceanothus ophiochilus*	Threatened	Terrestrial	No
	Centaury, Spring-loving	*Centaurium namophilum*	Threatened	Terrestrial	Yes
	Checker-mallow, Keck's	*Sidalcea keckii*	Endangered	Terrestrial	Yes
	Checker-mallow, Kenwood Marsh	*Sidalcea oregana ssp. valida*	Endangered	Terrestrial	No
	Checker-mallow, Pedate	*Sidalcea pedata*	Endangered	Terrestrial	No
	Clarkia, Pismo	*Clarkia speciosa ssp. immaculata*	Endangered	Terrestrial	No
	Clarkia, Presidio	*Clarkia franciscana*	Endangered	Terrestrial	No
	Clarkia, Springville	*Clarkia springvillensis*	Threatened	Terrestrial	No
	Clarkia, Vine Hill	*Clarkia imbricata*	Endangered	Terrestrial	No
	Clover, Fleshy Owl's	*Castilleja campestris ssp. succulenta*	Threatened	Vernal pool	Yes
	Clover, Monterey	*Trifolium trichocalyx*	Endangered	Terrestrial	No
	Clover, Showy Indian	*Trifolium amoenum*	Endangered	Terrestrial	No
	Coyote-thistle, Loch Lomond	*Eryngium constancei*	Endangered	Terrestrial	No
	Crownbeard, Big-leaved	*Verbesina dissita*	Threatened	Terrestrial	No

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Crownscale, San Jacinto Valley	*Atriplex coronata var. notatior*	Endangered	Terrestrial	No
Daisy, Parish's	*Erigeron parishii*	Threatened	Freshwater	Yes
Dudleya, Conejo	*Dudleya abramsii ssp. parva*	Threatened	Terrestrial	No
Dudleya, Marcescent	*Dudleya cymosa ssp. marcescens*	Threatened	Terrestrial	No
Dudleya, Santa Clara Valley	*Dudleya setchellii*	Endangered	Terrestrial	No
Dudleya, Santa Cruz Island	*Dudleya nesiotica*	Threatened	Terrestrial	No
Dudleya, Santa Monica Mountains	*Dudleya cymosa ssp. ovatifolia*	Threatened	Terrestrial	No
Dudleya, Verity's	*Dudleya verityi*	Threatened	Terrestrial	No
Dwarf-flax, Marin	*Hesperolinon congestum*	Threatened	Terrestrial	No
Evening-primrose, Antioch Dunes	*Oenothera deltoides ssp. howellii*	Endangered	Terrestrial	Yes
Evening-primrose, Eureka Valley	*Oenothera avita ssp. eurekensis*	Endangered	Terrestrial	No
Evening-primrose, San Benito	*Camissonia benitensis*	Threatened	Terrestrial	No
Fiddleneck, Large-flowered	*Amsinckia grandiflora*	Endangered	Terrestrial	Yes
Flannelbush, Mexican	*Fremontodendron mexicanum*	Endangered	Terrestrial	No
Flannelbush, Pine Hill	*Fremontodendron californicum ssp. decumbens*	Endangered	Terrestrial	No
Fringepod, Santa Cruz Island	*Thysanocarpus conchuliferus*	Endangered	Terrestrial	No
Gilia, Hoffmann's Slender-flowered	*Gilia tenuiflora ssp. hoffmannii*	Endangered	Terrestrial	No
Gilia, Monterey	*Gilia tenuiflora ssp. arenaria*	Endangered	Terrestrial	No
Golden Sunburst, Hartweg's	*Pseudobahia bahiifolia*	Endangered	Terrestrial	No
Goldfields, Burke's	*Lasthenia burkei*	Endangered	Terrestrial	No
Goldfields, Contra Costa	*Lasthenia conjugens*	Endangered	Terrestrial	Yes
Grass, Hairy Orcutt	*Orcuttia pilosa*	Endangered	Vernal pool	Yes
Grass, Sacramento Orcutt	*Orcuttia viscida*	Endangered	Vernal pool	Yes
Grass, Slender Orcutt	*Orcuttia tenuis*	Threatened	Vernal pool	Yes
Gumplant, Ash Meadows	*Grindelia fraxino-pratensis*	Threatened	Terrestrial	Yes
Ivesia, Ash Meadows	*Ivesia kingii var. eremica*	Threatened	Terrestrial	Yes
Jewelflower, California	*Caulanthus californicus*	Endangered	Terrestrial	No
Jewelflower, Metcalf Canyon	*Streptanthus albidus ssp. albidus*	Endangered	Terrestrial	No
Jewelflower, Tiburon	*Streptanthus niger*	Endangered	Terrestrial	No
Larkspur, Baker's	*Delphinium bakeri*	Endangered	Terrestrial	Yes
Larkspur, San Clemente Island	*Delphinium variegatum ssp. kinkiense*	Endangered	Terrestrial	No
Larkspur, Yellow	*Delphinium luteum*	Endangered	Terrestrial	Yes
Layia, Beach	*Layia carnosa*	Endangered	Terrestrial, Coastal (neritic)	No
Lessingia, San Francisco	*Lessingia germanorum (=L.g. var. germanorum)*	Endangered	Terrestrial	No
Liveforever, Laguna Beach	*Dudleya stolonifera*	Threatened	Terrestrial	No
Liveforever, Santa Barbara Island	*Dudleya traskiae*	Endangered	Terrestrial	No
Lupine, Clover	*Lupinus tidestromii*	Endangered	Coastal (neritic)	No
Lupine, Nipomo Mesa	*Lupinus nipomensis*	Endangered	Coastal (neritic)	No
Malacothrix, Island	*Malacothrix squalida*	Endangered	Terrestrial	No
Malacothrix, Santa Cruz Island	*Malacothrix indecora*	Endangered	Terrestrial	No
Mallow, Kern	*Eremalche kernensis*	Endangered	Terrestrial	No
Manzanita, Del Mar	*Arctostaphylos glandulosa ssp. crassifolia*	Endangered	Terrestrial	No
Manzanita, Ione	*Arctostaphylos myrtifolia*	Threatened	Terrestrial	No
Manzanita, Morro	*Arctostaphylos morroensis*	Threatened	Terrestrial	No
Manzanita, Pallid	*Arctostaphylos pallida*	Threatened	Terrestrial	No
Manzanita, Presidio (=Raven's)	*Arctostaphylos hookeri var. ravenii*	Endangered	Terrestrial	No
Manzanita, Santa Rosa Island	*Arctostaphylos confertiflora*	Endangered	Terrestrial	No
Meadowfoam, Butte County	*Limnanthes floccosa ssp. californica*	Endangered	Vernal pool	Yes
Meadowfoam, Sebastopol	*Limnanthes vinculans*	Endangered	Freshwater, Terrestrial	No
Milk-vetch, Braunton's	*Astragalus brauntonii*	Endangered	Terrestrial	No
Milk-vetch, Clara Hunt's	*Astragalus clarianus*	Endangered	Terrestrial	No
Milk-vetch, Coachella Valley	*Astragalus lentiginosus var. coachellae*	Endangered	Terrestrial	Yes

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Milk-vetch, Coastal Dunes	*Astragalus tener var. titi*	Endangered	Terrestrial	No
Milk-vetch, Cushenbury	*Astragalus albens*	Endangered	Terrestrial	Yes
Milk-vetch, Fish Slough	*Astragalus lentiginosus var. piscinensis*	Threatened	Terrestrial	No
Milk-vetch, Lane Mountain	*Astragalus jaegerianus*	Endangered	Terrestrial	Yes
Milk-vetch, Pierson's	*Astragalus magdalenae var. peirsonii*	Threatened	Terrestrial	Yes
Milk-vetch, Triple-ribbed	*Astragalus tricarinatus*	Endangered	Terrestrial	No
Milk-vetch, Ventura Marsh	*Astragalus pycnostachyus var. lanosissimus*	Endangered	Terrestrial, Freshwater	Yes
Mint, Otay Mesa	*Pogogyne nudiuscula*	Endangered	Terrestrial	No
Mint, San Diego Mesa	*Pogogyne abramsii*	Endangered	Terrestrial	No
Monardella, Willowy	*Monardella linoides ssp. viminea*	Endangered	Terrestrial	No
Morning-glory, Stebbins	*Calystegia stebbinsii*	Endangered	Terrestrial	No
Mountainbalm, Indian Knob	*Eriodictyon altissimum*	Endangered	Terrestrial	No
Mountain-mahogany, Catalina Island	*Cercocarpus traskiae*	Endangered	Terrestrial	No
Mustard, Slender-petaled	*Thelypodium stenopetalum*	Endangered	Terrestrial	No
Navarretia, Few-flowered	*Navarretia leucocephala ssp. pauciflora (=N. pauciflora)*	Endangered	Vernal pool, Terrestrial	No
Navarretia, Many-flowered	*Navarretia leucocephala ssp. plieantha*	Endangered	Terrestrial, Vernal pool	No
Navarretia, Spreading	*Navarretia fossalis*	Threatened	Vernal pool	No
Niterwort, Amargosa	*Nitrophila mohavensis*	Endangered	Terrestrial	Yes
Oxytheca, Cushenbury	*Oxytheca parishii var. goodmaniana*	Endangered	Terrestrial	Yes
Paintbrush, Ash-grey Indian	*Castilleja cinerea*	Threatened	Terrestrial	No
Paintbrush, San Clemente Island Indian	*Castilleja grisea*	Endangered	Terrestrial	No
Paintbrush, Soft-leaved	*Castilleja mollis*	Endangered	Terrestrial	No
Paintbrush, Tiburon	*Castilleja affinis ssp. neglecta*	Endangered	Terrestrial	No
Penny-cress, Kneeland Prairie	*Thlaspi californicum*	Endangered	Terrestrial	Yes
Pentachaeta, Lyon's	*Pentachaeta lyonii*	Endangered	Terrestrial	No
Pentachaeta, White-rayed	*Pentachaeta bellidiflora*	Endangered	Terrestrial	No
Phacelia, Island	*Phacelia insularis ssp. insularis*	Endangered	Terrestrial	No
Phlox, Yreka	*Phlox hirsuta*	Endangered	Terrestrial	No
Polygonum, Scott's Valley	*Polygonum hickmanii*	Endangered	Terrestrial	Yes
Potentilla, Hickman's	*Potentilla hickmanii*	Endangered	Terrestrial	No
Pussypaws, Mariposa	*Calyptridium pulchellum*	Threatened	Terrestrial	No
Rock-cress, Hoffmann's	*Arabis hoffmannii*	Endangered	Terrestrial	No
Rock-cress, McDonald's	*Arabis mcdonaldiana*	Endangered	Terrestrial	No
Rock-cress, Santa Cruz Island	*Sibara filifolia*	Endangered	Terrestrial	No
Rush-rose, Island	*Helianthemum greenei*	Threatened	Terrestrial	No
Sandwort, Bear Valley	*Arenaria ursina*	Threatened	Terrestrial	No
Sandwort, Marsh	*Arenaria paludicola*	Endangered	Freshwater, Terrestrial	No
Sea-blite, California	*Suaeda californica*	Endangered	Terrestrial	No
Spineflower, Ben Lomond	*Chorizanthe pungens var. hartwegiana*	Endangered	Terrestrial	No
Spineflower, Howell's	*Chorizanthe howellii*	Endangered	Terrestrial	No
Spineflower, Monterey	*Chorizanthe pungens var. pungens*	Threatened	Terrestrial	Yes
Spineflower, Orcutt's	*Chorizanthe orcuttiana*	Endangered	Terrestrial	No
Spineflower, Robust	*Chorizanthe robusta var. robusta*	Endangered	Terrestrial	Yes
Spineflower, Scotts Valley	*Chorizanthe robusta var. hartwegii*	Endangered	Terrestrial	Yes
Spineflower, Slender-horned	*Dodecahema leptoceras*	Endangered	Terrestrial	No
Spineflower, Sonoma	*Chorizanthe valida*	Endangered	Terrestrial	No
Spurge, Hoover's	*Chamaesyce hooveri*	Threatened	Vernal pool	Yes
Stickyseed, Baker's	*Blennosperma bakeri*	Endangered	Vernal pool	No
Stonecrop, Lake County	*Parvisedum leiocarpum*	Endangered	Vernal pool	No
Sunflower, San Mateo Woolly	*Eriophyllum latilobum*	Endangered	Terrestrial	No
Taraxacum, California	*Taraxacum californicum*	Endangered	Terrestrial	No
Tarplant, Gaviota	*Deinandra increscens ssp. villosa*	Endangered	Terrestrial	Yes

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	Tarplant, Otay	*Deinandra (=Hemizonia) conjugens*	Threatened	Terrestrial	Yes
	Tarplant, Santa Cruz	*Holocarpha macradenia*	Threatened	Terrestrial	Yes
	Thistle, Chorro creek Bog	*Cirsium fontinale var. obispoense*	Endangered	Terrestrial, Freshwater	No
	Thistle, Fountain	*Cirsium fontinale var. fontinale*	Endangered	Terrestrial	No
	Thistle, La Graciosa	*Cirsium loncholepis*	Endangered	Coastal (neritic), Freshwater, Saltwater, Brackish	Yes
	Thistle, Suisun	*Cirsium hydrophilum var. hydrophilum*	Endangered	Brackish, Terrestrial	No
	Thornmint, San Diego	*Acanthomintha ilicifolia*	Threatened	Terrestrial	No
	Thornmint, San Mateo	*Acanthomintha obovata ssp. duttonii*	Endangered	Terrestrial	No
	Tuctoria, Green's	*Tuctoria greenei*	Endangered	Vernal pool	Yes
	Vervain, California	*Verbena californica*	Threatened	Terrestrial	No
	Wallflower, Ben Lomond	*Erysimum teretifolium*	Endangered	Terrestrial	No
	Wallflower, Contra Costa	*Erysimum capitatum var. angustatum*	Endangered	Terrestrial	Yes
	Wallflower, Menzie's	*Erysimum menziesii*	Endangered	Terrestrial	No
	Watercress, Gambel's	*Rorippa gambellii*	Endangered	Terrestrial, Brackish, Freshwater	No
	Woodland-star, San Clemente Island	*Lithophragma maximum*	Endangered	Terrestrial	No
	Woolly-star, Santa Ana River	*Eriastrum densifolium ssp. sanctorum*	Endangered	Terrestrial	No
	Woolly-threads, San Joaquin	*Monolopia (=Lembertia) congdonii*	Endangered	Terrestrial	No
	Yerba Santa, Lompoc	*Eriodictyon capitatum*	Endangered	Terrestrial	Yes
Fish					
	Chub, Bonytail	*Gila elegans*	Endangered	Freshwater	Yes
	Chub, Hutton Tui	*Gila bicolor ssp.*	Threatened	Freshwater	No
	Chub, Mohave Tui	*Gila bicolor mohavensis*	Endangered	Freshwater	No
	Chub, Owens Tui	*Gila bicolor snyderi*	Endangered	Freshwater	Yes
	Dace, Ash Meadows Speckled	*Rhinichthys osculus nevadensis*	Endangered	Freshwater	Yes
	Goby, Tidewater	*Eucyclogobius newberryi*	Endangered	Freshwater	Yes
	Pupfish, Desert	*Cyprinodon macularius*	Endangered	Freshwater	Yes
	Pupfish, Owens	*Cyprinodon radiosus*	Endangered	Freshwater	No
	Salmon, Chinook (California Coastal Run)	*Oncorhynchus (=Salmo) tshawytscha*	Threatened	Freshwater, Saltwater, Brackish	Yes
	Salmon, Chinook (Central Valley Fall Run)	*Oncorhynchus (=Salmo) tshawytscha*	Threatened	Brackish, Freshwater, Saltwater	No
	Salmon, Chinook (Central Valley Spring Run)	*Oncorhynchus (=Salmo) tshawytscha*	Threatened	Brackish, Saltwater, Freshwater	Yes
	Salmon, Chinook (Sacramento River Winter Run)	*Oncorhynchus (=Salmo) tshawytscha*	Endangered	Saltwater, Freshwater, Brackish	No
	Salmon, Coho (Central California Coast population)	*Oncorhynchus (=Salmo) kisutch*	Endangered	Saltwater, Brackish, Freshwater	No
	Salmon, Coho (Southern OR/Northern CA Coast)	*Oncorhynchus (=Salmo) kisutch*	Threatened	Freshwater, Brackish, Saltwater	Yes
	Smelt, Delta	*Hypomesus transpacificus*	Threatened	Freshwater, Brackish	Yes
	Squawfish, Colorado	*Ptychocheilus lucius*	Endangered	Freshwater	Yes
	Steelhead, (California Central Valley population)	*Oncorhynchus (=Salmo) mykiss*	Threatened	Brackish, Freshwater, Saltwater	Yes
	Steelhead, (Central California Coast population)	*Oncorhynchus (=Salmo) mykiss*	Threatened	Freshwater, Saltwater, Brackish	Yes
	Steelhead, (Northern California population)	*Oncorhynchus (=Salmo) mykiss*	Threatened	Saltwater, Brackish, Freshwater	No
	Steelhead, (South-Central California population)	*Oncorhynchus (=Salmo) mykiss*	Threatened	Freshwater, Saltwater, Brackish	Yes
	Steelhead, (Southern California population)	*Oncorhynchus (=Salmo) mykiss*	Endangered	Brackish, Saltwater, Freshwater	Yes
	Stickleback, Unarmored Threespine	*Gasterosteus aculeatus williamsoni*	Endangered	Freshwater	No
	Sturgeon, green	*Acipenser medirostris*	Threatened		No
	Sucker, Lost River	*Deltistes luxatus*	Endangered	Freshwater	No

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	Sucker, Modoc	*Catostomus microps*	Endangered	Freshwater	Yes
	Sucker, Razorback	*Xyrauchen texanus*	Endangered	Freshwater	Yes
	Sucker, Santa Ana	*Catostomus santaanae*	Threatened	Freshwater	Yes
	Sucker, Shortnose	*Chasmistes brevirostris*	Endangered	Freshwater	No
	Trout, Lahontan Cutthroat	*Oncorhynchus clarki henshawi*	Threatened	Freshwater	No
	Trout, Little Kern Golden	*Oncorhynchus aguabonita whitei*	Threatened	Freshwater	Yes
	Trout, Paiute Cutthroat	*Oncorhynchus clarki seleniris*	Threatened	Freshwater	No
Gastropod					
	Snail, Morro Shoulderband	*Helminthoglypta walkeriana*	Endangered	Terrestrial	Yes
Insect					
	Beetle, Delta Green Ground	*Elaphrus viridis*	Threatened	Vernal pool, Terrestrial	Yes
	Beetle, Mount Hermon June	*Polyphylla barbata*	Endangered	Subterraneous, Terrestrial	No
	Beetle, Ohlone Tiger	*Cicindela ohlone*	Endangered	Terrestrial	No
	Beetle, Valley Elderberry Longhorn	*Desmocerus californicus dimorphus*	Threatened	Terrestrial	Yes
	Butterfly, Bay Checkerspot	*Euphydryas editha bayensis*	Threatened	Terrestrial	Yes
	Butterfly, Behren's Silverspot	*Speyeria zerene behrensii*	Endangered	Terrestrial	No
	Butterfly, Callippe Silverspot	*Speyeria callippe callippe*	Endangered	Terrestrial	No
	Butterfly, El Segundo Blue	*Euphilotes battoides allyni*	Endangered	Terrestrial	No
	Butterfly, Lange's Metalmark	*Apodemia mormo langei*	Endangered	Terrestrial	No
	Butterfly, Lotis Blue	*Lycaeides argyrognomon lotis*	Endangered	Terrestrial	No
	Butterfly, Mission Blue	*Icaricia icarioides missionensis*	Endangered	Terrestrial	No
	Butterfly, Myrtle's Silverspot	*Speyeria zerene myrtleae*	Endangered	Terrestrial	No
	Butterfly, Oregon Silverspot	*Speyeria zerene hippolyta*	Threatened	Terrestrial	Yes
	Butterfly, Palos Verdes Blue	*Glaucopsyche lygdamus palosverdesensis*	Endangered	Terrestrial	Yes
	Butterfly, Quino Checkerspot	*Euphydryas editha quino (=E. e. wrighti)*	Endangered	Terrestrial	Yes
	Butterfly, San Bruno Elfin	*Callophrys mossii bayensis*	Endangered	Terrestrial	No
	Butterfly, Smith's Blue	*Euphilotes enoptes smithi*	Endangered	Terrestrial	No
	Fly, Delhi Sands Flower-loving	*Rhaphiomidas terminatus abdominalis*	Endangered	Terrestrial	No
	Grasshopper, Zayante Band-winged	*Trimerotropis infantilis*	Endangered	Terrestrial	Yes
	Moth, Kern Primrose Sphinx	*Euproserpinus euterpe*	Threatened	Terrestrial	No
	Skipper, Carson Wandering	*Pseudocopaeodes eunus obscurus*	Endangered	Terrestrial	No
	Skipper, Laguna Mountain	*Pyrgus ruralis lagunae*	Endangered	Terrestrial	No
Mammal					
	Fox, San Joaquin Kit	*Vulpes macrotis mutica*	Endangered	Terrestrial	No
	Fox, San Miguel Island	*Urocyon littoralis littoralis*	Endangered	Terrestrial	Yes
	Fox, Santa Catalina Island	*Urocyon littoralis catalinae*	Endangered	Terrestrial	Yes
	Fox, Santa Cruz Island	*Urocyon littoralis santacruzae*	Endangered	Terrestrial	Yes
	Fox, Santa Rosa Island	*Urocyon littoralis santarosae*	Endangered	Terrestrial	Yes
	Kangaroo Rat, Fresno	*Dipodomys nitratoides exilis*	Endangered	Terrestrial	Yes
	Kangaroo Rat, Giant	*Dipodomys ingens*	Endangered	Terrestrial	No
	Kangaroo Rat, Morro Bay	*Dipodomys heermanni morroensis*	Endangered	Terrestrial	Yes
	Kangaroo Rat, San Bernardino Merriam's	*Dipodomys merriami parvus*	Endangered	Terrestrial	Yes
	Kangaroo Rat, Stephens'	*Dipodomys stephensi (incl. D. cascus)*	Endangered	Terrestrial	No
	Kangaroo Rat, Tipton	*Dipodomys nitratoides nitratoides*	Endangered	Terrestrial	No
	Mountain Beaver, Point Arena	*Aplodontia rufa nigra*	Endangered	Freshwater, Terrestrial	No
	Mouse, Pacific Pocket	*Perognathus longimembris pacificus*	Endangered	Terrestrial	No
	Mouse, Salt Marsh Harvest	*Reithrodontomys raviventris*	Endangered	Terrestrial	No
	Rabbit, Riparian Brush	*Sylvilagus bachmani riparius*	Endangered	Terrestrial	No
	Sheep, Peninsular Bighorn	*Ovis canadensis*	Endangered	Terrestrial	Yes

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			Sheep, Sierra Nevada Bighorn	*Ovis canadensis californiana*	Endangered	Terrestrial	No
			Shrew, Buena Vista Lake Ornate	*Sorex ornatus relictus*	Endangered	Terrestrial	Yes
			Vole, Amargosa	*Microtus californicus scirpensis*	Endangered	Terrestrial	Yes
			Woodrat, Riparian	*Neotoma fuscipes riparia*	Endangered	Terrestrial	No
		Marine mml					
			Otter, Southern Sea	*Enhydra lutris nereis*	Threatened	Saltwater	No
			Seal, Guadalupe Fur	*Arctocephalus townsendi*	Threatened	Coastal (neritic), Saltwater	No
			Sea-lion, Steller (eastern)	*Eumetopias jubatus*	Threatened	Saltwater	Yes
			Whale, Finback	*Balaenoptera physalus*	Endangered	Saltwater	No
			Whale, Humpback	*Megaptera novaeangliae*	Endangered	Saltwater	No
		Monocot					
			Alopecurus, Sonoma	*Alopecurus aequalis var. sonomensis*	Endangered	Terrestrial	No
			Amole, Cammatta Canyon	*Chlorogalum purpureum var. reductum*	Threatened	Terrestrial	Yes
			Amole, Purple	*Chlorogalum purpureum var. purpureum*	Threatened	Terrestrial	Yes
			Bluegrass, Napa	*Poa napensis*	Endangered	Terrestrial, Freshwater	No
			Bluegrass, San Bernardino	*Poa atropurpurea*	Endangered	Terrestrial	No
			Brodiaea, Chinese Camp	*Brodiaea pallida*	Threatened	Terrestrial	No
			Brodiaea, Thread-leaved	*Brodiaea filifolia*	Threatened	Terrestrial	Yes
			Grass, California Orcutt	*Orcuttia californica*	Endangered	Vernal pool, Terrestrial	No
			Grass, Colusa	*Neostapfia colusana*	Threatened	Vernal pool	No
			Grass, Eureka Dune	*Swallenia alexandrae*	Endangered	Terrestrial	No
			Grass, San Joaquin Valley Orcutt	*Orcuttia inaequalis*	Threatened	Vernal pool	Yes
			Grass, Solano	*Tuctoria mucronata*	Endangered	Vernal pool, Terrestrial	Yes
			Lily, Pitkin Marsh	*Lilium pardalinum ssp. pitkinense*	Endangered	Freshwater	No
			Lily, Tiburon Mariposa	*Calochortus tiburonensis*	Threatened	Terrestrial	No
			Lily, Western	*Lilium occidentale*	Endangered	Terrestrial	No
			Onion, Munz's	*Allium munzii*	Endangered	Terrestrial	No
			Piperia, Yadon's	*Piperia yadonii*	Endangered	Terrestrial	No
			Sedge, White	*Carex albida*	Endangered	Freshwater, Terrestrial	No
		Reptile					
			Lizard, Blunt-nosed Leopard	*Gambelia silus*	Endangered	Terrestrial	No
			Lizard, Coachella Valley Fringe-toed	*Uma inornata*	Threatened	Terrestrial	Yes
			Lizard, Island Night	*Xantusia riversiana*	Threatened	Terrestrial	No
			Sea turtle, green	*Chelonia mydas*	Endangered	Saltwater	No
			Sea turtle, leatherback	*Dermochelys coriacea*	Endangered	Saltwater	Yes
			Sea turtle, loggerhead	*Caretta caretta*	Threatened	Saltwater	No
			Sea turtle, olive ridley	*Lepidochelys olivacea*	Threatened	Saltwater	No
			Snake, Giant Garter	*Thamnophis gigas*	Threatened	Freshwater, Terrestrial	No
			Snake, San Francisco Garter	*Thamnophis sirtalis tetrataenia*	Endangered	Freshwater, Terrestrial	No
			Tortoise, Desert	*Gopherus agassizii*	Threatened	Terrestrial	Yes
			Whipsnake (=Striped Racer), Alameda	*Masticophis lateralis euryxanthus*	Threatened	Terrestrial	Yes
Florida	(109) species:						
		Amphibian					
			Salamander, Flatwoods	*Ambystoma cingulatum*	Threatened	Freshwater, Vernal pool, Terrestrial	No
		Bird					
			Caracara, Audubon's Crested	*Polyborus plancus audubonii*	Threatened	Terrestrial	No
			Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
			Kite, Everglade Snail	*Rostrhamus sociabilis plumbeus*	Endangered	Terrestrial	Yes
			Plover, Piping	*Charadrius melodus*	Endangered	Terrestrial	Yes

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	Scrub-Jay, Florida	*Aphelocoma coerulescens*	Threatened	Terrestrial	No
	Sparrow, Cape Sable Seaside	*Ammodramus maritimus mirabilis*	Endangered	Terrestrial	Yes
	Sparrow, Florida Grasshopper	*Ammodramus savannarum floridanus*	Endangered	Terrestrial	No
	Stork, Wood	*Mycteria americana*	Endangered	Terrestrial	No
	Tern, Roseate	*Sterna dougallii dougallii*	Endangered	Terrestrial	No
	Woodpecker, Red-cockaded	*Picoides borealis*	Endangered	Terrestrial	No
Bivalve					
	Bankclimber, Purple	*Elliptoideus sloatianus*	Threatened	Freshwater	No
	Mussel, Gulf Moccasinshell	*Medionidus penicillatus*	Endangered	Freshwater	No
	Mussel, Ochlockonee Moccasinshell	*Medionidus simpsonianus*	Endangered	Freshwater	No
	Mussel, Oval Pigtoe	*Pleurobema pyriforme*	Endangered	Freshwater	No
	Mussel, Shiny-rayed Pocketbook	*Lampsilis subangulata*	Endangered	Freshwater	No
	Slabshell, Chipola	*Elliptio chipolaensis*	Threatened	Freshwater	No
	Threeridge, Fat (Mussel)	*Amblema neislerii*	Endangered	Freshwater	No
Conifeyeds					
	Torreya, Florida	*Torreya taxifolia*	Endangered	Terrestrial	No
Coral					
	Staghorn coral	*Acropora cervicornis*	Threatened	Saltwater	No
Crustacean					
	Shrimp, Squirrel Chimney Cave	*Palaemonetes cummingi*	Threatened	Freshwater, Subterraneous	No
Dicot					
	Aster, Florida Golden	*Chrysopsis floridana*	Endangered	Terrestrial	No
	Bellflower, Brooksville	*Campanula robinsiae*	Endangered	Terrestrial	No
	Birds-in-a-nest, White	*Macbridea alba*	Threatened	Terrestrial	No
	Blazing Star, Scrub	*Liatris ohlingerae*	Endangered	Terrestrial	No
	Bonamia, Florida	*Bonamia grandiflora*	Threatened	Terrestrial	No
	Buckwheat, Scrub	*Eriogonum longifolium var. gnaphalifolium*	Threatened	Terrestrial	No
	Butterwort, Godfrey's	*Pinguicula ionantha*	Threatened	Terrestrial, Freshwater	No
	Cactus, Key Tree	*Pilosocereus robinii*	Endangered	Terrestrial	No
	Campion, Fringed	*Silene polypetala*	Endangered	Terrestrial	No
	Chaffseed, American	*Schwalbea americana*	Endangered	Terrestrial	No
	Fringe Tree, Pygmy	*Chionanthus pygmaeus*	Endangered	Terrestrial	No
	Gooseberry, Miccosukee	*Ribes echinellum*	Threatened	Terrestrial	No
	Gourd, Okeechobee	*Cucurbita okeechobeensis ssp. okeechobeensis*	Endangered	Terrestrial	No
	Harebells, Avon Park	*Crotalaria avonensis*	Endangered	Terrestrial	No
	Hypericum, Highlands Scrub	*Hypericum cumulicola*	Endangered	Terrestrial	No
	Jacquemontia, Beach	*Jacquemontia reclinata*	Endangered	Terrestrial, Coastal (neritic)	No
	Lead-plant, Crenulate	*Amorpha crenulata*	Endangered	Terrestrial	No
	Lupine, Scrub	*Lupinus aridorum*	Endangered	Terrestrial	No
	Meadowrue, Cooley's	*Thalictrum cooleyi*	Endangered	Terrestrial	No
	Milkpea, Small's	*Galactia smallii*	Endangered	Terrestrial	No
	Mint, Garrett's	*Dicerandra christmanii*	Endangered	Terrestrial	No
	Mint, Lakela's	*Dicerandra immaculata*	Endangered	Terrestrial	No
	Mint, Longspurred	*Dicerandra cornutissima*	Endangered	Terrestrial	No
	Mint, Scrub	*Dicerandra frutescens*	Endangered	Terrestrial	No
	Mustard, Carter's	*Warea carteri*	Endangered	Terrestrial	No
	Pawpaw, Beautiful	*Deeringothamnus pulchellus*	Endangered	Terrestrial	No
	Pawpaw, Four-petal	*Asimina tetramera*	Endangered	Terrestrial	No
	Pawpaw, Rugel's	*Deeringothamnus rugelii*	Endangered	Terrestrial	No
	Pinkroot, Gentian	*Spigelia gentianoides*	Endangered	Terrestrial	No
	Plum, Scrub	*Prunus geniculata*	Endangered	Terrestrial	No
	Polygala, Lewton's	*Polygala lewtonii*	Endangered	Terrestrial	No

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	Polygala, Tiny	*Polygala smallii*	Endangered	Terrestrial	No
	Prickly-apple, Fragrant	*Cereus eriophorus var. fragrans*	Endangered	Terrestrial	No
	Rhododendron, Chapman	*Rhododendron chapmanii*	Endangered	Terrestrial	No
	Rosemary, Apalachicola	*Conradina glabra*	Endangered	Terrestrial	No
	Rosemary, Etonia	*Conradina etonia*	Endangered	Terrestrial	No
	Rosemary, Short-leaved	*Conradina brevifolia*	Endangered	Terrestrial	No
	Sandlace	*Polygonella myriophylla*	Endangered	Terrestrial	No
	Skullcap, Florida	*Scutellaria floridana*	Threatened	Terrestrial	No
	Snakeroot	*Eryngium cuneifolium*	Endangered	Terrestrial	No
	Spurge, Deltoid	*Chamaesyce deltoidea ssp. deltoidea*	Endangered	Terrestrial	No
	Spurge, Garber's	*Chamaesyce garberi*	Threatened	Terrestrial	No
	Spurge, Telephus	*Euphorbia telephioides*	Threatened	Terrestrial	No
	Warea, Wide-leaf	*Warea amplexifolia*	Endangered	Terrestrial	No
	Water-willow, Cooley's	*Justicia cooleyi*	Endangered	Terrestrial	No
	Whitlow-wort, Papery	*Paronychia chartacea*	Threatened	Terrestrial	No
	Wings, Pigeon	*Clitoria fragrans*	Threatened	Terrestrial	No
	Wireweed	*Polygonella basiramia*	Endangered	Terrestrial	No
	Ziziphus, Florida	*Ziziphus celata*	Endangered	Terrestrial	No
Fish					
	Darter, Okaloosa	*Etheostoma okaloosae*	Endangered	Freshwater	No
	Sawfish, Smalltooth	*Pristis pectinata*	Endangered	Saltwater, Freshwater	No
	Sturgeon, Gulf	*Acipenser oxyrinchus desotoi*	Threatened	Saltwater, Freshwater	Yes
	Sturgeon, Shortnose	*Acipenser brevirostrum*	Endangered	Saltwater, Freshwater	No
Gastropod					
	Snail, Stock Island Tree	*Orthalicus reses (not incl. nesodryas)*	Threatened	Terrestrial	No
Insect					
	Butterfly, Schaus Swallowtail	*Heraclides aristodemus ponceanus*	Endangered	Terrestrial	No
Lichen					
	Cladonia, Florida Perforate	*Cladonia perforata*	Endangered	Terrestrial	No
Mammal					
	Bat, Gray	*Myotis grisescens*	Endangered	Subterraneous, Terrestrial	No
	Bat, Indiana	*Myotis sodalis*	Endangered	Subterraneous, Terrestrial	Yes
	Deer, Key	*Odocoileus virginianus clavium*	Endangered	Terrestrial	No
	Mouse, Anastasia Island Beach	*Peromyscus polionotus phasma*	Endangered	Terrestrial, Coastal (neritic)	No
	Mouse, Choctawhatchee Beach	*Peromyscus polionotus allophrys*	Endangered	Coastal (neritic), Terrestrial	Yes
	Mouse, Key Largo Cotton	*Peromyscus gossypinus allapaticola*	Endangered	Terrestrial	No
	Mouse, Perdido Key Beach	*Peromyscus polionotus trissyllepsis*	Endangered	Coastal (neritic)	Yes
	Mouse, Southeastern Beach	*Peromyscus polionotus niveiventris*	Threatened	Coastal (neritic), Terrestrial	No
	Mouse, St. Andrew Beach	*Peromyscus polionotus peninsularis*	Endangered	Terrestrial, Coastal (neritic)	No
	Panther, Florida	*Puma (=Felis) concolor coryi*	Endangered	Terrestrial	No
	Rabbit, Lower Keys Marsh	*Sylvilagus palustris hefneri*	Endangered	Terrestrial	No
	Rice Rat (=Silver Rice Rat)	*Oryzomys palustris natator*	Endangered	Terrestrial	Yes
	Vole, Florida Salt Marsh	*Microtus pennsylvanicus dukecampbelli*	Endangered	Terrestrial, Brackish	No
	Woodrat, Key Largo	*Neotoma floridana smalli*	Endangered	Terrestrial	No
Marine mml					

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			Manatee, West Indian	*Trichechus manatus*	Endangered	Saltwater	Yes
			Seal, Caribbean Monk	*Monachus tropicalis*	Endangered	Coastal (neritic), Saltwater	No
			Whale, Finback	*Balaenoptera physalus*	Endangered	Saltwater	No
			Whale, Humpback	*Megaptera novaeangliae*	Endangered	Saltwater	No
			Whale, northern right	*Eubalaena glacialis (incl. australis)*	Endangered	Saltwater	Yes
		Monocot					
			Beargrass, Britton's	*Nolina brittoniana*	Endangered	Terrestrial	No
			Beauty, Harper's	*Harperocallis flava*	Endangered	Freshwater, Terrestrial	No
			Seagrass, Johnson's	*Halophila johnsonii*	Threatened	Coastal (neritic), Saltwater	Yes
		Reptile					
			Crocodile, American	*Crocodylus acutus*	Endangered	Terrestrial, Freshwater	Yes
			Sea turtle, green	*Chelonia mydas*	Endangered	Saltwater	No
			Sea turtle, hawksbill	*Eretmochelys imbricata*	Endangered	Saltwater	Yes
			Sea turtle, Kemp's ridley	*Lepidochelys kempii*	Endangered	Saltwater	No
			Sea turtle, leatherback	*Dermochelys coriacea*	Endangered	Saltwater	Yes
			Sea turtle, loggerhead	*Caretta caretta*	Threatened	Saltwater	No
			Skink, Blue-tailed Mole	*Eumeces egregius lividus*	Threatened	Terrestrial	No
			Skink, Sand	*Neoseps reynoldsi*	Threatened	Terrestrial	No
			Snake, Atlantic Salt Marsh	*Nerodia clarkii taeniata*	Threatened	Saltwater, Terrestrial, Brackish	No
			Snake, Eastern Indigo	*Drymarchon corais couperi*	Threatened	Terrestrial	No
Georgia	(67) species:						
		Amphibian					
			Salamander, Flatwoods	*Ambystoma cingulatum*	Threatened	Freshwater, Vernal pool, Terrestrial	No
		Bird					
			Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
			Plover, Piping	*Charadrius melodus*	Endangered	Terrestrial	Yes
			Stork, Wood	*Mycteria americana*	Endangered	Terrestrial	No
			Warbler (=Wood), Kirtland's	*Dendroica kirtlandii*	Endangered	Terrestrial	No
			Woodpecker, Red-cockaded	*Picoides borealis*	Endangered	Terrestrial	No
		Bivalve					
			Bankclimber, Purple	*Elliptoideus sloatianus*	Threatened	Freshwater	No
			Combshell, Upland	*Epioblasma metastriata*	Endangered	Freshwater	Yes
			Fanshell	*Cyprogenia stegaria*	Endangered	Freshwater	No
			Kidneyshell, Triangular	*Ptychobranchus greenii*	Endangered	Freshwater	Yes
			Mucket, Pink (Pearlymussel)	*Lampsilis abrupta*	Endangered	Freshwater	No
			Mussel, Acornshell Southern	*Epioblasma othcaloogensis*	Endangered	Freshwater	Yes
			Mussel, Alabama Moccasinshell	*Medionidus acutissimus*	Threatened	Freshwater	Yes
			Mussel, Coosa Moccasinshell	*Medionidus parvulus*	Endangered	Freshwater	Yes
			Mussel, Fine-lined Pocketbook	*Lampsilis altilis*	Threatened	Freshwater	Yes
			Mussel, Gulf Moccasinshell	*Medionidus penicillatus*	Endangered	Freshwater	No
			Mussel, Oval Pigtoe	*Pleurobema pyriforme*	Endangered	Freshwater	No
			Mussel, Ovate Clubshell	*Pleurobema perovatum*	Endangered	Freshwater	Yes
			Mussel, Shiny-rayed Pocketbook	*Lampsilis subangulata*	Endangered	Freshwater	No
			Mussel, Southern Clubshell	*Pleurobema decisum*	Endangered	Freshwater	Yes
			Mussel, Southern Pigtoe	*Pleurobema georgianum*	Endangered	Freshwater	Yes
			Threeridge, Fat (Mussel)	*Amblema neislerii*	Endangered	Freshwater	No
		Conifcycds					
			Torreya, Florida	*Torreya taxifolia*	Endangered	Terrestrial	No
		Dicot					

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	Amphianthus, Little	*Amphianthus pusillus*	Threatened	Freshwater	No
	Barbara Buttons, Mohr's	*Marshallia mohrii*	Threatened	Terrestrial	No
	Campion, Fringed	*Silene polypetala*	Endangered	Terrestrial	No
	Dropwort, Canby's	*Oxypolis canbyi*	Endangered	Terrestrial, Freshwater	No
	Harperella	*Ptilimnium nodosum*	Endangered	Freshwater	No
	Pitcher-plant, Green	*Sarracenia oreophila*	Endangered	Terrestrial, Freshwater	No
	Pondberry	*Lindera melissifolia*	Endangered	Terrestrial	No
	Rattleweed, Hairy	*Baptisia arachnifera*	Endangered	Terrestrial	No
	Skullcap, Large-flowered	*Scutellaria montana*	Threatened	Terrestrial	No
	Spiraea, Virginia	*Spiraea virginiana*	Threatened	Terrestrial	No
	Sumac, Michaux's	*Rhus michauxii*	Endangered	Terrestrial	No
Ferns					
	Quillwort, Black-spored	*Isoetes melanospora*	Endangered	Vernal pool	No
	Quillwort, Mat-forming	*Isoetes tegetiformans*	Endangered	Vernal pool	No
Fish					
	Chub, Spotfin	*Erimonax monachus*	Threatened	Freshwater	Yes
	Darter, Amber	*Percina antesella*	Endangered	Freshwater	Yes
	Darter, Cherokee	*Etheostoma scotti*	Threatened	Freshwater	No
	Darter, Etowah	*Etheostoma etowahae*	Endangered	Freshwater	No
	Darter, Goldline	*Percina aurolineata*	Threatened	Freshwater	No
	Darter, Snail	*Percina tanasi*	Threatened	Freshwater	No
	Logperch, Conasauga	*Percina jenkinsi*	Endangered	Freshwater	Yes
	Madtom, Yellowfin	*Noturus flavipinnis*	Threatened	Freshwater	Yes
	Shiner, Blue	*Cyprinella caerulea*	Threatened	Freshwater	No
	Sturgeon, Gulf	*Acipenser oxyrinchus desotoi*	Threatened	Saltwater, Freshwater	Yes
	Sturgeon, Shortnose	*Acipenser brevirostrum*	Endangered	Saltwater, Freshwater	No
Insect					
	Beetle, American Burying	*Nicrophorus americanus*	Endangered	Terrestrial	No
Mammal					
	Bat, Gray	*Myotis grisescens*	Endangered	Subterraneous, Terrestrial	No
	Bat, Indiana	*Myotis sodalis*	Endangered	Subterraneous, Terrestrial	Yes
	Bat, Virginia Big-eared	*Corynorhinus (=Plecotus) townsendii virginianus*	Endangered	Terrestrial, Subterraneous	Yes
Marine mml					
	Manatee, West Indian	*Trichechus manatus*	Endangered	Saltwater	Yes
	Whale, Finback	*Balaenoptera physalus*	Endangered	Saltwater	No
	Whale, Humpback	*Megaptera novaeangliae*	Endangered	Saltwater	No
	Whale, northern right	*Eubalaena glacialis (incl. australis)*	Endangered	Saltwater	Yes
Monocot					
	Grass, Tennessee Yellow-eyed	*Xyris tennesseensis*	Endangered	Terrestrial	No
	Pink, Swamp	*Helonias bullata*	Threatened	Terrestrial, Freshwater	No
	Pogonia, Small Whorled	*Isotria medeoloides*	Threatened	Terrestrial	No
	Trillium, Persistent	*Trillium persistens*	Endangered	Terrestrial	No
	Trillium, Relict	*Trillium reliquum*	Endangered	Terrestrial	No
	Water-plantain, Kral's	*Sagittaria secundifolia*	Threatened	Freshwater	No
Reptile					
	Sea turtle, green	*Chelonia mydas*	Endangered	Saltwater	No
	Sea turtle, hawksbill	*Eretmochelys imbricata*	Endangered	Saltwater	Yes
	Sea turtle, Kemp's ridley	*Lepidochelys kempii*	Endangered	Saltwater	No
	Sea turtle, leatherback	*Dermochelys coriacea*	Endangered	Saltwater	Yes

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			Sea turtle, loggerhead	*Caretta caretta*	Threatened	Saltwater	No
			Snake, Eastern Indigo	*Drymarchon corais couperi*	Threatened	Terrestrial	No
Louisiana	(25) species:						
		Bird					
			Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
			Pelican, Brown	*Pelecanus occidentalis*	Endangered	Terrestrial	No
			Plover, Piping	*Charadrius melodus*	Endangered	Terrestrial	Yes
			Tern, California Least	*Sterna antillarum browni*	Endangered	Terrestrial	No
			Tern, Interior (population) Least	*Sterna antillarum*	Endangered	Terrestrial	No
			Woodpecker, Red-cockaded	*Picoides borealis*	Endangered	Terrestrial	No
		Bivalve					
			Mucket, Pink (Pearlymussel)	*Lampsilis abrupta*	Endangered	Freshwater	No
			Mussel, Heelsplitter Inflated	*Potamilus inflatus*	Threatened	Freshwater	No
			Pearlshell, Louisiana	*Margaritifera hembeli*	Threatened	Freshwater	No
		Dicot					
			Chaffseed, American	*Schwalbea americana*	Endangered	Terrestrial	No
			Fruit, Earth (=geocarpon)	*Geocarpon minimum*	Threatened	Terrestrial	No
		Ferns					
			Quillwort, Louisiana	*Isoetes louisianensis*	Endangered	Freshwater, Terrestrial	No
		Fish					
			Sturgeon, Gulf	*Acipenser oxyrinchus desotoi*	Threatened	Saltwater, Freshwater	Yes
			Sturgeon, Pallid	*Scaphirhynchus albus*	Endangered	Freshwater	No
		Mammal					
			Bear, Louisiana Black	*Ursus americanus luteolus*	Threatened	Terrestrial	No
		Marine mml					
			Manatee, West Indian	*Trichechus manatus*	Endangered	Saltwater	Yes
			Whale, Finback	*Balaenoptera physalus*	Endangered	Saltwater	No
			Whale, Humpback	*Megaptera novaeangliae*	Endangered	Saltwater	No
		Reptile					
			Sea turtle, green	*Chelonia mydas*	Endangered	Saltwater	No
			Sea turtle, hawksbill	*Eretmochelys imbricata*	Endangered	Saltwater	Yes
			Sea turtle, Kemp's ridley	*Lepidochelys kempii*	Endangered	Saltwater	No
			Sea turtle, leatherback	*Dermochelys coriacea*	Endangered	Saltwater	Yes
			Sea turtle, loggerhead	*Caretta caretta*	Threatened	Saltwater	No
			Tortoise, Gopher	*Gopherus polyphemus*	Threatened	Terrestrial	No
			Turtle, Ringed Sawback	*Graptemys oculifera*	Threatened	Freshwater, Terrestrial	No
Mississippi	(36) species:						
		Amphibian					
			Frog, Dusky Gopher (Mississippi DPS)	*Rana capito sevosa*	Endangered	Terrestrial, Freshwater	No
		Bird					
			Crane, Mississippi Sandhill	*Grus canadensis pulla*	Endangered	Terrestrial, Freshwater	Yes
			Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
			Pelican, Brown	*Pelecanus occidentalis*	Endangered	Terrestrial	No
			Plover, Piping	*Charadrius melodus*	Endangered	Terrestrial	Yes
			Tern, Interior (population) Least	*Sterna antillarum*	Endangered	Terrestrial	No
			Woodpecker, Red-cockaded	*Picoides borealis*	Endangered	Terrestrial	No
		Bivalve					

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			Combshell, Southern (=Penitent mussel)	*Epioblasma penita*	Endangered	Freshwater	No
			Mucket, Orangenacre	*Lampsilis perovalis*	Threatened	Freshwater	Yes
			Mussel, Alabama Moccasinshell	*Medionidus acutissimus*	Threatened	Freshwater	Yes
			Mussel, Black (=Curtus' Mussel) Clubshell	*Pleurobema curtum*	Endangered	Freshwater	No
			Mussel, Heavy Pigtoe (=Judge Tait's Mussel)	*Pleurobema taitianum*	Endangered	Freshwater	No
			Mussel, Heelsplitter Inflated	*Potamilus inflatus*	Threatened	Freshwater	No
			Mussel, Ovate Clubshell	*Pleurobema perovatum*	Endangered	Freshwater	Yes
			Mussel, Southern Clubshell	*Pleurobema decisum*	Endangered	Freshwater	Yes
			Pearlymussel, Fat Pocketbook	*Potamilus capax*	Endangered	Freshwater	No
		Dicot					
			Pondberry	*Lindera melissifolia*	Endangered	Terrestrial	No
			Potato-bean, Price's	*Apios priceana*	Threatened	Terrestrial	No
		Ferns					
			Quillwort, Louisiana	*Isoetes louisianensis*	Endangered	Freshwater, Terrestrial	No
		Fish					
			Darter, Bayou	*Etheostoma rubrum*	Threatened	Freshwater	No
			Sturgeon, Gulf	*Acipenser oxyrinchus desotoi*	Threatened	Saltwater, Freshwater	Yes
			Sturgeon, Pallid	*Scaphirhynchus albus*	Endangered	Freshwater	No
		Mammal					
			Bat, Gray	*Myotis grisescens*	Endangered	Subterraneous, Terrestrial	No
			Bat, Indiana	*Myotis sodalis*	Endangered	Subterraneous, Terrestrial	Yes
			Bear, Louisiana Black	*Ursus americanus luteolus*	Threatened	Terrestrial	No
		Marine mml					
			Whale, Finback	*Balaenoptera physalus*	Endangered	Saltwater	No
			Whale, Humpback	*Megaptera novaeangliae*	Endangered	Saltwater	No
		Reptile					
			Sea turtle, green	*Chelonia mydas*	Endangered	Saltwater	No
			Sea turtle, hawksbill	*Eretmochelys imbricata*	Endangered	Saltwater	Yes
			Sea turtle, Kemp's ridley	*Lepidochelys kempii*	Endangered	Saltwater	No
			Sea turtle, leatherback	*Dermochelys coriacea*	Endangered	Saltwater	Yes
			Sea turtle, loggerhead	*Caretta caretta*	Threatened	Saltwater	No
			Snake, Eastern Indigo	*Drymarchon corais couperi*	Threatened	Terrestrial	No
			Tortoise, Gopher	*Gopherus polyphemus*	Threatened	Terrestrial	No
			Turtle, Ringed Sawback	*Graptemys oculifera*	Threatened	Freshwater, Terrestrial	No
			Turtle, Yellow-blotched Map	*Graptemys flavimaculata*	Threatened	Freshwater, Terrestrial	No
North Carolina	(60) species:						
		Arachnid					
			Spider, Spruce-fir Moss	*Microhexura montivaga*	Endangered	Terrestrial	Yes
		Bird					
			Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
			Plover, Piping	*Charadrius melodus*	Endangered	Terrestrial	Yes
			Stork, Wood	*Mycteria americana*	Endangered	Terrestrial	No
			Tern, Roseate	*Sterna dougallii dougallii*	Endangered	Terrestrial	No
			Woodpecker, Red-cockaded	*Picoides borealis*	Endangered	Terrestrial	No
		Bivalve					
			Elktoe, Appalachian	*Alasmidonta raveneliana*	Endangered	Freshwater	Yes

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	Mussel, Dwarf Wedge	*Alasmidonta heterodon*	Endangered	Freshwater	No
	Mussel, Heelsplitter Carolina	*Lasmigona decorata*	Endangered	Freshwater	Yes
	Mussel, Oyster	*Epioblasma capsaeformis*	Endangered	Freshwater	Yes
	Pearlymussel, Little-wing	*Pegias fabula*	Endangered	Freshwater	No
	Purple Bean	*Villosa perpurpurea*	Endangered	Freshwater	Yes
	Spinymussel, James River	*Pleurobema collina*	Endangered	Freshwater	No
	Spinymussel, Tar River	*Elliptio steinstansana*	Endangered	Freshwater	No
Dicot					
	Amaranth, Seabeach	*Amaranthus pumilus*	Threatened	Coastal (neritic)	No
	Avens, Spreading	*Geum radiatum*	Endangered	Terrestrial	No
	Bittercress, Small-anthered	*Cardamine micranthera*	Endangered	Terrestrial	No
	Blazing Star, Heller's	*Liatris helleri*	Threatened	Terrestrial	No
	Bluet, Roan Mountain	*Hedyotis purpurea var. montana*	Endangered	Terrestrial	No
	Chaffseed, American	*Schwalbea americana*	Endangered	Terrestrial	No
	Coneflower, Smooth	*Echinacea laevigata*	Endangered	Terrestrial	No
	Dropwort, Canby's	*Oxypolis canbyi*	Endangered	Terrestrial, Freshwater	No
	Goldenrod, Blue Ridge	*Solidago spithamaea*	Threatened	Terrestrial	No
	Harperella	*Ptilimnium nodosum*	Endangered	Freshwater	No
	Heartleaf, Dwarf-flowered	*Hexastylis naniflora*	Threatened	Terrestrial	No
	Heather, Mountain Golden	*Hudsonia montana*	Threatened	Terrestrial	Yes
	Joint-vetch, Sensitive	*Aeschynomene virginica*	Threatened	Terrestrial, Brackish	No
	Loosestrife, Rough-leaved	*Lysimachia asperulaefolia*	Endangered	Terrestrial	No
	Meadowrue, Cooley's	*Thalictrum cooleyi*	Endangered	Terrestrial	No
	Pitcher-plant, Green	*Sarracenia oreophila*	Endangered	Terrestrial, Freshwater	No
	Pitcher-plant, Mountain Sweet	*Sarracenia rubra ssp. jonesii*	Endangered	Freshwater, Terrestrial	No
	Pondberry	*Lindera melissifolia*	Endangered	Terrestrial	No
	Spiraea, Virginia	*Spiraea virginiana*	Threatened	Terrestrial	No
	Sumac, Michaux's	*Rhus michauxii*	Endangered	Terrestrial	No
	Sunflower, Schweinitz's	*Helianthus schweinitzii*	Endangered	Terrestrial	No
Fish					
	Chub, Spotfin	*Erimonax monachus*	Threatened	Freshwater	Yes
	Shiner, Cape Fear	*Notropis mekistocholas*	Endangered	Freshwater	Yes
	Silverside, Waccamaw	*Menidia extensa*	Threatened	Freshwater	Yes
	Sturgeon, Shortnose	*Acipenser brevirostrum*	Endangered	Saltwater, Freshwater	No
Gastropod					
	Snail, Noonday	*Mesodon clarki nantahala*	Threatened	Terrestrial	No
Insect					
	Butterfly, Saint Francis' Satyr	*Neonympha mitchellii francisci*	Endangered	Terrestrial	No
Lichen					
	Lichen, Rock Gnome	*Gymnoderma lineare*	Endangered	Terrestrial	No
Mammal					
	Bat, Gray	*Myotis grisescens*	Endangered	Subterraneous, Terrestrial	No
	Bat, Indiana	*Myotis sodalis*	Endangered	Subterraneous, Terrestrial	Yes
	Bat, Virginia Big-eared	*Corynorhinus (=Plecotus) townsendii virginianus*	Endangered	Terrestrial, Subterraneous	Yes
	Squirrel, Carolina Northern Flying	*Glaucomys sabrinus coloratus*	Endangered	Terrestrial	No
Marine mml					
	Manatee, West Indian	*Trichechus manatus*	Endangered	Saltwater	Yes
	Whale, Finback	*Balaenoptera physalus*	Endangered	Saltwater	No
	Whale, Humpback	*Megaptera novaeangliae*	Endangered	Saltwater	No
	Whale, northern right	*Eubalaena glacialis (incl. australis)*	Endangered	Saltwater	Yes

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		Monocot					
			Arrowhead, Bunched	*Sagittaria fasciculata*	Endangered	Freshwater	No
			Irisette, White	*Sisyrinchium dichotomum*	Endangered	Terrestrial	No
			Pink, Swamp	*Helonias bullata*	Threatened	Terrestrial, Freshwater	No
			Pogonia, Small Whorled	*Isotria medeoloides*	Threatened	Terrestrial	No
			Sedge, Golden	*Carex lutea*	Endangered	Terrestrial	No
		Reptile					
			Sea turtle, green	*Chelonia mydas*	Endangered	Saltwater	No
			Sea turtle, hawksbill	*Eretmochelys imbricata*	Endangered	Saltwater	Yes
			Sea turtle, Kemp's ridley	*Lepidochelys kempii*	Endangered	Saltwater	No
			Sea turtle, leatherback	*Dermochelys coriacea*	Endangered	Saltwater	Yes
			Sea turtle, loggerhead	*Caretta caretta*	Threatened	Saltwater	No
Oklahoma	(19) species:						
		Bird					
			Crane, Whooping	*Grus americana*	Endangered	Terrestrial, Freshwater	Yes
			Curlew, Eskimo	*Numenius borealis*	Endangered	Terrestrial	No
			Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
			Plover, Piping	*Charadrius melodus*	Endangered	Terrestrial	Yes
			Tern, Interior (population) Least	*Sterna antillarum*	Endangered	Terrestrial	No
			Vireo, Black-capped	*Vireo atricapilla*	Endangered	Terrestrial	No
			Woodpecker, Red-cockaded	*Picoides borealis*	Endangered	Terrestrial	No
		Bivalve					
			Mussel, Scaleshell	*Leptodea leptodon*	Endangered	Freshwater	No
			Rock-pocketbook, Ouachita (=Wheeler's pm)	*Arkansia wheeleri*	Endangered	Freshwater	No
		Fish					
			Cavefish, Ozark	*Amblyopsis rosae*	Threatened	Freshwater	No
			Darter, Leopard	*Percina pantherina*	Threatened	Freshwater	Yes
			Madtom, Neosho	*Noturus placidus*	Threatened	Freshwater	No
			Shiner, Arkansas River	*Notropis girardi*	Threatened	Freshwater	Yes
		Insect					
			Beetle, American Burying	*Nicrophorus americanus*	Endangered	Terrestrial	No
		Mammal					
			Bat, Gray	*Myotis grisescens*	Endangered	Subterraneous, Terrestrial	No
			Bat, Indiana	*Myotis sodalis*	Endangered	Subterraneous, Terrestrial	Yes
			Bat, Ozark Big-eared	*Corynorhinus (=Plecotus) townsendii ingens*	Endangered	Terrestrial, Subterraneous	No
		Monocot					
			Orchid, Eastern Prairie Fringed	*Platanthera leucophaea*	Threatened	Terrestrial	No
			Orchid, Western Prairie Fringed	*Platanthera praeclara*	Threatened	Terrestrial	No
Puerto Rico	(73) species:						
		Amphibian					
			Coqui, Golden	*Eleutherodactylus jasperi*	Threatened	Freshwater, Terrestrial	Yes
			Guajon	*Eleutherodactylus cooki*	Threatened	Freshwater, Terrestrial	No
			Toad, Puerto Rican Crested	*Peltophryne lemur*	Threatened	Terrestrial, Freshwater	No
		Bird					
			Blackbird, Yellow-shouldered	*Agelaius xanthomus*	Endangered	Terrestrial	Yes

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	Hawk, Puerto Rican Broad-winged	*Buteo platypterus brunnescens*	Endangered	Terrestrial	No
	Hawk, Puerto Rican Sharp-shinned	*Accipiter striatus venator*	Endangered	Terrestrial	No
	Nightjar, Puerto Rico	*Caprimulgus noctitherus*	Endangered	Terrestrial	No
	Parrot, Puerto Rican	*Amazona vittata*	Endangered	Terrestrial	No
	Pelican, Brown	*Pelecanus occidentalis*	Endangered	Terrestrial	No
	Pigeon, Puerto Rican Plain	*Columba inornata wetmorei*	Endangered	Terrestrial	No
	Plover, Piping	*Charadrius melodus*	Endangered	Terrestrial	Yes
	Tern, Roseate	*Sterna dougallii dougallii*	Endangered	Terrestrial	No
Dicot					
	Auerodendron pauciflorum (ncn)	*Auerodendron pauciflorum*	Endangered	Terrestrial	No
	Bariaco	*Trichilia triacantha*	Endangered	Terrestrial	No
	Boxwood, Vahl's	*Buxus vahlii*	Endangered	Terrestrial	No
	Calyptranthes Thomasiana (ncn)	*Calyptranthes thomasiana*	Endangered	Terrestrial	No
	Capa Rosa	*Callicarpa ampla*	Endangered	Terrestrial	No
	Catesbaea Melanocarpa (ncn)	*Catesbaea melanocarpa*	Endangered	Terrestrial	No
	Chamaecrista glandulosa (ncn)	*Chamaecrista glandulosa var. mirabilis*	Endangered	Terrestrial	No
	Chumbo, Higo	*Harrisia portoricensis*	Threatened	Terrestrial	No
	Chupacallos	*Pleodendron macranthum*	Endangered	Terrestrial	No
	Cobana Negra	*Stahlia monosperma*	Threatened	Terrestrial	No
	Cordia bellonis (ncn)	*Cordia bellonis*	Endangered	Terrestrial	No
	Daphnopsis hellerana (ncn)	*Daphnopsis hellerana*	Endangered	Terrestrial	No
	Erubia	*Solanum drymophilum*	Endangered	Terrestrial	No
	Eugenia Woodburyana	*Eugenia woodburyana*	Endangered	Terrestrial	No
	Gesneria pauciflora (ncn)	*Gesneria pauciflora*	Threatened	Terrestrial	No
	Goetzea, Beautiful (Matabuey)	*Goetzea elegans*	Endangered	Terrestrial	No
	Higuero De Sierra	*Crescentia portoricensis*	Endangered	Terrestrial	No
	Holly, Cook's	*Ilex cookii*	Endangered	Terrestrial	No
	Ilex sintenisii (ncn)	*Ilex sintenisii*	Endangered	Terrestrial	No
	Leptocereus grantianus (ncn)	*Leptocereus grantianus*	Endangered	Terrestrial	No
	Lyonia truncata var. proctorii (ncn)	*Lyonia truncata var. proctorii*	Endangered	Terrestrial	No
	Mitracarpus Maxwelliae	*Mitracarpus maxwelliae*	Endangered	Terrestrial	No
	Mitracarpus Polycladus	*Mitracarpus polycladus*	Endangered	Terrestrial	No
	Myrcia Paganii	*Myrcia paganii*	Endangered	Terrestrial	No
	Palo Colorado (Ternstroemia luquillensis)	*Ternstroemia luquillensis*	Endangered	Terrestrial	No
	Palo de Jazmin	*Styrax portoricensis*	Endangered	Terrestrial	No
	Palo de Nigua	*Cornutia obovata*	Endangered	Terrestrial	No
	Palo de Ramon	*Banara vanderbiltii*	Endangered	Terrestrial	No
	Palo de Rosa	*Ottoschulzia rhodoxylon*	Endangered	Terrestrial	No
	Peperomia, Wheeler's	*Peperomia wheeleri*	Endangered	Terrestrial	No
	Prickly-ash, St. Thomas	*Zanthoxylum thomasianum*	Endangered	Terrestrial	No
	Schoepfia arenaria (ncn)	*Schoepfia arenaria*	Threatened	Terrestrial	No
	Ternstroemia subsessilis (ncn)	*Ternstroemia subsessilis*	Endangered	Terrestrial	No
	Uvillo	*Eugenia haematocarpa*	Endangered	Terrestrial	No
	Vernonia Proctorii (ncn)	*Vernonia proctorii*	Endangered	Terrestrial	No
	Walnut, Nogal	*Juglans jamaicensis*	Endangered	Terrestrial	No
Ferns					
	Fern, Adiantum vivesii	*Adiantum vivesii*	Endangered	Terrestrial	No
	Fern, Elaphoglossum serpens	*Elaphoglossum serpens*	Endangered	Terrestrial	No
	Fern, Thelypteris inabonensis	*Thelypteris inabonensis*	Endangered	Terrestrial	No
	Fern, Thelypteris verecunda	*Thelypteris verecunda*	Endangered	Terrestrial	No
	Fern, Thelypteris yaucoensis	*Thelypteris yaucoensis*	Endangered	Terrestrial	No
	Polystichum calderonense (ncn)	*Polystichum calderonense*	Endangered	Terrestrial	No
	Tectaria Estremerana	*Tectaria estremerana*	Endangered	Terrestrial	No
	Tree Fern, Elfin	*Cyathea dryopteroides*	Endangered	Terrestrial	No

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		Marine mml				
		Manatee, West Indian	*Trichechus manatus*	Endangered	Saltwater	Yes
		Seal, Caribbean Monk	*Monachus tropicalis*	Endangered	Coastal (neritic), Saltwater	No
		Whale, Finback	*Balaenoptera physalus*	Endangered	Saltwater	No
		Monocot				
		Aristida chaseae (ncn)	*Aristida chaseae*	Endangered	Terrestrial	No
		Cranichis Ricartii	*Cranichis ricartii*	Endangered	Terrestrial	No
		Lepanthes eltorensis (ncn)	*Lepanthes eltoroensis*	Endangered	Terrestrial	No
		Manaca, palma de	*Calyptronoma rivalis*	Threatened	Terrestrial	No
		Pelos del Diablo	*Aristida portoricensis*	Endangered	Terrestrial	No
		Reptile				
		Anole, Culebra Island Giant	*Anolis roosevelti*	Endangered	Terrestrial	Yes
		Boa, Mona	*Epicrates monensis monensis*	Threatened	Terrestrial	Yes
		Boa, Puerto Rican	*Epicrates inornatus*	Endangered	Terrestrial	No
		Gecko, Monito	*Sphaerodactylus micropithecus*	Endangered	Terrestrial	Yes
		Iguana, Mona Ground	*Cyclura stejnegeri*	Threatened	Terrestrial	Yes
		Sea turtle, green	*Chelonia mydas*	Endangered	Saltwater	No
		Sea turtle, hawksbill	*Eretmochelys imbricata*	Endangered	Saltwater	Yes
		Sea turtle, leatherback	*Dermochelys coriacea*	Endangered	Saltwater	Yes
		Sea turtle, loggerhead	*Caretta caretta*	Threatened	Saltwater	No
South Carolina	(39) species:					
		Amphibian				
		Salamander, Flatwoods	*Ambystoma cingulatum*	Threatened	Freshwater, Vernal pool, Terrestrial	No
		Bird				
		Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
		Plover, Piping	*Charadrius melodus*	Endangered	Terrestrial	Yes
		Stork, Wood	*Mycteria americana*	Endangered	Terrestrial	No
		Warbler, Bachman's	*Vermivora bachmanii*	Endangered	Terrestrial	No
		Woodpecker, Red-cockaded	*Picoides borealis*	Endangered	Terrestrial	No
		Bivalve				
		Mussel, Heelsplitter Carolina	*Lasmigona decorata*	Endangered	Freshwater	Yes
		Dicot				
		Amaranth, Seabeach	*Amaranthus pumilus*	Threatened	Coastal (neritic)	No
		Amphianthus, Little	*Amphianthus pusillus*	Threatened	Freshwater	No
		Chaffseed, American	*Schwalbea americana*	Endangered	Terrestrial	No
		Coneflower, Smooth	*Echinacea laevigata*	Endangered	Terrestrial	No
		Dropwort, Canby's	*Oxypolis canbyi*	Endangered	Terrestrial, Freshwater	No
		Gooseberry, Miccosukee	*Ribes echinellum*	Threatened	Terrestrial	No
		Harperella	*Ptilimnium nodosum*	Endangered	Freshwater	No
		Heartleaf, Dwarf-flowered	*Hexastylis naniflora*	Threatened	Terrestrial	No
		Loosestrife, Rough-leaved	*Lysimachia asperulaefolia*	Endangered	Terrestrial	No
		Pitcher-plant, Mountain Sweet	*Sarracenia rubra ssp. jonesii*	Endangered	Freshwater, Terrestrial	No
		Pondberry	*Lindera melissifolia*	Endangered	Terrestrial	No
		Sunflower, Schweinitz's	*Helianthus schweinitzii*	Endangered	Terrestrial	No
		Ferns				
		Quillwort, Black-spored	*Isoetes melanospora*	Endangered	Vernal pool	No
		Fish				
		Sturgeon, Shortnose	*Acipenser brevirostrum*	Endangered	Saltwater, Freshwater	No

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		Lichen					
			Lichen, Rock Gnome	*Gymnoderma lineare*	Endangered	Terrestrial	No
		Mammal					
			Bat, Indiana	*Myotis sodalis*	Endangered	Subterraneous, Terrestrial	Yes
		Marine mml					
			Manatee, West Indian	*Trichechus manatus*	Endangered	Saltwater	Yes
			Whale, Finback	*Balaenoptera physalus*	Endangered	Saltwater	No
			Whale, Humpback	*Megaptera novaeangliae*	Endangered	Saltwater	No
			Whale, northern right	*Eubalaena glacialis (incl. australis)*	Endangered	Saltwater	Yes
		Monocot					
			Arrowhead, Bunched	*Sagittaria fasciculata*	Endangered	Freshwater	No
			Irisette, White	*Sisyrinchium dichotomum*	Endangered	Terrestrial	No
			Pink, Swamp	*Helonias bullata*	Threatened	Terrestrial, Freshwater	No
			Pogonia, Small Whorled	*Isotria medeoloides*	Threatened	Terrestrial	No
			Trillium, Persistent	*Trillium persistens*	Endangered	Terrestrial	No
			Trillium, Relict	*Trillium reliquum*	Endangered	Terrestrial	No
		Reptile					
			Sea turtle, green	*Chelonia mydas*	Endangered	Saltwater	No
			Sea turtle, hawksbill	*Eretmochelys imbricata*	Endangered	Saltwater	Yes
			Sea turtle, Kemp's ridley	*Lepidochelys kempii*	Endangered	Saltwater	No
			Sea turtle, leatherback	*Dermochelys coriacea*	Endangered	Saltwater	Yes
			Sea turtle, loggerhead	*Caretta caretta*	Threatened	Saltwater	No
			Snake, Eastern Indigo	*Drymarchon corais couperi*	Threatened	Terrestrial	No
Tennessee	(87) species:						
		Arachnid					
			Spider, Spruce-fir Moss	*Microhexura montivaga*	Endangered	Terrestrial	Yes
		Bird					
			Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
			Stork, Wood	*Mycteria americana*	Endangered	Terrestrial	No
			Tern, Interior (population) Least	*Sterna antillarum*	Endangered	Terrestrial	No
			Woodpecker, Red-cockaded	*Picoides borealis*	Endangered	Terrestrial	No
		Bivalve					
			Combshell, Upland	*Epioblasma metastriata*	Endangered	Freshwater	Yes
			Elktoe, Appalachian	*Alasmidonta raveneliana*	Endangered	Freshwater	Yes
			Fanshell	*Cyprogenia stegaria*	Endangered	Freshwater	No
			Kidneyshell, Triangular	*Ptychobranchus greenii*	Endangered	Freshwater	Yes
			Mucket, Pink (Pearlymussel)	*Lampsilis abrupta*	Endangered	Freshwater	No
			Mussel, Alabama Moccasinshell	*Medionidus acutissimus*	Threatened	Freshwater	Yes
			Mussel, Clubshell	*Pleurobema clava*	Endangered	Freshwater	No
			Mussel, Coosa Moccasinshell	*Medionidus parvulus*	Endangered	Freshwater	Yes
			Mussel, Cumberland Combshell	*Epioblasma brevidens*	Endangered	Freshwater	Yes
			Mussel, Cumberland Elktoe	*Alasmidonta atropurpurea*	Endangered	Freshwater	Yes
			Mussel, Cumberland Pigtoe	*Pleurobema gibberum*	Endangered	Freshwater	No
			Mussel, Fine-lined Pocketbook	*Lampsilis altilis*	Threatened	Freshwater	Yes
			Mussel, Fine-rayed Pigtoe	*Fusconaia cuneolus*	Endangered	Freshwater	No
			Mussel, Ovate Clubshell	*Pleurobema perovatum*	Endangered	Freshwater	Yes
			Mussel, Oyster	*Epioblasma capsaeformis*	Endangered	Freshwater	Yes
			Mussel, Ring Pink (=Golf Stick Pearly)	*Obovaria retusa*	Endangered	Freshwater	No
			Mussel, Rough Pigtoe	*Pleurobema plenum*	Endangered	Freshwater	No
			Mussel, Shiny Pigtoe	*Fusconaia cor*	Endangered	Freshwater	No

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	Mussel, Southern Pigtoe	*Pleurobema georgianum*	Endangered	Freshwater	Yes
	Pearlymussel, Alabama Lamp	*Lampsilis virescens*	Endangered	Freshwater	No
	Pearlymussel, Appalachian Monkeyface	*Quadrula sparsa*	Endangered	Freshwater	No
	Pearlymussel, Birdwing	*Conradilla caelata*	Endangered	Freshwater	No
	Pearlymussel, Cracking	*Hemistena lata*	Endangered	Freshwater	No
	Pearlymussel, Cumberland Bean	*Villosa trabalis*	Endangered	Freshwater	No
	Pearlymussel, Cumberland Monkeyface	*Quadrula intermedia*	Endangered	Freshwater	No
	Pearlymussel, Dromedary	*Dromus dromas*	Endangered	Freshwater	No
	Pearlymussel, Green-blossom	*Epioblasma torulosa gubernaculum*	Endangered	Freshwater	No
	Pearlymussel, Little-wing	*Pegias fabula*	Endangered	Freshwater	No
	Pearlymussel, Orange-footed	*Plethobasus cooperianus*	Endangered	Freshwater	No
	Pearlymussel, Pale Lilliput	*Toxolasma cylindrellus*	Endangered	Freshwater	No
	Pearlymussel, Purple Cat's Paw	*Epioblasma obliquata obliquata*	Endangered	Freshwater	No
	Pearlymussel, Tubercled-blossom	*Epioblasma torulosa torulosa*	Endangered	Freshwater	No
	Pearlymussel, Turgid-blossom	*Epioblasma turgidula*	Endangered	Freshwater	No
	Pearlymussel, White Wartyback	*Plethobasus cicatricosus*	Endangered	Freshwater	No
	Pearlymussel, Yellow-blossom	*Epioblasma florentina florentina*	Endangered	Freshwater	No
	Purple Bean	*Villosa perpurpurea*	Endangered	Freshwater	Yes
	Rabbitsfoot, Rough	*Quadrula cylindrica strigillata*	Endangered	Freshwater	Yes
	Riffleshell, Tan	*Epioblasma florentina walkeri (=E. walkeri)*	Endangered	Freshwater	No
Crustacean					
	Crayfish, Nashville	*Orconectes shoupi*	Endangered	Freshwater	No
Dicot					
	Aster, Ruth's Golden	*Pityopsis ruthii*	Endangered	Terrestrial	No
	Avens, Spreading	*Geum radiatum*	Endangered	Terrestrial	No
	Bladderpod, Spring Creek	*Lesquerella perforata*	Endangered	Floodplain	No
	Bluet, Roan Mountain	*Hedyotis purpurea var. montana*	Endangered	Terrestrial	No
	Chaffseed, American	*Schwalbea americana*	Endangered	Terrestrial	No
	Clover, Leafy Prairie	*Dalea foliosa*	Endangered	Terrestrial	No
	Coneflower, Tennessee Purple	*Echinacea tennesseensis*	Endangered	Terrestrial	No
	Goldenrod, Blue Ridge	*Solidago spithamaea*	Threatened	Terrestrial	No
	Ground-plum, Guthrie's	*Astragalus bibullatus*	Endangered	Terrestrial	No
	Pitcher-plant, Green	*Sarracenia oreophila*	Endangered	Terrestrial, Freshwater	No
	Potato-bean, Price's	*Apios priceana*	Threatened	Terrestrial	No
	Rock-cress, Large (=Braun's)	*Arabis perstellata E. L. Braun var. ampla Rollins*	Endangered	Terrestrial	Yes
	Rock-cress, Small	*Arabis perstellata E. L. Braun var. perstellata Fernald*	Endangered	Terrestrial	Yes
	Rosemary, Cumberland	*Conradina verticillata*	Threatened	Terrestrial	No
	Sandwort, Cumberland	*Arenaria cumberlandensis*	Endangered	Terrestrial	No
	Skullcap, Large-flowered	*Scutellaria montana*	Threatened	Terrestrial	No
	Spiraea, Virginia	*Spiraea virginiana*	Threatened	Terrestrial	No
Ferns					
	Fern, American hart's-tongue	*Asplenium scolopendrium var. americanum*	Threatened	Terrestrial	No
Fish					
	Chub, Slender	*Erimystax cahni*	Threatened	Freshwater	Yes
	Chub, Spotfin	*Erimonax monachus*	Threatened	Freshwater	Yes
	Dace, Blackside	*Phoxinus cumberlandensis*	Threatened	Freshwater	No
	Darter, Amber	*Percina antesella*	Endangered	Freshwater	Yes
	Darter, Bluemask (=jewel)	*Etheostoma /*	Endangered	Freshwater	No

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			Darter, Boulder	*Etheostoma wapiti*	Endangered	Freshwater	No
			Darter, Duskytail	*Etheostoma percnurum*	Endangered	Freshwater	No
			Darter, Slackwater	*Etheostoma boschungi*	Threatened	Freshwater	Yes
			Darter, Snail	*Percina tanasi*	Threatened	Freshwater	No
			Logperch, Conasauga	*Percina jenkinsi*	Endangered	Freshwater	Yes
			Madtom, Pygmy	*Noturus stanauli*	Endangered	Freshwater	No
			Madtom, Smoky	*Noturus baileyi*	Endangered	Freshwater	Yes
			Madtom, Yellowfin	*Noturus flavipinnis*	Threatened	Freshwater	Yes
			Shiner, Blue	*Cyprinella caerulea*	Threatened	Freshwater	No
			Shiner, Palezone	*Notropis albizonatus*	Endangered	Freshwater	No
			Sturgeon, Pallid	*Scaphirhynchus albus*	Endangered	Freshwater	No
		Gastropod					
			Marstonia, Royal (=Royal Snail)	*Pyrgulopsis ogmorhaphe*	Endangered	Terrestrial	No
			Riversnail, Anthony's	*Athearnia anthonyi*	Endangered	Freshwater	No
			Snail, Painted Snake Coiled Forest	*Anguispira picta*	Threatened	Terrestrial	No
		Lichen					
			Lichen, Rock Gnome	*Gymnoderma lineare*	Endangered	Terrestrial	No
		Mammal					
			Bat, Gray	*Myotis grisescens*	Endangered	Subterraneous, Terrestrial	No
			Bat, Indiana	*Myotis sodalis*	Endangered	Subterraneous, Terrestrial	Yes
			Squirrel, Carolina Northern Flying	*Glaucomys sabrinus coloratus*	Endangered	Terrestrial	No
		Monocot					
			Grass, Tennessee Yellow-eyed	*Xyris tennesseensis*	Endangered	Terrestrial	No
			Pogonia, Small Whorled	*Isotria medeoloides*	Threatened	Terrestrial	No
Texas	(90) species:						
		Amphibian					
			Salamander, Barton Springs	*Eurycea sosorum*	Endangered	Freshwater, Terrestrial	No
			Salamander, San Marcos	*Eurycea nana*	Threatened	Freshwater, Terrestrial	Yes
			Salamander, Texas Blind	*Typhlomolge rathbuni*	Endangered	Subterraneous, Freshwater	No
			Toad, Houston	*Bufo houstonensis*	Endangered	Terrestrial, Freshwater	Yes
		Arachnid					
			Harvestman, Bee Creek Cave	*Texella reddelli*	Endangered	Terrestrial, Subterraneous	No
			Harvestman, Bone Cave	*Texella reyesi*	Endangered	Terrestrial, Subterraneous	No
			Harvestman, Robber Baron Cave	*Texella cokendolpheri*	Endangered	Subterraneous, Terrestrial	Yes
			Meshweaver, Braken Bat Cave	*Cicurina venii*	Endangered	Terrestrial, Subterraneous	Yes
			Pseudoscorpion, Tooth Cave	*Tartarocreagris texana*	Endangered	Terrestrial, Subterraneous	No
			Spider, Government Canyon Cave	*Neoleptoneta microps*	Endangered	Subterraneous, Terrestrial	No
			Spider, Madla's Cave	*Cicurina madla*	Endangered	Subterraneous, Terrestrial	Yes
			Spider, Robber Baron Cave	*Cicurina baronia*	Endangered	Terrestrial, Subterraneous	Yes
			Spider, Tooth Cave	*Neoleptoneta myopica*	Endangered	Terrestrial, Subterraneous	No
			Spider, Vesper Cave	*Cicurina vespera*	Endangered	Subterraneous, Terrestrial	No
		Bird					

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	Crane, Whooping	*Grus americana*	Endangered	Terrestrial, Freshwater	Yes
	Curlew, Eskimo	*Numenius borealis*	Endangered	Terrestrial	No
	Eagle, Bald	*Haliaeetus leucocephalus*	Threatened	Terrestrial	No
	Falcon, Northern Aplomado	*Falco femoralis septentrionalis*	Endangered	Terrestrial	No
	Flycatcher, Southwestern Willow	*Empidonax traillii extimus*	Endangered	Terrestrial	Yes
	Owl, Mexican Spotted	*Strix occidentalis lucida*	Threatened	Terrestrial	Yes
	Pelican, Brown	*Pelecanus occidentalis*	Endangered	Terrestrial	No
	Plover, Piping	*Charadrius melodus*	Endangered	Terrestrial	Yes
	Prairie-chicken, Attwater's Greater	*Tympanuchus cupido attwateri*	Endangered	Terrestrial	No
	Tern, Interior (population) Least	*Sterna antillarum*	Endangered	Terrestrial	No
	Vireo, Black-capped	*Vireo atricapilla*	Endangered	Terrestrial	No
	Warbler (=Wood), Golden-cheeked	*Dendroica chrysoparia*	Endangered	Terrestrial	No
	Woodpecker, Red-cockaded	*Picoides borealis*	Endangered	Terrestrial	No
Crustacean					
	Amphipod, Peck's Cave	*Stygobromus (=Stygonectes) pecki*	Endangered	Subterraneous, Freshwater	No
Dicot					
	Ambrosia, South Texas	*Ambrosia cheiranthifolia*	Endangered	Terrestrial	No
	Ayenia, Texas	*Ayenia limitaris*	Endangered	Terrestrial	No
	Bladderpod, White	*Lesquerella pallida*	Endangered	Terrestrial	No
	Bladderpod, Zapata	*Lesquerella thamnophila*	Endangered	Terrestrial	Yes
	Cactus, Black Lace	*Echinocereus reichenbachii var. albertii*	Endangered	Terrestrial	No
	Cactus, Bunched Cory	*Coryphantha ramillosa*	Threatened	Terrestrial	No
	Cactus, Chisos Mountain Hedgehog	*Echinocereus chisoensis var. chisoensis*	Threatened	Terrestrial	No
	Cactus, Lloyd's Mariposa	*Echinomastus mariposensis*	Threatened	Terrestrial	No
	Cactus, Nellie Cory	*Coryphantha minima*	Endangered	Terrestrial	No
	Cactus, Sneed Pincushion	*Coryphantha sneedii var. sneedii*	Endangered	Terrestrial	No
	Cactus, Star	*Astrophytum asterias*	Endangered	Terrestrial	No
	Cactus, Tobusch Fishhook	*Ancistrocactus tobuschii*	Endangered	Terrestrial	No
	Cat's-eye, Terlingua Creek	*Cryptantha crassipes*	Endangered	Terrestrial	No
	Dawn-flower, Texas Prairie (=Texas Bitterweed)	*Hymenoxys texana*	Endangered	Terrestrial	No
	Dogweed, Ashy	*Thymophylla tephroleuca*	Endangered	Terrestrial	No
	Frankenia, Johnston's	*Frankenia johnstonii*	Endangered	Terrestrial	No
	Fruit, Earth (=geocarpon)	*Geocarpon minimum*	Threatened	Terrestrial	No
	Manioc, Walker's	*Manihot walkerae*	Endangered	Terrestrial	No
	Oak, Hinckley	*Quercus hinckleyi*	Threatened	Terrestrial	No
	Phlox, Texas Trailing	*Phlox nivalis ssp. texensis*	Endangered	Terrestrial	No
	Pitaya, Davis' Green	*Echinocereus viridiflorus var. davisii*	Endangered	Terrestrial	No
	Poppy-mallow, Texas	*Callirhoe scabriuscula*	Endangered	Terrestrial	No
	Rush-pea, Slender	*Hoffmannseggia tenella*	Endangered	Terrestrial	No
	Sand-verbena, Large-fruited	*Abronia macrocarpa*	Endangered	Terrestrial	No
	Snowbells, Texas	*Styrax texanus*	Endangered	Terrestrial	No
	Sunflower, Pecos	*Helianthus paradoxus*	Threatened	Terrestrial, Freshwater	No
	Wild-buckwheat, Gypsum	*Eriogonum gypsophilum*	Threatened	Terrestrial	Yes
Fish					
	Darter, Fountain	*Etheostoma fonticola*	Endangered	Freshwater	Yes
	Gambusia, Big Bend	*Gambusia gaigei*	Endangered	Freshwater	No
	Gambusia, Clear Creek	*Gambusia heterochir*	Endangered	Freshwater	No
	Gambusia, Pecos	*Gambusia nobilis*	Endangered	Freshwater	No
	Gambusia, San Marcos	*Gambusia georgei*	Endangered	Freshwater	Yes
	Minnow, Devils River	*Dionda diaboli*	Threatened	Freshwater	No
	Pupfish, Comanche Springs	*Cyprinodon elegans*	Endangered	Freshwater	No

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	Pupfish, Leon Springs	*Cyprinodon bovinus*	Endangered	Freshwater	Yes
	Shiner, Arkansas River	*Notropis girardi*	Threatened	Freshwater	Yes
Gastropod					
	Snail, Pecos Assiminea	*Assiminea pecos*	Endangered	Freshwater	Yes
Insect					
	Beetle, American Burying	*Nicrophorus americanus*	Endangered	Terrestrial	No
	Beetle, Coffin Cave Mold	*Batrisodes texanus*	Endangered	Subterraneous	No
	Beetle, Comal Springs Dryopid	*Stygoparnus comalensis*	Endangered	Subterraneous, Freshwater	No
	Beetle, Comal Springs Riffle	*Heterelmis comalensis*	Endangered	Subterraneous, Freshwater	No
	Beetle, Helotes Mold	*Batrisodes venyivi*	Endangered	Subterraneous	Yes
	Beetle, Kretschmarr Cave Mold	*Texamaurops reddelli*	Endangered	Subterraneous	No
	Beetle, Tooth Cave Ground	*Rhadine persephone*	Endangered	Subterraneous	No
	Rhadine exilis (ncn)	*Rhadine exilis*	Endangered	Terrestrial, Subterraneous	Yes
	Rhadine infernalis (ncn)	*Rhadine infernalis*	Endangered	Terrestrial, Subterraneous	Yes
Mammal					
	Bat, Mexican Long-nosed	*Leptonycteris nivalis*	Endangered	Subterraneous, Terrestrial	No
	Bear, Louisiana Black	*Ursus americanus luteolus*	Threatened	Terrestrial	No
	Jaguarundi, Gulf Coast	*Herpailurus (=Felis) yagouaroundi cacomitli*	Endangered	Terrestrial	No
	Jaguarundi, Sinaloan	*Herpailurus (=Felis) yagouaroundi tolteca*	Endangered	Terrestrial	No
	Ocelot	*Leopardus (=Felis) pardalis*	Endangered	Terrestrial	No
Marine mml					
	Whale, Finback	*Balaenoptera physalus*	Endangered	Saltwater	No
	Whale, Humpback	*Megaptera novaeangliae*	Endangered	Saltwater	No
Monocot					
	Ladies'-tresses, Navasota	*Spiranthes parksii*	Endangered	Terrestrial	No
	Pondweed, Little Aguja Creek	*Potamogeton clystocarpus*	Endangered	Freshwater	No
	Wild-rice, Texas	*Zizania texana*	Endangered	Freshwater	Yes
Reptile					
	Sea turtle, green	*Chelonia mydas*	Endangered	Saltwater	No
	Sea turtle, hawksbill	*Eretmochelys imbricata*	Endangered	Saltwater	Yes
	Sea turtle, Kemp's ridley	*Lepidochelys kempii*	Endangered	Saltwater	No
	Sea turtle, leatherback	*Dermochelys coriacea*	Endangered	Saltwater	Yes
	Sea turtle, loggerhead	*Caretta caretta*	Threatened	Saltwater	No
	Snake, Concho Water	*Nerodia paucimaculata*	Threatened	Freshwater, Terrestrial	Yes

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Species Listing for stes with Corn grain or Sileage Agriculture STATE NAME	tSpecies Number	Common name	Status	Taxonomic group	Critical habitat	Scientific name	habitat type
Alabama	(87) species:						
		Salamander, Flatwoods	Threatened	Amphibian	No	*(Ambystoma cingulatum)*	Freshwater, Vernal pool, Terrestrial
		Salamander, Red Hills	Threatened	Amphibian	No	*(Phaeognathus hubrichti)*	Freshwater, Terrestrial
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Stork, Wood	Endangered	Bird	No	*(Mycteria americana)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
		Combshell, Southern (=Penitent mussel)	Endangered	Bivalve	No	*(Epioblasma penita)*	Freshwater
		Combshell, Upland	Endangered	Bivalve	Yes	*(Epioblasma metastriata)*	Freshwater
		Kidneyshell, Triangular	Endangered	Bivalve	Yes	*(Ptychobranchus greenii)*	Freshwater
		Mucket, Orangenacre	Threatened	Bivalve	Yes	*(Lampsilis perovalis)*	Freshwater
		Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No	*(Lampsilis abrupta)*	Freshwater
		Mussel, Acornshell Southern	Endangered	Bivalve	Yes	*(Epioblasma othcaloogensis)*	Freshwater
		Mussel, Alabama Moccasinshell	Threatened	Bivalve	Yes	*(Medionidus acutissimus)*	Freshwater
		Mussel, Coosa Moccasinshell	Endangered	Bivalve	Yes	*(Medionidus parvulus)*	Freshwater
		Mussel, Cumberland Combshell	Endangered	Bivalve	Yes	*(Epioblasma brevidens)*	Freshwater
		Mussel, Dark Pigtoe	Endangered	Bivalve	Yes	*(Pleurobema furvum)*	Freshwater
		Mussel, Fine-lined Pocketbook	Threatened	Bivalve	Yes	*(Lampsilis altilis)*	Freshwater
Alabama	(87) species:						
		Mussel, Fine-rayed Pigtoe	Endangered	Bivalve	No	*(Fusconaia cuneolus)*	Freshwater
		Mussel, Flat Pigtoe (=Marshall's Mussel)	Endangered	Bivalve	No	*(Pleurobema marshalli)*	Freshwater
		Mussel, Heavy Pigtoe (=Judge Tait's Mussel)	Endangered	Bivalve	No	*(Pleurobema taitianum)*	Freshwater
		Mussel, Heelsplitter Inflated	Threatened	Bivalve	No	*(Potamilus inflatus)*	Freshwater
		Mussel, Ovate Clubshell	Endangered	Bivalve	Yes	*(Pleurobema perovatum)*	Freshwater
		Mussel, Ring Pink (=Golf Stick Pearly)	Endangered	Bivalve	No	*(Obovaria retusa)*	Freshwater
		Mussel, Rough Pigtoe	Endangered	Bivalve	No	*(Pleurobema plenum)*	Freshwater
		Mussel, Shiny Pigtoe	Endangered	Bivalve	No	*(Fusconaia cor)*	Freshwater
		Mussel, Shiny-rayed Pocketbook	Endangered	Bivalve	No	*(Lampsilis subangulata)*	Freshwater
		Mussel, Southern Clubshell	Endangered	Bivalve	Yes	*(Pleurobema decisum)*	Freshwater
		Mussel, Southern Pigtoe	Endangered	Bivalve	Yes	*(Pleurobema georgianum)*	Freshwater
		Pearlymussel, Alabama Lamp	Endangered	Bivalve	No	*(Lampsilis virescens)*	Freshwater
		Pearlymussel, Cracking	Endangered	Bivalve	No	*(Hemistena lata)*	Freshwater
		Pearlymussel, Cumberland Monkeyface	Endangered	Bivalve	No	*(Quadrula intermedia)*	Freshwater
		Pearlymussel, Orange-footed	Endangered	Bivalve	No	*(Plethobasus cooperianus)*	Freshwater
		Pearlymussel, Pale Lilliput	Endangered	Bivalve	No	*(Toxolasma cylindrellus)*	Freshwater
		Pearlymussel, Turgid-blossom	Endangered	Bivalve	No	*(Epioblasma turgidula)*	Freshwater
		Pearlymussel, White Wartyback	Endangered	Bivalve	No	*(Plethobasus cicatricosus)*	Freshwater
		Stirrupshell	Endangered	Bivalve	No	*(Quadrula stapes)*	Freshwater
		Shrimp, Alabama Cave	Endangered	Crustacean	No	*(Palaemonias alabamae)*	Freshwater
		Amphianthus, Little	Threatened	Dicot	No	*(Amphianthus pusillus)*	Freshwater
Alabama	(87) species:						
		Barbara Buttons, Mohr's	Threatened	Dicot	No	*(Marshallia mohrii)*	Terrestrial
		Bladderpod, Lyrate	Threatened	Dicot	No	*(Lesquerella lyrata)*	Terrestrial
		Clover, Leafy Prairie	Endangered	Dicot	No	*(Dalea foliosa)*	Terrestrial
		Harperella	Endangered	Dicot	No	*(Ptilimnium nodosum)*	Freshwater
		Leather-flower, Alabama	Endangered	Dicot	No	*(Clematis socialis)*	Terrestrial
		Leather-flower, Morefield's	Endangered	Dicot	No	*(Clematis morefieldii)*	Terrestrial
		Pitcher-plant, Alabama Canebrake	Endangered	Dicot	No	*(Sarracenia rubra alabamensis)*	Freshwater, Terrestrial
		Pitcher-plant, Green	Endangered	Dicot	No	*(Sarracenia oreophila)*	Terrestrial, Freshwater
		Potato-bean, Price's	Threatened	Dicot	No	*(Apios priceana)*	Terrestrial

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		Fern, Alabama Streak-sorus	Threatened	Ferns	No	*(Thelypteris pilosa var. alabamensis)*	Terrestrial
		Fern, American hart's-tongue	Threatened	Ferns	No	*(Asplenium scolopendrium var. americanum)*	Terrestrial
		Quillwort, Louisiana	Endangered	Ferns	No	*(Isoetes louisianensis)*	Freshwater, Terrestrial
		Cavefish, Alabama	Endangered	Fish	Yes	*(Speoplatyrhinus poulsoni)*	Freshwater
		Chub, Spotfin	Threatened	Fish	Yes	*(Erimonax monachus)*	Freshwater
		Darter, Boulder	Endangered	Fish	No	*(Etheostoma wapiti)*	Freshwater
		Darter, Goldline	Threatened	Fish	No	*(Percina aurolineata)*	Freshwater
		Darter, Slackwater	Threatened	Fish	Yes	*(Etheostoma boschungi)*	Freshwater
		Darter, Snail	Threatened	Fish	No	*(Percina tanasi)*	Freshwater
		Darter, Vermilion	Endangered	Fish	No	*(Etheostoma chermocki)*	Freshwater
		Darter, Watercress	Endangered	Fish	No	*(Etheostoma nuchale)*	Freshwater
		Madtom, Yellowfin	Threatened	Fish	Yes	*(Noturus flavipinnis)*	Freshwater
Alabama	(87) species:						
		Sculpin, Pygmy	Threatened	Fish	No	*(Cottus paulus (=pygmaeus))*	Freshwater
		Shiner, Blue	Threatened	Fish	No	*(Cyprinella caerulea)*	Freshwater
		Shiner, Cahaba	Endangered	Fish	No	*(Notropis cahabae)*	Freshwater
		Shiner, Palezone	Endangered	Fish	No	*(Notropis albizonatus)*	Freshwater
		Sturgeon, Alabama	Endangered	Fish	No	*(Scaphirhynchus suttkusi)*	Freshwater
		Sturgeon, Gulf	Threatened	Fish	Yes	*(Acipenser oxyrinchus desotoi)*	Saltwater, Freshwater
		Campeloma, Slender	Endangered	Gastropod	No	*(Campeloma decampi)*	Freshwater
		Elimia, Laey	Threatened	Gastropod	No	*(Elimia crenatella)*	Freshwater
		Pebblesnail, Flat	Endangered	Gastropod	No	*(Lepyrium showalteri)*	Freshwater
		Riversnail, Anthony's	Endangered	Gastropod	No	*(Athearnia anthonyi)*	Freshwater
		Rocksnail, Painted	Threatened	Gastropod	No	*(Leptoxis taeniata)*	Freshwater
		Rocksnail, Plicate	Endangered	Gastropod	No	*(Leptoxis plicata)*	Freshwater
		Rocksnail, Round	Threatened	Gastropod	No	*(Leptoxis ampla)*	Freshwater
		Snail, Armored	Endangered	Gastropod	No	*(Pyrgulopsis (=Marstonia) pachyta)*	Freshwater
		Snail, Lioplax Cylindrical	Endangered	Gastropod	No	*(Lioplax cyclostomaformis)*	Freshwater
		Snail, Tulotoma	Endangered	Gastropod	No	*(Tulotoma magnifica)*	Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Mouse, Alabama Beach	Endangered	Mammal	Yes	*(Peromyscus polionotus ammobates)*	Terrestrial, Coastal (neritic)
		Mouse, Perdido Key Beach	Endangered	Mammal	Yes	*(Peromyscus polionotus trissyllepsis)*	Coastal (neritic)
		Grass, Tennessee Yellow-eyed	Endangered	Monocot	No	*(Xyris tennesseensis)*	Terrestrial
Alabama	(87) species:						
		Trillium, Relict	Endangered	Monocot	No	*(Trillium reliquum)*	Terrestrial
		Water-plantain, Kral's	Threatened	Monocot	No	*(Sagittaria secundifolia)*	Freshwater
		Sea turtle, loggerhead	Threatened	Reptile	No	*(Caretta caretta)*	Saltwater
		Snake, Eastern Indigo	Threatened	Reptile	No	*(Drymarchon corais couperi)*	Terrestrial
		Tortoise, Gopher	Threatened	Reptile	No	*(Gopherus polyphemus)*	Terrestrial
		Turtle, Alabama Red-bellied	Endangered	Reptile	No	*(Pseudemys alabamensis)*	Terrestrial, Freshwater
		Turtle, Flattened Musk	Threatened	Reptile	No	*(Sternotherus depressus)*	Freshwater, Terrestrial
Arizona	(53) species:						
		Frog, Chiricahua Leopard	Threatened	Amphibian	No	*(Rana chiricahuensis)*	Freshwater, Terrestrial
		Salamander, Sonora Tiger	Endangered	Amphibian	No	*(Ambystoma tigrinum stebbinsi)*	Vernal pool, Freshwater, Terrestrial
		Bobwhite, Masked	Endangered	Bird	No	*(Colinus virginianus ridgwayi)*	Terrestrial
		Condor, California	Endangered	Bird	Yes	*(Gymnogyps californianus)*	Terrestrial
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Falcon, Northern Aplomado	Endangered	Bird	No	*(Falco femoralis septentrionalis)*	Terrestrial
		Flycatcher, Southwestern Willow	Endangered	Bird	Yes	*(Empidonax traillii extimus)*	Terrestrial
		Owl, Mexican Spotted	Threatened	Bird	Yes	*(Strix occidentalis lucida)*	Terrestrial
		Pygmy-owl, Cactus Ferruginous	Endangered	Bird	No	*(Glaucidium brasilianum cactorum)*	Terrestrial
		Rail, Yuma Clapper	Endangered	Bird	No	*(Rallus longirostris yumanensis)*	Terrestrial
		Blue-star, Kearney's	Endangered	Dicot	No	*(Amsonia kearneyana)*	Terrestrial
		Cactus, Arizona Hedgehog	Endangered	Dicot	No	*(Echinocereus triglochidiatus var. arizonicus)*	Terrestrial
		Cactus, Brady Pincushion	Endangered	Dicot	No	*(Pediocactus bradyi)*	Terrestrial

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		Cactus, Cochise Pincushion	Threatened	Dicot	No	*(Coryphantha robbinsorum)*	Terrestrial
Arizona	(53) species:						
		Cactus, Nichol's Turk's Head	Endangered	Dicot	No	*(Echinocactus horizonthalonius var. nicholii)*	Terrestrial
		Cactus, Peebles Navajo	Endangered	Dicot	No	*(Pediocactus peeblesianus peeblesianus)*	Terrestrial
		Cactus, Pima Pineapple	Endangered	Dicot	No	*(Coryphantha scheeri var. robustispina)*	Terrestrial
		Cactus, Siler Pincushion	Threatened	Dicot	No	*(Pediocactus (=Echinocactus, =Utahia) sileri)*	Terrestrial
		Cliffrose, Arizona	Endangered	Dicot	No	*(Purshia (=cowania) subintegra)*	Terrestrial
		Fleabane, Zuni	Threatened	Dicot	No	*(Erigeron rhizomatus)*	Terrestrial
		Groundsel, San Francisco Peaks	Threatened	Dicot	Yes	*(Senecio franciscanus)*	Terrestrial
		Milk-vetch, Sentry	Endangered	Dicot	No	*(Astragalus cremnophylax var. cremnophylax)*	Terrestrial
		Milkweed, Welsh's	Threatened	Dicot	Yes	*(Asclepias welshii)*	Terrestrial
		Umbel, Huachuca Water	Endangered	Dicot	Yes	*(Lilaeopsis schaffneriana var. recurva)*	Terrestrial, Freshwater
		Catfish, Yaqui	Threatened	Fish	Yes	*(Ictalurus pricei)*	Freshwater
		Chub, Bonytail	Endangered	Fish	Yes	*(Gila elegans)*	Freshwater
		Chub, Gila	Endangered	Fish	Yes	*(Gila intermedia)*	Freshwater
		Chub, Humpback	Endangered	Fish	Yes	*(Gila cypha)*	Freshwater
		Chub, Yaqui	Endangered	Fish	Yes	*(Gila purpurea)*	Freshwater
		Minnow, Loach	Threatened	Fish	Yes	*(Tiaroga cobitis)*	Freshwater
		Pupfish, Desert	Endangered	Fish	Yes	*(Cyprinodon macularius)*	Freshwater
		Shiner, Beautiful	Threatened	Fish	Yes	*(Cyprinella formosa)*	Freshwater
		Spikedace	Threatened	Fish	Yes	*(Meda fulgida)*	Freshwater
		Spinedace, Little Colorado	Threatened	Fish	Yes	*(Lepidomeda vittata)*	Freshwater
		Squawfish, Colorado	Endangered	Fish	Yes	*(Ptychocheilus lucius)*	Freshwater
Arizona	(53) species:						
		Sucker, Razorback	Endangered	Fish	Yes	*(Xyrauchen texanus)*	Freshwater
		Topminnow, Gila (Yaqui)	Endangered	Fish	No	*(Poeciliopsis occidentalis)*	Freshwater
		Trout, Apache	Threatened	Fish	No	*(Oncorhynchus apache)*	Freshwater
		Trout, Gila	Endangered	Fish	No	*(Oncorhynchus gilae)*	Freshwater
		Ambersnail, Kanab	Endangered	Gastropod	No	*(Oxyloma haydeni kanabensis)*	Freshwater, Terrestrial
		Bat, Lesser (=Sanborn's) Long-nosed	Endangered	Mammal	No	*(Leptonycteris curasoae yerbabuenae)*	Subterraneous, Terrestrial
		Ferret, Black-footed	Endangered	Mammal	No	*(Mustela nigripes)*	Terrestrial
		Jaguar	Endangered	Mammal	No	*(Panthera onca)*	Terrestrial
		Jaguarundi, Sinaloan	Endangered	Mammal	No	*(Herpailurus (=Felis) yagouaroundi tolteca)*	Terrestrial
		Ocelot	Endangered	Mammal	No	*(Leopardus (=Felis) pardalis)*	Terrestrial
		Pronghorn, Sonoran	Endangered	Mammal	No	*(Antilocapra americana sonoriensis)*	Terrestrial
		Squirrel, Mount Graham Red	Endangered	Mammal	Yes	*(Tamiasciurus hudsonicus grahamensis)*	Terrestrial
		Vole, Hualapai Mexican	Endangered	Mammal	No	*(Microtus mexicanus hualpaiensis)*	Terrestrial
		Wolf, Gray	Endangered	Mammal	Yes	*(Canis lupus)*	Terrestrial
		Ladies'-tresses, Canelo Hills	Endangered	Monocot	No	*(Spiranthes delitescens)*	Terrestrial
		Sedge, Navajo	Threatened	Monocot	Yes	*(Carex specuicola)*	Terrestrial
		Rattlesnake, New Mexican Ridge-nosed	Threatened	Reptile	Yes	*(Crotalus willardi obscurus)*	Terrestrial
		Tortoise, Desert	Threatened	Reptile	Yes	*(Gopherus agassizii)*	Terrestrial
Arkansas	(21) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
Arkansas	(21) species:						
		Fatmucket, Arkansas	Threatened	Bivalve	No	*(Lampsilis powelli)*	Freshwater
		Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No	*(Lampsilis abrupta)*	Freshwater
		Mussel, Scaleshell	Endangered	Bivalve	No	*(Leptodea leptodon)*	Freshwater
		Mussel, Speckled Pocketbook	Endangered	Bivalve	No	*(Lampsilis streckeri)*	Freshwater
		Pearlymussel, Fat Pocketbook	Endangered	Bivalve	No	*(Potamilus capax)*	Freshwater
		Rock-pocketbook, Ouachita (=Wheeler's pm)	Endangered	Bivalve	No	*(Arkansia wheeleri)*	Freshwater
		Crayfish, Cave (Cambarus aculabrum)	Endangered	Crustacean	No	*(Cambarus aculabrum)*	Freshwater

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		Bladderpod, Missouri	Threatened	Dicot	No	*(Lesquerella filiformis)*	Terrestrial
		Fruit, Earth (=geocarpon)	Threatened	Dicot	No	*(Geocarpon minimum)*	Terrestrial
		Harperella	Endangered	Dicot	No	*(Ptilimnium nodosum)*	Freshwater
		Pondberry	Endangered	Dicot	No	*(Lindera melissifolia)*	Terrestrial
		Cavefish, Ozark	Threatened	Fish	No	*(Amblyopsis rosae)*	Freshwater
		Darter, Leopard	Threatened	Fish	Yes	*(Percina pantherina)*	Freshwater
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
		Shagreen, Magazine Mountain	Threatened	Gastropod	No	*(Mesodon magazinensis)*	Terrestrial
		Beetle, American Burying	Endangered	Insect	No	*(Nicrophorus americanus)*	Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Ozark Big-eared	Endangered	Mammal	No	*(Corynorhinus (=Plecotus) townsendii ingens)*	Terrestrial, Subterraneous
California	(252) species:						
		Frog, California Red-legged	Threatened	Amphibian	Yes	*(Rana aurora draytonii)*	Terrestrial, Freshwater
		Frog, Mountain Yellow-legged	Endangered	Amphibian	No	*(Rana muscosa)*	Terrestrial, Freshwater
		Salamander, California Tiger	Endangered	Amphibian	No	*(Ambystoma californiense)*	Terrestrial, Vernal pool
California	(252) species:						
		Salamander, Desert Slender	Endangered	Amphibian	No	*(Batrachoseps aridus)*	Freshwater, Terrestrial
		Salamander, Santa Cruz Long-toed	Endangered	Amphibian	No	*(Ambystoma macrodactylum croceum)*	Freshwater, Vernal pool, Terrestrial
		Toad, Arroyo Southwestern	Endangered	Amphibian	Yes	*(Bufo californicus (=microscaphus))*	Freshwater, Terrestrial
		Condor, California	Endangered	Bird	Yes	*(Gymnogyps californianus)*	Terrestrial
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Flycatcher, Southwestern Willow	Endangered	Bird	Yes	*(Empidonax traillii extimus)*	Terrestrial
		Gnatcatcher, Coastal California	Threatened	Bird	Yes	*(Polioptila californica californica)*	Terrestrial
		Murrelet, Marbled	Threatened	Bird	Yes	*(Brachyramphus marmoratus marmoratus)*	Freshwater, Terrestrial, Saltwater
		Owl, Northern Spotted	Threatened	Bird	Yes	*(Strix occidentalis caurina)*	Terrestrial
		Pelican, Brown	Endangered	Bird	No	*(Pelecanus occidentalis)*	Terrestrial
		Plover, Western Snowy	Threatened	Bird	Yes	*(Charadrius alexandrinus nivosus)*	Terrestrial
		Rail, California Clapper	Endangered	Bird	No	*(Rallus longirostris obsoletus)*	Terrestrial
		Rail, Light-footed Clapper	Endangered	Bird	No	*(Rallus longirostris levipes)*	Terrestrial
		Rail, Yuma Clapper	Endangered	Bird	No	*(Rallus longirostris yumanensis)*	Terrestrial
		Shrike, San Clemente Loggerhead	Endangered	Bird	No	*(Lanius ludovicianus mearnsi)*	Terrestrial
		Sparrow, San Clemente Sage	Threatened	Bird	No	*(Amphispiza belli clementeae)*	Terrestrial
		Tern, California Least	Endangered	Bird	No	*(Sterna antillarum browni)*	Terrestrial
		Vireo, Least Bell's	Endangered	Bird	Yes	*(Vireo bellii pusillus)*	Terrestrial
		Cypress, Gowen	Threatened	Conf/cycds	No	*(Cupressus goveniana ssp. goveniana)*	Terrestrial
		Abalone, White	Endangered	Crustacean	No	*(Haliotis sorenseni)*	Saltwater
		Crayfish, Shasta	Endangered	Crustacean	No	*(Pacifastacus fortis)*	Freshwater
California	(252) species:						
		Fairy Shrimp, Conservancy Fairy	Endangered	Crustacean	Yes	*(Branchinecta conservatio)*	Vernal pool
		Fairy Shrimp, Longhorn	Endangered	Crustacean	Yes	*(Branchinecta longiantenna)*	Vernal pool
		Fairy Shrimp, Riverside	Endangered	Crustacean	Yes	*(Streptocephalus woottoni)*	Vernal pool
		Fairy Shrimp, San Diego	Endangered	Crustacean	Yes	*(Branchinecta sandiegonensis)*	Vernal pool
		Fairy Shrimp, Vernal Pool	Threatened	Crustacean	Yes	*(Branchinecta lynchii)*	Vernal pool
		Shrimp, California Freshwater	Endangered	Crustacean	No	*(Syncaris pacifica)*	Freshwater
		Tadpole Shrimp, Vernal Pool	Endangered	Crustacean	Yes	*(Lepidurus packardi)*	Vernal pool
		Adobe Sunburst, San Joaquin	Threatened	Dicot	No	*(Pseudobahia peirsonii)*	Terrestrial
		Ambrosia, San Diego	Endangered	Dicot	No	*(Ambrosia pumila)*	Terrestrial
		Baccharis, Encinitas	Threatened	Dicot	No	*(Baccharis vanessae)*	Terrestrial
		Barberry, Island	Endangered	Dicot	No	*(Berberis pinnata ssp. insularis)*	Terrestrial
		Barberry, Nevin's	Endangered	Dicot	No	*(Berberis nevinii)*	Terrestrial
		Bedstraw, Island	Endangered	Dicot	No	*(Galium buxifolium)*	Terrestrial
		Bird's-beak, Palmate-bracted	Endangered	Dicot	No	*(Cordylanthus palmatus)*	Terrestrial
		Bird's-beak, Pennell's	Endangered	Dicot	No	*(Cordylanthus tenuis ssp. capillaris)*	Terrestrial
		Bird's-beak, salt marsh	Endangered	Dicot	No	*(Cordylanthus maritimus ssp. maritimus)*	Saltwater
		Bird's-beak, Soft	Endangered	Dicot	No	*(Cordylanthus mollis ssp. mollis)*	Brackish, Saltwater

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		Bladderpod, San Bernardino Mountains	Endangered	Dicot	Yes	*(Lesquerella kingii ssp. bernardina)*	Terrestrial
		Bluecurls, Hidden Lake	Threatened	Dicot	No	*(Trichostema austromontanum ssp. compactum)*	Terrestrial
		Broom, San Clemente Island	Endangered	Dicot	No	*(Lotus dendroideus ssp. traskiae)*	Terrestrial
		Buckwheat, Cushenbury	Endangered	Dicot	Yes	*(Eriogonum ovalifolium var. vineum)*	Terrestrial
California	(252) species:						
		Buckwheat, Ione (incl. Irish Hill)	Endangered	Dicot	No	*(Eriogonum apricum (incl. var. prostratum))*	Terrestrial
		Buckwheat, Southern Mountain Wild	Threatened	Dicot	No	*(Eriogonum kennedyi var. austromontanum)*	Terrestrial
		Bush-mallow, San Clemente Island	Endangered	Dicot	No	*(Malacothamnus clementinus)*	Terrestrial
		Bush-mallow, Santa Cruz Island	Endangered	Dicot	No	*(Malacothamnus fasciculatus var. nesioticus)*	Terrestrial
		Butterweed, Layne's	Threatened	Dicot	No	*(Senecio layneae)*	Terrestrial
		Button-celery, San Diego	Endangered	Dicot	No	*(Eryngium aristulatum var. parishii)*	Terrestrial
		Cactus, Bakersfield	Endangered	Dicot	No	*(Opuntia treleasei)*	Terrestrial
		Ceanothus, Coyote	Endangered	Dicot	No	*(Ceanothus ferrisae)*	Terrestrial
		Ceanothus, Vail Lake	Threatened	Dicot	No	*(Ceanothus ophiochilus)*	Terrestrial
		Checker-mallow, Keck's	Endangered	Dicot	Yes	*(Sidalcea keckii)*	Terrestrial
		Checker-mallow, Kenwood Marsh	Endangered	Dicot	No	*(Sidalcea oregana ssp. valida)*	Terrestrial
		Checker-mallow, Pedate	Endangered	Dicot	No	*(Sidalcea pedata)*	Terrestrial
		Clarkia, Pismo	Endangered	Dicot	No	*(Clarkia speciosa ssp. immaculata)*	Terrestrial
		Clarkia, Presidio	Endangered	Dicot	No	*(Clarkia franciscana)*	Terrestrial
		Clarkia, Springville	Threatened	Dicot	No	*(Clarkia springvillensis)*	Terrestrial
		Clarkia, Vine Hill	Endangered	Dicot	No	*(Clarkia imbricata)*	Terrestrial
		Clover, Fleshy Owl's	Threatened	Dicot	Yes	*(Castilleja campestris ssp. succulenta)*	Vernal pool
		Clover, Monterey	Endangered	Dicot	No	*(Trifolium trichocalyx)*	Terrestrial
		Clover, Showy Indian	Endangered	Dicot	No	*(Trifolium amoenum)*	Terrestrial
		Crownbeard, Big-leaved	Threatened	Dicot	No	*(Verbesina dissita)*	Terrestrial
		Crownscale, San Jacinto Valley	Endangered	Dicot	No	*(Atriplex coronata var. notatior)*	Terrestrial
California	(252) species:						
		Daisy, Parish's	Threatened	Dicot	Yes	*(Erigeron parishii)*	Freshwater
		Dudleya, Conejo	Threatened	Dicot	No	*(Dudleya abramsii ssp. parva)*	Terrestrial
		Dudleya, Marcescent	Threatened	Dicot	No	*(Dudleya cymosa ssp. marcescens)*	Terrestrial
		Dudleya, Santa Clara Valley	Endangered	Dicot	No	*(Dudleya setchellii)*	Terrestrial
		Dudleya, Santa Cruz Island	Threatened	Dicot	No	*(Dudleya nesiotica)*	Terrestrial
		Dudleya, Santa Monica Mountains	Threatened	Dicot	No	*(Dudleya cymosa ssp. ovatifolia)*	Terrestrial
		Dudleya, Verity's	Threatened	Dicot	No	*(Dudleya verityi)*	Terrestrial
		Evening-primrose, Antioch Dunes	Endangered	Dicot	Yes	*(Oenothera deltoides ssp. howellii)*	Terrestrial
		Evening-primrose, San Benito	Threatened	Dicot	No	*(Camissonia benitensis)*	Terrestrial
		Fiddleneck, Large-flowered	Endangered	Dicot	Yes	*(Amsinckia grandiflora)*	Terrestrial
		Flannelbush, Mexican	Endangered	Dicot	No	*(Fremontodendron mexicanum)*	Terrestrial
		Fringepod, Santa Cruz Island	Endangered	Dicot	No	*(Thysanocarpus conchuliferus)*	Terrestrial
		Gilia, Hoffmann's Slender-flowered	Endangered	Dicot	No	*(Gilia tenuiflora ssp. hoffmannii)*	Terrestrial
		Gilia, Monterey	Endangered	Dicot	No	*(Gilia tenuiflora ssp. arenaria)*	Terrestrial
		Golden Sunburst, Hartweg's	Endangered	Dicot	No	*(Pseudobahia bahiifolia)*	Terrestrial
		Goldfields, Burke's	Endangered	Dicot	No	*(Lasthenia burkei)*	Terrestrial
		Goldfields, Contra Costa	Endangered	Dicot	Yes	*(Lasthenia conjugens)*	Terrestrial
		Grass, Hairy Orcutt	Endangered	Dicot	Yes	*(Orcuttia pilosa)*	Vernal pool
		Grass, Sacramento Orcutt	Endangered	Dicot	Yes	*(Orcuttia viscida)*	Vernal pool
		Grass, Slender Orcutt	Threatened	Dicot	Yes	*(Orcuttia tenuis)*	Vernal pool
		Jewelflower, California	Endangered	Dicot	No	*(Caulanthus californicus)*	Terrestrial
California	(252) species:						
		Larkspur, Baker's	Endangered	Dicot	Yes	*(Delphinium bakeri)*	Terrestrial
		Larkspur, San Clemente Island	Endangered	Dicot	No	*(Delphinium variegatum ssp. kinkiense)*	Terrestrial
		Larkspur, Yellow	Endangered	Dicot	Yes	*(Delphinium luteum)*	Terrestrial
		Layia, Beach	Endangered	Dicot	No	*(Layia carnosa)*	Terrestrial, Coastal (neritic)
		Liveforever, Santa Barbara Island	Endangered	Dicot	No	*(Dudleya traskiae)*	Terrestrial

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		Lupine, Clover	Endangered	Dicot	No	*(Lupinus tidestromii)*	Coastal (neritic)
		Lupine, Nipomo Mesa	Endangered	Dicot	No	*(Lupinus nipomensis)*	Coastal (neritic)
		Malacothrix, Island	Endangered	Dicot	No	*(Malacothrix squalida)*	Terrestrial
		Malacothrix, Santa Cruz Island	Endangered	Dicot	No	*(Malacothrix indecora)*	Terrestrial
		Mallow, Kern	Endangered	Dicot	No	*(Eremalche kernensis)*	Terrestrial
		Manzanita, Del Mar	Endangered	Dicot	No	*(Arctostaphylos glandulosa ssp. crassifolia)*	Terrestrial
		Manzanita, Ione	Threatened	Dicot	No	*(Arctostaphylos myrtifolia)*	Terrestrial
		Manzanita, Morro	Threatened	Dicot	No	*(Arctostaphylos morroensis)*	Terrestrial
		Manzanita, Pallid	Threatened	Dicot	No	*(Arctostaphylos pallida)*	Terrestrial
		Manzanita, Santa Rosa Island	Endangered	Dicot	No	*(Arctostaphylos confertiflora)*	Terrestrial
		Meadowfoam, Butte County	Endangered	Dicot	Yes	*(Limnanthes floccosa ssp. californica)*	Vernal pool
		Meadowfoam, Sebastopol	Endangered	Dicot	No	*(Limnanthes vinculans)*	Freshwater, Terrestrial
		Milk-vetch, Braunton's	Endangered	Dicot	No	*(Astragalus brauntonii)*	Terrestrial
		Milk-vetch, Clara Hunt's	Endangered	Dicot	No	*(Astragalus clarianus)*	Terrestrial
		Milk-vetch, Coachella Valley	Endangered	Dicot	Yes	*(Astragalus lentiginosus var. coachellae)*	Terrestrial
		Milk-vetch, Coastal Dunes	Endangered	Dicot	No	*(Astragalus tener var. titi)*	Terrestrial
California	(252) species:						
		Milk-vetch, Cushenbury	Endangered	Dicot	Yes	*(Astragalus albens)*	Terrestrial
		Milk-vetch, Lane Mountain	Endangered	Dicot	Yes	*(Astragalus jaegerianus)*	Terrestrial
		Milk-vetch, Pierson's	Threatened	Dicot	Yes	*(Astragalus magdalenae var. peirsonii)*	Terrestrial
		Milk-vetch, Triple-ribbed	Endangered	Dicot	No	*(Astragalus tricarinatus)*	Terrestrial
		Milk-vetch, Ventura Marsh	Endangered	Dicot	Yes	*(Astragalus pycnostachyus var. lanosissimus)*	Terrestrial, Freshwater
		Mint, Otay Mesa	Endangered	Dicot	No	*(Pogogyne nudiuscula)*	Terrestrial
		Mint, San Diego Mesa	Endangered	Dicot	No	*(Pogogyne abramsii)*	Terrestrial
		Monardella, Willowy	Endangered	Dicot	No	*(Monardella linoides ssp. viminea)*	Terrestrial
		Mountainbalm, Indian Knob	Endangered	Dicot	No	*(Eriodictyon altissimum)*	Terrestrial
		Mountain-mahogany, Catalina Island	Endangered	Dicot	No	*(Cercocarpus traskiae)*	Terrestrial
		Mustard, Slender-petaled	Endangered	Dicot	No	*(Thelypodium stenopetalum)*	Terrestrial
		Navarretia, Few-flowered	Endangered	Dicot	No	*(Navarretia leucocephala ssp. pauciflora (=N. pauciflora))*	Vernal pool, Terrestrial
		Navarretia, Many-flowered	Endangered	Dicot	No	*(Navarretia leucocephala ssp. plieantha)*	Terrestrial, Vernal pool
		Navarretia, Spreading	Threatened	Dicot	No	*(Navarretia fossalis)*	Vernal pool
		Oxytheca, Cushenbury	Endangered	Dicot	Yes	*(Oxytheca parishii var. goodmaniana)*	Terrestrial
		Paintbrush, Ash-grey Indian	Threatened	Dicot	No	*(Castilleja cinerea)*	Terrestrial
		Paintbrush, San Clemente Island Indian	Endangered	Dicot	No	*(Castilleja grisea)*	Terrestrial
		Paintbrush, Soft-leaved	Endangered	Dicot	No	*(Castilleja mollis)*	Terrestrial
		Paintbrush, Tiburon	Endangered	Dicot	No	*(Castilleja affinis ssp. neglecta)*	Terrestrial
		Penny-cress, Kneeland Prairie	Endangered	Dicot	Yes	*(Thlaspi californicum)*	Terrestrial
		Pentachaeta, Lyon's	Endangered	Dicot	No	*(Pentachaeta lyonii)*	Terrestrial
California	(252) species:						
		Phacelia, Island	Endangered	Dicot	No	*(Phacelia insularis ssp. insularis)*	Terrestrial
		Phlox, Yreka	Endangered	Dicot	No	*(Phlox hirsuta)*	Terrestrial
		Potentilla, Hickman's	Endangered	Dicot	No	*(Potentilla hickmanii)*	Terrestrial
		Pussypaws, Mariposa	Threatened	Dicot	No	*(Calyptridium pulchellum)*	Terrestrial
		Rock-cress, Hoffmann's	Endangered	Dicot	No	*(Arabis hoffmannii)*	Terrestrial
		Rock-cress, McDonald's	Endangered	Dicot	No	*(Arabis mcdonaldiana)*	Terrestrial
		Rock-cress, Santa Cruz Island	Endangered	Dicot	No	*(Sibara filifolia)*	Terrestrial
		Rush-rose, Island	Threatened	Dicot	No	*(Helianthemum greenei)*	Terrestrial
		Sandwort, Bear Valley	Threatened	Dicot	No	*(Arenaria ursina)*	Terrestrial
		Sandwort, Marsh	Endangered	Dicot	No	*(Arenaria paludicola)*	Freshwater, Terrestrial
		Sea-blite, California	Endangered	Dicot	No	*(Suaeda californica)*	Terrestrial
		Spineflower, Howell's	Endangered	Dicot	No	*(Chorizanthe howellii)*	Terrestrial
		Spineflower, Monterey	Threatened	Dicot	Yes	*(Chorizanthe pungens var. pungens)*	Terrestrial
		Spineflower, Orcutt's	Endangered	Dicot	No	*(Chorizanthe orcuttiana)*	Terrestrial
		Spineflower, Robust	Endangered	Dicot	Yes	*(Chorizanthe robusta var. robusta)*	Terrestrial
		Spineflower, Slender-horned	Endangered	Dicot	No	*(Dodecahema leptoceras)*	Terrestrial
		Spineflower, Sonoma	Endangered	Dicot	No	*(Chorizanthe valida)*	Terrestrial

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		Spurge, Hoover's	Threatened	Dicot	Yes	*(Chamaesyce hooveri)*	Vernal pool
		Stickyseed, Baker's	Endangered	Dicot	No	*(Blennosperma bakeri)*	Vernal pool
		Stonecrop, Lake County	Endangered	Dicot	No	*(Parvisedum leiocarpum)*	Vernal pool
		Taraxacum, California	Endangered	Dicot	No	*(Taraxacum californicum)*	Terrestrial
California	(252) species:						
		Tarplant, Gaviota	Endangered	Dicot	Yes	*(Deinandra increscens ssp. villosa)*	Terrestrial
		Tarplant, Otay	Threatened	Dicot	Yes	*(Deinandra (=Hemizonia) conjugens)*	Terrestrial
		Tarplant, Santa Cruz	Threatened	Dicot	Yes	*(Holocarpha macradenia)*	Terrestrial
		Thistle, Chorro creek Bog	Endangered	Dicot	No	*(Cirsium fontinale var. obispoense)*	Terrestrial, Freshwater
		Thistle, Fountain	Endangered	Dicot	No	*(Cirsium fontinale var. fontinale)*	Terrestrial
		Thistle, La Graciosa	Endangered	Dicot	Yes	*(Cirsium loncholepis)*	Coastal (neritic), Freshwater, Saltwater, Brackish
		Thistle, Suisun	Endangered	Dicot	No	*(Cirsium hydrophilum var. hydrophilum)*	Brackish, Terrestrial
		Thornmint, San Diego	Threatened	Dicot	No	*(Acanthomintha ilicifolia)*	Terrestrial
		Tuctoria, Green's	Endangered	Dicot	Yes	*(Tuctoria greenei)*	Vernal pool
		Vervain, California	Threatened	Dicot	No	*(Verbena californica)*	Terrestrial
		Wallflower, Contra Costa	Endangered	Dicot	Yes	*(Erysimum capitatum var. angustatum)*	Terrestrial
		Wallflower, Menzie's	Endangered	Dicot	No	*(Erysimum menziesii)*	Terrestrial
		Watercress, Gambel's	Endangered	Dicot	No	*(Rorippa gambellii)*	Terrestrial, Brackish, Freshwater
		Woodland-star, San Clemente Island	Endangered	Dicot	No	*(Lithophragma maximum)*	Terrestrial
		Woolly-star, Santa Ana River	Endangered	Dicot	No	*(Eriastrum densifolium ssp. sanctorum)*	Terrestrial
		Woolly-threads, San Joaquin	Endangered	Dicot	No	*(Monolopia (=Lembertia) congdonii)*	Terrestrial
		Yerba Santa, Lompoc	Endangered	Dicot	Yes	*(Eriodictyon capitatum)*	Terrestrial
		Chub, Bonytail	Endangered	Fish	Yes	*(Gila elegans)*	Freshwater
		Chub, Mohave Tui	Endangered	Fish	No	*(Gila bicolor mohavensis)*	Freshwater
		Goby, Tidewater	Endangered	Fish	Yes	*(Eucyclogobius newberryi)*	Freshwater
		Pupfish, Desert	Endangered	Fish	Yes	*(Cyprinodon macularius)*	Freshwater
California	(252) species:						
		Salmon, Chinook (California Coastal Run)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) tshawytscha)*	Freshwater, Saltwater, Brackish
		Salmon, Chinook (Central Valley Fall Run)	Threatened	Fish	No	*(Oncorhynchus (=Salmo) tshawytscha)*	Brackish, Freshwater, Saltwater
		Salmon, Chinook (Central Valley Spring Run)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) tshawytscha)*	Brackish, Saltwater, Freshwater
		Salmon, Chinook (Sacramento River Winter Run)	Endangered	Fish	No	*(Oncorhynchus (=Salmo) tshawytscha)*	Saltwater, Freshwater, Brackish
		Salmon, Coho (Central California Coast population)	Endangered	Fish	No	*(Oncorhynchus (=Salmo) kisutch)*	Saltwater, Brackish, Freshwater
		Salmon, Coho (Southern OR/Northern CA Coast)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) kisutch)*	Freshwater, Brackish, Saltwater
		Smelt, Delta	Threatened	Fish	Yes	*(Hypomesus transpacificus)*	Freshwater, Brackish
		Squawfish, Colorado	Endangered	Fish	Yes	*(Ptychocheilus lucius)*	Freshwater
		Steelhead, (California Central Valley population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Brackish, Freshwater, Saltwater
		Steelhead, (Central California Coast population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Freshwater, Saltwater, Brackish
		Steelhead, (Northern California population)	Threatened	Fish	No	*(Oncorhynchus (=Salmo) mykiss)*	Saltwater, Brackish, Freshwater
		Steelhead, (South-Central California population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Freshwater, Saltwater, Brackish
		Steelhead, (Southern California population)	Endangered	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Brackish, Saltwater, Freshwater
		Stickleback, Unarmored Threespine	Endangered	Fish	No	*(Gasterosteus aculeatus williamsoni)*	Freshwater
		Sturgeon, green	Threatened	Fish	No	*(Acipenser medirostris)*	
		Sucker, Lost River	Endangered	Fish	No	*(Deltistes luxatus)*	Freshwater
		Sucker, Razorback	Endangered	Fish	Yes	*(Xyrauchen texanus)*	Freshwater
		Sucker, Santa Ana	Threatened	Fish	Yes	*(Catostomus santaanae)*	Freshwater
		Trout, Lahontan Cutthroat	Threatened	Fish	No	*(Oncorhynchus clarki henshawi)*	Freshwater
		Trout, Little Kern Golden	Threatened	Fish	Yes	*(Oncorhynchus aguabonita whitei)*	Freshwater
		Trout, Paiute Cutthroat	Threatened	Fish	No	*(Oncorhynchus clarki seleniris)*	Freshwater
California	(252) species:						
		Snail, Morro Shoulderband	Endangered	Gastropod	Yes	*(Helminthoglypta walkeriana)*	Terrestrial
		Beetle, Delta Green Ground	Threatened	Insect	Yes	*(Elaphrus viridis)*	Vernal pool, Terrestrial
		Beetle, Valley Elderberry Longhorn	Threatened	Insect	Yes	*(Desmocerus californicus dimorphus)*	Terrestrial
		Butterfly, Bay Checkerspot	Threatened	Insect	Yes	*(Euphydryas editha bayensis)*	Terrestrial

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		Butterfly, Behren's Silverspot	Endangered	Insect	No	*(Speyeria zerene behrensii)*	Terrestrial
		Butterfly, Callippe Silverspot	Endangered	Insect	No	*(Speyeria callippe callippe)*	Terrestrial
		Butterfly, El Segundo Blue	Endangered	Insect	No	*(Euphilotes battoides allyni)*	Terrestrial
		Butterfly, Lange's Metalmark	Endangered	Insect	No	*(Apodemia mormo langei)*	Terrestrial
		Butterfly, Lotis Blue	Endangered	Insect	No	*(Lycaeides argyrognomon lotis)*	Terrestrial
		Butterfly, Myrtle's Silverspot	Endangered	Insect	No	*(Speyeria zerene myrtleae)*	Terrestrial
		Butterfly, Palos Verdes Blue	Endangered	Insect	Yes	*(Glaucopsyche lygdamus palosverdesensis)*	Terrestrial
		Butterfly, Quino Checkerspot	Endangered	Insect	Yes	*(Euphydryas editha quino (=E. e. wrighti))*	Terrestrial
		Butterfly, Smith's Blue	Endangered	Insect	No	*(Euphilotes enoptes smithi)*	Terrestrial
		Fly, Delhi Sands Flower-loving	Endangered	Insect	No	*(Rhaphiomidas terminatus abdominalis)*	Terrestrial
		Moth, Kern Primrose Sphinx	Threatened	Insect	No	*(Euproserpinus euterpe)*	Terrestrial
		Skipper, Laguna Mountain	Endangered	Insect	No	*(Pyrgus ruralis lagunae)*	Terrestrial
		Fox, San Joaquin Kit	Endangered	Mammal	No	*(Vulpes macrotis mutica)*	Terrestrial
		Fox, San Miguel Island	Endangered	Mammal	Yes	*(Urocyon littoralis littoralis)*	Terrestrial
		Fox, Santa Catalina Island	Endangered	Mammal	Yes	*(Urocyon littoralis catalinae)*	Terrestrial
		Fox, Santa Cruz Island	Endangered	Mammal	Yes	*(Urocyon littoralis santacruzae)*	Terrestrial
		Fox, Santa Rosa Island	Endangered	Mammal	Yes	*(Urocyon littoralis santarosae)*	Terrestrial
California	(252) species:						
		Kangaroo Rat, Fresno	Endangered	Mammal	Yes	*(Dipodomys nitratoides exilis)*	Terrestrial
		Kangaroo Rat, Giant	Endangered	Mammal	No	*(Dipodomys ingens)*	Terrestrial
		Kangaroo Rat, Morro Bay	Endangered	Mammal	Yes	*(Dipodomys heermanni morroensis)*	Terrestrial
		Kangaroo Rat, San Bernardino Merriam's	Endangered	Mammal	Yes	*(Dipodomys merriami parvus)*	Terrestrial
		Kangaroo Rat, Stephens'	Endangered	Mammal	No	*(Dipodomys stephensi (incl. D. cascus))*	Terrestrial
		Kangaroo Rat, Tipton	Endangered	Mammal	No	*(Dipodomys nitratoides nitratoides)*	Terrestrial
		Mountain Beaver, Point Arena	Endangered	Mammal	No	*(Aplodontia rufa nigra)*	Freshwater, Terrestrial
		Mouse, Pacific Pocket	Endangered	Mammal	No	*(Perognathus longimembris pacificus)*	Terrestrial
		Mouse, Salt Marsh Harvest	Endangered	Mammal	No	*(Reithrodontomys raviventris)*	Terrestrial
		Rabbit, Riparian Brush	Endangered	Mammal	No	*(Sylvilagus bachmani riparius)*	Terrestrial
		Sheep, Peninsular Bighorn	Endangered	Mammal	Yes	*(Ovis canadensis)*	Terrestrial
		Sheep, Sierra Nevada Bighorn	Endangered	Mammal	No	*(Ovis canadensis californiana)*	Terrestrial
		Shrew, Buena Vista Lake Ornate	Endangered	Mammal	Yes	*(Sorex ornatus relictus)*	Terrestrial
		Vole, Amargosa	Endangered	Mammal	Yes	*(Microtus californicus scirpensis)*	Terrestrial
		Woodrat, Riparian	Endangered	Mammal	No	*(Neotoma fuscipes riparia)*	Terrestrial
		Otter, Southern Sea	Threatened	Marine mml	No	*(Enhydra lutris nereis)*	Saltwater
		Seal, Guadalupe Fur	Threatened	Marine mml	No	*(Arctocephalus townsendi)*	Coastal (neritic), Saltwater
		Alopecurus, Sonoma	Endangered	Monocot	No	*(Alopecurus aequalis var. sonomensis)*	Terrestrial
		Amole, Cammatta Canyon	Threatened	Monocot	Yes	*(Chlorogalum purpureum var. reductum)*	Terrestrial
		Amole, Purple	Threatened	Monocot	Yes	*(Chlorogalum purpureum var. purpureum)*	Terrestrial
		Bluegrass, San Bernardino	Endangered	Monocot	No	*(Poa atropurpurea)*	Terrestrial
California	(252) species:						
		Brodiaea, Chinese Camp	Threatened	Monocot	No	*(Brodiaea pallida)*	Terrestrial
		Brodiaea, Thread-leaved	Threatened	Monocot	Yes	*(Brodiaea filifolia)*	Terrestrial
		Grass, California Orcutt	Endangered	Monocot	No	*(Orcuttia californica)*	Vernal pool, Terrestrial
		Grass, Colusa	Threatened	Monocot	No	*(Neostapfia colusana)*	Vernal pool
		Grass, San Joaquin Valley Orcutt	Threatened	Monocot	Yes	*(Orcuttia inaequalis)*	Vernal pool
		Grass, Solano	Endangered	Monocot	Yes	*(Tuctoria mucronata)*	Vernal pool, Terrestrial
		Lily, Pitkin Marsh	Endangered	Monocot	No	*(Lilium pardalinum ssp. pitkinense)*	Freshwater
		Lily, Western	Endangered	Monocot	No	*(Lilium occidentale)*	Terrestrial
		Onion, Munz's	Endangered	Monocot	No	*(Allium munzii)*	Terrestrial
		Piperia, Yadon's	Endangered	Monocot	No	*(Piperia yadonii)*	Terrestrial
		Sedge, White	Endangered	Monocot	No	*(Carex albida)*	Freshwater, Terrestrial
		Lizard, Blunt-nosed Leopard	Endangered	Reptile	No	*(Gambelia silus)*	Terrestrial
		Lizard, Coachella Valley Fringe-toed	Threatened	Reptile	Yes	*(Uma inornata)*	Terrestrial
		Lizard, Island Night	Threatened	Reptile	No	*(Xantusia riversiana)*	Terrestrial
		Sea turtle, olive ridley	Threatened	Reptile	No	*(Lepidochelys olivacea)*	Saltwater

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		Snake, Giant Garter	Threatened	Reptile	No	*(Thamnophis gigas)*	Freshwater, Terrestrial
		Tortoise, Desert	Threatened	Reptile	Yes	*(Gopherus agassizii)*	Terrestrial
		Whipsnake (=Striped Racer), Alameda	Threatened	Reptile	Yes	*(Masticophis lateralis euryxanthus)*	Terrestrial
Colorado	(20) species:						
		Crane, Whooping	Endangered	Bird	Yes	*(Grus americana)*	Terrestrial, Freshwater
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Owl, Mexican Spotted	Threatened	Bird	Yes	*(Strix occidentalis lucida)*	Terrestrial
Colorado	(20) species:						
		Bladderpod, Dudley Bluffs	Threatened	Dicot	No	*(Lesquerella congesta)*	Terrestrial
		Butterfly Plant, Colorado	Threatened	Dicot	Yes	*(Gaura neomexicana var. coloradensis)*	Terrestrial
		Cactus, Knowlton	Endangered	Dicot	No	*(Pediocactus knowltonii)*	Terrestrial
		Cactus, Mesa Verde	Threatened	Dicot	No	*(Sclerocactus mesae-verdae)*	Terrestrial
		Cactus, Uinta Basin Hookless	Threatened	Dicot	No	*(Sclerocactus glaucus)*	Terrestrial
		Milk-vetch, Mancos	Endangered	Dicot	No	*(Astragalus humillimus)*	Terrestrial
		Twinpod, Dudley Bluffs	Threatened	Dicot	No	*(Physaria obcordata)*	Terrestrial
		Wild-buckwheat, Clay-loving	Endangered	Dicot	Yes	*(Eriogonum pelinophilum)*	Terrestrial
		Chub, Bonytail	Endangered	Fish	Yes	*(Gila elegans)*	Freshwater
		Chub, Humpback	Endangered	Fish	Yes	*(Gila cypha)*	Freshwater
		Squawfish, Colorado	Endangered	Fish	Yes	*(Ptychocheilus lucius)*	Freshwater
		Sucker, Razorback	Endangered	Fish	Yes	*(Xyrauchen texanus)*	Freshwater
		Trout, Greenback Cutthroat	Threatened	Fish	No	*(Oncorhynchus clarki stomias)*	Freshwater
		Butterfly, Uncompahgre Fritillary	Endangered	Insect	No	*(Boloria acrocnema)*	Terrestrial
		Ferret, Black-footed	Endangered	Mammal	No	*(Mustela nigripes)*	Terrestrial
		Mouse, Preble's Meadow Jumping	Threatened	Mammal	Yes	*(Zapus hudsonius preblei)*	Terrestrial
		Ladies'-tresses, Ute	Threatened	Monocot	No	*(Spiranthes diluvialis)*	Terrestrial
Connecticut	(10) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Roseate	Endangered	Bird	No	*(Sterna dougallii dougallii)*	Terrestrial
		Mussel, Dwarf Wedge	Endangered	Bivalve	No	*(Alasmidonta heterodon)*	Freshwater
Connecticut	(10) species:						
		Gerardia, Sandplain	Endangered	Dicot	No	*(Agalinis acuta)*	Terrestrial
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater
		Beetle, Puritan Tiger	Threatened	Insect	No	*(Cicindela puritana)*	Terrestrial, Coastal (neritic)
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
		Turtle, Bog (Northern population)	Threatened	Reptile	No	*(Clemmys muhlenbergii)*	Terrestrial, Freshwater
Delaware	(7) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater
		Squirrel, Delmarva Peninsula Fox	Endangered	Mammal	No	*(Sciurus niger cinereus)*	Terrestrial
		Pink, Swamp	Threatened	Monocot	No	*(Helonias bullata)*	Terrestrial, Freshwater
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
		Turtle, Bog (Northern population)	Threatened	Reptile	No	*(Clemmys muhlenbergii)*	Terrestrial, Freshwater
Florida	(90) species:						
		Salamander, Flatwoods	Threatened	Amphibian	No	*(Ambystoma cingulatum)*	Freshwater, Vernal pool, Terrestrial
		Caracara, Audubon's Crested	Threatened	Bird	No	*(Polyborus plancus audubonii)*	Terrestrial
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Kite, Everglade Snail	Endangered	Bird	Yes	*(Rostrhamus sociabilis plumbeus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Scrub-Jay, Florida	Threatened	Bird	No	*(Aphelocoma coerulescens)*	Terrestrial
		Sparrow, Cape Sable Seaside	Endangered	Bird	Yes	*(Ammodramus maritimus mirabilis)*	Terrestrial

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Florida	(90) species:						
		Sparrow, Florida Grasshopper	Endangered	Bird	No	*(Ammodramus savannarum floridanus)*	Terrestrial
		Stork, Wood	Endangered	Bird	No	*(Mycteria americana)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
		Bankclimber, Purple	Threatened	Bivalve	No	*(Elliptoideus sloatianus)*	Freshwater
		Mussel, Gulf Moccasinshell	Endangered	Bivalve	No	*(Medionidus penicillatus)*	Freshwater
		Mussel, Ochlockonee Moccasinshell	Endangered	Bivalve	No	*(Medionidus simpsonianus)*	Freshwater
		Mussel, Oval Pigtoe	Endangered	Bivalve	No	*(Pleurobema pyriforme)*	Freshwater
		Mussel, Shiny-rayed Pocketbook	Endangered	Bivalve	No	*(Lampsilis subangulata)*	Freshwater
		Slabshell, Chipola	Threatened	Bivalve	No	*(Elliptio chipolaensis)*	Freshwater
		Threeridge, Fat (Mussel)	Endangered	Bivalve	No	*(Amblema neislerii)*	Freshwater
		Torreya, Florida	Endangered	Conf'cycds	No	*(Torreya taxifolia)*	Terrestrial
		Shrimp, Squirrel Chimney Cave	Threatened	Crustacean	No	*(Palaemonetes cummingi)*	Freshwater, Subterraneous
		Aster, Florida Golden	Endangered	Dicot	No	*(Chrysopsis floridana)*	Terrestrial
		Birds-in-a-nest, White	Threatened	Dicot	No	*(Macbridea alba)*	Terrestrial
		Blazing Star, Scrub	Endangered	Dicot	No	*(Liatris ohlingerae)*	Terrestrial
		Bonamia, Florida	Threatened	Dicot	No	*(Bonamia grandiflora)*	Terrestrial
		Buckwheat, Scrub	Threatened	Dicot	No	*(Eriogonum longifolium var. gnaphalifolium)*	Terrestrial
		Butterwort, Godfrey's	Threatened	Dicot	No	*(Pinguicula ionantha)*	Terrestrial, Freshwater
		Campion, Fringed	Endangered	Dicot	No	*(Silene polypetala)*	Terrestrial
		Chaffseed, American	Endangered	Dicot	No	*(Schwalbea americana)*	Terrestrial
		Fringe Tree, Pygmy	Endangered	Dicot	No	*(Chionanthus pygmaeus)*	Terrestrial
Florida	(90) species:						
		Gooseberry, Miccosukee	Threatened	Dicot	No	*(Ribes echinellum)*	Terrestrial
		Gourd, Okeechobee	Endangered	Dicot	No	*(Cucurbita okeechobeensis ssp. okeechobeensis)*	Terrestrial
		Harebells, Avon Park	Endangered	Dicot	No	*(Crotalaria avonensis)*	Terrestrial
		Hypericum, Highlands Scrub	Endangered	Dicot	No	*(Hypericum cumulicola)*	Terrestrial
		Jacquemontia, Beach	Endangered	Dicot	No	*(Jacquemontia reclinata)*	Terrestrial, Coastal (neritic)
		Lead-plant, Crenulate	Endangered	Dicot	No	*(Amorpha crenulata)*	Terrestrial
		Lupine, Scrub	Endangered	Dicot	No	*(Lupinus aridorum)*	Terrestrial
		Meadowrue, Cooley's	Endangered	Dicot	No	*(Thalictrum cooleyi)*	Terrestrial
		Milkpea, Small's	Endangered	Dicot	No	*(Galactia smallii)*	Terrestrial
		Mint, Garrett's	Endangered	Dicot	No	*(Dicerandra christmanii)*	Terrestrial
		Mint, Lakela's	Endangered	Dicot	No	*(Dicerandra immaculata)*	Terrestrial
		Mint, Longspurred	Endangered	Dicot	No	*(Dicerandra cornutissima)*	Terrestrial
		Mint, Scrub	Endangered	Dicot	No	*(Dicerandra frutescens)*	Terrestrial
		Mustard, Carter's	Endangered	Dicot	No	*(Warea carteri)*	Terrestrial
		Pawpaw, Four-petal	Endangered	Dicot	No	*(Asimina tetramera)*	Terrestrial
		Pinkroot, Gentian	Endangered	Dicot	No	*(Spigelia gentianoides)*	Terrestrial
		Plum, Scrub	Endangered	Dicot	No	*(Prunus geniculata)*	Terrestrial
		Polygala, Lewton's	Endangered	Dicot	No	*(Polygala lewtonii)*	Terrestrial
		Polygala, Tiny	Endangered	Dicot	No	*(Polygala smallii)*	Terrestrial
		Rhododendron, Chapman	Endangered	Dicot	No	*(Rhododendron chapmanii)*	Terrestrial
		Rosemary, Apalachicola	Endangered	Dicot	No	*(Conradina glabra)*	Terrestrial
Florida	(90) species:						
		Rosemary, Etonia	Endangered	Dicot	No	*(Conradina etonia)*	Terrestrial
		Rosemary, Short-leaved	Endangered	Dicot	No	*(Conradina brevifolia)*	Terrestrial
		Sandlace	Endangered	Dicot	No	*(Polygonella myriophylla)*	Terrestrial
		Skullcap, Florida	Threatened	Dicot	No	*(Scutellaria floridana)*	Terrestrial
		Snakeroot	Endangered	Dicot	No	*(Eryngium cuneifolium)*	Terrestrial
		Spurge, Deltoid	Endangered	Dicot	No	*(Chamaesyce deltoidea ssp. deltoidea)*	Terrestrial
		Spurge, Garber's	Threatened	Dicot	No	*(Chamaesyce garberi)*	Terrestrial
		Spurge, Telephus	Threatened	Dicot	No	*(Euphorbia telephioides)*	Terrestrial
		Warea, Wide-leaf	Endangered	Dicot	No	*(Warea amplexifolia)*	Terrestrial
		Whitlow-wort, Papery	Threatened	Dicot	No	*(Paronychia chartacea)*	Terrestrial
		Wings, Pigeon	Threatened	Dicot	No	*(Clitoria fragrans)*	Terrestrial

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		Wireweed	Endangered	Dicot	No	*(Polygonella basiramia)*	Terrestrial
		Ziziphus, Florida	Endangered	Dicot	No	*(Ziziphus celata)*	Terrestrial
		Darter, Okaloosa	Endangered	Fish	No	*(Etheostoma okaloosae)*	Freshwater
		Sawfish, Smalltooth	Endangered	Fish	No	*(Pristis pectinata)*	Saltwater, Freshwater
		Sturgeon, Gulf	Threatened	Fish	Yes	*(Acipenser oxyrinchus desotoi)*	Saltwater, Freshwater
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater
		Butterfly, Schaus Swallowtail	Endangered	Insect	No	*(Heraclides aristodemus ponceanus)*	Terrestrial
		Cladonia, Florida Perforate	Endangered	Lichen	No	*(Cladonia perforata)*	Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
Florida	(90) species:						
		Mouse, Anastasia Island Beach	Endangered	Mammal	No	*(Peromyscus polionotus phasma)*	Terrestrial, Coastal (neritic)
		Mouse, Choctawhatchee Beach	Endangered	Mammal	Yes	*(Peromyscus polionotus allophrys)*	Coastal (neritic), Terrestrial
		Mouse, Perdido Key Beach	Endangered	Mammal	Yes	*(Peromyscus polionotus trissyllepsis)*	Coastal (neritic)
		Mouse, Southeastern Beach	Threatened	Mammal	No	*(Peromyscus polionotus niveiventris)*	Coastal (neritic), Terrestrial
		Panther, Florida	Endangered	Mammal	No	*(Puma (=Felis) concolor coryi)*	Terrestrial
		Vole, Florida Salt Marsh	Endangered	Mammal	No	*(Microtus pennsylvanicus dukecampbelli)*	Terrestrial, Brackish
		Manatee, West Indian	Endangered	Marine mml	Yes	*(Trichechus manatus)*	Saltwater
		Beargrass, Britton's	Endangered	Monocot	No	*(Nolina brittoniana)*	Terrestrial
		Beauty, Harper's	Endangered	Monocot	No	*(Harperocallis flava)*	Freshwater, Terrestrial
		Seagrass, Johnson's	Threatened	Monocot	Yes	*(Halophila johnsonii)*	Coastal (neritic), Saltwater
		Crocodile, American	Endangered	Reptile	Yes	*(Crocodylus acutus)*	Terrestrial, Freshwater
		Sea turtle, green	Endangered	Reptile	No	*(Chelonia mydas)*	Saltwater
		Sea turtle, hawksbill	Endangered	Reptile	Yes	*(Eretmochelys imbricata)*	Saltwater
		Sea turtle, Kemp's ridley	Endangered	Reptile	No	*(Lepidochelys kempii)*	Saltwater
		Sea turtle, leatherback	Endangered	Reptile	Yes	*(Dermochelys coriacea)*	Saltwater
		Sea turtle, loggerhead	Threatened	Reptile	No	*(Caretta caretta)*	Saltwater
		Skink, Blue-tailed Mole	Threatened	Reptile	No	*(Eumeces egregius lividus)*	Terrestrial
		Skink, Sand	Threatened	Reptile	No	*(Neoseps reynoldsi)*	Terrestrial
		Snake, Atlantic Salt Marsh	Threatened	Reptile	No	*(Nerodia clarkii taeniata)*	Saltwater, Terrestrial, Brackish
		Snake, Eastern Indigo	Threatened	Reptile	No	*(Drymarchon corais couperi)*	Terrestrial
Georgia	(60) species:						
		Salamander, Flatwoods	Threatened	Amphibian	No	*(Ambystoma cingulatum)*	Freshwater, Vernal pool, Terrestrial
Georgia	(60) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Stork, Wood	Endangered	Bird	No	*(Mycteria americana)*	Terrestrial
		Warbler (=Wood), Kirtland's	Endangered	Bird	No	*(Dendroica kirtlandii)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
		Bankclimber, Purple	Threatened	Bivalve	No	*(Elliptoideus sloatianus)*	Freshwater
		Combshell, Upland	Endangered	Bivalve	Yes	*(Epioblasma metastriata)*	Freshwater
		Fanshell	Endangered	Bivalve	No	*(Cyprogenia stegaria)*	Freshwater
		Kidneyshell, Triangular	Endangered	Bivalve	Yes	*(Ptychobranchus greenii)*	Freshwater
		Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No	*(Lampsilis abrupta)*	Freshwater
		Mussel, Acornshell Southern	Endangered	Bivalve	Yes	*(Epioblasma othcaloogensis)*	Freshwater
		Mussel, Alabama Moccasinshell	Threatened	Bivalve	Yes	*(Medionidus acutissimus)*	Freshwater
		Mussel, Coosa Moccasinshell	Endangered	Bivalve	Yes	*(Medionidus parvulus)*	Freshwater
		Mussel, Fine-lined Pocketbook	Threatened	Bivalve	Yes	*(Lampsilis altilis)*	Freshwater
		Mussel, Gulf Moccasinshell	Endangered	Bivalve	No	*(Medionidus penicillatus)*	Freshwater
		Mussel, Oval Pigtoe	Endangered	Bivalve	No	*(Pleurobema pyriforme)*	Freshwater
		Mussel, Ovate Clubshell	Endangered	Bivalve	Yes	*(Pleurobema perovatum)*	Freshwater
		Mussel, Shiny-rayed Pocketbook	Endangered	Bivalve	No	*(Lampsilis subangulata)*	Freshwater
		Mussel, Southern Clubshell	Endangered	Bivalve	Yes	*(Pleurobema decisum)*	Freshwater
		Mussel, Southern Pigtoe	Endangered	Bivalve	Yes	*(Pleurobema georgianum)*	Freshwater
		Threeridge, Fat (Mussel)	Endangered	Bivalve	No	*(Amblema neislerii)*	Freshwater

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Georgia	(60) species:						
		Torreya, Florida	Endangered	Conf'cycds	No	*(Torreya taxifolia)*	Terrestrial
		Amphianthus, Little	Threatened	Dicot	No	*(Amphianthus pusillus)*	Freshwater
		Barbara Buttons, Mohr's	Threatened	Dicot	No	*(Marshallia mohrii)*	Terrestrial
		Campion, Fringed	Endangered	Dicot	No	*(Silene polypetala)*	Terrestrial
		Dropwort, Canby's	Endangered	Dicot	No	*(Oxypolis canbyi)*	Terrestrial, Freshwater
		Harperella	Endangered	Dicot	No	*(Ptilimnium nodosum)*	Freshwater
		Pitcher-plant, Green	Endangered	Dicot	No	*(Sarracenia oreophila)*	Terrestrial, Freshwater
		Pondberry	Endangered	Dicot	No	*(Lindera melissifolia)*	Terrestrial
		Rattleweed, Hairy	Endangered	Dicot	No	*(Baptisia arachnifera)*	Terrestrial
		Skullcap, Large-flowered	Threatened	Dicot	No	*(Scutellaria montana)*	Terrestrial
		Spiraea, Virginia	Threatened	Dicot	No	*(Spiraea virginiana)*	Terrestrial
		Sumac, Michaux's	Endangered	Dicot	No	*(Rhus michauxii)*	Terrestrial
		Quillwort, Black-spored	Endangered	Ferns	No	*(Isoetes melanospora)*	Vernal pool
		Quillwort, Mat-forming	Endangered	Ferns	No	*(Isoetes tegetiformans)*	Vernal pool
		Chub, Spotfin	Threatened	Fish	Yes	*(Erimonax monachus)*	Freshwater
		Darter, Amber	Endangered	Fish	Yes	*(Percina antesella)*	Freshwater
		Darter, Cherokee	Threatened	Fish	No	*(Etheostoma scotti)*	Freshwater
		Darter, Etowah	Endangered	Fish	No	*(Etheostoma etowahae)*	Freshwater
		Darter, Goldline	Threatened	Fish	No	*(Percina aurolineata)*	Freshwater
		Darter, Snail	Threatened	Fish	No	*(Percina tanasi)*	Freshwater
		Logperch, Conasauga	Endangered	Fish	Yes	*(Percina jenkinsi)*	Freshwater
Georgia	(60) species:						
		Madtom, Yellowfin	Threatened	Fish	Yes	*(Noturus flavipinnis)*	Freshwater
		Shiner, Blue	Threatened	Fish	No	*(Cyprinella caerulea)*	Freshwater
		Sturgeon, Gulf	Threatened	Fish	Yes	*(Acipenser oxyrinchus desotoi)*	Saltwater, Freshwater
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater
		Beetle, American Burying	Endangered	Insect	No	*(Nicrophorus americanus)*	Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Bat, Virginia Big-eared	Endangered	Mammal	Yes	*(Corynorhinus (=Plecotus) townsendii virginianus)*	Terrestrial, Subterraneous
		Manatee, West Indian	Endangered	Marine mml	Yes	*(Trichechus manatus)*	Saltwater
		Grass, Tennessee Yellow-eyed	Endangered	Monocot	No	*(Xyris tennesseensis)*	Terrestrial
		Pink, Swamp	Threatened	Monocot	No	*(Helonias bullata)*	Terrestrial, Freshwater
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
		Trillium, Persistent	Endangered	Monocot	No	*(Trillium persistens)*	Terrestrial
		Trillium, Relict	Endangered	Monocot	No	*(Trillium reliquum)*	Terrestrial
		Water-plantain, Kral's	Threatened	Monocot	No	*(Sagittaria secundifolia)*	Freshwater
		Sea turtle, loggerhead	Threatened	Reptile	No	*(Caretta caretta)*	Saltwater
		Snake, Eastern Indigo	Threatened	Reptile	No	*(Drymarchon corais couperi)*	Terrestrial
Hawaii	(302) species:						
		Spider, Kauai Cave Wolf	Endangered	Arachnid	Yes	*(Adelocosa anops)*	Terrestrial, Subterraneous
		'Akepa, Maui	Endangered	Bird	No	*(Loxops coccineus ochraceus)*	Terrestrial
		'Akia Loa, Kauai (Hemignathus procerus)	Endangered	Bird	No	*(Hemignathus procerus)*	Terrestrial
		Albatross, Short-tailed	Endangered	Bird	No	*(Phoebastria (=Diomedea) albatrus)*	Terrestrial, Saltwater
Hawaii	(302) species:						
		Coot, Hawaiian (=Alae keo keo)	Endangered	Bird	No	*(Fulica americana alai)*	Terrestrial
		Creeper, Molokai (Kakawahie)	Endangered	Bird	No	*(Paroreomyza flammea)*	Terrestrial
		Creeper, Oahu (Alauwahio)	Endangered	Bird	No	*(Paroreomyza maculata)*	Terrestrial
		Duck, Hawaiian (Koloa)	Endangered	Bird	No	*(Anas wyvilliana)*	Freshwater, Terrestrial
		Duck, Laysan	Endangered	Bird	No	*(Anas laysanensis)*	Terrestrial, Freshwater
		Elepaio, Oahu	Endangered	Bird	Yes	*(Chasiempis sandwichensis ibidis)*	Terrestrial
		Finch, Laysan	Endangered	Bird	No	*(Telespyza cantans)*	Terrestrial
		Finch, Nihoa	Endangered	Bird	No	*(Telespyza ultima)*	Terrestrial
		Goose, Hawaiian (Nene)	Endangered	Bird	No	*(Branta (=Nesochen) sandvicensis)*	Terrestrial, Freshwater
		Honeycreeper, Crested ('Akohekohe)	Endangered	Bird	No	*(Palmeria dolei)*	Terrestrial

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		Millerbird, Nihoa	Endangered	Bird	No	*(Acrocephalus familiaris kingi)*	Terrestrial
		Moorhen, Hawaiian Common	Endangered	Bird	No	*(Gallinula chloropus sandvicensis)*	Terrestrial
		Nuku Pu'u	Endangered	Bird	No	*(Hemignathus lucidus)*	Terrestrial
		'O'o, Kauai (='A'a)	Endangered	Bird	No	*(Moho braccatus)*	Terrestrial
		'O'u (Honeycreeper)	Endangered	Bird	No	*(Psittirostra psittacea)*	Terrestrial
		Parrotbill, Maui	Endangered	Bird	No	*(Pseudonestor xanthophrys)*	Terrestrial
		Petrel, Hawaiian Dark-rumped	Endangered	Bird	No	*(Pterodroma phaeopygia sandwichensis)*	Terrestrial
		Po'ouli	Endangered	Bird	No	*(Melamprosops phaeosoma)*	Terrestrial
		Shearwater, Newell's Townsend's	Threatened	Bird	No	*(Puffinus auricularis newelli)*	Terrestrial, Saltwater
		Stilt, Hawaiian (=Ae'o)	Endangered	Bird	No	*(Himantopus mexicanus knudseni)*	Terrestrial
		Thrush, Large Kauai	Endangered	Bird	No	*(Myadestes myadestinus)*	Terrestrial
Hawaii	(302) species:						
		Thrush, Molokai (Oloma'o)	Endangered	Bird	No	*(Myadestes lanaiensis rutha)*	Terrestrial
		Thrush, Small Kauai (Puaiohi)	Endangered	Bird	No	*(Myadestes palmeri)*	Terrestrial
		Amphipod, Kauai Cave	Endangered	Crustacean	Yes	*(Spelaeorchestia koloana)*	Freshwater, Subterraneous
		Abutilon eremitopetalum (ncn)	Endangered	Dicot	Yes	*(Abutilon eremitopetalum)*	Terrestrial
		Abutilon sandwicense (ncn)	Endangered	Dicot	Yes	*(Abutilon sandwicense)*	Terrestrial
		Achyranthes splendens var. rotundata (ncn)	Endangered	Dicot	No	*(Achyranthes splendens var. rotundata)*	Terrestrial
		A'e (Zanthoxylum hawaiiense)	Endangered	Dicot	Yes	*(Zanthoxylum hawaiiense)*	Terrestrial
		'Aiea (Nothocestrum peltatum)	Endangered	Dicot	Yes	*(Nothocestrum peltatum)*	Terrestrial
		'Akoko (Chamaesyce celastroides var. kaenana)	Endangered	Dicot	Yes	*(Chamaesyce celastroides var. kaenana)*	Terrestrial
		'Akoko (Chamaesyce deppeana)	Endangered	Dicot	Yes	*(Chamaesyce deppeana)*	Terrestrial
		'Akoko (Chamaesyce herbstii)	Endangered	Dicot	Yes	*(Chamaesyce herbstii)*	Terrestrial
		'Akoko (Chamaesyce kuwaleana)	Endangered	Dicot	Yes	*(Chamaesyce kuwaleana)*	Terrestrial
		'Akoko (Chamaesyce rockii)	Endangered	Dicot	Yes	*(Chamaesyce rockii)*	Terrestrial
		'Akoko (Chamaesyce skottsbergii var. skottsbe	Endangered	Dicot	No	*(Chamaesyce skottsbergii var. kalaeloana)*	Terrestrial
		'Akoko (Euphorbia haeleeleana)	Endangered	Dicot	Yes	*(Euphorbia haeleeleana)*	Terrestrial
		Alani (Melicope adscendens)	Endangered	Dicot	Yes	*(Melicope adscendens)*	Terrestrial
		Alani (Melicope balloui)	Endangered	Dicot	Yes	*(Melicope balloui)*	Terrestrial
		Alani (Melicope haupuensis)	Endangered	Dicot	Yes	*(Melicope haupuensis)*	Terrestrial
		Alani (Melicope knudsenii)	Endangered	Dicot	Yes	*(Melicope knudsenii)*	Terrestrial
		Alani (Melicope lydgatei)	Endangered	Dicot	Yes	*(Melicope lydgatei)*	Terrestrial
		Alani (Melicope mucronulata)	Endangered	Dicot	Yes	*(Melicope mucronulata)*	Terrestrial
Hawaii	(302) species:						
		Alani (Melicope munroi)	Endangered	Dicot	No	*(Melicope munroi)*	Terrestrial
		Alani (Melicope ovalis)	Endangered	Dicot	Yes	*(Melicope ovalis)*	Terrestrial
		Alani (Melicope pallida)	Endangered	Dicot	Yes	*(Melicope pallida)*	Terrestrial
		Alani (Melicope quadrangularis)	Endangered	Dicot	No	*(Melicope quadrangularis)*	Terrestrial
		Alani (Melicope reflexa)	Endangered	Dicot	Yes	*(Melicope reflexa)*	Terrestrial
		Alani (Melicope saint-johnii)	Endangered	Dicot	Yes	*(Melicope saint-johnii)*	Terrestrial
		Alsinidendron obovatum (ncn)	Endangered	Dicot	Yes	*(Alsinidendron obovatum)*	Terrestrial
		Alsinidendron trinerve (ncn)	Endangered	Dicot	Yes	*(Alsinidendron trinerve)*	Terrestrial
		Alsinidendron viscosum (ncn)	Endangered	Dicot	Yes	*(Alsinidendron viscosum)*	Terrestrial
		Amaranthus brownii (ncn)	Endangered	Dicot	Yes	*(Amaranthus brownii)*	Terrestrial
		'Anaunau (Lepidium arbuscula)	Endangered	Dicot	Yes	*(Lepidium arbuscula)*	Terrestrial
		Aupaka (Isodendrion laurifolium)	Endangered	Dicot	Yes	*(Isodendrion laurifolium)*	Terrestrial
		Aupaka (Isodendrion longifolium)	Threatened	Dicot	Yes	*(Isodendrion longifolium)*	Terrestrial
		'Awikiwiki (Canavalia molokaiensis)	Endangered	Dicot	Yes	*(Canavalia molokaiensis)*	Terrestrial
		'Awiwi (Centaurium sebaeoides)	Endangered	Dicot	Yes	*(Centaurium sebaeoides)*	Terrestrial
		'Awiwi (Hedyotis cookiana)	Endangered	Dicot	Yes	*(Hedyotis cookiana)*	Terrestrial
		Bonamia menziesii (ncn)	Endangered	Dicot	Yes	*(Bonamia menziesii)*	Terrestrial
		Chamaesyce Halemanui (ncn)	Endangered	Dicot	Yes	*(Chamaesyce halemanui)*	Terrestrial
		Cyanea undulata (ncn)	Endangered	Dicot	Yes	*(Cyanea undulata)*	Terrestrial
		Delissea rhytodisperma (ncn)	Endangered	Dicot	Yes	*(Delissea rhytidosperma)*	Terrestrial
		Dubautia latifolia (ncn)	Endangered	Dicot	Yes	*(Dubautia latifolia)*	Terrestrial
Hawaii	(302) species:						

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		Dubautia pauciflorula (ncn)	Endangered	Dicot	Yes	*(Dubautia pauciflorula)*	Terrestrial
		Geranium, Hawaiian Red-flowered	Endangered	Dicot	Yes	*(Geranium arboreum)*	Terrestrial
		Gouania hillebrandii (ncn)	Endangered	Dicot	Yes	*(Gouania hillebrandii)*	Terrestrial
		Gouania meyenii (ncn)	Endangered	Dicot	Yes	*(Gouania meyenii)*	Terrestrial
		Gouania vitifolia (ncn)	Endangered	Dicot	Yes	*(Gouania vitifolia)*	Terrestrial
		Haha (Cyanea acuminata)	Endangered	Dicot	Yes	*(Cyanea acuminata)*	Terrestrial
		Haha (Cyanea asarifolia)	Endangered	Dicot	Yes	*(Cyanea asarifolia)*	Terrestrial
		Haha (Cyanea copelandii ssp. haleakalaensis)	Endangered	Dicot	Yes	*(Cyanea copelandii ssp. haleakalaensis)*	Terrestrial
		Haha (Cyanea Crispa) (=Rollandia crispa)	Endangered	Dicot	Yes	*(Cyanea (=Rollandia) crispa)*	Terrestrial
		Haha (Cyanea dunbarii)	Endangered	Dicot	Yes	*(Cyanea dunbarii)*	Terrestrial
		Haha (Cyanea glabra)	Endangered	Dicot	Yes	*(Cyanea glabra)*	Terrestrial
		Haha (Cyanea grimesiana ssp. grimesiana)	Endangered	Dicot	Yes	*(Cyanea grimesiana ssp. grimesiana)*	Terrestrial
		Haha (Cyanea grimesiana ssp. obatae)	Endangered	Dicot	Yes	*(Cyanea grimesiana ssp. obatae)*	Terrestrial
		Haha (Cyanea hamatiflora ssp. hamatiflora)	Endangered	Dicot	Yes	*(Cyanea hamatiflora ssp. hamatiflora)*	Terrestrial
		Haha (Cyanea humboldtiana)	Endangered	Dicot	Yes	*(Cyanea humboldtiana)*	Terrestrial
		Haha (Cyanea koolauensis)	Endangered	Dicot	Yes	*(Cyanea koolauensis)*	Terrestrial
		Haha (Cyanea longiflora)	Endangered	Dicot	Yes	*(Cyanea longiflora)*	Terrestrial
		Haha (Cyanea Macrostegia var. gibsonii)	Endangered	Dicot	No	*(Cyanea macrostegia ssp. gibsonii)*	Terrestrial
		Haha (Cyanea mannii)	Endangered	Dicot	Yes	*(Cyanea mannii)*	Terrestrial
		Haha (Cyanea mceldowneyi)	Endangered	Dicot	Yes	*(Cyanea mceldowneyi)*	Terrestrial
		Haha (Cyanea pinnatifida)	Endangered	Dicot	Yes	*(Cyanea pinnatifida)*	Terrestrial
Hawaii	(302) species:						
		Haha (Cyanea procera)	Endangered	Dicot	Yes	*(Cyanea procera)*	Terrestrial
		Haha (Cyanea recta)	Threatened	Dicot	Yes	*(Cyanea recta)*	Terrestrial
		Haha (Cyanea remyi)	Endangered	Dicot	Yes	*(Cyanea remyi)*	Terrestrial
		Haha (Cyanea St-Johnii) (=Rollandia St-Johnii)	Endangered	Dicot	Yes	*(Cyanea st-johnii)*	Terrestrial
		Haha (Cyanea superba)	Endangered	Dicot	Yes	*(Cyanea superba)*	Terrestrial
		Ha'Iwale (Cyrtandra crenata)	Endangered	Dicot	No	*(Cyrtandra crenata)*	Terrestrial
		Ha'Iwale (Cyrtandra dentata)	Endangered	Dicot	Yes	*(Cyrtandra dentata)*	Terrestrial
		Ha'Iwale (Cyrtandra limahuliensis)	Threatened	Dicot	Yes	*(Cyrtandra limahuliensis)*	Terrestrial
		Ha'Iwale (Cyrtandra munroi)	Endangered	Dicot	Yes	*(Cyrtandra munroi)*	Terrestrial
		Ha'Iwale (Cyrtandra polyantha)	Endangered	Dicot	Yes	*(Cyrtandra polyantha)*	Terrestrial
		Ha'Iwale (Cyrtandra subumbellata)	Endangered	Dicot	Yes	*(Cyrtandra subumbellata)*	Terrestrial
		Ha'Iwale (Cyrtandra tintinnabula)	Endangered	Dicot	Yes	*(Cyrtandra tintinnabula)*	Terrestrial
		Ha'Iwale (Cyrtandra viridiflora)	Endangered	Dicot	Yes	*(Cyrtandra viridiflora)*	Terrestrial
		Hau Kauhiwi (Hibiscadelphus woodi)	Endangered	Dicot	Yes	*(Hibiscadelphus woodii)*	Terrestrial
		Hau Kuahiwi (Hibiscadelphus distans)	Endangered	Dicot	No	*(Hibiscadelphus distans)*	Terrestrial
		Heau (Exocarpos luteolus)	Endangered	Dicot	Yes	*(Exocarpos luteolus)*	Terrestrial
		Hedyotis degeneri (ncn)	Endangered	Dicot	Yes	*(Hedyotis degeneri)*	Terrestrial
		Hedyotis parvula (ncn)	Endangered	Dicot	Yes	*(Hedyotis parvula)*	Terrestrial
		Hedyotis St.-Johnii (ncn)	Endangered	Dicot	Yes	*(Hedyotis st.-johnii)*	Terrestrial
		Hesperomannia arborescens (ncn)	Endangered	Dicot	Yes	*(Hesperomannia arborescens)*	Terrestrial
		Hesperomannia arbuscula (ncn)	Endangered	Dicot	Yes	*(Hesperomannia arbuscula)*	Terrestrial
Hawaii	(302) species:						
		Hesperomannia lydgatei (ncn)	Endangered	Dicot	Yes	*(Hesperomannia lydgatei)*	Terrestrial
		Hibiscus, Clay's	Endangered	Dicot	Yes	*(Hibiscus clayi)*	Terrestrial
		Iliau (Wilkesia hobdyi)	Endangered	Dicot	Yes	*(Wilkesia hobdyi)*	Terrestrial
		Kamakahala (Labordia cyrtandrae)	Endangered	Dicot	Yes	*(Labordia cyrtandrae)*	Terrestrial
		Kamakahala (Labordia lydgatei)	Endangered	Dicot	Yes	*(Labordia lydgatei)*	Terrestrial
		Kamakahala (Labordia tinifolia var. lanaiensis)	Endangered	Dicot	No	*(Labordia tinifolia var. lanaiensis)*	Terrestrial
		Kamakahala (Labordia tinifolia var. wahiawaen)	Endangered	Dicot	Yes	*(Labordia tinifolia var. wahiawaensis)*	Terrestrial
		Kamakahala (Labordia triflora)	Endangered	Dicot	No	*(Labordia triflora)*	Terrestrial
		Kanaloa kahoolawensis (ncn)	Endangered	Dicot	Yes	*(Kanaloa kahoolawensis)*	Terrestrial
		Kaulu (Pteralyxia kauaiensis)	Endangered	Dicot	Yes	*(Pteralyxia kauaiensis)*	Terrestrial
		Kio'Ele (Hedyotis coriacea)	Endangered	Dicot	Yes	*(Hedyotis coriacea)*	Terrestrial
		Koki'o (Kokia kauaiensis)	Endangered	Dicot	Yes	*(Kokia kauaiensis)*	Terrestrial

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		Koki'o Ke'oke'o (Hibiscus arnottianus ssp. immaculatus)	Endangered	Dicot	Yes	*(Hibiscus arnottianus ssp. immaculatus)*	Terrestrial
		Koki'o Ke'oke'o (Hibiscus waimeae ssp. hannerae)	Endangered	Dicot	Yes	*(Hibiscus waimeae ssp. hannerae)*	Terrestrial
		Kolea (Myrsine juddii)	Endangered	Dicot	Yes	*(Myrsine juddii)*	Terrestrial
		Kolea (Myrsine linearifolia)	Threatened	Dicot	Yes	*(Myrsine linearifolia)*	Terrestrial
		Ko'oko'olau (Bidens micrantha ssp. kalealaha)	Endangered	Dicot	Yes	*(Bidens micrantha ssp. kalealaha)*	Terrestrial
		Ko'oko'olau (Bidens wiebkei)	Endangered	Dicot	Yes	*(Bidens wiebkei)*	Terrestrial
		Ko'oloa'ula (Abutilon menziesii)	Endangered	Dicot	No	*(Abutilon menziesii)*	Terrestrial
		Kopa (Hedyotis schlechtendahliana var. remyi)	Endangered	Dicot	No	*(Hedyotis schlechtendahliana var. remyi)*	Terrestrial
		Kuawawaenohu (Alsinidendron lychnoides)	Endangered	Dicot	Yes	*(Alsinidendron lychnoides)*	Terrestrial
Hawaii	(302) species:						
		Kulu'I (Nototrichium humile)	Endangered	Dicot	Yes	*(Nototrichium humile)*	Terrestrial
		Laukahi Kuahiwi (Plantago princeps)	Endangered	Dicot	Yes	*(Plantago princeps)*	Terrestrial
		Laulihilihi (Schiedea stellarioides)	Endangered	Dicot	Yes	*(Schiedea stellarioides)*	Terrestrial
		Lobelia monostachya (ncn)	Endangered	Dicot	Yes	*(Lobelia monostachya)*	Terrestrial
		Lobelia niihauensis (ncn)	Endangered	Dicot	Yes	*(Lobelia niihauensis)*	Terrestrial
		Lobelia oahuensis (ncn)	Endangered	Dicot	Yes	*(Lobelia oahuensis)*	Terrestrial
		Lysimachia filifolia (ncn)	Endangered	Dicot	Yes	*(Lysimachia filifolia)*	Terrestrial
		Lysimachia lydgatei (ncn)	Endangered	Dicot	Yes	*(Lysimachia lydgatei)*	Terrestrial
		Lysimachia maxima (ncn)	Endangered	Dicot	Yes	*(Lysimachia maxima)*	Terrestrial
		Mahoe (Alectryon macrococcus)	Endangered	Dicot	Yes	*(Alectryon macrococcus)*	Terrestrial
		Makou (Peucedanum sandwicense)	Threatened	Dicot	Yes	*(Peucedanum sandwicense)*	Terrestrial
		Ma'o Hau Hele (Hibiscus brackenridgei)	Endangered	Dicot	Yes	*(Hibiscus brackenridgei)*	Terrestrial
		Ma'oli'oli (Schiedea apokremnos)	Endangered	Dicot	Yes	*(Schiedea apokremnos)*	Terrestrial
		Ma'oli'oli (Schiedea kealiae)	Endangered	Dicot	Yes	*(Schiedea kealiae)*	Terrestrial
		Mapele (Cyrtandra cyaneoides)	Endangered	Dicot	Yes	*(Cyrtandra cyaneoides)*	Terrestrial
		Mehamehame (Flueggea neowawraea)	Endangered	Dicot	Yes	*(Flueggea neowawraea)*	Terrestrial
		Munroidendron racemosum (ncn)	Endangered	Dicot	Yes	*(Munroidendron racemosum)*	Terrestrial
		Na'ena'e (Dubautia herbstobatae)	Endangered	Dicot	Yes	*(Dubautia herbstobatae)*	Terrestrial
		Na'ena'e (Dubautia plantaginea ssp. humilis)	Endangered	Dicot	Yes	*(Dubautia plantaginea ssp. humilis)*	Terrestrial
		Nani Wai'ale'ale (Viola kauaensis var. wahiawaensis)	Endangered	Dicot	Yes	*(Viola kauaiensis var. wahiawaensis)*	Terrestrial
		Nanu (Gardenia mannii)	Endangered	Dicot	Yes	*(Gardenia mannii)*	Terrestrial
Hawaii	(302) species:						
		Na'u (Gardenia brighamii)	Endangered	Dicot	No	*(Gardenia brighamii)*	Terrestrial
		Naupaka, Dwarf (Scaevola coriacea)	Endangered	Dicot	No	*(Scaevola coriacea)*	Terrestrial
		Nehe (Lipochaeta fauriei)	Endangered	Dicot	Yes	*(Lipochaeta fauriei)*	Terrestrial
		Nehe (Lipochaeta kamolensis)	Endangered	Dicot	Yes	*(Lipochaeta kamolensis)*	Terrestrial
		Nehe (Lipochaeta lobata var. leptophylla)	Endangered	Dicot	Yes	*(Lipochaeta lobata var. leptophylla)*	Terrestrial
		Nehe (Lipochaeta micrantha)	Endangered	Dicot	Yes	*(Lipochaeta micrantha)*	Terrestrial
		Nehe (Lipochaeta tenuifolia)	Endangered	Dicot	Yes	*(Lipochaeta tenuifolia)*	Terrestrial
		Nehe (Lipochaeta waimeaensis)	Endangered	Dicot	Yes	*(Lipochaeta waimeaensis)*	Terrestrial
		Neraudia angulata (ncn)	Endangered	Dicot	Yes	*(Neraudia angulata)*	Terrestrial
		Neraudia sericea (ncn)	Endangered	Dicot	Yes	*(Neraudia sericea)*	Terrestrial
		Nioi (Eugenia koolauensis)	Endangered	Dicot	Yes	*(Eugenia koolauensis)*	Terrestrial
		Nohoanu (Geranium multiflorum)	Endangered	Dicot	Yes	*(Geranium multiflorum)*	Terrestrial
		'Oha (Delissea rivularis)	Endangered	Dicot	Yes	*(Delissea rivularis)*	Terrestrial
		'Oha (Delissea subcordata)	Endangered	Dicot	Yes	*(Delissea subcordata)*	Terrestrial
		'Oha (Lobelia gaudichaudii koolauensis)	Endangered	Dicot	Yes	*(Lobelia gaudichaudii ssp. koolauensis)*	Terrestrial
		'Oha Wai (Clermontia lindseyana)	Endangered	Dicot	Yes	*(Clermontia lindseyana)*	Terrestrial
		'Oha Wai (Clermontia oblongifolia ssp. brevipes)	Endangered	Dicot	Yes	*(Clermontia oblongifolia ssp. brevipes)*	Terrestrial
		'Oha Wai (Clermontia oblongifolia ssp. mauiensis)	Endangered	Dicot	Yes	*(Clermontia oblongifolia ssp. mauiensis)*	Terrestrial
		'Oha Wai (Clermontia samuelii)	Endangered	Dicot	Yes	*(Clermontia samuelii)*	Terrestrial
		'Ohai (Sesbania tomentosa)	Endangered	Dicot	Yes	*(Sesbania tomentosa)*	Terrestrial
		'Ohe'ohe (Tetraplasandra gymnocarpa)	Endangered	Dicot	Yes	*(Tetraplasandra gymnocarpa)*	Terrestrial
Hawaii	(302) species:						
		'Olulu (Brighamia insignis)	Endangered	Dicot	Yes	*(Brighamia insignis)*	Terrestrial

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		Opuhe (Urera kaalae)	Endangered	Dicot	Yes	*(Urera kaalae)*	Terrestrial
		Pamakani (Viola chamissoniana ssp. chamissoniana)	Endangered	Dicot	Yes	*(Viola chamissoniana ssp. chamissoniana)*	Terrestrial
		Phyllostegia hirsuta (ncn)	Endangered	Dicot	Yes	*(Phyllostegia hirsuta)*	Terrestrial
		Phyllostegia kaalaensis (ncn)	Endangered	Dicot	Yes	*(Phyllostegia kaalaensis)*	Terrestrial
		Phyllostegia knudsenii (ncn)	Endangered	Dicot	Yes	*(Phyllostegia knudsenii)*	Terrestrial
		Phyllostegia mannii (ncn)	Endangered	Dicot	Yes	*(Phyllostegia mannii)*	Terrestrial
		Phyllostegia mollis (ncn)	Endangered	Dicot	Yes	*(Phyllostegia mollis)*	Terrestrial
		Phyllostegia parviflora (ncn)	Endangered	Dicot	Yes	*(Phyllostegia parviflora)*	Terrestrial
		Phyllostegia waimeae (ncn)	Endangered	Dicot	Yes	*(Phyllostegia waimeae)*	Terrestrial
		Phyllostegia wawrana (ncn)	Endangered	Dicot	Yes	*(Phyllostegia wawrana)*	Terrestrial
		Pilo (Hedyotis mannii)	Endangered	Dicot	Yes	*(Hedyotis mannii)*	Terrestrial
		Po'e (Portulaca sclerocarpa)	Endangered	Dicot	Yes	*(Portulaca sclerocarpa)*	Terrestrial
		Popolo 'Aiakeakua (Solanum sandwicense)	Endangered	Dicot	Yes	*(Solanum sandwicense)*	Terrestrial
		Pua'ala (Brighamia rockii)	Endangered	Dicot	Yes	*(Brighamia rockii)*	Terrestrial
		Remya kauaiensis (ncn)	Endangered	Dicot	Yes	*(Remya kauaiensis)*	Terrestrial
		Remya montgomeryi (ncn)	Endangered	Dicot	Yes	*(Remya montgomeryi)*	Terrestrial
		Remya, Maui	Endangered	Dicot	Yes	*(Remya mauiensis)*	Terrestrial
		Sandalwood, Lanai (='Iliahi)	Endangered	Dicot	No	*(Santalum freycinetianum var. lanaiense)*	Terrestrial
		Sanicula mariversa (ncn)	Endangered	Dicot	Yes	*(Sanicula mariversa)*	Terrestrial
		Sanicula purpurea (ncn)	Endangered	Dicot	Yes	*(Sanicula purpurea)*	Terrestrial
Hawaii	(302) species:						
		Schiedea haleakalensis (ncn)	Endangered	Dicot	Yes	*(Schiedea haleakalensis)*	Terrestrial
		Schiedea helleri (ncn)	Endangered	Dicot	Yes	*(Schiedea helleri)*	Terrestrial
		Schiedea hookeri (ncn)	Endangered	Dicot	Yes	*(Schiedea hookeri)*	Terrestrial
		Schiedea kaalae (ncn)	Endangered	Dicot	Yes	*(Schiedea kaalae)*	Terrestrial
		Schiedea kauaiensis (ncn)	Endangered	Dicot	Yes	*(Schiedea kauaiensis)*	Terrestrial
		Schiedea lydgatei (ncn)	Endangered	Dicot	Yes	*(Schiedea lydgatei)*	Terrestrial
		Schiedea membranacea (ncn)	Endangered	Dicot	Yes	*(Schiedea membranacea)*	Terrestrial
		Schiedea nuttallii (ncn)	Endangered	Dicot	Yes	*(Schiedea nuttallii)*	Terrestrial
		Schiedea sarmentosa (ncn)	Endangered	Dicot	Yes	*(Schiedea sarmentosa)*	Terrestrial
		Schiedea spergulina var. leiopoda (ncn)	Endangered	Dicot	Yes	*(Schiedea spergulina var. leiopoda)*	Terrestrial
		Schiedea spergulina var. spergulina (ncn)	Threatened	Dicot	Yes	*(Schiedea spergulina var. spergulina)*	Terrestrial
		Schiedea verticillata (ncn)	Endangered	Dicot	Yes	*(Schiedea verticillata)*	Terrestrial
		Schiedea, Diamond Head (Schiedea adamantis)	Endangered	Dicot	No	*(Schiedea adamantis)*	Terrestrial
		Silene alexandri (ncn)	Endangered	Dicot	Yes	*(Silene alexandri)*	Terrestrial
		Silene lanceolata (ncn)	Endangered	Dicot	Yes	*(Silene lanceolata)*	Terrestrial
		Silene perlmanii (ncn)	Endangered	Dicot	Yes	*(Silene perlmanii)*	Terrestrial
		Silversword, Haleakala ('Ahinahina)	Threatened	Dicot	Yes	*(Argyroxiphium sandwicense ssp. macrocephalum)*	Terrestrial
		Silversword, Mauna Kea ('Ahinahina)	Endangered	Dicot	No	*(Argyroxiphium sandwicense ssp. sandwicense)*	Terrestrial
		Spermolepis hawaiiensis (ncn)	Endangered	Dicot	Yes	*(Spermolepis hawaiiensis)*	Terrestrial
		Stenogyne bifida (ncn)	Endangered	Dicot	Yes	*(Stenogyne bifida)*	Terrestrial
		Stenogyne campanulata (ncn)	Endangered	Dicot	Yes	*(Stenogyne campanulata)*	Terrestrial
Hawaii	(302) species:						
		Stenogyne kanehoana (ncn)	Endangered	Dicot	Yes	*(Stenogyne kanehoana)*	Terrestrial
		Tetramolopium capillare (ncn)	Endangered	Dicot	Yes	*(Tetramolopium capillare)*	Terrestrial
		Tetramolopium filiforme (ncn)	Endangered	Dicot	Yes	*(Tetramolopium filiforme)*	Terrestrial
		Tetramolopium lepidotum ssp. lepidotum (ncn)	Endangered	Dicot	Yes	*(Tetramolopium lepidotum ssp. lepidotum)*	Terrestrial
		Tetramolopium remyi (ncn)	Endangered	Dicot	Yes	*(Tetramolopium remyi)*	Terrestrial
		Tetramolopium rockii (ncn)	Threatened	Dicot	Yes	*(Tetramolopium rockii)*	Coastal (neritic), Terrestrial
		Trematolobelia singularis (ncn)	Endangered	Dicot	Yes	*(Trematolobelia singularis)*	Terrestrial
		Uhiuhi (Caesalpinia kavaiensis)	Endangered	Dicot	No	*(Caesalpinia kavaiense)*	Terrestrial
		Ulihi (Phyllostegia glabra var. lanaiensis)	Endangered	Dicot	No	*(Phyllostegia glabra var. lanaiensis)*	Terrestrial
		Vigna o-wahuensis (ncn)	Endangered	Dicot	Yes	*(Vigna o-wahuensis)*	Terrestrial
		Viola helenae (ncn)	Endangered	Dicot	Yes	*(Viola helenae)*	Terrestrial
		Viola lanaiensis (ncn)	Endangered	Dicot	No	*(Viola lanaiensis)*	Terrestrial
		Viola oahuensis (ncn)	Endangered	Dicot	Yes	*(Viola oahuensis)*	Terrestrial

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		Xylosma crenatum (ncn)	Endangered	Dicot	Yes	*(Xylosma crenatum)*	Terrestrial
		Diellia erecta (ncn)	Endangered	Ferns	Yes	*(Diellia erecta)*	Terrestrial
		Diellia falcata (ncn)	Endangered	Ferns	Yes	*(Diellia falcata)*	Terrestrial
		Diellia pallida (ncn)	Endangered	Ferns	Yes	*(Diellia pallida)*	Terrestrial
		Diellia unisora (ncn)	Endangered	Ferns	Yes	*(Diellia unisora)*	Terrestrial
		Diplazium molokaiense (ncn)	Endangered	Ferns	Yes	*(Diplazium molokaiense)*	Terrestrial
		Fern, Pendant Kihi (Adenophorus periens)	Endangered	Ferns	Yes	*(Adenophorus periens)*	Terrestrial
		'Ihi'Ihi (Marsilea villosa)	Endangered	Ferns	Yes	*(Marsilea villosa)*	Vernal pool, Terrestrial
Hawaii	(302) species:						
		Pauoa (Ctenitis squamigera)	Endangered	Ferns	Yes	*(Ctenitis squamigera)*	Terrestrial
		Pteris lidgatei (ncn)	Endangered	Ferns	Yes	*(Pteris lidgatei)*	Terrestrial
		Wawae'lole (Phlegmariurus (=Huperzia) mannii)	Endangered	Ferns	Yes	*(Huperzia mannii)*	Terrestrial
		Wawae'lole (Phlegmariurus (=Lycopodium) nutans)	Endangered	Ferns	Yes	*(Lycopodium (=Phlegmariurus) nutans)*	Terrestrial
		Snail, Newcomb's	Threatened	Gastropod	Yes	*(Erinna newcombi)*	Freshwater
		Snail, O'ahu Tree (Achatinella abbreviata)	Endangered	Gastropod	No	*(Achatinella abbreviata)*	Terrestrial
		Snail, O'ahu Tree (Achatinella apexfulva)	Endangered	Gastropod	No	*(Achatinella apexfulva)*	Terrestrial
		Snail, O'ahu Tree (Achatinella bellula)	Endangered	Gastropod	No	*(Achatinella bellula)*	Terrestrial
		Snail, O'ahu Tree (Achatinella buddii)	Endangered	Gastropod	No	*(Achatinella buddii)*	Terrestrial
		Snail, O'ahu Tree (Achatinella bulimoides)	Endangered	Gastropod	No	*(Achatinella bulimoides)*	Terrestrial
		Snail, O'ahu Tree (Achatinella byronii)	Endangered	Gastropod	No	*(Achatinella byronii)*	Terrestrial
		Snail, O'ahu Tree (Achatinella caesia)	Endangered	Gastropod	No	*(Achatinella caesia)*	Terrestrial
		Snail, O'ahu Tree (Achatinella casta)	Endangered	Gastropod	No	*(Achatinella casta)*	Terrestrial
		Snail, O'ahu Tree (Achatinella cestus)	Endangered	Gastropod	No	*(Achatinella cestus)*	Terrestrial
		Snail, O'ahu Tree (Achatinella concavospira)	Endangered	Gastropod	No	*(Achatinella concavospira)*	Terrestrial
		Snail, O'ahu Tree (Achatinella curta)	Endangered	Gastropod	No	*(Achatinella curta)*	Terrestrial
		Snail, O'ahu Tree (Achatinella decipiens)	Endangered	Gastropod	No	*(Achatinella decipiens)*	Terrestrial
		Snail, O'ahu Tree (Achatinella decora)	Endangered	Gastropod	No	*(Achatinella decora)*	Terrestrial
		Snail, O'ahu Tree (Achatinella dimorpha)	Endangered	Gastropod	No	*(Achatinella dimorpha)*	Terrestrial
		Snail, O'ahu Tree (Achatinella elegans)	Endangered	Gastropod	No	*(Achatinella elegans)*	Terrestrial
		Snail, O'ahu Tree (Achatinella fulgens)	Endangered	Gastropod	No	*(Achatinella fulgens)*	Terrestrial
Hawaii	(302) species:						
		Snail, O'ahu Tree (Achatinella fuscobasis)	Endangered	Gastropod	No	*(Achatinella fuscobasis)*	Terrestrial
		Snail, O'ahu Tree (Achatinella juddii)	Endangered	Gastropod	No	*(Achatinella juddii)*	Terrestrial
		Snail, O'ahu Tree (Achatinella juncea)	Endangered	Gastropod	No	*(Achatinella juncea)*	Terrestrial
		Snail, O'ahu Tree (Achatinella lehuiensis)	Endangered	Gastropod	No	*(Achatinella lehuiensis)*	Terrestrial
		Snail, O'ahu Tree (Achatinella leucorraphe)	Endangered	Gastropod	No	*(Achatinella leucorraphe)*	Terrestrial
		Snail, O'ahu Tree (Achatinella lila)	Endangered	Gastropod	No	*(Achatinella lila)*	Terrestrial
		Snail, O'ahu Tree (Achatinella livida)	Endangered	Gastropod	No	*(Achatinella livida)*	Terrestrial
		Snail, O'ahu Tree (Achatinella lorata)	Endangered	Gastropod	No	*(Achatinella lorata)*	Terrestrial
		Snail, O'ahu Tree (Achatinella mustelina)	Endangered	Gastropod	No	*(Achatinella mustelina)*	Terrestrial
		Snail, O'ahu Tree (Achatinella papyracea)	Endangered	Gastropod	No	*(Achatinella papyracea)*	Terrestrial
		Snail, O'ahu Tree (Achatinella phaeozona)	Endangered	Gastropod	No	*(Achatinella phaeozona)*	Terrestrial
		Snail, O'ahu Tree (Achatinella pulcherrima)	Endangered	Gastropod	No	*(Achatinella pulcherrima)*	Terrestrial
		Snail, O'ahu Tree (Achatinella pupukanioe)	Endangered	Gastropod	No	*(Achatinella pupukanioe)*	Terrestrial
		Snail, O'ahu Tree (Achatinella rosea)	Endangered	Gastropod	No	*(Achatinella rosea)*	Terrestrial
		Snail, O'ahu Tree (Achatinella sowerbyana)	Endangered	Gastropod	No	*(Achatinella sowerbyana)*	Terrestrial
		Snail, O'ahu Tree (Achatinella spaldingi)	Endangered	Gastropod	No	*(Achatinella spaldingi)*	Terrestrial
		Snail, O'ahu Tree (Achatinella stewartii)	Endangered	Gastropod	No	*(Achatinella stewartii)*	Terrestrial
		Snail, O'ahu Tree (Achatinella swiftii)	Endangered	Gastropod	No	*(Achatinella swiftii)*	Terrestrial
		Snail, O'ahu Tree (Achatinella taeniolata)	Endangered	Gastropod	No	*(Achatinella taeniolata)*	Terrestrial
		Snail, O'ahu Tree (Achatinella thaanumi)	Endangered	Gastropod	No	*(Achatinella thaanumi)*	Terrestrial
		Snail, O'ahu Tree (Achatinella turgida)	Endangered	Gastropod	No	*(Achatinella turgida)*	Terrestrial
Hawaii	(302) species:						
		Snail, O'ahu Tree (Achatinella valida)	Endangered	Gastropod	No	*(Achatinella valida)*	Terrestrial

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		Moth, Blackburn's Sphinx	Endangered	Insect	Yes	*(Manduca blackburni)*	Terrestrial
		Bat, Hawaiian Hoary	Endangered	Mammal	No	*(Lasiurus cinereus semotus)*	Terrestrial, Subterraneous
		Seal, Hawaiian Monk	Endangered	Marine mml	Yes	*(Monachus schauinslandi)*	Coastal (neritic), Saltwater
		Bluegrass, Hawaiian	Endangered	Monocot	Yes	*(Poa sandvicensis)*	Terrestrial
		Bluegrass, Mann's (Poa mannii)	Endangered	Monocot	Yes	*(Poa mannii)*	Terrestrial
		Gahnia Lanaiensis (ncn)	Endangered	Monocot	No	*(Gahnia lanaiensis)*	Terrestrial
		Grass, Fosberg's Love	Endangered	Monocot	Yes	*(Eragrostis fosbergii)*	Terrestrial
		Hilo Ischaemum (Ischaemum byrone)	Endangered	Monocot	Yes	*(Ischaemum byrone)*	Terrestrial
		Kamanomano (Cenchrus agrimonioides)	Endangered	Monocot	Yes	*(Cenchrus agrimonioides)*	Terrestrial
		Lau'ehu (Panicum niihauense)	Endangered	Monocot	Yes	*(Panicum niihauense)*	Terrestrial
		Lo`ulu (Pritchardia kaalae)	Endangered	Monocot	No	*(Pritchardia kaalae)*	Terrestrial
		Lo`ulu (Pritchardia munroi)	Endangered	Monocot	Yes	*(Pritchardia munroi)*	Terrestrial
		Lo`ulu (Pritchardia napaliensis)	Endangered	Monocot	No	*(Pritchardia napaliensis)*	Terrestrial
		Lo`ulu (Pritchardia remota)	Endangered	Monocot	Yes	*(Pritchardia remota)*	Terrestrial
		Lo`ulu (Pritchardia viscosa)	Endangered	Monocot	No	*(Pritchardia viscosa)*	Terrestrial
		Mariscus fauriei (ncn)	Endangered	Monocot	Yes	*(Mariscus fauriei)*	Terrestrial
		Mariscus pennatiformis (ncn)	Endangered	Monocot	Yes	*(Mariscus pennatiformis)*	Terrestrial
		Panicgrass, Carter's (Panicum fauriei var.carteri)	Endangered	Monocot	Yes	*(Panicum fauriei var. carteri)*	Terrestrial
		Platanthera holochila (ncn)	Endangered	Monocot	Yes	*(Platanthera holochila)*	Terrestrial
		Poa siphonoglossa (ncn)	Endangered	Monocot	Yes	*(Poa siphonoglossa)*	Terrestrial
Hawaii	(302) species:						
		Pu'uka'a (Cyperus trachysanthos)	Endangered	Monocot	Yes	*(Cyperus trachysanthos)*	Terrestrial
		Wahane (Pritchardia aylmer-robinsonii)	Endangered	Monocot	No	*(Pritchardia aylmer-robinsonii)*	Terrestrial
		Sea turtle, green	Endangered	Reptile	No	*(Chelonia mydas)*	Saltwater
		Sea turtle, hawksbill	Endangered	Reptile	Yes	*(Eretmochelys imbricata)*	Saltwater
Idaho	(22) species:						
		Crane, Whooping	Endangered	Bird	Yes	*(Grus americana)*	Terrestrial, Freshwater
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Catchfly, Spalding's	Threatened	Dicot	No	*(Silene spaldingii)*	Terrestrial
		Howellia, Water	Threatened	Dicot	No	*(Howellia aquatilis)*	Freshwater
		Salmon, Chinook (Snake River Fall Run)	Threatened	Fish	No	*(Oncorhynchus (=Salmo) tshawytscha)*	Freshwater, Saltwater, Brackish
		Salmon, Chinook (Snake River spring/summer)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) tshawytscha)*	Brackish, Saltwater, Freshwater
		Salmon, Sockeye (Snake River population)	Endangered	Fish	No	*(Oncorhynchus (=Salmo) nerka)*	Brackish, Saltwater, Freshwater
		Steelhead, (Snake River Basin population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Freshwater, Brackish, Saltwater
		Sturgeon, White	Endangered	Fish	Yes	*(Acipenser transmontanus)*	Saltwater, Freshwater
		Trout, Bull	Threatened	Fish	No	*(Salvelinus confluentus)*	Freshwater
		Trout, Bull (Columbia River population)	Threatened	Fish	Yes	*(Salvelinus confluentus)*	Freshwater
		Trout, Bull (Klamath River population)	Threatened	Fish	Yes	*(Salvelinus confluentus)*	Freshwater
		Limpet, Banbury Springs	Endangered	Gastropod	No	*(Lanx sp.)*	Freshwater
		Snail, Bliss Rapids	Threatened	Gastropod	No	*(Taylorconcha serpenticola)*	Freshwater
		Snail, Snake River Physa	Endangered	Gastropod	No	*(Physa natricina)*	Terrestrial
		Snail, Utah Valvata	Endangered	Gastropod	No	*(Valvata utahensis)*	Terrestrial
		Springsnail, Bruneau Hot	Endangered	Gastropod	No	*(Pyrgulopsis bruneauensis)*	Freshwater
Idaho	(22) species:						
		Springsnail, Idaho	Endangered	Gastropod	No	*(Fontelicella idahoensis)*	Freshwater
		Bear, Grizzly	Threatened	Mammal	No	*(Ursus arctos horribilis)*	Terrestrial
		Caribou, Woodland	Endangered	Mammal	No	*(Rangifer tarandus caribou)*	Terrestrial
		Squirrel, Northern Idaho Ground	Threatened	Mammal	No	*(Spermophilus brunneus brunneus)*	Terrestrial
		Wolf, Gray	Endangered	Mammal	Yes	*(Canis lupus)*	Terrestrial
Illinois	(26) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Fanshell	Endangered	Bivalve	No	*(Cyprogenia stegaria)*	Freshwater
		Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No	*(Lampsilis abrupta)*	Freshwater

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		Mussel, Clubshell	Endangered	Bivalve	No	*(Pleurobema clava)*	Freshwater
		Pearlymussel, Fat Pocketbook	Endangered	Bivalve	No	*(Potamilus capax)*	Freshwater
		Pearlymussel, Higgins' Eye	Endangered	Bivalve	No	*(Lampsilis higginsii)*	Freshwater
		Pearlymussel, Orange-footed	Endangered	Bivalve	No	*(Plethobasus cooperianus)*	Freshwater
		Pearlymussel, White Wartyback	Endangered	Bivalve	No	*(Plethobasus cicatricosus)*	Freshwater
		Amphipod, Illinois Cave	Endangered	Crustacean	No	*(Gammarus acherondytes)*	Subterraneous, Freshwater
		Aster, Decurrent False	Threatened	Dicot	No	*(Boltonia decurrens)*	Terrestrial, Freshwater
		Clover, Leafy Prairie	Endangered	Dicot	No	*(Dalea foliosa)*	Terrestrial
		Clover, Prairie Bush	Threatened	Dicot	No	*(Lespedeza leptostachya)*	Terrestrial
		Daisy, Lakeside	Threatened	Dicot	No	*(Hymenoxys herbacea)*	Freshwater
		Milkweed, Mead's	Threatened	Dicot	No	*(Asclepias meadii)*	Terrestrial
Illinois	(26) species:						
		Potato-bean, Price's	Threatened	Dicot	No	*(Apios priceana)*	Terrestrial
		Thistle, Pitcher's	Threatened	Dicot	No	*(Cirsium pitcheri)*	Terrestrial
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
		Snail, Iowa Pleistocene	Endangered	Gastropod	No	*(Discus macclintocki)*	Terrestrial
		Butterfly, Karner Blue	Endangered	Insect	No	*(Lycaeides melissa samuelis)*	Terrestrial
		Dragonfly, Hine's Emerald	Endangered	Insect	No	*(Somatochlora hineana)*	Freshwater, Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Orchid, Eastern Prairie Fringed	Threatened	Monocot	No	*(Platanthera leucophaea)*	Terrestrial
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
Indiana	(24) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Fanshell	Endangered	Bivalve	No	*(Cyprogenia stegaria)*	Freshwater
		Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No	*(Lampsilis abrupta)*	Freshwater
		Mussel, Clubshell	Endangered	Bivalve	No	*(Pleurobema clava)*	Freshwater
		Mussel, Ring Pink (=Golf Stick Pearly)	Endangered	Bivalve	No	*(Obovaria retusa)*	Freshwater
		Mussel, Rough Pigtoe	Endangered	Bivalve	No	*(Pleurobema plenum)*	Freshwater
		Pearlymussel, Fat Pocketbook	Endangered	Bivalve	No	*(Potamilus capax)*	Freshwater
		Pearlymussel, Orange-footed	Endangered	Bivalve	No	*(Plethobasus cooperianus)*	Freshwater
		Pearlymussel, Tubercled-blossom	Endangered	Bivalve	No	*(Epioblasma torulosa torulosa)*	Freshwater
Indiana	(24) species:						
		Pearlymussel, White Cat's Paw	Endangered	Bivalve	No	*(Epioblasma obliquata perobliqua)*	Freshwater
		Pearlymussel, White Wartyback	Endangered	Bivalve	No	*(Plethobasus cicatricosus)*	Freshwater
		Riffleshell, Northern	Endangered	Bivalve	No	*(Epioblasma torulosa rangiana)*	Freshwater
		Clover, Running Buffalo	Endangered	Dicot	No	*(Trifolium stoloniferum)*	Terrestrial
		Goldenrod, Short's	Endangered	Dicot	No	*(Solidago shortii)*	Terrestrial
		Milkweed, Mead's	Threatened	Dicot	No	*(Asclepias meadii)*	Terrestrial
		Thistle, Pitcher's	Threatened	Dicot	No	*(Cirsium pitcheri)*	Terrestrial
		Butterfly, Karner Blue	Endangered	Insect	No	*(Lycaeides melissa samuelis)*	Terrestrial
		Butterfly, Mitchell's Satyr	Endangered	Insect	No	*(Neonympha mitchellii mitchellii)*	Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Orchid, Eastern Prairie Fringed	Threatened	Monocot	No	*(Platanthera leucophaea)*	Terrestrial
		Snake, Northern Copperbelly Water	Threatened	Reptile	No	*(Nerodia erythrogaster neglecta)*	Freshwater, Terrestrial
Iowa	(15) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Pearlymussel, Fat Pocketbook	Endangered	Bivalve	No	*(Potamilus capax)*	Freshwater
		Pearlymussel, Higgins' Eye	Endangered	Bivalve	No	*(Lampsilis higginsii)*	Freshwater
		Clover, Prairie Bush	Threatened	Dicot	No	*(Lespedeza leptostachya)*	Terrestrial
		Milkweed, Mead's	Threatened	Dicot	No	*(Asclepias meadii)*	Terrestrial

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		Monkshood, Northern Wild	Threatened	Dicot	No	*(Aconitum noveboracense)*	Terrestrial
Iowa	(15) species:						
		Fern, American hart's-tongue	Threatened	Ferns	No	*(Asplenium scolopendrium var. americanum)*	Terrestrial
		Shiner, Topeka	Endangered	Fish	Yes	*(Notropis topeka (=tristis))*	Freshwater
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
		Snail, Iowa Pleistocene	Endangered	Gastropod	No	*(Discus macclintocki)*	Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Orchid, Eastern Prairie Fringed	Threatened	Monocot	No	*(Platanthera leucophaea)*	Terrestrial
		Orchid, Western Prairie Fringed	Threatened	Monocot	No	*(Platanthera praeclara)*	Terrestrial
Kansas	(13) species:						
		Crane, Whooping	Endangered	Bird	Yes	*(Grus americana)*	Terrestrial, Freshwater
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Milkweed, Mead's	Threatened	Dicot	No	*(Asclepias meadii)*	Terrestrial
		Madtom, Neosho	Threatened	Fish	No	*(Noturus placidus)*	Freshwater
		Shiner, Arkansas River	Threatened	Fish	Yes	*(Notropis girardi)*	Freshwater
		Shiner, Topeka	Endangered	Fish	Yes	*(Notropis topeka (=tristis))*	Freshwater
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
		Beetle, American Burying	Endangered	Insect	No	*(Nicrophorus americanus)*	Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Ferret, Black-footed	Endangered	Mammal	No	*(Mustela nigripes)*	Terrestrial
		Orchid, Western Prairie Fringed	Threatened	Monocot	No	*(Platanthera praeclara)*	Terrestrial
Kentucky	(49) species:						
Kentucky	(49) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Warbler (=Wood), Kirtland's	Endangered	Bird	No	*(Dendroica kirtlandii)*	Terrestrial
		Warbler, Bachman's	Endangered	Bird	No	*(Vermivora bachmanii)*	Terrestrial
		Woodpecker, Ivory-billed	Endangered	Bird	No	*(Campephilus principalis)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
		Fanshell	Endangered	Bivalve	No	*(Cyprogenia stegaria)*	Freshwater
		Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No	*(Lampsilis abrupta)*	Freshwater
		Mussel, Clubshell	Endangered	Bivalve	No	*(Pleurobema clava)*	Freshwater
		Mussel, Cumberland Combshell	Endangered	Bivalve	Yes	*(Epioblasma brevidens)*	Freshwater
		Mussel, Cumberland Elktoe	Endangered	Bivalve	Yes	*(Alasmidonta atropurpurea)*	Freshwater
		Mussel, Oyster	Endangered	Bivalve	Yes	*(Epioblasma capsaeformis)*	Freshwater
		Mussel, Ring Pink (=Golf Stick Pearly)	Endangered	Bivalve	No	*(Obovaria retusa)*	Freshwater
		Mussel, Rough Pigtoe	Endangered	Bivalve	No	*(Pleurobema plenum)*	Freshwater
		Mussel, Winged Mapleleaf	Endangered	Bivalve	No	*(Quadrula fragosa)*	Freshwater
		Pearlymussel, Appalachian Monkeyface	Endangered	Bivalve	No	*(Quadrula sparsa)*	Freshwater
		Pearlymussel, Cracking	Endangered	Bivalve	No	*(Hemistena lata)*	Freshwater
		Pearlymussel, Cumberland Bean	Endangered	Bivalve	No	*(Villosa trabalis)*	Freshwater
		Pearlymussel, Dromedary	Endangered	Bivalve	No	*(Dromus dromas)*	Freshwater
		Pearlymussel, Fat Pocketbook	Endangered	Bivalve	No	*(Potamilus capax)*	Freshwater
Kentucky	(49) species:						
		Pearlymussel, Little-wing	Endangered	Bivalve	No	*(Pegias fabula)*	Freshwater
		Pearlymussel, Orange-footed	Endangered	Bivalve	No	*(Plethobasus cooperianus)*	Freshwater
		Pearlymussel, Purple Cat's Paw	Endangered	Bivalve	No	*(Epioblasma obliquata obliquata)*	Freshwater
		Pearlymussel, Tubercled-blossom	Endangered	Bivalve	No	*(Epioblasma torulosa torulosa)*	Freshwater
		Pearlymussel, White Wartyback	Endangered	Bivalve	No	*(Plethobasus cicatricosus)*	Freshwater
		Pearlymussel, Yellow-blossom	Endangered	Bivalve	No	*(Epioblasma florentina florentina)*	Freshwater
		Riffleshell, Northern	Endangered	Bivalve	No	*(Epioblasma torulosa rangiana)*	Freshwater
		Riffleshell, Tan	Endangered	Bivalve	No	*(Epioblasma florentina walkeri (=E. walkeri))*	Freshwater

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		Shrimp, Kentucky Cave	Endangered	Crustacean	Yes	*(Palaemonias ganteri)*	Freshwater
		Chaffseed, American	Endangered	Dicot	No	*(Schwalbea americana)*	Terrestrial
		Clover, Running Buffalo	Endangered	Dicot	No	*(Trifolium stoloniferum)*	Terrestrial
		Goldenrod, Short's	Endangered	Dicot	No	*(Solidago shortii)*	Terrestrial
		Goldenrod, White-haired	Threatened	Dicot	No	*(Solidago albopilosa)*	Terrestrial
		Potato-bean, Price's	Threatened	Dicot	No	*(Apios priceana)*	Terrestrial
		Rock-cress, Large (=Braun's)	Endangered	Dicot	Yes	*(Arabis perstellata E. L. Braun var. ampla Rollins)*	Terrestrial
		Rock-cress, Small	Endangered	Dicot	Yes	*(Arabis perstellata E. L. Braun var. perstellata Fernald)*	Terrestrial
		Rosemary, Cumberland	Threatened	Dicot	No	*(Conradina verticillata)*	Terrestrial
		Sandwort, Cumberland	Endangered	Dicot	No	*(Arenaria cumberlandensis)*	Terrestrial
		Spiraea, Virginia	Threatened	Dicot	No	*(Spiraea virginiana)*	Terrestrial
		Dace, Blackside	Threatened	Fish	No	*(Phoxinus cumberlandensis)*	Freshwater
		Darter, Bluemask (=jewel)	Endangered	Fish	No	*(Etheostoma ;)*	Freshwater
Kentucky	(49) species:						
		Darter, Relict	Endangered	Fish	No	*(Etheostoma chienense)*	Freshwater
		Shiner, Palezone	Endangered	Fish	No	*(Notropis albizonatus)*	Freshwater
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
		Beetle, American Burying	Endangered	Insect	No	*(Nicrophorus americanus)*	Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Bat, Virginia Big-eared	Endangered	Mammal	Yes	*(Corynorhinus (=Plecotus) townsendii virginianus)*	Terrestrial, Subterraneous
Louisiana	(23) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Pelican, Brown	Endangered	Bird	No	*(Pelecanus occidentalis)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, California Least	Endangered	Bird	No	*(Sterna antillarum browni)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
		Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No	*(Lampsilis abrupta)*	Freshwater
		Mussel, Heelsplitter Inflated	Threatened	Bivalve	No	*(Potamilus inflatus)*	Freshwater
		Pearlshell, Louisiana	Threatened	Bivalve	No	*(Margaritifera hembeli)*	Freshwater
		Chaffseed, American	Endangered	Dicot	No	*(Schwalbea americana)*	Terrestrial
		Fruit, Earth (=geocarpon)	Threatened	Dicot	No	*(Geocarpon minimum)*	Terrestrial
		Quillwort, Louisiana	Endangered	Ferns	No	*(Isoetes louisianensis)*	Freshwater, Terrestrial
		Sturgeon, Gulf	Threatened	Fish	Yes	*(Acipenser oxyrinchus desotoi)*	Saltwater, Freshwater
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
Louisiana	(23) species:						
		Bear, Louisiana Black	Threatened	Mammal	No	*(Ursus americanus luteolus)*	Terrestrial
		Manatee, West Indian	Endangered	Marine mml	Yes	*(Trichechus manatus)*	Saltwater
		Sea turtle, green	Endangered	Reptile	No	*(Chelonia mydas)*	Saltwater
		Sea turtle, hawksbill	Endangered	Reptile	Yes	*(Eretmochelys imbricata)*	Saltwater
		Sea turtle, Kemp's ridley	Endangered	Reptile	No	*(Lepidochelys kempii)*	Saltwater
		Sea turtle, leatherback	Endangered	Reptile	Yes	*(Dermochelys coriacea)*	Saltwater
		Sea turtle, loggerhead	Threatened	Reptile	No	*(Caretta caretta)*	Saltwater
		Tortoise, Gopher	Threatened	Reptile	No	*(Gopherus polyphemus)*	Terrestrial
		Turtle, Ringed Sawback	Threatened	Reptile	No	*(Graptemys oculifera)*	Freshwater, Terrestrial
Maine	(9) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Roseate	Endangered	Bird	No	*(Sterna dougallii dougallii)*	Terrestrial
		Lousewort, Furbish	Endangered	Dicot	No	*(Pedicularis furbishiae)*	Terrestrial
		Salmon, Atlantic	Endangered	Fish	No	*(Salmo salar)*	Brackish, Saltwater, Freshwater
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater
		Lynx, Canada	Threatened	Mammal	No	*(Lynx canadensis)*	Terrestrial
		Orchid, Eastern Prairie Fringed	Threatened	Monocot	No	*(Platanthera leucophaea)*	Terrestrial
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial

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Maryland	(16) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
Maryland	(16) species:						
		Mussel, Dwarf Wedge	Endangered	Bivalve	No	*(Alasmidonta heterodon)*	Freshwater
		Dropwort, Canby's	Endangered	Dicot	No	*(Oxypolis canbyi)*	Terrestrial, Freshwater
		Gerardia, Sandplain	Endangered	Dicot	No	*(Agalinis acuta)*	Terrestrial
		Harperella	Endangered	Dicot	No	*(Ptilimnium nodosum)*	Freshwater
		Joint-vetch, Sensitive	Threatened	Dicot	No	*(Aeschynomene virginica)*	Terrestrial, Brackish
		Darter, Maryland	Endangered	Fish	Yes	*(Etheostoma sellare)*	Freshwater
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater
		Beetle, Northeastern Beach Tiger	Threatened	Insect	No	*(Cicindela dorsalis dorsalis)*	Terrestrial
		Beetle, Puritan Tiger	Threatened	Insect	No	*(Cicindela puritana)*	Terrestrial, Coastal (neritic)
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Squirrel, Delmarva Peninsula Fox	Endangered	Mammal	No	*(Sciurus niger cinereus)*	Terrestrial
		Bulrush, Northeastern (=Barbed Bristle)	Endangered	Monocot	No	*(Scirpus ancistrochaetus)*	Terrestrial, Freshwater
		Pink, Swamp	Threatened	Monocot	No	*(Helonias bullata)*	Terrestrial, Freshwater
		Turtle, Bog (Northern population)	Threatened	Reptile	No	*(Clemmys muhlenbergii)*	Terrestrial, Freshwater
Massachusetts	(14) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Starling, Ponape Mountain	Endangered	Bird	No	*(Aplonis pelzelni)*	Terrestrial
		Tern, Roseate	Endangered	Bird	No	*(Sterna dougallii dougallii)*	Terrestrial
		Gerardia, Sandplain	Endangered	Dicot	No	*(Agalinis acuta)*	Terrestrial
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater
		Beetle, American Burying	Endangered	Insect	No	*(Nicrophorus americanus)*	Terrestrial
Massachusetts	(14) species:						
		Beetle, Northeastern Beach Tiger	Threatened	Insect	No	*(Cicindela dorsalis dorsalis)*	Terrestrial
		Beetle, Puritan Tiger	Threatened	Insect	No	*(Cicindela puritana)*	Terrestrial, Coastal (neritic)
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Bulrush, Northeastern (=Barbed Bristle)	Endangered	Monocot	No	*(Scirpus ancistrochaetus)*	Terrestrial, Freshwater
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
		Turtle, Bog (Northern population)	Threatened	Reptile	No	*(Clemmys muhlenbergii)*	Terrestrial, Freshwater
		Turtle, Plymouth Red-bellied	Endangered	Reptile	Yes	*(Pseudemys rubriventris bangsi)*	Terrestrial, Freshwater
Michigan	(21) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Warbler (=Wood), Kirtland's	Endangered	Bird	No	*(Dendroica kirtlandii)*	Terrestrial
		Mussel, Clubshell	Endangered	Bivalve	No	*(Pleurobema clava)*	Freshwater
		Riffleshell, Northern	Endangered	Bivalve	No	*(Epioblasma torulosa rangiana)*	Freshwater
		Daisy, Lakeside	Threatened	Dicot	No	*(Hymenoxys herbacea)*	Freshwater
		Goldenrod, Houghton's	Threatened	Dicot	No	*(Solidago houghtonii)*	Terrestrial
		Monkey-flower, Michigan	Endangered	Dicot	No	*(Mimulus glabratus var. michiganensis)*	Terrestrial, Freshwater
		Thistle, Pitcher's	Threatened	Dicot	No	*(Cirsium pitcheri)*	Terrestrial
		Fern, American hart's-tongue	Threatened	Ferns	No	*(Asplenium scolopendrium var. americanum)*	Terrestrial
		Beetle, Hungerford's Crawling Water	Endangered	Insect	No	*(Brychius hungerfordi)*	Freshwater
		Butterfly, Karner Blue	Endangered	Insect	No	*(Lycaeides melissa samuelis)*	Terrestrial
		Butterfly, Mitchell's Satyr	Endangered	Insect	No	*(Neonympha mitchellii mitchellii)*	Terrestrial
		Dragonfly, Hine's Emerald	Endangered	Insect	No	*(Somatochlora hineana)*	Freshwater, Terrestrial
Michigan	(21) species:						
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Lynx, Canada	Threatened	Mammal	No	*(Lynx canadensis)*	Terrestrial
		Wolf, Gray	Endangered	Mammal	Yes	*(Canis lupus)*	Terrestrial
		Iris, Dwarf Lake	Threatened	Monocot	No	*(Iris lacustris)*	Terrestrial
		Orchid, Eastern Prairie Fringed	Threatened	Monocot	No	*(Platanthera leucophaea)*	Terrestrial

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		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
		Snake, Northern Copperbelly Water	Threatened	Reptile	No	*(Nerodia erythrogaster neglecta)*	Freshwater, Terrestrial
Minnesota	(12) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Mussel, Winged Mapleleaf	Endangered	Bivalve	No	*(Quadrula fragosa)*	Freshwater
		Pearlymussel, Higgins' Eye	Endangered	Bivalve	No	*(Lampsilis higginsii)*	Freshwater
		Clover, Prairie Bush	Threatened	Dicot	No	*(Lespedeza leptostachya)*	Terrestrial
		Roseroot, Leedy's	Threatened	Dicot	No	*(Sedum integrifolium ssp. leedyi)*	Terrestrial
		Shiner, Topeka	Endangered	Fish	Yes	*(Notropis topeka (=tristis))*	Freshwater
		Butterfly, Karner Blue	Endangered	Insect	No	*(Lycaeides melissa samuelis)*	Terrestrial
		Lynx, Canada	Threatened	Mammal	No	*(Lynx canadensis)*	Terrestrial
		Wolf, Gray	Threatened	Mammal	Yes	*(Canis lupus)*	Terrestrial
		Lily, Minnesota Trout	Endangered	Monocot	No	*(Erythronium propullans)*	Terrestrial
		Orchid, Western Prairie Fringed	Threatened	Monocot	No	*(Platanthera praeclara)*	Terrestrial
Mississippi	(32) species:						
		Frog, Dusky Gopher (Mississippi DPS)	Endangered	Amphibian	No	*(Rana capito sevosa)*	Terrestrial, Freshwater
Mississippi	(32) species:						
		Crane, Mississippi Sandhill	Endangered	Bird	Yes	*(Grus canadensis pulla)*	Terrestrial, Freshwater
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Pelican, Brown	Endangered	Bird	No	*(Pelecanus occidentalis)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
		Combshell, Southern (=Penitent mussel)	Endangered	Bivalve	No	*(Epioblasma penita)*	Freshwater
		Mucket, Orangenacre	Threatened	Bivalve	Yes	*(Lampsilis perovalis)*	Freshwater
		Mussel, Alabama Moccasinshell	Threatened	Bivalve	Yes	*(Medionidus acutissimus)*	Freshwater
		Mussel, Black (=Curtus' Mussel) Clubshell	Endangered	Bivalve	No	*(Pleurobema curtum)*	Freshwater
		Mussel, Heavy Pigtoe (=Judge Tait's Mussel)	Endangered	Bivalve	No	*(Pleurobema taitianum)*	Freshwater
		Mussel, Heelsplitter Inflated	Threatened	Bivalve	No	*(Potamilus inflatus)*	Freshwater
		Mussel, Ovate Clubshell	Endangered	Bivalve	Yes	*(Pleurobema perovatum)*	Freshwater
		Mussel, Southern Clubshell	Endangered	Bivalve	Yes	*(Pleurobema decisum)*	Freshwater
		Pearlymussel, Fat Pocketbook	Endangered	Bivalve	No	*(Potamilus capax)*	Freshwater
		Pondberry	Endangered	Dicot	No	*(Lindera melissifolia)*	Terrestrial
		Potato-bean, Price's	Threatened	Dicot	No	*(Apios priceana)*	Terrestrial
		Quillwort, Louisiana	Endangered	Ferns	No	*(Isoetes louisianensis)*	Freshwater, Terrestrial
		Darter, Bayou	Threatened	Fish	No	*(Etheostoma rubrum)*	Freshwater
		Sturgeon, Gulf	Threatened	Fish	Yes	*(Acipenser oxyrinchus desotoi)*	Saltwater, Freshwater
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
Mississippi	(32) species:						
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Bear, Louisiana Black	Threatened	Mammal	No	*(Ursus americanus luteolus)*	Terrestrial
		Sea turtle, green	Endangered	Reptile	No	*(Chelonia mydas)*	Saltwater
		Sea turtle, Kemp's ridley	Endangered	Reptile	No	*(Lepidochelys kempii)*	Saltwater
		Sea turtle, loggerhead	Threatened	Reptile	No	*(Caretta caretta)*	Saltwater
		Snake, Eastern Indigo	Threatened	Reptile	No	*(Drymarchon corais couperi)*	Terrestrial
		Tortoise, Gopher	Threatened	Reptile	No	*(Gopherus polyphemus)*	Terrestrial
		Turtle, Ringed Sawback	Threatened	Reptile	No	*(Graptemys oculifera)*	Freshwater, Terrestrial
		Turtle, Yellow-blotched Map	Threatened	Reptile	No	*(Graptemys flavimaculata)*	Freshwater, Terrestrial
Missouri	(30) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No	*(Lampsilis abrupta)*	Freshwater

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		Mussel, Scaleshell	Endangered	Bivalve	No	*(Leptodea leptodon)*	Freshwater
		Mussel, Winged Mapleleaf	Endangered	Bivalve	No	*(Quadrula fragosa)*	Freshwater
		Pearlymussel, Curtis'	Endangered	Bivalve	No	*(Epioblasma florentina curtisii)*	Freshwater
		Pearlymussel, Fat Pocketbook	Endangered	Bivalve	No	*(Potamilus capax)*	Freshwater
		Pearlymussel, Higgins' Eye	Endangered	Bivalve	No	*(Lampsilis higginsii)*	Freshwater
		Crayfish, Cave (Cambarus aculabrum)	Endangered	Crustacean	No	*(Cambarus aculabrum)*	Freshwater
		Aster, Decurrent False	Threatened	Dicot	No	*(Boltonia decurrens)*	Terrestrial, Freshwater
Missouri	(30) species:						
		Bladderpod, Missouri	Threatened	Dicot	No	*(Lesquerella filiformis)*	Terrestrial
		Clover, Running Buffalo	Endangered	Dicot	No	*(Trifolium stoloniferum)*	Terrestrial
		Fruit, Earth (=geocarpon)	Threatened	Dicot	No	*(Geocarpon minimum)*	Terrestrial
		Milkweed, Mead's	Threatened	Dicot	No	*(Asclepias meadii)*	Terrestrial
		Pondberry	Endangered	Dicot	No	*(Lindera melissifolia)*	Terrestrial
		Sneezeweed, Virginia	Threatened	Dicot	No	*(Helenium virginicum)*	Vernal pool
		Cavefish, Ozark	Threatened	Fish	No	*(Amblyopsis rosae)*	Freshwater
		Chub, Humpback	Endangered	Fish	Yes	*(Gila cypha)*	Freshwater
		Darter, Niangua	Threatened	Fish	Yes	*(Etheostoma nianguae)*	Freshwater
		Madtom, Neosho	Threatened	Fish	No	*(Noturus placidus)*	Freshwater
		Shiner, Topeka	Endangered	Fish	Yes	*(Notropis topeka (=tristis))*	Freshwater
		Sturgeon, Gulf	Threatened	Fish	Yes	*(Acipenser oxyrinchus desotoi)*	Saltwater, Freshwater
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
		Cavesnail, Tumbling Creek	Endangered	Gastropod	No	*(Antrobia culveri)*	Subterraneous, Freshwater
		Beetle, American Burying	Endangered	Insect	No	*(Nicrophorus americanus)*	Terrestrial
		Dragonfly, Hine's Emerald	Endangered	Insect	No	*(Somatochlora hineana)*	Freshwater, Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Orchid, Western Prairie Fringed	Threatened	Monocot	No	*(Platanthera praeclara)*	Terrestrial
Montana	(13) species:						
		Crane, Whooping	Endangered	Bird	Yes	*(Grus americana)*	Terrestrial, Freshwater
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
Montana	(13) species:						
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Catchfly, Spalding's	Threatened	Dicot	No	*(Silene spaldingii)*	Terrestrial
		Howellia, Water	Threatened	Dicot	No	*(Howellia aquatilis)*	Freshwater
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
		Trout, Bull	Threatened	Fish	No	*(Salvelinus confluentus)*	Freshwater
		Trout, Bull (Columbia River population)	Threatened	Fish	Yes	*(Salvelinus confluentus)*	Freshwater
		Trout, Bull (Klamath River population)	Threatened	Fish	Yes	*(Salvelinus confluentus)*	Freshwater
		Bear, Grizzly	Threatened	Mammal	No	*(Ursus arctos horribilis)*	Terrestrial
		Ferret, Black-footed	Endangered	Mammal	No	*(Mustela nigripes)*	Terrestrial
		Wolf, Gray	Endangered	Mammal	Yes	*(Canis lupus)*	Terrestrial
Nebraska	(11) species:						
		Crane, Whooping	Endangered	Bird	Yes	*(Grus americana)*	Terrestrial, Freshwater
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Butterfly Plant, Colorado	Threatened	Dicot	Yes	*(Gaura neomexicana var. coloradensis)*	Terrestrial
		Penstemon, Blowout	Endangered	Dicot	No	*(Penstemon haydenii)*	Terrestrial
		Shiner, Topeka	Endangered	Fish	Yes	*(Notropis topeka (=tristis))*	Freshwater
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
		Beetle, Salt Creek Tiger	Endangered	Insect	No	*(Cicindela nevadica lincolniana)*	Terrestrial
		Ferret, Black-footed	Endangered	Mammal	No	*(Mustela nigripes)*	Terrestrial
Nebraska	(11) species:						
		Orchid, Western Prairie Fringed	Threatened	Monocot	No	*(Platanthera praeclara)*	Terrestrial

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Nevada	(29) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Blazing Star, Ash Meadows	Threatened	Dicot	Yes	*(Mentzelia leucophylla)*	Terrestrial
		Buckwheat, Steamboat	Endangered	Dicot	No	*(Eriogonum ovalifolium var. williamsiae)*	Terrestrial
		Centaury, Spring-loving	Threatened	Dicot	Yes	*(Centaurium namophilum)*	Terrestrial
		Gumplant, Ash Meadows	Threatened	Dicot	Yes	*(Grindelia fraxino-pratensis)*	Terrestrial
		Ivesia, Ash Meadows	Threatened	Dicot	Yes	*(Ivesia kingii var. eremica)*	Terrestrial
		Milk-vetch, Ash Meadows	Threatened	Dicot	Yes	*(Astragalus phoenix)*	Terrestrial
		Niterwort, Amargosa	Endangered	Dicot	Yes	*(Nitrophila mohavensis)*	Terrestrial
		Sunray, Ash Meadows	Threatened	Dicot	Yes	*(Enceliopsis nudicaulis var. corrugata)*	Terrestrial
		Chub, Pahranagat Roundtail	Endangered	Fish	No	*(Gila robusta jordani)*	Freshwater
		Cui-ui	Endangered	Fish	No	*(Chasmistes cujus)*	Freshwater
		Dace, Ash Meadows Speckled	Endangered	Fish	Yes	*(Rhinichthys osculus nevadensis)*	Freshwater
		Dace, Desert	Threatened	Fish	Yes	*(Eremichthys acros)*	Freshwater
		Poolfish, Pahrump (= Pahrump Killifish)	Endangered	Fish	No	*(Empetrichthys latos)*	Freshwater
		Pupfish, Ash Meadows Amargosa	Endangered	Fish	Yes	*(Cyprinodon nevadensis mionectes)*	Freshwater
		Pupfish, Devils Hole	Endangered	Fish	No	*(Cyprinodon diabolis)*	Freshwater
		Pupfish, Warm Springs	Endangered	Fish	No	*(Cyprinodon nevadensis pectoralis)*	Freshwater
		Spinedace, Big Spring	Threatened	Fish	Yes	*(Lepidomeda mollispinis pratensis)*	Freshwater
		Spinedace, White River	Endangered	Fish	Yes	*(Lepidomeda albivallis)*	Freshwater
		Springfish, Hiko White River	Endangered	Fish	Yes	*(Crenichthys baileyi grandis)*	Freshwater
Nevada	(29) species:						
		Springfish, Railroad Valley	Threatened	Fish	Yes	*(Crenichthys nevadae)*	Freshwater
		Springfish, White River	Endangered	Fish	Yes	*(Crenichthys baileyi baileyi)*	Freshwater
		Sucker, Warner	Threatened	Fish	Yes	*(Catostomus warnerensis)*	Freshwater
		Trout, Bull	Threatened	Fish	No	*(Salvelinus confluentus)*	Freshwater
		Trout, Lahontan Cutthroat	Threatened	Fish	No	*(Oncorhynchus clarki henshawi)*	Freshwater
		Naucorid, Ash Meadows	Threatened	Insect	Yes	*(Ambrysus amargosus)*	Terrestrial
		Skipper, Carson Wandering	Endangered	Insect	No	*(Pseudocopaeodes eunus obscurus)*	Terrestrial
		Ladies'-tresses, Ute	Threatened	Monocot	No	*(Spiranthes diluvialis)*	Terrestrial
		Tortoise, Desert	Threatened	Reptile	Yes	*(Gopherus agassizii)*	Terrestrial
New Hampshire	(6) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Mussel, Dwarf Wedge	Endangered	Bivalve	No	*(Alasmidonta heterodon)*	Freshwater
		Milk-vetch, Jesup's	Endangered	Dicot	No	*(Astragalus robbinsii var. jesupi)*	Terrestrial
		Butterfly, Karner Blue	Endangered	Insect	No	*(Lycaeides melissa samuelis)*	Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
New Jersey	(11) species:						
		Curlew, Eskimo	Endangered	Bird	No	*(Numenius borealis)*	Terrestrial
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Chaffseed, American	Endangered	Dicot	No	*(Schwalbea americana)*	Terrestrial
		Joint-vetch, Sensitive	Threatened	Dicot	No	*(Aeschynomene virginica)*	Terrestrial, Brackish
New Jersey	(11) species:						
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Beaked-rush, Knieskern's	Threatened	Monocot	No	*(Rhynchospora knieskernii)*	Terrestrial
		Pink, Swamp	Threatened	Monocot	No	*(Helonias bullata)*	Terrestrial, Freshwater
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
		Turtle, Bog (Northern population)	Threatened	Reptile	No	*(Clemmys muhlenbergii)*	Terrestrial, Freshwater
New Mexico	(45) species:						
		Frog, Chiricahua Leopard	Threatened	Amphibian	No	*(Rana chiricahuensis)*	Freshwater, Terrestrial
		Crane, Whooping	Endangered	Bird	Yes	*(Grus americana)*	Terrestrial, Freshwater

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		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Falcon, Northern Aplomado	Endangered	Bird	No	*(Falco femoralis septentrionalis)*	Terrestrial
		Flycatcher, Southwestern Willow	Endangered	Bird	Yes	*(Empidonax traillii extimus)*	Terrestrial
		Owl, Mexican Spotted	Threatened	Bird	Yes	*(Strix occidentalis lucida)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Amphipod, Noel's	Endangered	Crustacean	No	*(Gammarus desperatus)*	Freshwater
		Isopod, Socorro	Endangered	Crustacean	No	*(Thermosphaeroma thermophilus)*	Freshwater
		Cactus, Knowlton	Endangered	Dicot	No	*(Pediocactus knowltonii)*	Terrestrial
		Cactus, Kuenzler Hedgehog	Endangered	Dicot	No	*(Echinocereus fendleri var. kuenzleri)*	Terrestrial
		Cactus, Lee Pincushion	Threatened	Dicot	No	*(Coryphantha sneedii var. leei)*	Terrestrial
		Cactus, Mesa Verde	Threatened	Dicot	No	*(Sclerocactus mesae-verdae)*	Terrestrial
		Cactus, Sneed Pincushion	Endangered	Dicot	No	*(Coryphantha sneedii var. sneedii)*	Terrestrial
New Mexico	(45) species:						
		Fleabane, Zuni	Threatened	Dicot	No	*(Erigeron rhizomatus)*	Terrestrial
		Ipomopsis, Holy Ghost	Endangered	Dicot	No	*(Ipomopsis sancti-spiritus)*	Terrestrial
		Milk-vetch, Mancos	Endangered	Dicot	No	*(Astragalus humillimus)*	Terrestrial
		Pennyroyal, Todsen's	Endangered	Dicot	Yes	*(Hedeoma todsenii)*	Terrestrial
		Sunflower, Pecos	Threatened	Dicot	No	*(Helianthus paradoxus)*	Terrestrial, Freshwater
		Wild-buckwheat, Gypsum	Threatened	Dicot	Yes	*(Eriogonum gypsophilum)*	Terrestrial
		Chub, Chihuahua	Threatened	Fish	No	*(Gila nigrescens)*	Freshwater
		Chub, Gila	Endangered	Fish	Yes	*(Gila intermedia)*	Freshwater
		Gambusia, Pecos	Endangered	Fish	No	*(Gambusia nobilis)*	Freshwater
		Minnow, Loach	Threatened	Fish	Yes	*(Tiaroga cobitis)*	Freshwater
		Minnow, Rio Grande Silvery	Endangered	Fish	Yes	*(Hybognathus amarus)*	Freshwater
		Shiner, Arkansas River	Threatened	Fish	Yes	*(Notropis girardi)*	Freshwater
		Shiner, Beautiful	Threatened	Fish	Yes	*(Cyprinella formosa)*	Freshwater
		Shiner, Pecos Bluntnose	Threatened	Fish	Yes	*(Notropis simus pecosensis)*	Freshwater
		Spikedace	Threatened	Fish	Yes	*(Meda fulgida)*	Freshwater
		Squawfish, Colorado	Endangered	Fish	Yes	*(Ptychocheilus lucius)*	Freshwater
		Sucker, Razorback	Endangered	Fish	Yes	*(Xyrauchen texanus)*	Freshwater
		Topminnow, Gila (Yaqui)	Endangered	Fish	No	*(Poeciliopsis occidentalis)*	Freshwater
		Trout, Gila	Endangered	Fish	No	*(Oncorhynchus gilae)*	Freshwater
		Snail, Pecos Assiminea	Endangered	Gastropod	Yes	*(Assiminea pecos)*	Freshwater
		Springsnail, Alamosa	Endangered	Gastropod	No	*(Tryonia alamosae)*	Freshwater
New Mexico	(45) species:						
		Springsnail, Koster's	Endangered	Gastropod	No	*(Juturnia kosteri)*	Terrestrial
		Springsnail, Roswell	Endangered	Gastropod	No	*(Pyrgulopsis roswellensis)*	Freshwater
		Springsnail, Socorro	Endangered	Gastropod	No	*(Pyrgulopsis neomexicana)*	Freshwater
		Bat, Lesser (=Sanborn's) Long-nosed	Endangered	Mammal	No	*(Leptonycteris curasoae yerbabuenae)*	Subterraneous, Terrestrial
		Bat, Mexican Long-nosed	Endangered	Mammal	No	*(Leptonycteris nivalis)*	Subterraneous, Terrestrial
		Ferret, Black-footed	Endangered	Mammal	No	*(Mustela nigripes)*	Terrestrial
		Jaguar	Endangered	Mammal	No	*(Panthera onca)*	Terrestrial
		Wolf, Gray	Endangered	Mammal	Yes	*(Canis lupus)*	Terrestrial
		Rattlesnake, New Mexican Ridge-nosed	Threatened	Reptile	Yes	*(Crotalus willardi obscurus)*	Terrestrial
New York	(15) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Roseate	Endangered	Bird	No	*(Sterna dougallii dougallii)*	Terrestrial
		Mussel, Dwarf Wedge	Endangered	Bivalve	No	*(Alasmidonta heterodon)*	Freshwater
		Amaranth, Seabeach	Threatened	Dicot	No	*(Amaranthus pumilus)*	Coastal (neritic)
		Gerardia, Sandplain	Endangered	Dicot	No	*(Agalinis acuta)*	Terrestrial
		Monkshood, Northern Wild	Threatened	Dicot	No	*(Aconitum noveboracense)*	Terrestrial
		Roseroot, Leedy's	Threatened	Dicot	No	*(Sedum integrifolium ssp. leedyi)*	Terrestrial
		Fern, American hart's-tongue	Threatened	Ferns	No	*(Asplenium scolopendrium var. americanum)*	Terrestrial
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater

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		Snail, Chittenango Ovate Amber	Threatened	Gastropod	No	*(Succinea chittenangoensis)*	Terrestrial, Freshwater
		Butterfly, Karner Blue	Endangered	Insect	No	*(Lycaeides melissa samuelis)*	Terrestrial
New York	(15) species:						
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
		Turtle, Bog (Northern population)	Threatened	Reptile	No	*(Clemmys muhlenbergii)*	Terrestrial, Freshwater
North Carolina	(57) species:						
		Spider, Spruce-fir Moss	Endangered	Arachnid	Yes	*(Microhexura montivaga)*	Terrestrial
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Stork, Wood	Endangered	Bird	No	*(Mycteria americana)*	Terrestrial
		Tern, Roseate	Endangered	Bird	No	*(Sterna dougallii dougallii)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
		Elktoe, Appalachian	Endangered	Bivalve	Yes	*(Alasmidonta raveneliana)*	Freshwater
		Mussel, Dwarf Wedge	Endangered	Bivalve	No	*(Alasmidonta heterodon)*	Freshwater
		Mussel, Heelsplitter Carolina	Endangered	Bivalve	Yes	*(Lasmigona decorata)*	Freshwater
		Mussel, Oyster	Endangered	Bivalve	Yes	*(Epioblasma capsaeformis)*	Freshwater
		Pearlymussel, Little-wing	Endangered	Bivalve	No	*(Pegias fabula)*	Freshwater
		Purple Bean	Endangered	Bivalve	Yes	*(Villosa perpurpurea)*	Freshwater
		Spinymussel, James River	Endangered	Bivalve	No	*(Pleurobema collina)*	Freshwater
		Spinymussel, Tar River	Endangered	Bivalve	No	*(Elliptio steinstansana)*	Freshwater
		Amaranth, Seabeach	Threatened	Dicot	No	*(Amaranthus pumilus)*	Coastal (neritic)
		Avens, Spreading	Endangered	Dicot	No	*(Geum radiatum)*	Terrestrial
		Bittercress, Small-anthered	Endangered	Dicot	No	*(Cardamine micranthera)*	Terrestrial
		Blazing Star, Heller's	Threatened	Dicot	No	*(Liatris helleri)*	Terrestrial
North Carolina	(57) species:						
		Bluet, Roan Mountain	Endangered	Dicot	No	*(Hedyotis purpurea var. montana)*	Terrestrial
		Chaffseed, American	Endangered	Dicot	No	*(Schwalbea americana)*	Terrestrial
		Coneflower, Smooth	Endangered	Dicot	No	*(Echinacea laevigata)*	Terrestrial
		Dropwort, Canby's	Endangered	Dicot	No	*(Oxypolis canbyi)*	Terrestrial, Freshwater
		Goldenrod, Blue Ridge	Threatened	Dicot	No	*(Solidago spithamaea)*	Terrestrial
		Harperella	Endangered	Dicot	No	*(Ptilimnium nodosum)*	Freshwater
		Heartleaf, Dwarf-flowered	Threatened	Dicot	No	*(Hexastylis naniflora)*	Terrestrial
		Heather, Mountain Golden	Threatened	Dicot	Yes	*(Hudsonia montana)*	Terrestrial
		Joint-vetch, Sensitive	Threatened	Dicot	No	*(Aeschynomene virginica)*	Terrestrial, Brackish
		Loosestrife, Rough-leaved	Endangered	Dicot	No	*(Lysimachia asperulaefolia)*	Terrestrial
		Meadowrue, Cooley's	Endangered	Dicot	No	*(Thalictrum cooleyi)*	Terrestrial
		Pitcher-plant, Green	Endangered	Dicot	No	*(Sarracenia oreophila)*	Terrestrial, Freshwater
		Pitcher-plant, Mountain Sweet	Endangered	Dicot	No	*(Sarracenia rubra ssp. jonesii)*	Freshwater, Terrestrial
		Pondberry	Endangered	Dicot	No	*(Lindera melissifolia)*	Terrestrial
		Spiraea, Virginia	Threatened	Dicot	No	*(Spiraea virginiana)*	Terrestrial
		Sumac, Michaux's	Endangered	Dicot	No	*(Rhus michauxii)*	Terrestrial
		Sunflower, Schweinitz's	Endangered	Dicot	No	*(Helianthus schweinitzii)*	Terrestrial
		Chub, Spotfin	Threatened	Fish	Yes	*(Erimonax monachus)*	Freshwater
		Shiner, Cape Fear	Endangered	Fish	Yes	*(Notropis mekistocholas)*	Freshwater
		Silverside, Waccamaw	Threatened	Fish	Yes	*(Menidia extensa)*	Freshwater
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater
North Carolina	(57) species:						
		Snail, Noonday	Threatened	Gastropod	No	*(Mesodon clarki nantahala)*	Terrestrial
		Butterfly, Saint Francis' Satyr	Endangered	Insect	No	*(Neonympha mitchellii francisci)*	Terrestrial
		Lichen, Rock Gnome	Endangered	Lichen	No	*(Gymnoderma lineare)*	Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Bat, Virginia Big-eared	Endangered	Mammal	Yes	*(Corynorhinus (=Plecotus) townsendii virginianus)*	Terrestrial, Subterraneous
		Squirrel, Carolina Northern Flying	Endangered	Mammal	No	*(Glaucomys sabrinus coloratus)*	Terrestrial
		Manatee, West Indian	Endangered	Marine mml	Yes	*(Trichechus manatus)*	Saltwater

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		Arrowhead, Bunched	Endangered	Monocot	No	*(Sagittaria fasciculata)*	Freshwater
		Irisette, White	Endangered	Monocot	No	*(Sisyrinchium dichotomum)*	Terrestrial
		Pink, Swamp	Threatened	Monocot	No	*(Helonias bullata)*	Terrestrial, Freshwater
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
		Sedge, Golden	Endangered	Monocot	No	*(Carex lutea)*	Terrestrial
		Sea turtle, green	Endangered	Reptile	No	*(Chelonia mydas)*	Saltwater
		Sea turtle, hawksbill	Endangered	Reptile	Yes	*(Eretmochelys imbricata)*	Saltwater
		Sea turtle, Kemp's ridley	Endangered	Reptile	No	*(Lepidochelys kempii)*	Saltwater
		Sea turtle, leatherback	Endangered	Reptile	Yes	*(Dermochelys coriacea)*	Saltwater
		Sea turtle, loggerhead	Threatened	Reptile	No	*(Caretta caretta)*	Saltwater
North Dakota	(6) species:						
		Crane, Whooping	Endangered	Bird	Yes	*(Grus americana)*	Terrestrial, Freshwater
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
North Dakota	(6) species:						
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
		Orchid, Western Prairie Fringed	Threatened	Monocot	No	*(Platanthera praeclara)*	Terrestrial
Ohio	(23) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Fanshell	Endangered	Bivalve	No	*(Cyprogenia stegaria)*	Freshwater
		Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No	*(Lampsilis abrupta)*	Freshwater
		Mussel, Clubshell	Endangered	Bivalve	No	*(Pleurobema clava)*	Freshwater
		Pearlymussel, Purple Cat's Paw	Endangered	Bivalve	No	*(Epioblasma obliquata obliquata)*	Freshwater
		Pearlymussel, White Cat's Paw	Endangered	Bivalve	No	*(Epioblasma obliquata perobliqua)*	Freshwater
		Riffleshell, Northern	Endangered	Bivalve	No	*(Epioblasma torulosa rangiana)*	Freshwater
		Clover, Running Buffalo	Endangered	Dicot	No	*(Trifolium stoloniferum)*	Terrestrial
		Daisy, Lakeside	Threatened	Dicot	No	*(Hymenoxys herbacea)*	Freshwater
		Monkshood, Northern Wild	Threatened	Dicot	No	*(Aconitum noveboracense)*	Terrestrial
		Spiraea, Virginia	Threatened	Dicot	No	*(Spiraea virginiana)*	Terrestrial
		Madtom, Scioto	Endangered	Fish	No	*(Noturus trautmani)*	Freshwater
		Beetle, American Burying	Endangered	Insect	No	*(Nicrophorus americanus)*	Terrestrial
		Butterfly, Karner Blue	Endangered	Insect	No	*(Lycaeides melissa samuelis)*	Terrestrial
		Butterfly, Mitchell's Satyr	Endangered	Insect	No	*(Neonympha mitchellii mitchellii)*	Terrestrial
		Dragonfly, Hine's Emerald	Endangered	Insect	No	*(Somatochlora hineana)*	Freshwater, Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
Ohio	(23) species:						
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Orchid, Eastern Prairie Fringed	Threatened	Monocot	No	*(Platanthera leucophaea)*	Terrestrial
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
		Snake, Lake Erie Water	Threatened	Reptile	No	*(Nerodia sipedon insularum)*	Terrestrial, Freshwater
		Snake, Northern Copperbelly Water	Threatened	Reptile	No	*(Nerodia erythrogaster neglecta)*	Freshwater, Terrestrial
Oklahoma	(19) species:						
		Crane, Whooping	Endangered	Bird	Yes	*(Grus americana)*	Terrestrial, Freshwater
		Curlew, Eskimo	Endangered	Bird	No	*(Numenius borealis)*	Terrestrial
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Vireo, Black-capped	Endangered	Bird	No	*(Vireo atricapilla)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
		Mussel, Scaleshell	Endangered	Bivalve	No	*(Leptodea leptodon)*	Freshwater
		Rock-pocketbook, Ouachita (=Wheeler's pm)	Endangered	Bivalve	No	*(Arkansia wheeleri)*	Freshwater
		Cavefish, Ozark	Threatened	Fish	No	*(Amblyopsis rosae)*	Freshwater
		Darter, Leopard	Threatened	Fish	Yes	*(Percina pantherina)*	Freshwater

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		Madtom, Neosho	Threatened	Fish	No	*(Noturus placidus)*	Freshwater
		Shiner, Arkansas River	Threatened	Fish	Yes	*(Notropis girardi)*	Freshwater
		Beetle, American Burying	Endangered	Insect	No	*(Nicrophorus americanus)*	Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
Oklahoma	(19) species:						
		Bat, Ozark Big-eared	Endangered	Mammal	No	*(Corynorhinus (=Plecotus) townsendii ingens)*	Terrestrial, Subterraneous
		Orchid, Eastern Prairie Fringed	Threatened	Monocot	No	*(Platanthera leucophaea)*	Terrestrial
		Orchid, Western Prairie Fringed	Threatened	Monocot	No	*(Platanthera praeclara)*	Terrestrial
Oregon	(42) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Murrelet, Marbled	Threatened	Bird	Yes	*(Brachyramphus marmoratus marmoratus)*	Freshwater, Terrestrial, Saltwater
		Owl, Northern Spotted	Threatened	Bird	Yes	*(Strix occidentalis caurina)*	Terrestrial
		Pelican, Brown	Endangered	Bird	No	*(Pelecanus occidentalis)*	Terrestrial
		Plover, Western Snowy	Threatened	Bird	Yes	*(Charadrius alexandrinus nivosus)*	Terrestrial
		Fairy Shrimp, Vernal Pool	Threatened	Crustacean	Yes	*(Branchinecta lynchi)*	Vernal pool
		Checker-mallow, Nelson's	Threatened	Dicot	No	*(Sidalcea nelsoniana)*	Terrestrial
		Daisy, Willamette	Endangered	Dicot	No	*(Erigeron decumbens var. decumbens)*	Terrestrial
		Lomatium, Bradshaw's	Endangered	Dicot	No	*(Lomatium bradshawii)*	Terrestrial, Freshwater
		Lomatium, Cook's	Endangered	Dicot	No	*(Lomatium cookii)*	Vernal pool
		Lupine, Kincaid's	Threatened	Dicot	No	*(Lupinus sulphureus (=oreganus) ssp. kincaidii (=var. kincaidii))*	Terrestrial
		Meadowfoam, Large-flowered Woolly	Endangered	Dicot	No	*(Limnanthes floccosa ssp. Grandiflora)*	Vernal pool
		Milk-vetch, Applegate's	Endangered	Dicot	No	*(Astragalus applegatei)*	Terrestrial
		Popcornflower, Rough	Endangered	Dicot	No	*(Plagiobothrys hirtus)*	Vernal pool
		Thelypody, Howell's Spectacular	Threatened	Dicot	No	*(Thelypodium howellii spectabilis)*	Terrestrial
		Chub, Hutton Tui	Threatened	Fish	No	*(Gila bicolor ssp.)*	Freshwater
		Chub, Oregon	Endangered	Fish	No	*(Oregonichthys crameri)*	Freshwater
		Dace, Foskett Speckled	Threatened	Fish	No	*(Rhinichthys osculus ssp.)*	Freshwater
Oregon	(42) species:						
		Salmon, Chinook (Lower Columbia River)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) tshawytscha)*	Freshwater, Brackish, Saltwater
		Salmon, Chinook (Snake River Fall Run)	Threatened	Fish	No	*(Oncorhynchus (=Salmo) tshawytscha)*	Freshwater, Saltwater, Brackish
		Salmon, Chinook (Snake River spring/summer)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) tshawytscha)*	Brackish, Saltwater, Freshwater
		Salmon, Chinook (Upper Columbia River Spring)	Endangered	Fish	Yes	*(Oncorhynchus (=Salmo) tshawytscha)*	Freshwater, Saltwater, Brackish
		Salmon, Chinook (Upper Willamette River)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) tshawytscha)*	Saltwater, Brackish, Freshwater
		Salmon, Chum (Columbia River population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) keta)*	Brackish, Freshwater, Saltwater
		Salmon, Coho (Southern OR/Northern CA Coast)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) kisutch)*	Freshwater, Brackish, Saltwater
		Salmon, Sockeye (Snake River population)	Endangered	Fish	No	*(Oncorhynchus (=Salmo) nerka)*	Brackish, Saltwater, Freshwater
		Steelhead, (Lower Columbia River population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Brackish, Freshwater, Saltwater
		Steelhead, (Middle Columbia River population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Freshwater, Saltwater, Brackish
		Steelhead, (Snake River Basin population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Freshwater, Brackish, Saltwater
		Steelhead, (Upper Columbia River population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Brackish, Saltwater, Freshwater
		Steelhead, (Upper Willamette River population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Brackish, Saltwater, Freshwater
		Sucker, Lost River	Endangered	Fish	No	*(Deltistes luxatus)*	Freshwater
		Sucker, Shortnose	Endangered	Fish	No	*(Chasmistes brevirostris)*	Freshwater
		Sucker, Warner	Threatened	Fish	Yes	*(Catostomus warnerensis)*	Freshwater
		Trout, Bull	Threatened	Fish	No	*(Salvelinus confluentus)*	Freshwater
		Trout, Bull (Columbia River population)	Threatened	Fish	Yes	*(Salvelinus confluentus)*	Freshwater
		Trout, Bull (Klamath River population)	Threatened	Fish	Yes	*(Salvelinus confluentus)*	Freshwater
		Butterfly, Fender's Blue	Endangered	Insect	No	*(Icaricia icarioides fenderi)*	Terrestrial
		Butterfly, Oregon Silverspot	Threatened	Insect	Yes	*(Speyeria zerene hippolyta)*	Terrestrial
Oregon	(42) species:						
		Deer, Columbian White-tailed	Endangered	Mammal	No	*(Odocoileus virginianus leucurus)*	Terrestrial

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		Fritillary, Gentner's	Endangered	Monocot	No	*(Fritillaria gentneri)*	Terrestrial
		Lily, Western	Endangered	Monocot	No	*(Lilium occidentale)*	Terrestrial
Pennsylvania	(9) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Mussel, Clubshell	Endangered	Bivalve	No	*(Pleurobema clava)*	Freshwater
		Riffleshell, Northern	Endangered	Bivalve	No	*(Epioblasma torulosa rangiana)*	Freshwater
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Squirrel, Delmarva Peninsula Fox	Endangered	Mammal	No	*(Sciurus niger cinereus)*	Terrestrial
		Bulrush, Northeastern (=Barbed Bristle)	Endangered	Monocot	No	*(Scirpus ancistrochaetus)*	Terrestrial, Freshwater
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
		Turtle, Bog (Northern population)	Threatened	Reptile	No	*(Clemmys muhlenbergii)*	Terrestrial, Freshwater
Rhode Island	(6) species:						
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Gerardia, Sandplain	Endangered	Dicot	No	*(Agalinis acuta)*	Terrestrial
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater
		Beetle, American Burying	Endangered	Insect	No	*(Nicrophorus americanus)*	Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
South Carolina	(37) species:						
		Salamander, Flatwoods	Threatened	Amphibian	No	*(Ambystoma cingulatum)*	Freshwater, Vernal pool, Terrestrial
South Carolina	(37) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Stork, Wood	Endangered	Bird	No	*(Mycteria americana)*	Terrestrial
		Warbler, Bachman's	Endangered	Bird	No	*(Vermivora bachmanii)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
		Mussel, Heelsplitter Carolina	Endangered	Bivalve	Yes	*(Lasmigona decorata)*	Freshwater
		Amaranth, Seabeach	Threatened	Dicot	No	*(Amaranthus pumilus)*	Coastal (neritic)
		Amphianthus, Little	Threatened	Dicot	No	*(Amphianthus pusillus)*	Freshwater
		Chaffseed, American	Endangered	Dicot	No	*(Schwalbea americana)*	Terrestrial
		Coneflower, Smooth	Endangered	Dicot	No	*(Echinacea laevigata)*	Terrestrial
		Dropwort, Canby's	Endangered	Dicot	No	*(Oxypolis canbyi)*	Terrestrial, Freshwater
		Gooseberry, Miccosukee	Threatened	Dicot	No	*(Ribes echinellum)*	Terrestrial
		Harperella	Endangered	Dicot	No	*(Ptilimnium nodosum)*	Freshwater
		Heartleaf, Dwarf-flowered	Threatened	Dicot	No	*(Hexastylis naniflora)*	Terrestrial
		Loosestrife, Rough-leaved	Endangered	Dicot	No	*(Lysimachia asperulaefolia)*	Terrestrial
		Pitcher-plant, Mountain Sweet	Endangered	Dicot	No	*(Sarracenia rubra ssp. jonesii)*	Freshwater, Terrestrial
		Pondberry	Endangered	Dicot	No	*(Lindera melissifolia)*	Terrestrial
		Sunflower, Schweinitz's	Endangered	Dicot	No	*(Helianthus schweinitzii)*	Terrestrial
		Quillwort, Black-spored	Endangered	Ferns	No	*(Isoetes melanospora)*	Vernal pool
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater
		Lichen, Rock Gnome	Endangered	Lichen	No	*(Gymnoderma lineare)*	Terrestrial
South Carolina	(37) species:						
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Manatee, West Indian	Endangered	Marine mml	Yes	*(Trichechus manatus)*	Saltwater
		Whale, Finback	Endangered	Marine mml	No	*(Balaenoptera physalus)*	Saltwater
		Whale, Humpback	Endangered	Marine mml	No	*(Megaptera novaeangliae)*	Saltwater
		Arrowhead, Bunched	Endangered	Monocot	No	*(Sagittaria fasciculata)*	Freshwater
		Irisette, White	Endangered	Monocot	No	*(Sisyrinchium dichotomum)*	Terrestrial
		Pink, Swamp	Threatened	Monocot	No	*(Helonias bullata)*	Terrestrial, Freshwater
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
		Trillium, Persistent	Endangered	Monocot	No	*(Trillium persistens)*	Terrestrial
		Trillium, Relict	Endangered	Monocot	No	*(Trillium reliquum)*	Terrestrial
		Sea turtle, green	Endangered	Reptile	No	*(Chelonia mydas)*	Saltwater

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		Sea turtle, Kemp's ridley	Endangered	Reptile	No	*(Lepidochelys kempii)*	Saltwater
		Sea turtle, leatherback	Endangered	Reptile	Yes	*(Dermochelys coriacea)*	Saltwater
		Sea turtle, loggerhead	Threatened	Reptile	No	*(Caretta caretta)*	Saltwater
		Snake, Eastern Indigo	Threatened	Reptile	No	*(Drymarchon corais couperi)*	Terrestrial
South Dakota	(9) species:						
		Crane, Whooping	Endangered	Bird	Yes	*(Grus americana)*	Terrestrial, Freshwater
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Shiner, Topeka	Endangered	Fish	Yes	*(Notropis topeka (=tristis))*	Freshwater
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
South Dakota	(9) species:						
		Beetle, American Burying	Endangered	Insect	No	*(Nicrophorus americanus)*	Terrestrial
		Ferret, Black-footed	Endangered	Mammal	No	*(Mustela nigripes)*	Terrestrial
		Orchid, Western Prairie Fringed	Threatened	Monocot	No	*(Platanthera praeclara)*	Terrestrial
Tennessee	(86) species:						
		Spider, Spruce-fir Moss	Endangered	Arachnid	Yes	*(Microhexura montivaga)*	Terrestrial
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Stork, Wood	Endangered	Bird	No	*(Mycteria americana)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
		Combshell, Upland	Endangered	Bivalve	Yes	*(Epioblasma metastriata)*	Freshwater
		Elktoe, Appalachian	Endangered	Bivalve	Yes	*(Alasmidonta raveneliana)*	Freshwater
		Fanshell	Endangered	Bivalve	No	*(Cyprogenia stegaria)*	Freshwater
		Kidneyshell, Triangular	Endangered	Bivalve	Yes	*(Ptychobranchus greenii)*	Freshwater
		Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No	*(Lampsilis abrupta)*	Freshwater
		Mussel, Alabama Moccasinshell	Threatened	Bivalve	Yes	*(Medionidus acutissimus)*	Freshwater
		Mussel, Clubshell	Endangered	Bivalve	No	*(Pleurobema clava)*	Freshwater
		Mussel, Coosa Moccasinshell	Endangered	Bivalve	Yes	*(Medionidus parvulus)*	Freshwater
		Mussel, Cumberland Combshell	Endangered	Bivalve	Yes	*(Epioblasma brevidens)*	Freshwater
		Mussel, Cumberland Elktoe	Endangered	Bivalve	Yes	*(Alasmidonta atropurpurea)*	Freshwater
		Mussel, Cumberland Pigtoe	Endangered	Bivalve	No	*(Pleurobema gibberum)*	Freshwater
		Mussel, Fine-lined Pocketbook	Threatened	Bivalve	Yes	*(Lampsilis altilis)*	Freshwater
		Mussel, Fine-rayed Pigtoe	Endangered	Bivalve	No	*(Fusconaia cuneolus)*	Freshwater
Tennessee	(86) species:						
		Mussel, Ovate Clubshell	Endangered	Bivalve	Yes	*(Pleurobema perovatum)*	Freshwater
		Mussel, Oyster	Endangered	Bivalve	Yes	*(Epioblasma capsaeformis)*	Freshwater
		Mussel, Ring Pink (=Golf Stick Pearly)	Endangered	Bivalve	No	*(Obovaria retusa)*	Freshwater
		Mussel, Rough Pigtoe	Endangered	Bivalve	No	*(Pleurobema plenum)*	Freshwater
		Mussel, Shiny Pigtoe	Endangered	Bivalve	No	*(Fusconaia cor)*	Freshwater
		Mussel, Southern Pigtoe	Endangered	Bivalve	Yes	*(Pleurobema georgianum)*	Freshwater
		Pearlymussel, Alabama Lamp	Endangered	Bivalve	No	*(Lampsilis virescens)*	Freshwater
		Pearlymussel, Appalachian Monkeyface	Endangered	Bivalve	No	*(Quadrula sparsa)*	Freshwater
		Pearlymussel, Birdwing	Endangered	Bivalve	No	*(Conradilla caelata)*	Freshwater
		Pearlymussel, Cracking	Endangered	Bivalve	No	*(Hemistena lata)*	Freshwater
		Pearlymussel, Cumberland Bean	Endangered	Bivalve	No	*(Villosa trabalis)*	Freshwater
		Pearlymussel, Cumberland Monkeyface	Endangered	Bivalve	No	*(Quadrula intermedia)*	Freshwater
		Pearlymussel, Dromedary	Endangered	Bivalve	No	*(Dromus dromas)*	Freshwater
		Pearlymussel, Green-blossom	Endangered	Bivalve	No	*(Epioblasma torulosa gubernaculum)*	Freshwater
		Pearlymussel, Little-wing	Endangered	Bivalve	No	*(Pegias fabula)*	Freshwater
		Pearlymussel, Orange-footed	Endangered	Bivalve	No	*(Plethobasus cooperianus)*	Freshwater
		Pearlymussel, Pale Lilliput	Endangered	Bivalve	No	*(Toxolasma cylindrellus)*	Freshwater
		Pearlymussel, Purple Cat's Paw	Endangered	Bivalve	No	*(Epioblasma obliquata obliquata)*	Freshwater
		Pearlymussel, Tubercled-blossom	Endangered	Bivalve	No	*(Epioblasma torulosa torulosa)*	Freshwater
		Pearlymussel, Turgid-blossom	Endangered	Bivalve	No	*(Epioblasma turgidula)*	Freshwater
		Pearlymussel, White Wartyback	Endangered	Bivalve	No	*(Plethobasus cicatricosus)*	Freshwater

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Tennessee	(86) species:						
		Pearlymussel, Yellow-blossom	Endangered	Bivalve	No	*(Epioblasma florentina florentina)*	Freshwater
		Purple Bean	Endangered	Bivalve	Yes	*(Villosa perpurpurea)*	Freshwater
		Rabbitsfoot, Rough	Endangered	Bivalve	Yes	*(Quadrula cylindrica strigillata)*	Freshwater
		Riffleshell, Tan	Endangered	Bivalve	No	*(Epioblasma florentina walkeri (=E. walkeri))*	Freshwater
		Crayfish, Nashville	Endangered	Crustacean	No	*(Orconectes shoupi)*	Freshwater
		Aster, Ruth's Golden	Endangered	Dicot	No	*(Pityopsis ruthii)*	Terrestrial
		Avens, Spreading	Endangered	Dicot	No	*(Geum radiatum)*	Terrestrial
		Bladderpod, Spring Creek	Endangered	Dicot	No	*(Lesquerella perforata)*	Floodplain
		Bluet, Roan Mountain	Endangered	Dicot	No	*(Hedyotis purpurea var. montana)*	Terrestrial
		Chaffseed, American	Endangered	Dicot	No	*(Schwalbea americana)*	Terrestrial
		Clover, Leafy Prairie	Endangered	Dicot	No	*(Dalea foliosa)*	Terrestrial
		Coneflower, Tennessee Purple	Endangered	Dicot	No	*(Echinacea tennesseensis)*	Terrestrial
		Goldenrod, Blue Ridge	Threatened	Dicot	No	*(Solidago spithamaea)*	Terrestrial
		Ground-plum, Guthrie's	Endangered	Dicot	No	*(Astragalus bibullatus)*	Terrestrial
		Pitcher-plant, Green	Endangered	Dicot	No	*(Sarracenia oreophila)*	Terrestrial, Freshwater
		Potato-bean, Price's	Threatened	Dicot	No	*(Apios priceana)*	Terrestrial
		Rock-cress, Large (=Braun's)	Endangered	Dicot	Yes	*(Arabis perstellata E. L. Braun var. ampla Rollins)*	Terrestrial
		Rosemary, Cumberland	Threatened	Dicot	No	*(Conradina verticillata)*	Terrestrial
		Sandwort, Cumberland	Endangered	Dicot	No	*(Arenaria cumberlandensis)*	Terrestrial
		Skullcap, Large-flowered	Threatened	Dicot	No	*(Scutellaria montana)*	Terrestrial
		Spiraea, Virginia	Threatened	Dicot	No	*(Spiraea virginiana)*	Terrestrial
Tennessee	(86) species:						
		Fern, American hart's-tongue	Threatened	Ferns	No	*(Asplenium scolopendrium var. americanum)*	Terrestrial
		Chub, Slender	Threatened	Fish	Yes	*(Erimystax cahni)*	Freshwater
		Chub, Spotfin	Threatened	Fish	Yes	*(Erimonax monachus)*	Freshwater
		Dace, Blackside	Threatened	Fish	No	*(Phoxinus cumberlandensis)*	Freshwater
		Darter, Amber	Endangered	Fish	Yes	*(Percina antesella)*	Freshwater
		Darter, Bluemask (=jewel)	Endangered	Fish	No	*(Etheostoma /)*	Freshwater
		Darter, Boulder	Endangered	Fish	No	*(Etheostoma wapiti)*	Freshwater
		Darter, Duskytail	Endangered	Fish	No	*(Etheostoma percnurum)*	Freshwater
		Darter, Slackwater	Threatened	Fish	Yes	*(Etheostoma boschungi)*	Freshwater
		Darter, Snail	Threatened	Fish	No	*(Percina tanasi)*	Freshwater
		Logperch, Conasauga	Endangered	Fish	Yes	*(Percina jenkinsi)*	Freshwater
		Madtom, Pygmy	Endangered	Fish	No	*(Noturus stanauli)*	Freshwater
		Madtom, Smoky	Endangered	Fish	Yes	*(Noturus baileyi)*	Freshwater
		Madtom, Yellowfin	Threatened	Fish	Yes	*(Noturus flavipinnis)*	Freshwater
		Shiner, Blue	Threatened	Fish	No	*(Cyprinella caerulea)*	Freshwater
		Shiner, Palezone	Endangered	Fish	No	*(Notropis albizonatus)*	Freshwater
		Sturgeon, Pallid	Endangered	Fish	No	*(Scaphirhynchus albus)*	Freshwater
		Marstonia, Royal (=Royal Snail)	Endangered	Gastropod	No	*(Pyrgulopsis ogmorhaphe)*	Terrestrial
		Riversnail, Anthony's	Endangered	Gastropod	No	*(Athearnia anthonyi)*	Freshwater
		Snail, Painted Snake Coiled Forest	Threatened	Gastropod	No	*(Anguispira picta)*	Terrestrial
		Lichen, Rock Gnome	Endangered	Lichen	No	*(Gymnoderma lineare)*	Terrestrial
Tennessee	(86) species:						
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Squirrel, Carolina Northern Flying	Endangered	Mammal	No	*(Glaucomys sabrinus coloratus)*	Terrestrial
		Grass, Tennessee Yellow-eyed	Endangered	Monocot	No	*(Xyris tennesseensis)*	Terrestrial
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
Texas	(84) species:						
		Salamander, Barton Springs	Endangered	Amphibian	No	*(Eurycea sosorum)*	Freshwater, Terrestrial
		Salamander, San Marcos	Threatened	Amphibian	Yes	*(Eurycea nana)*	Freshwater, Terrestrial
		Salamander, Texas Blind	Endangered	Amphibian	No	*(Typhlomolge rathbuni)*	Subterraneous, Freshwater
		Toad, Houston	Endangered	Amphibian	Yes	*(Bufo houstonensis)*	Terrestrial, Freshwater

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		Harvestman, Bee Creek Cave	Endangered	Arachnid	No	*(Texella reddelli)*	Terrestrial, Subterraneous
		Harvestman, Bone Cave	Endangered	Arachnid	No	*(Texella reyesi)*	Terrestrial, Subterraneous
		Harvestman, Robber Baron Cave	Endangered	Arachnid	Yes	*(Texella cokendolpheri)*	Subterraneous, Terrestrial
		Meshweaver, Braken Bat Cave	Endangered	Arachnid	Yes	*(Cicurina venii)*	Terrestrial, Subterraneous
		Pseudoscorpion, Tooth Cave	Endangered	Arachnid	No	*(Tartarocreagris texana)*	Terrestrial, Subterraneous
		Spider, Government Canyon Cave	Endangered	Arachnid	No	*(Neoleptoneta microps)*	Subterraneous, Terrestrial
		Spider, Madla's Cave	Endangered	Arachnid	Yes	*(Cicurina madla)*	Subterraneous, Terrestrial
		Spider, Robber Baron Cave	Endangered	Arachnid	Yes	*(Cicurina baronia)*	Terrestrial, Subterraneous
		Spider, Tooth Cave	Endangered	Arachnid	No	*(Neoleptoneta myopica)*	Terrestrial, Subterraneous
		Spider, Vesper Cave	Endangered	Arachnid	No	*(Cicurina vespera)*	Subterraneous, Terrestrial
		Crane, Whooping	Endangered	Bird	Yes	*(Grus americana)*	Terrestrial, Freshwater
		Curlew, Eskimo	Endangered	Bird	No	*(Numenius borealis)*	Terrestrial
Texas	(84) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Falcon, Northern Aplomado	Endangered	Bird	No	*(Falco femoralis septentrionalis)*	Terrestrial
		Flycatcher, Southwestern Willow	Endangered	Bird	Yes	*(Empidonax traillii extimus)*	Terrestrial
		Owl, Mexican Spotted	Threatened	Bird	Yes	*(Strix occidentalis lucida)*	Terrestrial
		Pelican, Brown	Endangered	Bird	No	*(Pelecanus occidentalis)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Prairie-chicken, Attwater's Greater	Endangered	Bird	No	*(Tympanuchus cupido attwateri)*	Terrestrial
		Tern, Interior (population) Least	Endangered	Bird	No	*(Sterna antillarum)*	Terrestrial
		Vireo, Black-capped	Endangered	Bird	No	*(Vireo atricapilla)*	Terrestrial
		Warbler (=Wood), Golden-cheeked	Endangered	Bird	No	*(Dendroica chrysoparia)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
		Amphipod, Peck's Cave	Endangered	Crustacean	No	*(Stygobromus (=Stygonectes) pecki)*	Subterraneous, Freshwater
		Ambrosia, South Texas	Endangered	Dicot	No	*(Ambrosia cheiranthifolia)*	Terrestrial
		Ayenia, Texas	Endangered	Dicot	No	*(Ayenia limitaris)*	Terrestrial
		Bladderpod, White	Endangered	Dicot	No	*(Lesquerella pallida)*	Terrestrial
		Cactus, Black Lace	Endangered	Dicot	No	*(Echinocereus reichenbachii var. albertii)*	Terrestrial
		Cactus, Bunched Cory	Threatened	Dicot	No	*(Coryphantha ramillosa)*	Terrestrial
		Cactus, Chisos Mountain Hedgehog	Threatened	Dicot	No	*(Echinocereus chisoensis var. chisoensis)*	Terrestrial
		Cactus, Lloyd's Mariposa	Threatened	Dicot	No	*(Echinomastus mariposensis)*	Terrestrial
		Cactus, Nellie Cory	Endangered	Dicot	No	*(Coryphantha minima)*	Terrestrial
		Cactus, Sneed Pincushion	Endangered	Dicot	No	*(Coryphantha sneedii var. sneedii)*	Terrestrial
Texas	(84) species:						
		Cactus, Star	Endangered	Dicot	No	*(Astrophytum asterias)*	Terrestrial
		Cactus, Tobusch Fishhook	Endangered	Dicot	No	*(Ancistrocactus tobuschii)*	Terrestrial
		Cat's-eye, Terlingua Creek	Endangered	Dicot	No	*(Cryptantha crassipes)*	Terrestrial
		Dawn-flower, Texas Prairie (=Texas Bitterweed)	Endangered	Dicot	No	*(Hymenoxys texana)*	Terrestrial
		Dogweed, Ashy	Endangered	Dicot	No	*(Thymophylla tephroleuca)*	Terrestrial
		Frankenia, Johnston's	Endangered	Dicot	No	*(Frankenia johnstonii)*	Terrestrial
		Fruit, Earth (=geocarpon)	Threatened	Dicot	No	*(Geocarpon minimum)*	Terrestrial
		Manioc, Walker's	Endangered	Dicot	No	*(Manihot walkerae)*	Terrestrial
		Oak, Hinckley	Threatened	Dicot	No	*(Quercus hinckleyi)*	Terrestrial
		Phlox, Texas Trailing	Endangered	Dicot	No	*(Phlox nivalis ssp. texensis)*	Terrestrial
		Pitaya, Davis' Green	Endangered	Dicot	No	*(Echinocereus viridiflorus var. davisii)*	Terrestrial
		Poppy-mallow, Texas	Endangered	Dicot	No	*(Callirhoe scabriuscula)*	Terrestrial
		Rush-pea, Slender	Endangered	Dicot	No	*(Hoffmannseggia tenella)*	Terrestrial
		Sand-verbena, Large-fruited	Endangered	Dicot	No	*(Abronia macrocarpa)*	Terrestrial
		Snowbells, Texas	Endangered	Dicot	No	*(Styrax texanus)*	Terrestrial
		Sunflower, Pecos	Threatened	Dicot	No	*(Helianthus paradoxus)*	Terrestrial, Freshwater
		Wild-buckwheat, Gypsum	Threatened	Dicot	Yes	*(Eriogonum gypsophilum)*	Terrestrial
		Darter, Fountain	Endangered	Fish	Yes	*(Etheostoma fonticola)*	Freshwater
		Gambusia, Big Bend	Endangered	Fish	No	*(Gambusia gaigei)*	Freshwater
		Gambusia, Pecos	Endangered	Fish	No	*(Gambusia nobilis)*	Freshwater
		Gambusia, San Marcos	Endangered	Fish	Yes	*(Gambusia georgei)*	Freshwater

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Texas	(84) species:						
		Pupfish, Comanche Springs	Endangered	Fish	No	*(Cyprinodon elegans)*	Freshwater
		Pupfish, Leon Springs	Endangered	Fish	Yes	*(Cyprinodon bovinus)*	Freshwater
		Shiner, Arkansas River	Threatened	Fish	Yes	*(Notropis girardi)*	Freshwater
		Snail, Pecos Assiminea	Endangered	Gastropod	Yes	*(Assiminea pecos)*	Freshwater
		Beetle, American Burying	Endangered	Insect	No	*(Nicrophorus americanus)*	Terrestrial
		Beetle, Coffin Cave Mold	Endangered	Insect	No	*(Batrisodes texanus)*	Subterraneous
		Beetle, Comal Springs Dryopid	Endangered	Insect	No	*(Stygoparnus comalensis)*	Subterraneous, Freshwater
		Beetle, Comal Springs Riffle	Endangered	Insect	No	*(Heterelmis comalensis)*	Subterraneous, Freshwater
		Beetle, Helotes Mold	Endangered	Insect	Yes	*(Batrisodes venyivi)*	Subterraneous
		Beetle, Kretschmarr Cave Mold	Endangered	Insect	No	*(Texamaurops reddelli)*	Subterraneous
		Beetle, Tooth Cave Ground	Endangered	Insect	No	*(Rhadine persephone)*	Subterraneous
		Rhadine exilis (ncn)	Endangered	Insect	Yes	*(Rhadine exilis)*	Terrestrial, Subterraneous
		Rhadine infernalis (ncn)	Endangered	Insect	Yes	*(Rhadine infernalis)*	Terrestrial, Subterraneous
		Bat, Mexican Long-nosed	Endangered	Mammal	No	*(Leptonycteris nivalis)*	Subterraneous, Terrestrial
		Bear, Louisiana Black	Threatened	Mammal	No	*(Ursus americanus luteolus)*	Terrestrial
		Jaguarundi, Gulf Coast	Endangered	Mammal	No	*(Herpailurus (=Felis) yagouaroundi cacomitli)*	Terrestrial
		Jaguarundi, Sinaloan	Endangered	Mammal	No	*(Herpailurus (=Felis) yagouaroundi tolteca)*	Terrestrial
		Ocelot	Endangered	Mammal	No	*(Leopardus (=Felis) pardalis)*	Terrestrial
		Ladies'-tresses, Navasota	Endangered	Monocot	No	*(Spiranthes parksii)*	Terrestrial
		Wild-rice, Texas	Endangered	Monocot	Yes	*(Zizania texana)*	Freshwater
		Sea turtle, green	Endangered	Reptile	No	*(Chelonia mydas)*	Saltwater
Texas	(84) species:						
		Sea turtle, hawksbill	Endangered	Reptile	Yes	*(Eretmochelys imbricata)*	Saltwater
		Sea turtle, Kemp's ridley	Endangered	Reptile	No	*(Lepidochelys kempii)*	Saltwater
		Sea turtle, leatherback	Endangered	Reptile	Yes	*(Dermochelys coriacea)*	Saltwater
		Sea turtle, loggerhead	Threatened	Reptile	No	*(Caretta caretta)*	Saltwater
		Snake, Concho Water	Threatened	Reptile	Yes	*(Nerodia paucimaculata)*	Freshwater, Terrestrial
Utah	(35) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Flycatcher, Southwestern Willow	Endangered	Bird	Yes	*(Empidonax traillii extimus)*	Terrestrial
		Owl, Mexican Spotted	Threatened	Bird	Yes	*(Strix occidentalis lucida)*	Terrestrial
		Bear-poppy, Dwarf	Endangered	Dicot	No	*(Arctomecon humilis)*	Terrestrial
		Cactus, San Rafael	Endangered	Dicot	No	*(Pediocactus despainii)*	Terrestrial
		Cactus, Siler Pincushion	Threatened	Dicot	No	*(Pediocactus (=Echinocactus, =Utahia) sileri)*	Terrestrial
		Cactus, Uinta Basin Hookless	Threatened	Dicot	No	*(Sclerocactus glaucus)*	Terrestrial
		Cactus, Winkler	Threatened	Dicot	No	*(Pediocactus winkleri)*	Terrestrial
		Cactus, Wright Fishhook	Endangered	Dicot	No	*(Sclerocactus wrightiae)*	Terrestrial
		Cycladenia, Jones	Threatened	Dicot	No	*(Cycladenia jonesii (=humilis))*	Terrestrial
		Daisy, Maguire	Threatened	Dicot	No	*(Erigeron maguirei)*	Freshwater
		Milk-vetch, Deseret	Threatened	Dicot	No	*(Astragalus desereticus)*	Terrestrial
		Milk-vetch, Heliotrope	Threatened	Dicot	Yes	*(Astragalus montii)*	Terrestrial
		Milk-vetch, Holmgren	Endangered	Dicot	No	*(Astragalus holmgreniorum)*	Terrestrial
		Milk-vetch, Shivwits	Endangered	Dicot	No	*(Astragalus ampullarioides)*	Terrestrial
		Phacelia, Clay	Endangered	Dicot	No	*(Phacelia argillacea)*	Terrestrial
Utah	(35) species:						
		Primrose, Maguire	Threatened	Dicot	No	*(Primula maguirei)*	Terrestrial
		Reed-mustard, Barneby	Endangered	Dicot	No	*(Schoenocrambe barnebyi)*	Terrestrial
		Reed-mustard, Clay	Threatened	Dicot	No	*(Schoenocrambe argillacea)*	Terrestrial
		Reed-mustard, Shrubby	Endangered	Dicot	No	*(Schoenocrambe suffrutescens)*	Terrestrial
		Ridge-cress (=Pepper-cress), Barneby	Endangered	Dicot	No	*(Lepidium barnebyanum)*	Terrestrial
		Townsendia, Last Chance	Threatened	Dicot	No	*(Townsendia aprica)*	Terrestrial
		Chub, Bonytail	Endangered	Fish	Yes	*(Gila elegans)*	Freshwater
		Chub, Humpback	Endangered	Fish	Yes	*(Gila cypha)*	Freshwater
		Chub, Virgin River	Endangered	Fish	Yes	*(Gila seminuda (=robusta))*	Freshwater

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		Squawfish, Colorado	Endangered	Fish	Yes	*(Ptychocheilus lucius)*	Freshwater
		Sucker, June	Endangered	Fish	Yes	*(Chasmistes liorus)*	Freshwater
		Sucker, Razorback	Endangered	Fish	Yes	*(Xyrauchen texanus)*	Freshwater
		Trout, Lahontan Cutthroat	Threatened	Fish	No	*(Oncorhynchus clarki henshawi)*	Freshwater
		Woundfin	Endangered	Fish	Yes	*(Plagopterus argentissimus)*	Freshwater
		Ferret, Black-footed	Endangered	Mammal	No	*(Mustela nigripes)*	Terrestrial
		Prairie Dog, Utah	Threatened	Mammal	No	*(Cynomys parvidens)*	Terrestrial, Subterraneous
		Ladies'-tresses, Ute	Threatened	Monocot	No	*(Spiranthes diluvialis)*	Terrestrial
		Sedge, Navajo	Threatened	Monocot	Yes	*(Carex specuicola)*	Terrestrial
		Tortoise, Desert	Threatened	Reptile	Yes	*(Gopherus agassizii)*	Terrestrial
Vermont	(5) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Mussel, Dwarf Wedge	Endangered	Bivalve	No	*(Alasmidonta heterodon)*	Freshwater
Vermont	(5) species:						
		Milk-vetch, Jesup's	Endangered	Dicot	No	*(Astragalus robbinsii var. jesupi)*	Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Bulrush, Northeastern (=Barbed Bristle)	Endangered	Monocot	No	*(Scirpus ancistrochaetus)*	Terrestrial, Freshwater
Virginia	(61) species:						
		Salamander, Shenandoah	Endangered	Amphibian	No	*(Plethodon shenandoah)*	Freshwater, Terrestrial
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Woodpecker, Red-cockaded	Endangered	Bird	No	*(Picoides borealis)*	Terrestrial
		Fanshell	Endangered	Bivalve	No	*(Cyprogenia stegaria)*	Freshwater
		Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No	*(Lampsilis abrupta)*	Freshwater
		Mussel, Cumberland Combshell	Endangered	Bivalve	Yes	*(Epioblasma brevidens)*	Freshwater
		Mussel, Cumberland Elktoe	Endangered	Bivalve	Yes	*(Alasmidonta atropurpurea)*	Freshwater
		Mussel, Dwarf Wedge	Endangered	Bivalve	No	*(Alasmidonta heterodon)*	Freshwater
		Mussel, Fine-rayed Pigtoe	Endangered	Bivalve	No	*(Fusconaia cuneolus)*	Freshwater
		Mussel, Oyster	Endangered	Bivalve	Yes	*(Epioblasma capsaeformis)*	Freshwater
		Mussel, Rough Pigtoe	Endangered	Bivalve	No	*(Pleurobema plenum)*	Freshwater
		Mussel, Shiny Pigtoe	Endangered	Bivalve	No	*(Fusconaia cor)*	Freshwater
		Pearlymussel, Appalachian Monkeyface	Endangered	Bivalve	No	*(Quadrula sparsa)*	Freshwater
		Pearlymussel, Birdwing	Endangered	Bivalve	No	*(Conradilla caelata)*	Freshwater
		Pearlymussel, Cracking	Endangered	Bivalve	No	*(Hemistena lata)*	Freshwater
		Pearlymussel, Cumberland Bean	Endangered	Bivalve	No	*(Villosa trabalis)*	Freshwater
		Pearlymussel, Cumberland Monkeyface	Endangered	Bivalve	No	*(Quadrula intermedia)*	Freshwater
Virginia	(61) species:						
		Pearlymussel, Dromedary	Endangered	Bivalve	No	*(Dromus dromas)*	Freshwater
		Pearlymussel, Green-blossom	Endangered	Bivalve	No	*(Epioblasma torulosa gubernaculum)*	Freshwater
		Pearlymussel, Little-wing	Endangered	Bivalve	No	*(Pegias fabula)*	Freshwater
		Purple Bean	Endangered	Bivalve	Yes	*(Villosa perpurpurea)*	Freshwater
		Rabbitsfoot, Rough	Endangered	Bivalve	Yes	*(Quadrula cylindrica strigillata)*	Freshwater
		Riffleshell, Tan	Endangered	Bivalve	No	*(Epioblasma florentina walkeri (=E. walkeri))*	Freshwater
		Spinymussel, James River	Endangered	Bivalve	No	*(Pleurobema collina)*	Freshwater
		Isopod, Lee County Cave	Endangered	Crustacean	No	*(Lirceus usdagalun)*	Freshwater
		Isopod, Madison Cave	Threatened	Crustacean	No	*(Antrolana lira)*	Freshwater
		Amaranth, Seabeach	Threatened	Dicot	No	*(Amaranthus pumilus)*	Coastal (neritic)
		Birch, Virginia Round-leaf	Threatened	Dicot	No	*(Betula uber)*	Floodplain
		Bittercress, Small-anthered	Endangered	Dicot	No	*(Cardamine micranthera)*	Terrestrial
		Chaffseed, American	Endangered	Dicot	No	*(Schwalbea americana)*	Terrestrial
		Coneflower, Smooth	Endangered	Dicot	No	*(Echinacea laevigata)*	Terrestrial
		Harperella	Endangered	Dicot	No	*(Ptilimnium nodosum)*	Freshwater
		Joint-vetch, Sensitive	Threatened	Dicot	No	*(Aeschynomene virginica)*	Terrestrial, Brackish
		Mallow, Peter's Mountain	Endangered	Dicot	No	*(Iliamna corei)*	Terrestrial
		Rock-cress, Shale Barren	Endangered	Dicot	No	*(Arabis serotina)*	Terrestrial
		Sneezeweed, Virginia	Threatened	Dicot	No	*(Helenium virginicum)*	Vernal pool

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		Spiraea, Virginia	Threatened	Dicot	No	*(Spiraea virginiana)*	Terrestrial
		Sumac, Michaux's	Endangered	Dicot	No	*(Rhus michauxii)*	Terrestrial
Virginia	(61) species:						
		Sunflower, Schweinitz's	Endangered	Dicot	No	*(Helianthus schweinitzii)*	Terrestrial
		Chub, Slender	Threatened	Fish	Yes	*(Erimystax cahni)*	Freshwater
		Chub, Spotfin	Threatened	Fish	Yes	*(Erimonax monachus)*	Freshwater
		Dace, Blackside	Threatened	Fish	No	*(Phoxinus cumberlandensis)*	Freshwater
		Darter, Duskytail	Endangered	Fish	No	*(Etheostoma percnurum)*	Freshwater
		Logperch, Roanoke	Endangered	Fish	No	*(Percina rex)*	Freshwater
		Madtom, Yellowfin	Threatened	Fish	Yes	*(Noturus flavipinnis)*	Freshwater
		Sturgeon, Shortnose	Endangered	Fish	No	*(Acipenser brevirostrum)*	Saltwater, Freshwater
		Snail, Virginia Fringed Mountain	Endangered	Gastropod	No	*(Polygyriscus virginianus)*	Terrestrial
		Beetle, Northeastern Beach Tiger	Threatened	Insect	No	*(Cicindela dorsalis dorsalis)*	Terrestrial
		Butterfly, Mitchell's Satyr	Endangered	Insect	No	*(Neonympha mitchellii mitchellii)*	Terrestrial
		Butterfly, Saint Francis' Satyr	Endangered	Insect	No	*(Neonympha mitchellii francisci)*	Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Bat, Virginia Big-eared	Endangered	Mammal	Yes	*(Corynorhinus (=Plecotus) townsendii virginianus)*	Terrestrial, Subterraneous
		Squirrel, Delmarva Peninsula Fox	Endangered	Mammal	No	*(Sciurus niger cinereus)*	Terrestrial
		Squirrel, Virginia Northern Flying	Endangered	Mammal	No	*(Glaucomys sabrinus fuscus)*	Terrestrial
		Bulrush, Northeastern (=Barbed Bristle)	Endangered	Monocot	No	*(Scirpus ancistrochaetus)*	Terrestrial, Freshwater
		Orchid, Eastern Prairie Fringed	Threatened	Monocot	No	*(Platanthera leucophaea)*	Terrestrial
		Pink, Swamp	Threatened	Monocot	No	*(Helonias bullata)*	Terrestrial, Freshwater
		Pogonia, Small Whorled	Threatened	Monocot	No	*(Isotria medeoloides)*	Terrestrial
Virginia	(61) species:						
		Sea turtle, loggerhead	Threatened	Reptile	No	*(Caretta caretta)*	Saltwater
Washington	(34) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Murrelet, Marbled	Threatened	Bird	Yes	*(Brachyramphus marmoratus marmoratus)*	Freshwater, Terrestrial, Saltwater
		Owl, Northern Spotted	Threatened	Bird	Yes	*(Strix occidentalis caurina)*	Terrestrial
		Pelican, Brown	Endangered	Bird	No	*(Pelecanus occidentalis)*	Terrestrial
		Plover, Western Snowy	Threatened	Bird	Yes	*(Charadrius alexandrinus nivosus)*	Terrestrial
		Catchfly, Spalding's	Threatened	Dicot	No	*(Silene spaldingii)*	Terrestrial
		Checker-mallow, Nelson's	Threatened	Dicot	No	*(Sidalcea nelsoniana)*	Terrestrial
		Checker-mallow, Wenatchee Mountains	Endangered	Dicot	Yes	*(Sidalcea oregana var. calva)*	Terrestrial
		Howellia, Water	Threatened	Dicot	No	*(Howellia aquatilis)*	Freshwater
		Lupine, Kincaid's	Threatened	Dicot	No	*(Lupinus sulphureus (=oreganus) ssp. kincaidii (=var. kincaidii))*	Terrestrial
		Paintbrush, Golden	Threatened	Dicot	No	*(Castilleja levisecta)*	Terrestrial
		Stickseed, Showy	Endangered	Dicot	No	*(Hackelia venusta)*	Terrestrial
		Salmon, Chinook (Lower Columbia River)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) tshawytscha)*	Freshwater, Brackish, Saltwater
		Salmon, Chinook (Puget Sound)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) tshawytscha)*	Freshwater, Brackish, Saltwater
		Salmon, Chinook (Snake River Fall Run)	Threatened	Fish	No	*(Oncorhynchus (=Salmo) tshawytscha)*	Freshwater, Saltwater, Brackish
		Salmon, Chinook (Snake River spring/summer)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) tshawytscha)*	Brackish, Saltwater, Freshwater
		Salmon, Chinook (Upper Columbia River Spring)	Endangered	Fish	Yes	*(Oncorhynchus (=Salmo) tshawytscha)*	Freshwater, Saltwater, Brackish
		Salmon, Chinook (Upper Willamette River)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) tshawytscha)*	Saltwater, Brackish, Freshwater
		Salmon, Chum (Columbia River population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) keta)*	Brackish, Freshwater, Saltwater
		Salmon, Chum (Hood Canal Summer population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) keta)*	Freshwater, Brackish, Saltwater
Washington	(34) species:						
		Salmon, Sockeye (Ozette Lake population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) nerka)*	Saltwater, Freshwater, Brackish
		Salmon, Sockeye (Snake River population)	Endangered	Fish	No	*(Oncorhynchus (=Salmo) nerka)*	Brackish, Saltwater, Freshwater
		Steelhead, (Lower Columbia River population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Brackish, Freshwater, Saltwater
		Steelhead, (Middle Columbia River population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Freshwater, Saltwater, Brackish
		Steelhead, (Snake River Basin population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Freshwater, Brackish, Saltwater

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		Steelhead, (Upper Columbia River population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Brackish, Saltwater, Freshwater
		Steelhead, (Upper Willamette River population)	Threatened	Fish	Yes	*(Oncorhynchus (=Salmo) mykiss)*	Brackish, Saltwater, Freshwater
		Trout, Bull	Threatened	Fish	No	*(Salvelinus confluentus)*	Freshwater
		Trout, Bull (Columbia River population)	Threatened	Fish	Yes	*(Salvelinus confluentus)*	Freshwater
		Trout, Bull (Klamath River population)	Threatened	Fish	Yes	*(Salvelinus confluentus)*	Freshwater
		Bear, Grizzly	Threatened	Mammal	No	*(Ursus arctos horribilis)*	Terrestrial
		Deer, Columbian White-tailed	Endangered	Mammal	No	*(Odocoileus virginianus leucurus)*	Terrestrial
		Rabbit, Pygmy	Endangered	Mammal	No	*(Brachylagus idahoensis)*	Terrestrial
		Wolf, Gray	Endangered	Mammal	Yes	*(Canis lupus)*	Terrestrial
West Virginia	(18) species:						
		Salamander, Cheat Mountain	Threatened	Amphibian	No	*(Plethodon nettingi)*	Freshwater, Terrestrial
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Fanshell	Endangered	Bivalve	No	*(Cyprogenia stegaria)*	Freshwater
		Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No	*(Lampsilis abrupta)*	Freshwater
		Mussel, Clubshell	Endangered	Bivalve	No	*(Pleurobema clava)*	Freshwater
		Pearlymussel, Tubercled-blossom	Endangered	Bivalve	No	*(Epioblasma torulosa torulosa)*	Freshwater
		Spinymussel, James River	Endangered	Bivalve	No	*(Pleurobema collina)*	Freshwater
West Virginia	(18) species:						
		Clover, Running Buffalo	Endangered	Dicot	No	*(Trifolium stoloniferum)*	Terrestrial
		Harperella	Endangered	Dicot	No	*(Ptilimnium nodosum)*	Freshwater
		Rock-cress, Shale Barren	Endangered	Dicot	No	*(Arabis serotina)*	Terrestrial
		Spiraea, Virginia	Threatened	Dicot	No	*(Spiraea virginiana)*	Terrestrial
		Snail, Flat-spired Three-toothed	Threatened	Gastropod	No	*(Triodopsis platysayoides)*	Terrestrial
		Bat, Gray	Endangered	Mammal	No	*(Myotis grisescens)*	Subterraneous, Terrestrial
		Bat, Indiana	Endangered	Mammal	Yes	*(Myotis sodalis)*	Subterraneous, Terrestrial
		Bat, Virginia Big-eared	Endangered	Mammal	Yes	*(Corynorhinus (=Plecotus) townsendii virginianus)*	Terrestrial, Subterraneous
		Squirrel, Carolina Northern Flying	Endangered	Mammal	No	*(Glaucomys sabrinus coloratus)*	Terrestrial
		Squirrel, Virginia Northern Flying	Endangered	Mammal	No	*(Glaucomys sabrinus fuscus)*	Terrestrial
		Bulrush, Northeastern (=Barbed Bristle)	Endangered	Monocot	No	*(Scirpus ancistrochaetus)*	Terrestrial, Freshwater
Wisconsin	(16) species:						
		Crane, Whooping	Endangered	Bird	Yes	*(Grus americana)*	Terrestrial, Freshwater
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Plover, Piping	Endangered	Bird	Yes	*(Charadrius melodus)*	Terrestrial
		Warbler (=Wood), Kirtland's	Endangered	Bird	No	*(Dendroica kirtlandii)*	Terrestrial
		Mussel, Winged Mapleleaf	Endangered	Bivalve	No	*(Quadrula fragosa)*	Freshwater
		Pearlymussel, Higgins' Eye	Endangered	Bivalve	No	*(Lampsilis higginsii)*	Freshwater
		Clover, Prairie Bush	Threatened	Dicot	No	*(Lespedeza leptostachya)*	Terrestrial
		Locoweed, Fassett's	Threatened	Dicot	No	*(Oxytropis campestris var. chartacea)*	Terrestrial
		Monkshood, Northern Wild	Threatened	Dicot	No	*(Aconitum noveboracense)*	Terrestrial
		Thistle, Pitcher's	Threatened	Dicot	No	*(Cirsium pitcheri)*	Terrestrial
Wisconsin	(16) species:						
		Butterfly, Karner Blue	Endangered	Insect	No	*(Lycaeides melissa samuelis)*	Terrestrial
		Dragonfly, Hine's Emerald	Endangered	Insect	No	*(Somatochlora hineana)*	Freshwater, Terrestrial
		Lynx, Canada	Threatened	Mammal	No	*(Lynx canadensis)*	Terrestrial
		Wolf, Gray	Endangered	Mammal	Yes	*(Canis lupus)*	Terrestrial
		Iris, Dwarf Lake	Threatened	Monocot	No	*(Iris lacustris)*	Terrestrial
		Orchid, Eastern Prairie Fringed	Threatened	Monocot	No	*(Platanthera leucophaea)*	Terrestrial
Wyoming	(7) species:						
		Eagle, Bald	Threatened	Bird	No	*(Haliaeetus leucocephalus)*	Terrestrial
		Butterfly Plant, Colorado	Threatened	Dicot	Yes	*(Gaura neomexicana var. coloradensis)*	Terrestrial
		Yellowhead, Desert	Threatened	Dicot	Yes	*(Yermo xanthocephalus)*	Terrestrial
		Bear, Grizzly	Threatened	Mammal	No	*(Ursus arctos horribilis)*	Terrestrial
		Ferret, Black-footed	Endangered	Mammal	No	*(Mustela nigripes)*	Terrestrial
		Mouse, Preble's Meadow Jumping	Threatened	Mammal	Yes	*(Zapus hudsonius preblei)*	Terrestrial
		Wolf, Gray	Endangered	Mammal	Yes	*(Canis lupus)*	Terrestrial

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Appendix J
Studies Rejected by ECOTOX

1967). 11 million DOLLAR SCIENCE BUILDING GETS PRELIMINARY REGENT OK. *The Iowa Dental Journal / Iowa State Dental Society* 53: 13-14.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

1990). 1990 Award of Merit to George Kenneth Austin. Citation presented by Regent Prem S. Sharma. *The Journal Of The American College Of Dentists* 57: 9.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Biography, Historical Article, Journal Article; In English; United States]

1990). 1990, William John Gies Award to Jose Enrique Medina. Citation presented by Regent Chris C. Scures. *The Journal Of The American College Of Dentists* 57: 8.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Biography, Historical Article, Journal Article; In English; United States]

1991). 1991 Gies Award to Robert J. Nelsen. Citation presented by regent Charles V. Farrell. *The Journal Of The American College Of Dentists* 58: 5.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Biography, Historical Article, Journal Article; In English; United States]

1983). 4358535 Specific DNA probes in diagnostic microbiology : Stanley Falkow, Stephen L. Moseley, assigned to Board of Regents of the University of Washington. *Biotechnology Advances* 1: 143.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

1983). 4363877 Recombinant DNA transfer vectors : Howard M. Goodman, John Shine, Peter H. Seeburg, assigned to The Regents of the University of California. *Biotechnology Advances* 1: 137.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

1983). 4374859 Method for reducing fusel oil in alcoholic beverages and yeast strain useful in that method : Ralph Kunkee, Richard S. Snow, Craig Rous, assigned to The Regents of The University of California. *Biotechnology Advances* 1: 148.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

1983). 4384897 Method of treating biomass material : David L. Brink, assigned to The Regents of the University of California. *Biotechnology Advances* 1: 166.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

1983). 4388233 Synthetic substrates for enzyme analysis : Eugene R Bissell, Alexander Mitchell, Karen W Pearson, Robert E Smith assigned to The Regents of the University of California. *Biotechnology Advances* 1: 343.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

1983). 4390630 Hementin--A fibrinolytic agent : Roy T Sawyer, Gunther S Stent, Andrei Z Budzynski, Stephanie A Olexa, Penclawdd, CA, United Kingdom assigned to The Regents of the University of California. *Biotechnology Advances* 1: 327.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

1983). 4396601 Gene transfer in intact mammals : Winston A Salser, Martin Cline, Howard Stang assigned to The Regents of the University of Calif. *Biotechnology Advances* 1: 309.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

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1983). 4396713 Restriction endonuclease fingerprinting of kinetoplast DNA minicircles : Larry P Simpson, Carlos M Morel assigned to The Regents of the University of Calif. *Biotechnology Advances* 1: 308.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

1983). 4397954 Flowcell fractionator : Siddhartha Sarkar assigned to The Regents of the University of California. *Biotechnology Advances* 1: 321.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

1985). 4401647 Radiolabeled neoglycopeptides : Kenneth A Krohn, David R Vera, Robert C Stadalmk assigned to The Regents of the University of CA. *International Journal of Nuclear Medicine and Biology* 12: v.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO SPECIES.

1983). 4403035 In vitro DNA-protein viral assembly and gene cloning system : Dwight Anderson, Bernard Reilly assigned to Regents of the University of Minnesota. *Biotechnology Advances* 1: 306.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

1983). 4407948 Purification of nucleotide sequences suitable for expression in bacteria : Howard M. Goodman, John Shine, Peter H. Seeburg, assigned to The Regents of the University of California. *Biotechnology Advances* 1: 304.
Chem Codes: Chemical of Concern: FPN Rejection Code: BACTERIA.

1983). 4407956 Cloned cauliflower mosaic virus DNA as a plant vehicle : Stephen Howell, assigned to The Regents of the University of California. *Biotechnology Advances* 1: 303-304.
Chem Codes: Chemical of Concern: FPN Rejection Code: VIRUS.

1983). 4410506 Immunoassay for vitamin K-dependent bone protein : Paul A Price, Satoru K Nishimoto assigned to The Regents of the University of California. *Biotechnology Advances* 1: 315.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

1983). 4415491 Synthetic vaccine peptide epitomes of hepatitis B surface antigen : Girish N Vyas assigned to The Regents of the University of California. *Biotechnology Advances* 1: 345.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

1985). 4431626 TC-99M labeled carrier for imaging : Eberhard Henze assigned to The Regents of the University of California. *International Journal of Nuclear Medicine and Biology* 12: xii.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

1984). 4448885 Bacillus thuringiensis crystal protein in escherichia coli : H Ernest Schnepf, Helen R Whiteley assigned to Board of the Regents of the University of Washington. *Biotechnology Advances* 2 : 377.
Chem Codes: Chemical of Concern: FPN Rejection Code: BACTERIA.

1984). 4455296 Hybrid cell lines producing monoclonal antibodies directed against haemophilus influenzae : Eric J Hansen, John R Kettman, Stella M Robertson assigned to Board of Regents the University of Texas System. *Biotechnology Advances* 2: 398.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

1984). 4464472 Construction and use of functional minichromosomes : John A Carbon, Louise B Clarke assigned to The Regents of the University of California. *Biotechnology Advances* 2: 381.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

1984). 4464473 Ice nucleating microorganisms : Cindy Orser, Steven E Lindow, Nickolas Panopoulos, Brian J Staskawicz assigned to The Regents of the University of California. *Biotechnology Advances* 2 : 381.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

1984). 4469631 Fusion peptides comprising an expressible bacterial gene and beta-endorphin : John D Baxter, Iv Fettes, Joh Shine assigned to The Regents of the University of California. *Biotechnology Advances* 2: 383.
Chem Codes : Chemical of Concern: FPN Rejection Code: BACTERIA.

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[Journal Article; In English; United States]

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Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; Not Available]Specialty IndexingSource ID: CLML - 5222:427:299NLM
Keywords: * NEOPLASMS

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Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

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Chem Codes: Chemical of Concern: FPN Rejection Code: VIRUS.

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Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

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Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

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ADAMCZYK JJ, LEONARD BR, FIFE JH, and GRAVES JB (1998). CONTROL OF BOLL WEEVIL ON COTTON WITH SELECTED INSECTICIDES 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 213-214.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM-HIRSUTUM ANTHONOMUS-GRANDIS-GRANDIS COTTON BOLL WEEVIL CROP CULTIVAR-HOLLAND 1919 PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES BIDRIN INSECTICIDE GUTHION METHYL PARATHION MONITOR PHASER REGENT VYDATE Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Plants/ Coleoptera

AL-DOGHAIRI, M. and CRANSHAW, W. (1998). CONTROL OF WESTERN BLACK FLEA BEETLE ON MUSTARD GREENS 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 110.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER BRASSICA-RAPA PHYLLOTRETA-

US EPA ARCHIVE DOCUMENT

PUSILLA MUSTARD GREEN WESTERN BLACK FLEA BEETLE CULTIVAR-GREEN WAVE HOST CROP PEST PEST MANAGEMENT PESTICIDES APPLICATION RATE SEVIN XLR INSECTICIDE PROVADO 1.6 F LANNATE 90 SP AMMO 2.5 E THIODAN 3 E AMBUSH 2 E MUSTANG 1.5 EW AGENDA 1.67 SC COLORADO USA Biochemistry/ Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Coleoptera

AL-DOGHAIRI, M., CRANSHAW, W., SCLAR DC, GERACE, D., and TUPY, A. (1997). FLEA BEETLE CONTROL IN BROCCOLI 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 86.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER BRASSICA-OLERACEA-VAR-BOTRYTIS PHYLLOTRETA-PUSILLA BROCCOLI WESTERN BLACK FLEA BEETLE HOST CULTIVAR-GREEN COMET HORTICULTURE PEST MANAGEMENT PROVADO EFFICACY INSECTICIDE THIODAN ASANA SEVIN FIPRONIL WARRIOR MUSTANG COLORADO USA Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

Ali, A., Chowdhury, M. A., Hossain, M. I., Ameen, M., Habiba, D. B., and Aslam, A. F. M. (1999). Laboratory Evaluation of Selected Larvicides and Insect Growth Regulators Against Field-Collected Culex quinquefasciatus Larvae from Urban Dhaka, Bangladesh. *J.Am.Mosq.Control Assoc.* 15: 43-47.

EcoReference No.: 62487
Chemical of Concern: CYP,CPY,MLN,PMR,TMP,FPN,BFT,FNTH,CPYM,DFZ; Habitat: A; Effect Codes: MOR; Rejection Code: LITE EVAL CODED(CYP),OK(ALL CHEMS).

Ali, N., Javidfar, F., and Ali Attary, A. (Stability analysis of seed yield in winter type rapeseed (Brassica napus) varieties. *Pakistan Journal of Botany, 34 (2) pp. 151-155, 2002.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Twelve winter type rapeseed varieties of Brassica napus were evaluated at 10 different locations in mild cold and cold regions of Iran for stability parameters of grain yield. Genotype x Environment interaction was significant indicating the influence of environment on grain yield. The linear component has major contribution towards differences in stability of genotypes. A top yielding genotype SLM-046 was found a stable cultivar for grain yield. Genotypes Regent x Cobra and A.W. are suitable for favourable environments, whereas PF-7045/91 and Eureka are suitable for poor environment. Variety Cobra is unpredictable across the environments. Brassica napus

Ancel, J. E., El Kaim, L., Gadras, A., Grimaud, L., and Jana, N. K. (2002). Studies towards the synthesis of Fipronil(R) analogues: improved decarboxylation of [alpha]-hydrazonoacid derivatives. *Tetrahedron Letters* 43: 8319-8321.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

The Mannich reaction of hydrazones coupled with a [4+1] cycloaddition with isocyanides has been used for the synthesis of aminopyrazole analogues of Fipronil(R). The starting cyanohydrazone was prepared with new experimental conditions for efficient diazonium coupling in fluorinated solvents followed by a new sodium cyanide catalysed decarboxylation.

Arnoldo, M, Baszczynski, C L, Bellemare, G, Brown, G, Carlson, J, Gillespie, B, Huang, B, MacLean, N, MacRae, W D, and Rayner et, al. (1992). Evaluation of transgenic canola plants under field conditions. *Genome / National Research Council Canada = Genome / Conseil National De Recherches Canada* 35: 58-63.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Eleven independent transgenic canola (Brassica napus ssp. oleifera L. cv. Westar and Regent) lines were evaluated in the field. The plants carried a neomycin phosphotransferase (NPTII) gene for kanamycin resistance that was introduced via Agrobacterium-mediated transformation. NPTII enzyme assays, Southern blot by hybridizations and progeny analysis, confirmed the stable, heritable integration and expression of the introduced NPTII gene. A number of agronomic characteristics evaluated under field conditions, including maturity yield, and oil and protein content, were all statistically comparable between

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the transformed and nontransforemd platns. These results indicate that canola can be genetically engineered successfully, and that the Agrobacterium-based transformation system employed does not induced any adverse effects on the intrinsic agronomic and qualitative traits critical to the agricultural industry. [Journal Article; In English; Canada]

Avault, J. W. Jr (Catastrophic Loss of Pond-Raised Crawfish Attributed To Rice Insecticide. *Aquaculture Magazine [Aquacult. Mag.]. Vol. 27, no. 1, pp. 45-48. Jan-Feb 2001.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

The LSU Agricultural Center made a survey of 92 ponds across 13 major crawfish-producing parishes during the last two weeks of February 2000. They reported, "in ponds where ICON had been used to protect rice crops, 43% had no crawfish present, 47% exhibited catches well below average, 5% were below average, and 5% exhibited average harvests." In 1999, a new insecticide called ICON was introduced in Louisiana for the control of the rice water weevil. The active ingredient is called fipronil. Fipronil breaks down into several metabolites. Prior to this Furadan had been used, but it was banned for further use in Louisiana for environmental reasons. ICON was introduced as a replacement for Furadan. Beginning around March of 1999 reports came in regarding catastrophic losses of crawfish in the rice-crawfish growing parishes of Louisiana. Crayfish culture/ Insecticides/ Pollution effects/ Pollution monitoring/ Agricultural runoff/ Rice field aquaculture/ Agropisciculture/ Mortality causes/ Environmental impact/ Mortality/ Aquaculture/ USA, Louisiana/ Water Pollution Effects/ Toxicity/ Pesticides (see also Bactericides, Weedkillers)/ Pollution (Water)/ Toxicity (see also Lethal limits)/ Runoff (Agricultural) (see also Return flows)/ USA, Louisiana

Avault, J. W. Jr (2001). Catastrophic Loss of Pond-Raised Crawfish Attributed To Rice Insecticide. *Aquaculture Magazine [Aquacult. Mag.]. Vol. 27, no. 1, pp. 45-48. Jan-Feb 2001.*
Chem Codes: CBF Rejection Code: SURVEY.

The LSU Agricultural Center made a survey of 92 ponds across 13 major crawfish-producing parishes during the last two weeks of February 2000. They reported, "in ponds where ICON had been used to protect rice crops, 43% had no crawfish present, 47% exhibited catches well below average, 5% were below average, and 5% exhibited average harvests." In 1999, a new insecticide called ICON was introduced in Louisiana for the control of the rice water weevil. The active ingredient is called fipronil. Fipronil breaks down into several metabolites. Prior to this Furadan had been used, but it was banned for further use in Louisiana for environmental reasons. ICON was introduced as a replacement for Furadan. Beginning around March of 1999 reports came in regarding catastrophic losses of crawfish in the rice-crawfish growing parishes of Louisiana. Crayfish culture. Insecticides. Pollution effects. Pollution monitoring. Agricultural runoff. Rice field aquaculture. Agropisciculture. Mortality causes. Environmental impact. Mortality. Aquaculture. USA, Louisiana. Water Pollution Effects. Toxicity. Pesticides (see also Bactericides, Weedkillers). Pollution (Water). Toxicity (see also Lethal limits). Runoff (Agricultural) (see also Return flows). USA, Louisiana ISSN: 0199-1388
Language: English
Subfile: ASFA Aquaculture Abstracts; ASFA 1: Biological Sciences & Living Resources; ASFA 3: Aquatic Pollution & Environmental Quality; Pollution Abstracts; Water Resources Abstracts; Aqualine Abstracts

BACHELER JS, MOTT DW, EDMISTEN, K., and STRAUGHN, E. (1997). EFFECT OF SELECTED INSECTICIDES FOR THRIPS CONTROL ON COTTON 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 240.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM-HIRSUTUM COTTON THRIPS FIBER CROP AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST TEMIK INSECTICIDE DI-SYSTON THIMET ORTHENE PAYLOAD FIPRONIL CYGON GAUCHO GOLDSBORO NORTH CAROLINA USA Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

Baron, Gerhard, Kilian, Michael, and Rosenfeldt, Frank (20020606). Synergistic insecticidal and acaricidal compns. containing neem extract. 22 pp.

US EPA ARCHIVE DOCUMENT

Chem Codes: Chemical of Concern: AZD, SPM Rejection Code: NO TOX DATA.

The title compns. comprise neem seed ext. and any of 35 known insecticides and acaricides. [on SciFinder (R)] synergism/ insecticide/ acaricide/ neem/ ext Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2002:428627
Chemical Abstracts Number: CAN 137:1951
Section Code: 5-4
Section Title: Agrochemical Bioregulators
Coden: PIXXD2
Index Terms: Melia azadirachta (ext., mixts. contg.; synergistic insecticidal and acaricidal compns.); Pyrethrins Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (neem ext. mixts. contg.; synergistic insecticidal and acaricidal compn.); Acaricides; Insecticides (synergistic; compns. contg. neem ext.)
CAS Registry Numbers: 60-51-5D (Dimethoate); 114-26-1D (Propoxur); 2032-65-7D (Methiocarb); 23103-98-2D (Pirimicarb); 34681-10-2D (Butocarboxim); 35367-38-5D (Diflubenzuron); 39515-41-8D (Fenpropathrin); 42509-80-8D (Isazophos); 52315-07-8D (Cypermethrin); 52645-53-1D (Permethrin); 52918-63-5D (Deltamethrin); 64628-44-0D (Triflumuron); 66215-27-8D (Cyromazine); 68359-37-5D (Cyfluthrin); 69327-76-0D (Buprofezin); 71751-41-2D (Abamectin); 78587-05-0D (Hexythiazox); 80060-09-9D (Diafenthiuron); 91465-08-6D (Lambda-cyhalothrin); 96489-71-3D (Pyridaben); 111988-49-9D (Thiacloprid); 112636-83-6D (Dicyclanil); 119168-77-3D (Tebufenpyrad); 120068-37-3D (Fipronil); 123312-89-0D (Pymetrozine); 135410-20-7D (Acetamiprid); 138261-41-3D (Imidacloprid); 148477-71-8D (Spirodiclofen); 149877-41-8D (Bifenazate); 153719-23-4D (Thiamethoxam); 168316-95-8D (Spinosad); 210880-92-5D (Clothianidin); 283594-90-1D; 431898-75-8 (Thiacloprid-NeemAzal mixt.) Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (synergistic insecticidal and acaricidal compn.); 11141-17-6D (Azadirachtin) Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (synergistic insecticidal and acaricidal compns.)

written in German.

Barr, Paul (2005). Overseeing oversight. Wellmark CEO resigns Board of Regents position. *Modern Healthcare* 35: 14.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

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BARTELS DW, BOLIN PC, and HUTCHISON WD (1995). INSECTICIDAL AND MICROBIAL CONTROL OF LEPIDOPTERAN PESTS INS MINNESOTA CABBAGE 1994. *BURDITT, A. K. JR. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 20. III+399P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-53-1.; 0 (0). 1995. 68-69.*
Chem Codes: Chemical of Concern: FPN Rejection Code: BACTERIA.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER BRASSICA-OLERACEA BACILLUS-THURINGIENSIS TRICHOPLUSIA-NI ARTEGEIA-RAPAE PLUTELLA-XYLOSTELLA CULTIVAR SUPER ELITE POUNCE AMBUSH KARATE AMMO FURY TD-2344-1 FIPRONIL LARVIN DIPEL XENTARI JAVELIN CGA-269941 AGREE CUTLASS INSECTICIDE PESTICIDE EVALUATION BIOLOGICAL CONTROL INTEGRATED CONTROL ARTHROPOD MANAGEMENT TEST USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Pest Control, Biological/ Arachnida/ Entomology/Economics/ Pest Control/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Gram-Positive Endospore-Forming Bacteria/ Plants/ Lepidoptera

BAUR ME, HALL TS, FITZPATRICK BJ, and BOETHEL DJ (1999). Evaluation of insecticides for threecornered alfalfa hopper control on soybean, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 284-285.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GLYCINE MAX SPISSISTILUS FESTINUS SOYBEAN THREECORNERED ALFALFA HOPPER CULTIVAR-PIONEER 9594 FODDER CROP FODDER GROP HOST OIL CROP CONTROL PEST AGRONOMY ECONOMIC

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ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT APPLAUD INSECTICIDE EFFICACY ASANA EXP 60720A KARATE ORTHENE HAMBURG LOUISIANA USA Cereals/ Plants/Growth & Development/ Soil/ Animal Feed/ Plants/Growth & Development/ Soil/ Oils/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Legumes/ Insects

Behnke, J M (1975). Aspiculuris tetraptera in wild Mus musculus. The prevalence of infection in male and female mice. *Journal Of Helminthology* 49: 85-90.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

A survey was carried out of the levels of infection with Aspiculuris tetraptera and Syphacia obvelata in a wild house mouse population living in the Charles Clore Small Mammals Pavilion at the London Zoo in Regent's Park. The extent of infection with A. tetraptera is analysed according to the sex of the host. It is shown that the prevalence of infection was greater in male than in female mice and frequency distribution studies suggest that this is not only because fewer female mice become infected but also because females resist larvae more effectively than do males. [Journal Article; In English; England]

Bernhardt, J. L. (1998). CONTROL OF RICE WATER WEEVIL AND RICE STALK BORER WITH FIPRONIL 1997. *Saxena, K. N. (Ed.). Arthropod Management Tests, Vol. 23. Iv+418p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-77-9.* 23 : 259-260.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 23.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA-SATIVA LISSORHOPTRUS-ORYZOPHILUS CHILO-PLEJADELLUS RICE RICE WATER WEEVIL RICE STALK BORER GRAIN CROP IMMATURE PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT FIPRONIL 75 FS INSECTICIDE FIPRONIL 80 WG FURADAN 3 G
KEYWORDS: Biochemical Studies-General
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Gramineae
KEYWORDS: Coleoptera
KEYWORDS: Lepidoptera

Bernhardt, J. L. (1997). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL 1996A. *Saxena, C. R. Arthropod Management Tests, Vol. 22. Iv+469p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-61-2.* 22 : 286-287.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 22.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA-SATIVA LISSORHOPTRUS-ORYZOPHILUS RICE RICE WATER WEEVIL GRAIN CROP CULTIVAR-CYPRESS AGRICULTURAL PEST AGRICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST FIPRONIL INSECTICIDE EXP 80698A EXP 60720A EXP 60145A FURADAN ARKANSAS USA
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Bernhardt, J. L. (1997). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL 1996B. *Saxena, C. R. Arthropod Management Tests, Vol. 22. Iv+469p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-61-2.* 22 : 287.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 22.

US EPA ARCHIVE DOCUMENT

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LISSORHOPTRUS-ORYZOPHILUS ORYZA-SATIVA RICE WATER WEEVIL RICE AGRICULTURAL PEST CULTIVAR-CYPRESS GRAIN CROP AGRICULTURE EXP 60720A INSECTICIDE EXP 80698A FURADAN PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST ARKANSAS USA
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Bernhardt, J. L. (1998). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL 1997. *Saxena, K. N. (Ed.). Arthropod Management Tests, Vol. 23. Iv+418p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-77-9.* 23 : 259.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 23.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA-SATIVA LISSORHOPTRUS-ORYZOPHILUS RICE RICE WATER WEEVIL CULTIVAR-CYPRESS GRAIN CROP IMMATURE PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT EXP 60949A 1.5G INSECTICIDE EXP 80572B 44.1 FC FIPRONIL 75 FS FURADAN 3 G
KEYWORDS: Biochemical Studies-General
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Bernhardt, J. L. (1995). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL APPLIED POSTFLOOD 1994. *Burditt, A. K. Jr. (Ed.). Arthropod Management Tests, Vol. 20. Iii+399p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-53-1.* 0 : 225-226.
Chem Codes: CBF Rejection Code: BOOK ORDERED - BURDITT VOL 2O.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA-SATIVA LISSORHOPTRUS-ORYZOPHILUS CULTIVAR LEMONT FURADAN EXP60655A INSECTICIDE PESTICIDE EVALUATION ARTHROPOD MANAGEMENT TEST
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Bernhardt, J. L. (1995). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL APPLIED PREPLANT INCORPORATED 1994. *Burditt, A. K. Jr. (Ed.). Arthropod Management Tests, Vol. 20. Iii+399p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-53-1.* 0 : 225.
Chem Codes: CBF Rejection Code: BOOK ORDERED - BURDITT VOL 2O.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA-SATIVA LISSORHOPTRUS-ORYZOPHILUS CULTIVAR LEMONT FURADAN EXP60655A INSECTICIDE PESTICIDE EVALUATION ARTHROPOD MANAGEMENT TEST
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae

US EPA ARCHIVE DOCUMENT

KEYWORDS: Coleoptera

Bernhardt, J. L. (1995). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL AS A SEED TREATMENT 1994. *Burditt, A. K. Jr. (Ed.). Arthropod Management Tests, Vol. 20. Iii+399p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-53-1.* 0 : 226.
Chem Codes: CBF Rejection Code: BOOK ORDERED - BURDITT VOL 2O.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA-SATIVA LISSORHOPTRUS-ORYZOPHILUS CULTIVAR LEMONT FURADAN EXP80415A INSECTICIDE PESTICIDE EVALUATION ARTHROPOD MANAGEMENT TEST
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

BERTOLOTTI, E and DE CECCO, C (1959). Reducing action of tetracycline on Nylander's and Fehling's regents. *Minerva Medica* 50: 678-680.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO FOREIGN.

[Journal Article; In Italian; Not Available]Specialty IndexingSource ID: CLML - 5936:30643:272:392:528NLM Keywords: * INDEXING; * OXIDATION-REDUCTION; * TETRACYCLINE/effects

BESSIN RT (1999). Western corn rootworm larval control, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 207.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA MAYS DIABROTICA VIRGIFERA VIRGIFERA DIABROTICA VIRGIFERA VINGITERA FIELD CORN INSECT HOST OIL CROP CULTIVAR-DEKALB 580 RR CONTROL LARVA PEST AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT FORCE INSECTICIDE EFFICACY FORTRESS FURADAN REGENT KENTUCKY USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

BESSIN RT (1999). White grub control in no-till field corn, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 207.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA MAYS PHYLLOPHAGA CYCLOCEPHALA FIELD CORN MAY BEETLE MASKED CHAFER CROP CULTIVAR-PIONEER 3394 HOST NO-TILL OIL CROP CONTROL PEST AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT FORCE INSECTICIDE EFFICACY REGENT KENTUCKY USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

Blaich, R. and Grundhofer, H. (Uptake of silica by grapevines from soil and recirculating nutrient solutions. *Vitis, 36 (4) pp. 161-166, 1997.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

The uptake of silica by grapevines was investigated both in the field and in hydroponic cultures. In aqueous soil suspensions (14 d at 20 degree C) of 6 different locations (clay/loam) an equilibrium of 55-71 ppm of soluble silica (expressed as SiO inferior 2) was measured; the content of grapevine leaves at harvest time

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was between 0.44 and 0.73 % of the dry matter, the concentrations being correlated with the silica solubility of the relative soil. Before budburst xylem exudates contained only about 1-4 ppm SiO inferior 2 (rising with soil temperature), whereas during summer up to 68 ppm were measured. Six different grapevine cultivars were grown in recirculating nutrient solutions supplied with different amounts (112, 10 and 0 ppm) of SiO inferior 2; the solutions were changed weekly. The average SiO inferior 2 content of leaf dry matter at harvest time (0.1-2 %) was correlated with leaf age and the SiO inferior 2 concentration of the nutrient solution whereas in stems and petioles it was always less than 0.1%. Significant varietal differences could be found only for cv. Regent which accumulated about 20 % more SiO inferior 2 than the other varieties from the 112 ppm solutions. By the end of the vegetation period fresh leaves from plants grown on 112 ppm contained always around 0.1% of water soluble SiO inferior 2, irrespective of the leaves' age whereas the total amount of SiO inferior 2 was up to 2 % in old leaves from the basis of the shoots and less than 0.5 % in the apical region. In the leaf center the silica concentration was always around 50 % lower than in the leaf periphery. Vitis/ Silica uptake

BLOOMQUIST JR (1993). Toxicology, mode of action and target site-mediated resistance to insecticides acting on chloride channels.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

BIOSIS COPYRIGHT: BIOL ABS. 1. The discovery that the avermectins and cyclodienes affected the chloride channels of excitable membranes generated intense research interest among academic and industrial scientists. 2. The results of biochemical and neurophysiological studies indicate that the gamma-aminobutyric acid (GABA)-gated chloride channel is an important, if not the primary site of action for these compounds. 3. The action of insecticides on the functional properties of the GABA receptor differs by structural class. The cyclodienes block the chloride ion channel and the avermectins activate it. 4. Blockage of the GABA-gated chloride channel by cyclodienes reduces neuronal inhibition, which leads to hyper-excitation of the central nervous system, convulsions, and death. For avermectins, activation of the channel suppresses neuronal activity, resulting in ataxia, paralysis and death. Although actions on the GABA-gated chloride channel can explain many of the effects of these compounds, there i Animals/ Cytology/ Histocytochemistry/ Biochemistry/ Amino Acids/ Peptides/ Proteins/ Minerals/ Biophysics/ Membranes/Physiology/ Necrosis/Pathology/ Neurosecretory Systems/ Nervous System Diseases/Pathology/ Poisoning/ Animals, Laboratory/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Insects

Bobe, A., Cooper, J. F., Coste, C. M., and Muller, M. A. (Behaviour of fipronil in soil under Sahelian plain field conditions. *Pesticide Science, 52 (3) pp. 275-281, 1998.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO SPECIES.

The behaviour of fipronil, a phenylpyrazole insecticide used for locust control, was studied under sub-Saharan conditions in soils of the Niamey region of Niger. A formulation of fipronil (Adonis registered trade mark sign)) was applied to uncultivated soils at Banizoumbou and Saguia. Soil was sampled at 0-10, 10-20 and 20-30 cm depths for up to two months after treatment. Residues were analysed by gas chromatography using electron capture and mass detectors. For both soils, a rapid initial decrease of fipronil was observed, with rapid formation for the most part of a photodegradate. Three other metabolites of fipronil were also detected throughout the study. These metabolites displayed different dissipation kinetics. Fipronil and its metabolites did not move beyond 10 cm depth, except for the amide, which is not considered a toxicologically significant metabolite. Fipronil/ Locust control/ Tropical conditions

BOETEL MA and FULLER BW (1999). Comparison of registered insecticide products for controlling corn rootworm larvae 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 208-209.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM COMPARISON OF REGISTERED INSECTICIDE PRODUCTS FOR CONTROLLING CORN ROOTWORM LARVAE 1998YBOOK CHAPTER ZEA MAYS DIABROTICA BARBERI DIABROTICA VIRGIFERA VIRGIFERA FIELD CORN NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM CROP CULTIVAR-DEKALB 493 HOST PEST CONTROL LARVA AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT AZTEC INSECTICIDE EFFICACY COMPARISON FORCE REGENT LORSBAN AURORA CAVOUR NEW HOLLAND SOUTH DAKOTA USA

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Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera/ Lepidoptera

BOETEL MA and FULLER BW (1998). CONVENTIONAL AND LOW-VOLUME MICROTUBE APPLICATION OF INSECTICIDE TREATMENTS FOR MANAGEMENT OF CORN ROOTWORM LARVAE AND RESIDUAL CONTROL OF FIRST-GENERATION EUROPEAN CORN BORERS 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 189.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DIABROTICA-BARBERI DIABROTICA-VIRGIFERA-VIRGIFERA OSTRINIA-NUBILALIS CORN WESTERN ROOTWORM WESTERN CORN ROOTWORM EUROPEAN CORN BORER CROP CULTIVAR-PIONEER IR-3751 PEST LARVA ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES COUNTER 20 CR INSECTICIDE FORCE 3 G REGENT Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Coleoptera/ Lepidoptera

BOETEL MA and FULLER BW (1999). Planting-time and post-emergence insecticide treatments for controlling corn rootworms in South Dakota, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 209-210.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA MAYS DIABROTICA BARBERI DIABROTICA VIRGIFERA VIRGIFERA FIELD CORN NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM HOST CROP CULTIVAR-DEKALB 493 CONTROL PEST AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT AZTEC PLANTING-TIME APPLICATION EFFICACY INSECTICIDE AZTEC BIODAC COUNTER FORCE FORTRESS LORSBAN PILOT REGENT THIMET FURADAN POSTEMERGENCE APPLICATION AURORA CAVOUR NEW HOLLAND SOUTH DAKOTA USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera/ Lepidoptera

Boga, Carla, Manescalchi, Francesco, and Savoia, Diego (1994). Diastereoselective synthesis of 2,5-dimethylpyrrolidines and 2,6-dimethylpiperidines by reductive amination of 2,5-hexanedione and 2,6-heptanedione with hydride reagents. *Tetrahedron* 50: 4709-4722.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

The reductive amination of 2,5-hexanedione and 2,6-heptanedione with ammonia and primary amines in the presence of hydride regents afforded 2,5-dimethylpyrrolidines and 2,6-dimethylpiperidines with variable diastercoselectivity, as the cis/trans ratio was affected by the size of the ring formed and the steric and electronic properties of the nitrogen substituent. Increasing the bulkiness of the nitrogen substituent, the cis pyrrolidines and the trans-piperidines were obtained with enhanced selectivity.

Bornhoff, B. A. and Harst, M. (Establishment of embryo suspension cultures of grapevines (Vitis L.). *Vitis, 39 (1) pp. 27-29, 2000.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Somatic embryos of Seyval blanc, Dornfelder, Regent, Riesling, Muller-Thurgau and Rupestris du Lot originating from leaf discs or anther culture were checked with regard to their ability to be cultivated in suspensions for an induction of secondary embryogenesis. Culture parameters like carbohydrates, phytohormones, pH, intervals of media change, the anti-oxidant dithioerythritol (DTE), and the size of embryos were tested to optimize the suspension culture conditions. In liquid culture, glucose was better utilized than sucrose or maltose. The pH (5.8 - 5.0) and the embryo size mainly influenced the quality of embryogenic suspensions. Medium change proved to be necessary at a pH less than 4.5 or after a culture period greater than 4 weeks. Browning of media was avoided by addition of 3 or 6 mM DTE.

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Homogeneous suspension cultures were maintained by fragmentation of embryos according to their developmental stage. From suspensions containing embryos of globulary- and heart-stage (0.5-2.0 mm) 50 % new somatic embryos were obtained whereas further developed embryos (torpedo-stage, greater than 2.0 mm) were not suitable for cultivation in suspension. Best induction of secondary embryos was obtained from Seyval blanc, Dornfelder, Muller-Thurgau and Rupestris du Lot. After transfer to a LS-medium the seedlings of Dornfelder and Muller-Thurgau regenerated to rooted in vitro plantlets. Carbon source/ DTE/ Embryo suspension culture/ pH/ Phytohormone/ Regeneration/ Vitis vinifera/ Vitis

BRANDENBURG RL and ROYALS BM (1998). EVALUATING THRIPS CONTROL IN PEANUTS USING PERCENT DAMAGE LEAFLET RATINGS 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 252.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ARACHIS-HYPOGAEA FRANKLINIELLA-FUSCA PEANUT TOBACCO THRIPS OIL CROP CULTIVAR-NC-7 PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT ORTHENE 97 PERCENT INSECTICIDE TEMIK 15 G THIMET 20 G FIPRONIL 1.65 G Biochemistry/ Oils/ Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Legumes/ Insects

BRANDENBURG RL and ROYALS BM (1998). SOUTHERN CORN ROOTWORM CONTROL ON PEANUT 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 251-252.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ARACHIS-HYPOGAEA DIABROTICA-UNDECIMPUNCTATA-HOWARDI PEANUT SOUTHERN CORN ROOTWORM CULTIVAR-NC-7 OIL CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT LORSBAN 15 G INSECTICIDE MOCAP 10 G FIPRONIL 1.65 G Biochemistry/ Oils/ Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Legumes/ Coleoptera

Brooks, A D (1976). Mental health law. *Administration In Mental Health* 4: 94-97.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]Specialty IndexingSource ID: KIE - 05437KIE Keywords: Tarasoff v. Regents of the University of CaliforniaGeneral Note: Full author name: Brooks, Alexander D; KIE BoB Subject Heading: DISCLOSURE/LEGAL OBLIGATIONS/PSYCHOTHERAPY/DANGEROUSNESS; Title provided

Buckingham, S D, Hosie, A M, Roush, R L, and Sattelle, D B (1994). Actions of agonists and convulsant antagonists on a Drosophila melanogaster GABA receptor (Rdl) homo-oligomer expressed in Xenopus oocytes. *Neuroscience Letters* 181: 137-140.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

Cytoplasmic injection of Xenopus oocytes with cDNA-derived RNA (cRNA) encoding a wild-type Drosophila melanogaster GABA receptor subunit (Rdl) resulted in functional expression of a GABA receptor homo-oligomer. Membrane currents recorded in response to muscimol, trans (TACA)- and cis (CACA)-4-aminocrotonic acid reversed at membrane potentials close to ECl- and were insensitive to 1.0 x 10(-4) M bicuculline methiodide. An order of potency of GABA approximately muscimol approximately TACA > CACA > glycine was observed. Response of the expressed Drosophila Rdl receptor to GABA was reduced by t-butylbicyclophosphorothionate (TBPS), 4-n-propyl-4'-ethynylbicycloorthobenzoate (EBOB), picrotoxinin and the novel insecticide, fipronil (all at 1.0 x 10(-5) M). [Journal Article; In English; Ireland]

Buckingham, Steven David, Biggin, Philip Charles, Sattelle, Benedict Mark, Brown, Laurence Andrew, and Sattelle, David Barry (2005). Insect GABA receptors: splicing, editing, and targeting by antiparasitics and insecticides. *Molecular Pharmacology* 68: 942-951.

US EPA ARCHIVE DOCUMENT

Chem Codes: Chemical of Concern: FPN Rejection Code: REVIEW.

Ionotropic GABA receptors are abundant in both vertebrate and invertebrate nervous systems, where they mediate rapid, mostly inhibitory synaptic transmission. A GABA-gated chloride channel subunit from Drosophila melanogaster [Resistant to Dieldrin (RDL)] has been cloned, functionally expressed, and found to exhibit many aspects of the pharmacology of native, bicuculline-insensitive insect GABA receptors. RDL is the target of the commercially important insecticide fipronil. A point mutation in the channel-lining region of the RDL molecule is known to underlie most cases of resistance to insecticides acting on GABA receptors. RDL is widely distributed throughout the insect nervous system, but the subunit composition of RDL-containing in native receptors is unknown. It is possible that in some instances, RDL coexpresses with glutamate-gated chloride channel subunits. Other ionotropic receptor subunits (LCCH3 and GRD) form GABA-gated cation channels when heterologously expressed. Interest in RDL as a model ligandgated anion channel has been enhanced by the recent discovery of pre-mRNA A-to-I editing, which, together with alternative splicing, adds to the functional diversity of this GABA receptor subunit. [Journal Article, Review, Review, Tutorial; 85 Refs; In English; United States]

Burke, Darren and Fulham, Benjamin J. (2003). An evolved spatial memory bias in a nectar-feeding bird? *Animal Behaviour* 66: 695-701.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

Studies have shown that nectar-feeding birds more easily learn to avoid a previously rewarding location (to win-shift) than to return to such a location (to win-stay). This pattern has been interpreted as evidence of an evolved adaptation to the fact that nectar is a depleting resource; however, such a conclusion requires ruling out the possibility that this tendency is a consequence of the experience of individual birds, and is more compelling if performance in the memory task reveals sensitivity to detailed features of the spatiotemporal distribution of nectar in the environment. We tested the tendency of captive-reared Regent honeyeaters, Xanthomyza phrygia, a species of nectar-feeding bird, to win-shift or win-stay at different intervisit intervals. The birds generally avoided rewarding locations after a short retention interval (10 min), but returned to these locations after a long retention interval (3 h). This behaviour tracks the replenishment rate of the flowers exploited by this species in the wild, even though the subjects were born and reared in captivity. Copyright 2003 Published by Elsevier Ltd on behalf of The Association for the Study of Animal Behaviour.

BUSCHMAN LL and SLODERBECK PE (1997). EVALUATION OF REGENT INSECTICIDE FOR EARLY SEASON INSECT CONTROL IN CORN 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 208-209.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DIABROTICA-VIRGIFERA-VIRGIFERA OSTRINIA-NUBIALIS DIATRAEA-GRANDIOSELLA FIELD CORN WESTERN CORN ROOTWORM EUROPEAN CORN BORER SOUTHWESTERN CORN BORER CROP CULTIVAR-PIONEER 3162 IR AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT REGENT INSECTICIDE INSECT CONTROL POUNCE EXP 61216A COUNTER ARTHROPOD MANAGEMENT TEST EARLY SEASON FINNEY COUNTY KANSAS USA Cereals/ Plants/Growth & Development/ Soil/ Oils/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera/ Lepidoptera

CALLCOTT A-M A and COLLINS HL (1999). RIFA quarantine treatments in grass sod, 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 328.*
Chem Codes : Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER PASPALUM NOTATUM SOLENPOSIS INVICTA BAHIAGRASS RED IMPORTED FIRE ANT HOST ORNAMENTAL CROP SOD CONTROL PEST HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT EXP 60818A INSECTICIDE EFFICACY DURSBAN HATTIESBURG MISSISSIPPI USA Plants/Growth & Development/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/

US EPA ARCHIVE DOCUMENT

Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Hymenoptera

Carter, M. E., Villani, M. G., Allee, L. L., and Losey, J. E. (Absence of non-target effects of two Bacillus thuringiensis coleopteran active (delta)-endotoxins on the bulb mite, Rhizoglypus robini (Clapare(grave)de) (Acari, Acaridae). *Journal of Applied Entomology, 128 (1) pp. 56-63, 2004.*
Chem Codes: Chemical of Concern: FPN Rejection Code: BACTERIA.

Transgenic crops with plant-incorporated protectants are often more specific than synthetic insecticides and have the potential to reduce impacts on non-target organisms. In this study we assessed the impact of Cry3Aa and Cry3Bbl coleopteran-active (delta)-endotoxins on the bulb mite, Rhizoglypus robini. The effect of Cry3Aa prototoxin in solutions of the biopesticide Novodor(registered trademark) on mite survival was assessed in laboratory studies. Survival of R. robini exposed to Cry3Aa in a short-term contact and ingestion experiment was not affected, although R. robini was significantly affected by the insecticide Fipronil(registered trademark) used as a positive control. Similarly, R. robini exposed in a longer duration feeding trial to the Cry3Aa toxin in artificial diet were also not significantly affected. When Cry3Aa was tested on the positive control insect, Leptinotarsa decemlineata, reduced weight of larvae and increased mortality was recorded. The effect of Cry3Bbl toxin in transgenic corn tissues on R. robini food choice was assessed in a laboratory study. In no-choice tests a greater proportion of R. robini were found on garlic roots than on Cry3Bbl transgenic corn and a near-isogenic non-transgenic corn. In a choice test, more R. robini was recovered on garlic roots than on either corn variety, and on Cry3Bbl corn than on non-transgenic corn. In large field plots using specific mite traps across the growing season, R. robini mite populations were not significantly different between Cry3Bbl corn and non-transgenic corn alone or non-transgenic corn treated with different combinations of two insecticides. Our results, combined with results from other studies, suggest that transgenic plants expressing the Cry3Aa or Cry3Bbl Bacillus thuringiensis toxins are likely to have negligible impact on R. robini mite populations. Rhizoglypus robini/ Acaridae/ Bulb mite/ Non-target effects/ Transgenic plants/ Bacillus thuringiensis/ Rhizoglypus robini/ Leptinotarsa decemlineata

CASIDA JE and PULMAN DA (1994). RECENT ADVANCES ON HETEROCYCLIC INSECTICIDES ACTING AS GABA ANTAGONISTS. *BRIGGS, G. G. (ED.). ROYAL SOCIETY OF CHEMISTRY SPECIAL PUBLICATION, NO. 147. ADVANCES IN THE CHEMISTRY OF INSECT CONTROL III; 3RD INTERNATIONAL SYMPOSIUM, CAMBRIDGE, ENGLAND, UK, JULY 18-21, 1993. VI+250P. ROYAL SOCIETY OF CHEMISTRY: CAMBRIDGE, ENGLAND, UK. ISBN 0-85186-992-0.; 0 (0). 1994. 36-51.*
Chem Codes: Chemical of Concern: FPN Rejection Code: ABSTRACT.

BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING PAPER BOOK CHAPTER NEUROTOXIN INSECT PEST CONTROL Congresses/ Biology/ Biochemistry/ Nervous System Diseases/Pathology/ Poisoning/ Animals, Laboratory/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Animal/ Disease/ Insects/Parasitology

Castro, B. A., Riley, T. J., and Leonard, B. R. (1998). RED IMPORTED FIRE ANT MANAGEMENT IN GRAIN SORGHUM USING SELECTED INSECTICIDE TREATMENTS 1997. *Saxena, K. N. (Ed.). Arthropod Management Tests, Vol. 23. Iv+418p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-77-9.* 23 : 277-278.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 23.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SORGHUM-BICOLOR SOLENOPSIS-INVICTA SORGHUM RED IMPORTED FIRE ANT CULTIVAR-PIONEER 8333 CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES GAUCHO INSECTICIDE KARATE LORSBAN FIPRONIL FORCE FURADAN
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-General
KEYWORDS: Invertebrata
KEYWORDS: Gramineae
KEYWORDS: Hymenoptera

CASTRO BA, RILEY TJ, and LEONARD BR (1999). Management of the red imported fire ant in grain sorghum with selected insecticide treatments, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS,*

US EPA ARCHIVE DOCUMENT

VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 282.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SORGHUM BICOLOR SOLENOPSIS INVICTA SORGHUM RED IMPORTED FIRE ANT GRAIN CROP HOST CULTIVAR-PIONEER 8282 CONTROL PEST AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT GAUCHO EFFICACY INSECTICIDE LORSBAN EXP 80698 WINNSBORO LOUISIANA USA Cereals/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Hymenoptera

CASTRO BA, RILEY TJ, and LEONARD BR (1998). RED IMPORTED FIRE ANT MANAGEMENT IN GRAIN SORGHUM USING SELECTED INSECTICIDE TREATMENTS 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 277-278.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SORGHUM-BICOLOR SOLENOPSIS-INVICTA SORGHUM RED IMPORTED FIRE ANT CULTIVAR-PIONEER 8333 CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES GAUCHO INSECTICIDE KARATE LORSBAN FIPRONIL FORCE FURADAN Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Hymenoptera

CASTRO BA, RILEY TJ, TORREY KD, and LEONARD BR (1999). Chinch bug management in grain sorghum using foliar insecticides, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 281-282.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SORGHUM BICOLOR BLISSUS LEUCOPTERUS LEUCOPTERUS SORGHUM CHINCH BUG GRAIN CROP CULTIVAR-PIONEER 8282 HOST PEST CONTROL AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT BAYTHROID FOLIAR APPLICATION INSECTICIDE EFFICACY DECIS FURADAN KARATE Z LORSBAN PROVADO REGENT WINNSBORO LOUISIANA USA Cereals/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Insects

Chai, Ming-Liang, Wang, Bing-Liang, Kim, Jae-Yeoul, Lee, Jong-Min, and Kim, Doo-Hwan (Agrobacterium-mediated transformation of herbicide resistance in creeping bentgrass and colonial bentgrass. *Journal Of Zhejiang University. Science* 4: 346-351.
Chem Codes: Chemical of Concern: FPN Rejection Code: BACTERIA.

Embryogenic calli were induced from the seeds of creeping bentgrass (Agrostis palustris Huds.) cv. Regent and colonial bentgrass (Agrostis Tenuis Sibth. Fl. Oxen.) cv. Tiger. The embryogenic calli were precultured on fresh medium for 4-7 days and then co-cultivated with Agrobacterium tumefaciens, LBA4404, which contains plasmid vector-pSBGM harboring bar coding region, synthetic green fluorescent protein (sGFP) coding region and matrix attachment region (MAR). After 3 days of co-cultivation, the calli were washed thoroughly and transferred to MS medium containing 2 mg/L of 2, 4-D, 12-15 mg/L phosphinothricin (PPT) and 250 mg/L of cefotaxime. After 2-3 months of selection, the actively growing calli of 'Regent' and 'Tiger' were transferred to MS medium with 12-15 mg/L PPT and 250 mg/L cefotaxime for regeneration. The putative transformants were maintained on MS medium with 3 mg/L PPT for long period but control died within 1 month. After establishing in greenhouse, the transformants also showed strong resistance to 0.4% of herbicide Basta but control plants died within 2 weeks. Under confocal microscope, both young leaves and roots showed significant GFP expression. PCR analysis revealed the presence of a DNA fragment of GFP gene at the expected size (380 bp) in the transformants and its absence in a randomly selected control plant. [Journal Article; In English; China]

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Cheeseman, Catherine L., Delany, Natalie S., Woods, Debra J., and Wolstenholme, Adrian J. (2001). High-affinity ivermectin binding to recombinant subunits of the Haemonchus contortus glutamate-gated chloride channel. *Molecular and Biochemical Parasitology* 114: 161-168.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

Glutamate-gated chloride channels (GluCls) are targets for the avermectin anthelmintics. A family of five GluCl subunit genes encoding seven subunits has been identified in Caenorhabditis elegans. We have previously shown that two orthologous genes in the parasite, Haemonchus contortus, encode three GluCl subunits (HcGluCl[beta], Hcgbr-2A and Hcgbr-2B) with high amino-acid identity (>80%) to their C. elegans counterparts. We amplified and cloned a further subunit cDNA, HcGluCl[alpha], from H. contortus eggs. Sequence comparisons suggested that this subunit was closely related to, but not orthologous with, the C. elegans GluCl[alpha]1, [alpha]2 or [alpha]3/GBR-2 subunits (~55% amino-acid identity). The HcGluCl[alpha] cDNA from an ivermectin-resistant isolate contained no coding changes from the wild-type. All of the known H. contortus GluCl cDNA clones were subcloned into the expression vector pcDNA3.1 and transiently expressed in COS-7 cells. As predicted by functional data from the C. elegans orthologues, the Hcgbr-2A and HcGluCl[beta] subunits failed to bind [3H]ivermectin. The Hcgbr-2B and HcGluCl[alpha] subunits bound [3H]ivermectin with high affinity; the Kd values were 70+/-16 and 26+/-12 pM, respectively. This binding was inhibited by a variety of avermectins, though cold ivermectin was the most potent inhibitor of [3H] ivermectin binding. Picrotoxin, fipronil, glutamate and GABA all failed to compete for ivermectin binding to either subunit. The affinity of [3H]ivermectin binding to H. contortus L3 P2 larval membrane preparations was re-examined and found to be 70+/-7 pM. The properties of orthologous GluCl subunits are likely to be conserved across species, but the repertoire and relative importance of those subunits may vary.

Chen, G, Hoag, G E, Chedda, P, Nadim, F, Woody, B A, and Dobbs, G M (2001). The mechanism and applicability of in situ oxidation of trichloroethylene with Fenton's reagent. *Journal Of Hazardous Materials* 87: 171-186.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO COC.

Fenton's reagent is the result of reaction between hydrogen peroxide (H(2)O(2)) and ferrous iron (Fe(2+)), producing the hydroxyl radical (-*OH). The hydroxyl radical is a strong oxidant capable of oxidizing various organic compounds. The mechanism of oxidizing trichloroethylene (TCE) in groundwater and soil slurries with Fenton's reagent and the feasibility of injecting Fenton's reagent into a sandy aquifer were examined with bench-scale soil column and batch experiment studies. Under batch experimental conditions and low pH values (approximately 3), Fenton's reagent was able to oxidize 93-100% (by weight) of dissolved TCE in groundwater and 98-102% (by weight) of TCE in soil slurries. Hydrogen peroxide decomposed rapidly in the test soil medium in both batch and column experiments. Due to competition between H(2)O(2) and TCE for hydroxyl radicals in the aqueous solutions and soil slurries, the presence of TCE significantly decreased the degradation rate of H(2)O(2) and was preferentially degraded by hydroxyl radicals. In the batch experiments, Fenton's reagent was able to completely dechlorinate the aqueous-phase TCE with and without the presence of soil and no VOC intermediates or by-products were found in the oxidation process. In the soil column experiments, it was found that application of high concentrations of H(2)O(2) with addition of no Fe(2+) generated large quantities of gas in a short period of time, sparging about 70% of the dissolved TCE into the gaseous phase with little or no detectable oxidation taking place. Fenton's reagent completely oxidized the dissolved phase TCE in the soil column experiment when TCE and Fenton's regent were simultaneously fed into the column. The results of this study showed that the feasibility of injecting Fenton's reagent or H(2)O(2) as a Fenton-type oxidant into the subsurface is highly dependent on the soil oxidant demand (SOD), presence of sufficient quantities of ferrous iron in the application area, and the proximity of the injection area to the zone of high aqueous concentration of the target contaminant. Also, it was found that in situ application of H(2)O(2) could have a gas-sparging effect on the dissolved VOC in groundwater, requiring careful attention to the remedial system design. [Journal Article; In English; Netherlands]

Chen, Ge, Hoag, George E., Chedda, Pradeep, Nadim, Farhad, Woody, Bernard A., and Dobbs, Gregory M. (2001). The mechanism and applicability of in situ oxidation of trichloroethylene with Fenton’s reagent. *Journal of Hazardous Materials* 87: 171-186.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO COC.

Fenton’s reagent is the result of reaction between hydrogen peroxide (H2O2) and ferrous iron (Fe2+), producing the hydroxyl radical (.OH). The hydroxyl radical is a strong oxidant capable of oxidizing various organic compounds. The mechanism of oxidizing trichloroethylene (TCE) in groundwater and soil

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slurries with Fenton’s reagent and the feasibility of injecting Fenton’s reagent into a sandy aquifer were examined with bench-scale soil column and batch experiment studies. Under batch experimental conditions and low pH values (~3), Fenton’s reagent was able to oxidize 93-100% (by weight) of dissolved TCE in groundwater and 98-102% (by weight) of TCE in soil slurries. Hydrogen peroxide decomposed rapidly in the test soil medium in both batch and column experiments. Due to competition between H2O2 and TCE for hydroxyl radicals in the aqueous solutions and soil slurries, the presence of TCE significantly decreased the degradation rate of H2O2 and was preferentially degraded by hydroxyl radicals. In the batch experiments, Fenton’s reagent was able to completely dechlorinate the aqueous-phase TCE with and without the presence of soil and no VOC intermediates or by-products were found in the oxidation process. In the soil column experiments, it was found that application of high concentrations of H2O2 with addition of no Fe2+ generated large quantities of gas in a short period of time, sparging about 70% of the dissolved TCE into the gaseous phase with little or no detectable oxidation taking place. Fenton’s reagent completely oxidized the dissolved phase TCE in the soil column experiment when TCE and Fenton’s regent were simultaneously fed into the column. The results of this study showed that the feasibility of injecting Fenton’s reagent or H2O2 as a Fenton-type oxidant into the subsurface is highly dependent on the soil oxidant demand (SOD), presence of sufficient quantities of ferrous iron in the application area, and the proximity of the injection area to the zone of high aqueous concentration of the target contaminant. Also, it was found that in situ application of H2O2 could have a gas-sparging effect on the dissolved VOC in groundwater, requiring careful attention to the remedial system design.

Chodorowski, Z. and Anand, J. S. (Accidental Dermal and Inhalation Exposure with Fipronil - A Case Report. *Journal of Toxicology: Clinical Toxicology [J. Toxicol.: Clin. Toxicol.]. Vol. 42, no. 2, pp. 189-190. Mar 2004.*
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

Fipronil which has initiated the new generation of insecticides and possesses greater affinity at GABA receptors in insects than humans is supposed to be safer than the old generation of insecticides. Dermal and inhalation exposure to fipronil has not been reported in the literature. A 50-year-old male was admitted to the Clinic after 5h of spraying his field with the solution of fipronil. The patient was fully conscious with the BP and HR within normal range. There were no seizures, other neurological deficits, signs of conjunctivitis or skin irritation. Physical examinations and biochemical results were normal. The patient complained of a headache, nausea, vertigo and weakness. All symptoms resolved spontaneously after about 5h. During hospitalization and the follow up after three weeks he was asymptomatic. Further investigations should be carried on to evaluate the risk of fipronil in humans. The benzodiazepines are drugs of choice during seizures, B1 agonists and steroids may be useful during severe inhalation exposure. Drugs/ Benzodiazepine/ Risks/ Asymptomatic infection/ vertigo/ Nausea/ Headache/ Irritation/ Neurological diseases/ Seizures/ Inhalation/ Skin/ Insecticides/ fipronil/ Steroid hormones/ Absorption/ Toxicity/ Side effects/ weakness/ insects/ case reports/ man/ fipronil

Cochet, P, Birckel, P, Bromet-Petit, M, Bromet, N, and Weil, A (Skin distribution of fipronil by microautoradiography following topical administration to the beagle dog. *European Journal Of Drug Metabolism And Pharmacokinetics* 22: 211-216.
Chem Codes: Chemical of Concern: FPN Rejection Code: METABOLISM.

To investigate the localisation of fipronil in dog skin, [14C]-fipronil was topically applied to a male beagle dog (spot-on administration) at the therapeutic dose of 10 mg/kg. By means of autohistoradiography, the radioactivity was precisely detected in the skin and appendages at various intervals after application. Radioactivity was predominantly observed within the stratum corneum, the viable epidermis, and in the pilo-sebaceous units (mainly in the sebaceous glands and epithelial layers). [14C]-fipronil was significantly detected in these structures up to 56 days post-treatment, in the application zone (neck) but also in the lumbar zone, thus indicating the mechanical displacement of fipronil. No radioactivity was detected in either the dermal or the hypodermal layers, confirming the low percutaneous passage of fipronil. [Journal Article; In English; Switzerland]

Cole, L M, Roush, R T, and Casida, J E (1995). Drosophila GABA-gated chloride channel: modified [3H]EBOB binding site associated with Ala-->Ser or Gly mutants of Rdl subunit. *Life Sciences* 56: 757-765.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

The non-competitive blocker site of the GABA-gated chloride ion channel in normal susceptible strains of Drosophila melanogaster and simulans binds 4-n-[3H]propyl-4'-ethynylbicycloorthobenzoate ([3H]EBOB)

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at specific sites with KdS of 1.6-1.9 nM and BmaxS of 171-181 fmol/mg protein. This specific binding of [3H]EBOB is strongly inhibited by: a large number and variety of insecticidal channel blockers at 20 nM (lindane, alpha-endosulfan, dieldrin, 12-ketoendrin, fipronil, and a representative bicycloorthobenzoate and dithiane) or 200 nM (picrotoxinin); the insecticidal channel activators avermectin and moxidectin at 20 nM; muscimol at 30 microM and GABA at 300 microM. Cyclodiene resistance in D. melanogaster has been attributed to a mutation resulting in an Ala302-->Ser replacement in the Rdl GABA receptor subunit and in D. simulans to an homologous Ala-->Ser or Gly replacement. These mutations are shown here to greatly reduce [3H]EBOB binding, i.e. lower affinity and apparent number of binding sites. The Ala-->Ser replacement with both melanogaster and simulans almost always reduces the potency in inhibiting [3H]EBOB binding of each of eight channel blockers and of muscimol and GABA. The Ala-->Gly replacement in D. simulans is generally less effective than the Ala-->Ser modification in reducing sensitivity to the channel blockers and to muscimol and GABA. The channel activators avermectin and moxidectin usually retain their inhibitory potency in the Rdl subunit mutants. Thus, it appears that replacement of Ala by Ser generally modifies the non-competitive blocker site and its coupling to the GABA-recognition site with less effect on the channel activator site. In contrast, the Ala-->Gly replacement has less impact in protecting the chloride channel from the action of insecticidal blockers. Each of the resistant strains has the same level of resistance to the lethal action of the five channel blockers examined but none to avermectins and muscimol. [Journal Article; In English; England]

Commander, Simon (1988). Adjustment and the agricultural sector : Overseas development institute: conference on the design and impact of Adjustment Programmes on Agriculture and Agricultural Institutions, ODI Regent's College, London, UK, 10-11 September 1987. *Food Policy* 13: 127-128.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

Cooper, J. F., Wynn, N. R., Deuse, J. P. L., Coste, C. M., Zheng, S. Q., and Schiffers, B. C (1997). Impact of insecticides on wild fauna: a proposed toxicity index. *Mededelingen - Faculteit Landbouwkundige en Toegepaste Biologische Wetenschappen (Universiteit Gent)* 62: 599-606.
Chem Codes: Chemical of Concern: DZM Rejection Code: NO TOX DATA.

The risk to fauna assocd. with the use of pesticides are generally known for individual pesticides. There exists, however, a lack of published material providing comparative coverage of all pesticides, although some partial complications have been published. In an attempt to redress this situation, the authors propose here index covering fish, birds, and bees for 169 currently available insecticides. [on SciFinder (R)]
Copyright: Copyright 2005 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 1998:45753
Chemical Abstracts Number: CAN 128:137344
Section Code: 4-4
Section Title: Toxicology
Document Type: Journal
Language: written in English.
Index Terms: Anas platyrhynchos; Bacillus thuringiensis; Bee; Bird; Colinus virginianus; Creosote; Ecotoxicity; Environmental pollution; Fish; Insecticides; Lepomis macrochirus; Metarhizium anisopliae; Oncorhynchus mykiss; Tar oils; Toxicity (impact of insecticides on wild fauna: a proposed toxicity index); Petroleum; Pyrethrins Role: ADV (Adverse effect, including toxicity), POL (Pollutant), BIOL (Biological study), OCCU (Occurrence) (impact of insecticides on wild fauna: a proposed toxicity index); Animal (wild; impact of insecticides on wild fauna: a proposed toxicity index)
CAS Registry Numbers: 50-29-3 (DDT); 52-68-6 (Trichlorfon); 55-38-9 (Fenthion); 56-38-2 (Parathion); 56-72-4 (Coumaphos); 58-89-9 (Lindane); 60-51-5 (Dimethoate); 60-57-1 (Dieldrin); 62-73-7 (Dichlorvos); 63-25-2 (Carbaryl); 72-43-5 (Methoxychlor); 74-90-8 (Hydrogen cyanide); 76-06-2 (Chloropicrin); 76-44-8 (Heptachlor); 78-34-2 (Dioxathion); 83-79-4 (Rotenone); 86-50-0 (Azinphos-methyl); 87-86-5 (Pentachlorophenol); 97-17-6 (Dichlofenthion); 115-29-7 (Endosulfan); 115-90-2 (Fensulfothion); 116-06-3 (Aldicarb); 119-12-0 (Pyridaphenthion); 121-75-5 (Malathion); 122-14-5 (Fenitrothion); 141-66-2 (Dicrotophos); 144-54-7 (Metam); 298-00-0 (Parathion methyl); 298-02-2 (Phorate); 298-04-4 (Disulfoton); 300-76-5 (Naled); 301-12-2 (Oxydemeton methyl); 309-00-2 (Aldrin); 333-41-5 (Diazinon); 470-90-6 (Chlorfenvinphos); 533-74-4 (Dazomet); 534-52-1 (DNOC); 556-61-6 (MIT); 563-12-2 (Ethion); 584-79-2 (Allethrin); 640-15-3 (Thiometon); 732-11-6 (Phosmet); 786-19-6 (Carbophenothion); 919-86-8 (Demeton S-methyl); 944-22-9 (Fonofos); 947-02-4 (Phosfolan); 950-10-7 (Mephosfolan); 950-37-8 (Methidathion); 1113-02-6 (Omethoate); 1129-41-5 (Metolcarb); 1563-66-2 (Carbofuran); 1646-88-4 (Aldoxycarb); 2032-65-7 (Mercaptodimethur); 2104-64-5 (EPN); 2104-96-3 (Bromophos); 2275-18-5 (Prothoate); 2275-23-2 (Vamidothion); 2310-17-0 (Phosalone); 2425-10-7

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(Xylylcarb); 2439-01-2 (Chinomethionat); 2540-82-1 (Formothion); 2595-54-2 (Mecarbam); 2597-03-7 (Phenthoate); 2631-40-5 (Isoprocarb); 2636-26-2 (Cyanophos); 2642-71-9 (Azinphos-ethyl); 2921-88-2 (Chlorpyrifos); 3383-96-8 (Temephos); 3689-24-5 (Sulfotep); 3766-81-2 (Fenobucarb); 4824-78-6 (Bromophos-ethyl); 5598-13-0 (Chlorpyrifos-methyl); 6923-22-4 (Monocrotophos); 6988-21-2 (Dioxacarb); 7696-12-0 (Tetramethrin); 7704-34-9 (Sulfur); 7786-34-7 (Mevinphos); 8003-19-8; 10112-91-1 (Mercurous chloride); 10265-92-6 (Methamidophos); 10311-84-9 (Dialifos); 12789-03-6 (Chlordane); 13071-79-9 (Terbufos); 13171-21-6 (Phosphamidon); 13194-48-4 (Ethoprophos); 13593-03-8 (Quinalphos); 14816-18-3 (Phoxim); 15263-52-2 (Cartap hydrochloride); 16752-77-5 (Methomyl); 17040-19-6; 18854-01-8 (Isoxathion); 22248-79-9 (Tetrachlorvinphos); 22781-23-3 (Bendiocarb); 23103-98-2 (Pirimicarb); 23135-22-0 (Oxamyl); 23422-53-9 (Formetanate hydrochloride); 23505-41-1 (Pirimiphos ethyl); 23560-59-0 (Heptenophos); 24017-47-8 (Triazophos); 25311-71-1 (Isofenphos); 26002-80-2 (Phenothrin); 28434-01-7 (Bioresmethrin); 29232-93-7 (Pirimiphos methyl); 30560-19-1 (Acephate); 30864-28-9 (Methacrifos); 31895-22-4; 33089-61-1 (Amitraz); 34681-23-7 (Butoxycarboxim); 35367-38-5 (Diflubenzuron); 35575-96-3 (Azamethiphos); 35597-43-4 (Bialaphos); 38260-54-7 (Etrimfos); 39196-18-4 (Thiofanox); 39515-40-7 (Cyphenothrin); 39515-41-8 (Fenpropathrin); 40596-69-8 (Methoprene); 41198-08-7 (Profenofos); 42509-80-8 (Isazofos); 50512-35-1 (Isoprothiolane); 51487-69-5 (Cloethocarb); 51630-58-1 (Fenvalerate); 52315-07-8 (Cypermethrin); 52645-53-1 (Permethrin); 52918-63-5 (Deltamethrin); 55285-14-8 (Carbosulfan); 59669-26-0 (Thiodicarb); 63935-38-6 (Cycloprothrin); 64628-44-0 (Triflumuron); 65907-30-4 (Furathiocarb); 66215-27-8 (Cyromazine); 66230-04-4 (Esfenvalerate); 66841-25-6 (Tralomethrin); 67375-30-8; 68085-85-8 (Cyhalothrin); 68359-37-5 (BetaCyfluthrin); 69327-76-0 (Buprofezin); 69409-94-5 (Fluvalinate); 70124-77-5 (Flucythrinate); 71422-67-8 (Chlorfluazuron); 71751-41-2 (Abamectin); 72490-01-8 (Fenoxycarb); 79538-32-2 (Tefluthrin); 80844-07-1 (Etofenprox); 82560-54-1 (Benfuracarb); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 83733-82-8 (Fosmethilan); 86479-06-3 (Hexaflumuron); 89784-60-1 (Pyraclofos); 91465-08-6; 95465-99-9; 96489-71-3 (Pyridaben); 101463-69-8 (Flufenoxuron); 113036-88-7 (Flucycloxuron); 120068-37-3 (Fipronil); 138261-41-3 (Imidacloprid) Role: ADV (Adverse effect, including toxicity), POL (Pollutant), BIOL (Biological study), OCCU (Occurrence) (impact of insecticides on wild fauna: a proposed toxicity index); 7439-97-6 (Mercury) Role: ADV (Adverse effect, including toxicity), BIOL (Biological study) (toxicity; impact of insecticides on wild fauna: a proposed toxicity index)
Citations: Anon; Farm Chemicals Handbook 1994
Citations: Harden, J; Peskem Products The Australian directory of registered pesticides and their uses, 13 th Edition 1993
Citations: Anon; The Agrochemicals Handbook, Third Edition 1992
Citations: Anon; Shibuya Index (Index of Pesticides), Fifth Edition 1991
Citations: Anon; EPA Datasheets 1994
Citations: Anon; WHO/FAO Datasheets on Pesticides 1994
Citations: Anon; WHO Recommended Classification of Pesticides by Hazard and the Guidelines to Classification 1994-1995 insecticide/ wild/ fauna/ toxicity/ index;/ Anas/ Colinus/ Apis/ insecticide/ toxicity;/ rainbow/ trout/ bluegill/ sunfish/ insecticide/ toxicity;/ bee/ insecticide/ toxicity/ index;/ Salmo/ insecticide/ toxicity/ index

COSTELLO RW and LEONARD BR (1999). Evaluation of foliar insecticides against thrips on seedling cotton, 1998. AU - PANKEY JH . *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 250-251.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM HIRSUTUM FRANKLINIELLA COTTON THRIPS HOST SEEDLING CULTIVAR-DELTA AND PINE LAND 5415 RR FIBER CROP CONTROL PEST AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT ORTHENE INSECTICIDE FOLIAR APPLICATION EFFICACY KARATE VYDATE REGENT BIDRIN DIMETHOATE PROVADO MACON RIDGE LOUISIANA USA Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

CRANSHAW, W. and BISHOP, J. (1997). ONION THRIPS CONTROL 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 140.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

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BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ALLIUM-CEPA THRIPS-TABACI ONION ONION THRIPS CULTIVAR-VEGA VEGETABLE CROP AGRICULTURAL PEST HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST WARRIOR INSECTICIDE MUSTANG NAF-85 TD-2344-02 ORTHENE V-71369 VYDATE FIPRONIL AC 303 630 FRUITA COLORADO USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

CRANSHAW, W., SCLAR DC, AL-DOGHAIRI, M., GERACE, D., and TUPY, A. (1997). CONTROL OF CABBAGE INSECTS 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 93.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER PIERIS-RAPAE BRASSICA-OLERACEA-VAR-CAPITATA PLUTELLA-XYLOSTELLA TRICHOPLUSIA-NI IMPORTED CABBAGE WORM CABBAGE DIAMONDBACK MOTH CABBAGE LOOPER PEST CULTIVAR-COPENHAGEN MARKET HOST AC 303 INSECTICIDE EFFICACY HORTICULTURE PEST MANAGEMENT POUNCE FIPRONIL EMAMECTIN GEORGIA USA Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Lepidoptera

CRANSHAW, W., SCLAR DC, GERACE, D., and TUPY, A. (1997). EVALUATION OF SOIL TREATMENTS ON CONTROL OF ONION THRIPS ON ONIONS 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 140.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ALLIUM-CEPA THRIPS-TABACI ONION ONION THRIPS CULTIVAR-VEGA VEGETABLE CROP AGRICULTURAL PEST HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST ADMIRE INSECTICIDE SOIL APPLICATION FIPRONIL VYDATE FT. COLLINS COLORADO USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ALLIUM-CEPA THRIPS-TABACI ONION ONION THRIPS CULTIVAR-VEGA VEGETABLE CROP AGRICULTURAL PEST WARRIOR INSECTICIDE HORTICULTURE FIPRONIL PEST MANAGEMENT VYDATE ARTHROPOD MANAGEMENT TEST GUARDIAN FT. COLLINS COLORADO USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

Crombie, Leslie and Rainbow, Linda J. (1988). Ring Scission of Cyclic [beta]-Halogeno-ethers with Samarium Di-iodide: A Synthesis of (E)- and (Z)-Enynols. *Tetrahedron Letters* 29: 6517-6520.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

The use of samarium di-iodide in place of sodium metal for the ring-scission of cyclic [beta]-halogeno-ethers drastically alters the stereochemistry of the resulting olefinic alcohols: using the method, highly stereoselective syntheses of enynols in ()- and ()- forms are reported.

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS OSTRINIA-NUBIALIS FIELD CORN EUROPEAN CORN BORER CROP CULTIVAR-PIONEER 3162 CULTIVAR-PIONEER 3417IR WHORL STAGE LARVA AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT EXP 60720A INSECTICIDE EXP 61216A DYFONATE II LORSBAN POUNCE M-PERIL MYD-2049 CONDOR ARTHROPOD MANAGEMENT TEST CLAY CENTER NEBRASKA USA Cereals/ Plants/Growth & Development/ Soil/ Oils/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Lepidoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER DIABROTICA-BARBERI DIABROTICA-VIRGIFERA-VIRGIFERA ZEA-MAYS NORTHERN CORN WORM WESTERN CORN ROOTWORM FIELD CORN AGRICULTURAL PEST LARVA CROP CULTIVAR-PIONEER 3417IR AGRONOMY PEST MANAGEMENT AZTEC INSECTICIDE FORCE COUNTER LORSBAN NAF-188 EXP 61216A EXP 60655A NAF-289 NAF-287 EXP 60720A THIMET FURADAN DYFONATE ARTHROPOD MANAGEMENT TEST CLAY CENTER NEBRASKA USA Cereals/ Plants/Growth & Development/ Soil/ Oils/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA-DECEMLINEATA MYZUS-PERSICAE SOLANUM-TUBEROSUM EPITRIX-CUCUMERIS PARATRIOZA-COCKERELLI COLORADO POTATO BEETLE GREEN PEACH APHID POTATO POTATO FLEA BEETLE PEST CROP CULTIVAR-RUSSET NORKOTAH HOST PEST MANAGEMENT PESTICIDES APPLICATION RATE ADMIRE INSECTICIDE AGENDA 1.67 SC TEMIK 15 G CROP DAMAGE Biochemistry/ Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Coleoptera/ Insects

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Chem Codes: Chemical of Concern: FPN Rejection Code: NO SPECIES.

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Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS OSTRINIA-NUBILALIS CORN EUROPEAN CORN BORER CULTIVAR-DEKALB 641 CROP PEST LARVA ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES EXP 61421A INSECTICIDE POUNCE WARRIOR LEPINOX ICIA0321 Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Lepidoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DIABROTICA-BARBERI DIABROTICA-VIRGIFERA-VIRGIFERA CORN NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM CULTIVAR-GOLDEN HARVEST 2547 CROP LARVA ECONOMIC ENTOMOLOGY PESTICIDES EXP 61421A INSECTICIDE AC 166 002 AZTEC COUNTER FORCE LORSBAN FORTRESS 5 G NAF-358 30 G Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Coleoptera/ Lepidoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DIABROTICA-VIRGIFERA-VIRGIFERA DIABROTICA-BARBERI CORN WESTERN CORN ROOTWORM NORTHERN CORN ROOTWORM CULTIVAR-GOLDEN HARVEST 2547 CROP PEST LARVA ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES COUNTER 15 G INSECTICIDE FORCE 3 G LORSBAN 15 G COUNTER 20 CR DYFONATE 15 G AZTEC 2.1 G FORTRESS 5G EXP 60720 A FURADAN 4 F THIMET 20 G Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Coleoptera

Di Gaspero, G., Cipriani, G., Marrazzo, M. T., Andreetta, D., Castro, M. J. P., Peterlunger, E., and Testolin, R. (Isolation of (AC)n-microsatellites in Vitis vinifera L. and analysis of genetic background in grapevines under marker assisted selection. *Molecular Breeding, 15 (1) pp. 11-20, 2005.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Primers were developed for 118 microsatellites isolated from grape (Vitis vinifera) genomic libraries enriched for (AC)n repeats. Only one microsatellite sequence matched other grape SSR-sequences in the GeneBank database. Genotyping was carried out in the parental lines and four offspring of two pseudo-test-cross populations, 'Cabernet Sauvignon' x 'Seyval' and 'Chardonnay' x 'Bianca', and a further six other grape genotypes (V. vinifera 'Sultanina', 'Merlot', 'Syrah', 'Mu(dieresis)ller-Thurgau', Vitis 'Regent' and V. riparia 'Gloire de Montpellier'). A total of 108 microsatellites showed easily scorable alleles and 100 of them

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segregated according to a configuration suitable for mapping in either cross. A further 8 SSRs, although unsuitable for mapping in those crosses, showed polymorphism in the other genotypes tested. This set of markers was used, along with 75 microsatellites of other repeat-types, to fingerprint 46 offspring of the cross 'Chardonnay' x 'Bianca'. For each full-sib, individual heterozygosity and distance in repeat units between pairs of alleles at each locus (mean d ²) were calculated as a tool for predicting 'highly outbred' recombinant individuals. Six microsatellites with segregation ratios significantly distorted towards the lack of homozygous sibs were identified and mapped to linkage groups LG 3 and LG 5. Estimation of heterozygosity at genome-wide level and genotyping at loci for which homozygous sibs are discriminated against are discussed for marker-assisted background selection in outcrossing grapevines. (copyright) 2005 Springer. DNA markers/ Genotyping/ Inbreeding depression/ MAS/ SSR/ Vitis vinifera/ Vitis sp./ Vitis riparia/ Riparia

Dolan, Thomas C (Your ACHE partners at the local level. ACHE Regents and chapters are here to serve you. *Healthcare Executive* 20: 6-7.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

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Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

During, H. and Stoll, M. (Stomatal patchiness of grapevine leaves. I. Estimation of non- uniform stomatal apertures by a new infiltration technique. *Vitis, 35 (2) pp. 65-68, 1996.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Non-uniform stomatal behaviour of vine leaves is associated with a heterobaric leaf structure. A microscopical analysis of cross sections of glasshouse- and in vitro-grown Silvaner leaves indicates single airspaces which are pneumatically isolated by vessels, bundle sheath extensions and the abaxial and adaxial epidermes. A pressure-regulated infiltration technique is presented by which the infiltration process and the infiltration capacity (percentage of the surface area of infiltrated airspaces) can be estimated and photographed using a light microscope. The average surface area of airspaces ranged from 0.10 mm superior 2 (Regent) to 0.14 mm superior 2 (Silvaner), the number of stomata per airspace from 35 (Regent) to 42 (Silvaner). The infiltration capacity of turgid leaves is shown to be negatively correlated with the surface tension of the infiltrated liquid and positively with stomatal conductance and with infiltration pressure, except for very low stomatal conductances (e.g. 12 mmol H inferior 2O m superior - superior 2 s superior - superior 1). The latter relationship follows a saturation curve confirming heterogenous stomatal aperture over the leaf blade. The distribution of stomatal apertures does not appear to be bimodal but to follow a bell-shaped curve. There is some evidence for the stomata of an airspace to behave heterogenously as well. leaf anatomy/ stomatal patchiness/ stomatal conductance/ infiltration

Ebert, T. A., Taylor, R. A. J., Downer, R. A., and Hall, F. R. (Deposit structure and efficacy of pesticide application. 2: Trichoplusia ni control on cabbage with fipronil. *Pesticide Science, 55 (8) pp. 793-798, 1999.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

Pesticide deposits have a spatial structure having elements of size, number per area and toxicant per deposit. To investigate the relative contributions of these elements to the efficacy of the deposit structure, we developed a bioassay using the cabbage looper (Trichoplusia ni), cabbage, and a soluble concentrate formulation of fipronil [(plus-or-minus)-5-amino-1-(2,6-dichloro- alpha , alpha , alpha -trifluoro-p-tolyl)-4-trifluoromethylsulfinylpyrazole-3- carbonitrile]. The bioassay manipulated deposit structure by changing the number, toxicant concentration of the solution, and size of droplets used in creating deposits. The bioassay methodology was developed as an extension from standard industrial mixture experimental designs. Results from the bioassay led to the following conclusions: (1) Deposit structure plays a major role in toxicant efficacy. (2) The effect of droplet size is roughly equal to the effect of concentration, while both these factors may have a greater effect than droplet number. (3) The interactions between the factors of deposit size, deposit number, and concentration are more important than any single component. (4) Uniform coverage is not the most efficacious deposit structure if one is forced to limit application rates, and field persistence. (5) Uniform deposit structures have less variability in their biological effect than do more

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heterogeneous structures-though the relationship is not linear. These bioassay data corroborate the predictions of an earlier paper. Trichoplusia ni/ Cabbage looper/ Mixture design/ Pesticide application/ Deposit structure/ Fipronil/ Trichoplusia ni

ECHTENKAMP, J. (1999). Control of European corn borer in whorl stage corn, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 210.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

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ECKENRODE CJ, HESSNEY ML, WEBB, D., and TAYLOR AG (1999). Onion maggot control, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 140.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER PHASEOLUS-VULGARIS DELIA-PLATURA SEEDCORN MAGGOT DELIA-FLORILEGA SNAP BEAN BEAN SEED MAGGOT CULTIVAR-LABRADOR PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES LORSBAN INSECTICIDE FIPRONIL Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Legumes/ Diptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DELIA-PLATURA DELIA-FLORILEGA SWEET CORN SEEDCORN MAGGOT BEAN SEED MAGGOT CROP CULTIVAR-BUTTER AND SUGAR PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES REGENT 4 INSECTICIDE COUNTER Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Grasses/ Diptera

EDELSON JV and PETERS, M. (1997). CONTROL OF LEPIDOPTEROUS PESTS ON COLLARDS 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 119.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER BRASSICA-OLERACEA PLUTELLA-XYLOSTELLA TRICHOPLUSIA-NI COLLARDS DIAMONDBACK MOTH CABBAGE LOOPER VEGETABLE CROP CULTIVAR-FLASH AGRICULTURAL PEST HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST CARBARYL INSECTICIDE PROVADO FULFILL THIODICARB DIMETHOATE ENDOSULFAN METHOXYCHLOR CRYOLITE PERMETHRIN DIAZINON ENCAPSIDE AGREE CHLORPYRIFOS LAMBDA-CYHALOTHRIN FIPRONIL LANE OKLAHOMA USA MH - VEGETABLES Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Lepidoptera

El-Shiekh, A. F., Tong, C. B. S., Luby, J. J., Hoover, E. E., and Bedford, D. S. (Storage potential of cold-hardy apple cultivars. *Journal of the American Pomological Society, 56 (1) pp. 34-45, 2002.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

The apple cultivars Fireside, Haralson, Honeygold, Regent, Cortland, Honeycrisp, and Delicious were harvested at up to three harvest dates in each of two years and fruit were stored for 9 months in air or controlled atmosphere (CA; 3% O<inf>2</inf> + 3% CO<inf>2</inf>) storage. Fruit were sampled at harvest and at three month intervals for firmness, soluble solids content, titratable acidity, starch concentration, fresh weight loss, and decay. Responses to CA storage were generally favorable, though variable among harvest dates and seasons, for the cultivars in this study. CA storage helped maintain the quality of 'Fireside', 'Honeygold', 'Cortland', and 'Delicious' compared to air storage. 'Honeycrisp' fruit exhibited few differences between air and CA storage for the parameters measured and quality of the fruit was maintained at a high level under both regimes. 'Haralson' fruit exhibited poor long-term storage potential, including extensive decay after nine months, and did not benefit from the CA.

Elinder, F, Mannikko, R, and Larsson, H P (2001). S4 charges move close to residues in the pore domain during activation in a K channel. *The Journal Of General Physiology* 118: 1-10.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

Voltage-gated ion channels respond to changes in the transmembrane voltage by opening or closing their ion conducting pore. The positively charged fourth transmembrane segment (S4) has been identified as the main voltage sensor, but the mechanisms of coupling between the voltage sensor and the gates are still unknown. Obtaining information about the location and the exact motion of S4 is an important step toward an understanding of these coupling mechanisms. In previous studies we have shown that the extracellular end of S4 is located close to segment 5 (S5). The purpose of the present study is to estimate the location of S4 charges in both resting and activated states. We measured the modification rates by differently charged methanethiosulfonate regents of two residues in the extracellular end of S5 in the Shaker K channel (418C and 419C). When S4 moves to its activated state, the modification rate by the negatively charged sodium (2-sulfonatoethyl) methanethiosulfonate (MTSES(-)) increases significantly more than the modification rate by the positively charged [2-(trimethylammonium)ethyl] methanethiosulfonate, bromide (MTSET(+)). This indicates that the positive S4 charges are moving close to 418C and 419C in S5 during activation. Neutralization of the most external charge of S4 (R362), shows that R362 in its activated state electrostatically affects the environment at 418C by 19 mV. In contrast, R362 in its resting state has no

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effect on 418C. This suggests that, during activation of the channel, R362 moves from a position far away (>20 A) to a position close (8 A) to 418C. Despite its close approach to E418, a residue shown to be important in slow inactivation, R362 has no effect on slow inactivation or the recovery from slow inactivation. This refutes previous models for slow inactivation with an electrostatic S4-to-gate coupling. Instead, we propose a model with an allosteric mechanism for the S4-to-gate coupling. [Journal Article; In English; United States]

Emmett, A. J., Clarke, S., and Howles, S. (1996). Conjunctive wetland treatment/aquifer storage and recovery at Regent Gardens residential development, Northfield, South Australia. *Desalination* 106: 407-410.
Chem Codes: Chemical of Concern: FPN Rejection Code: EFFLUENT.

At Northfield, a suburb of Adelaide, South Australia, a stormwater reuse scheme utilising a new dual-purpose wetland detention basin and an aquifer storage and recovery system has been developed. The wetland acts as a flood control basin and also provides water quality improvement. The aquifer is too saline for use as an irrigation water supply for parks and gardens; however, by storing low salinity stormwater in the aquifer during winter, a volume of low salinity water can be withdrawn and used the following summer. The water will also be used for topping up the wetland during the dry summers experienced in the region. Recharge water quality is required to either meet Australian criteria for irrigation water quality or be no worse than the existing groundwater quality. The economics of the system are favourable.

Ferguson, A B (1976). 1976 reports from nine American surgical specialty boards to the Board of Regents of the American College of Surgeons. Presented at the meeting of the Board of Regents, October 10, 1976, in Chicago, Illinois. Report of the American Board of Orthopaedic Surgery. *Bulletin Of The American College Of Surgeons* 61: 29-30.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

FIFE JH, LEONARD BR, TORREY KD, GRAVES JB, and ADAMCZYK, J. (1997). CONTROL OF BOLL WEEVIL IN COTTON WITH SELECTED INSECTICIDES 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 252-253.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM-HIRSUTUM ANTHONOMUS-GRANDIS-GRANDIS COTTON BOLL WEEVIL CULTIVAR-HOLLAND 1919 FIBER CROP AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST METHYL PARATHION INSECTICIDE GUTHION BIDRIN FIPRONIL VYDATE PHASER FCR 4545 TD-2344 BAYTHROID KARATE FURY DECIS LOUISIANA USA Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

FIFE JH, LEONARD BR, TORREY KD, RILEY TJ, and CASTRO BA (1998). CHINCH BUG MANAGEMENT WITH FOLIAR INSECTICIDES IN FIELD CORN 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 195.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS BLISSUS-LEUCOPTERUS-LEUCOPTERUS CORN CHINCH BUG CROP CULTIVAR-PIONEER 3163 PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES TD-2344 INSECTICIDE DECIS KARATE REGENT Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Insects

Fischer, B M, Salakhutdinov, I, Akkurt, M, Eibach, R, Edwards, K J, Topfer, R, and Zyprian, E M (2004). Quantitative trait locus analysis of fungal disease resistance factors on a molecular map of grapevine. *TAG. Theoretical And Applied Genetics. Theoretische Und Angewandte Genetik* 108: 501-515.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

A full-sibling F1 population comprising 153 individuals from the cross of 'Regent' x 'Lemberger' was employed to construct a genetic map based on 429 molecular markers. The newly-bred red grapevine variety 'Regent' has multiple field-resistance to fungal diseases inherited as polygenic traits, while 'Lemberger' is a traditional fungus-susceptible cultivar. The progeny segregate quantitatively for resistances to Plasmopara viticola and Uncinula necator, fungal pathogens that threaten viticulture in temperate areas. A double pseudo-testcross strategy was employed to construct the two parental maps under high statistical stringency for linkage to obtain a robust marker frame for subsequent quantitative trait locus (QTL) analysis. In total, 185 amplified fragment length polymorphism, 137 random amplified polymorphic DNA, 85 single sequence repeat and 22 sequence characterized amplified region or cleaved amplified polymorphic sequence markers were mapped. The maps were aligned by co-dominant or doubly heterozygous dominant anchor markers. Twelve pairs of homologous linkage groups could be integrated into consensus linkage groups. Resistance phenotypes and segregating characteristics were scored as quantitative traits in three or four growing seasons. Interval mapping reproducibly localized genetic factors that correlated with fungal disease resistances to specific regions on three linkage groups of the maternal 'Regent' map. A QTL for resistance to Uncinula necator was identified on linkage group 16, and QTLs for endurance to Plasmopara viticola on linkage groups 9 and 10 of 'Regent'. Additional QTLs for the onset of berry ripening ("veraison"), berry size and axillary shoot growth were identified. Berry color segregated as a simple trait in this cross of two red varieties and was mapped as a morphological marker. Six markers derived from functional genes could be localized. This dissection of polygenic fungus disease resistance in grapevine allows the development of marker-assisted selection for breeding, the characterization of genetic resources and the isolation of the corresponding genes. [Journal Article; In English; Germany]

Frame, N W and Frame, R K (2001). Psoroptes species in alpacas. *The Veterinary Record* 149: 128.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

[Comment, Letter; In English; England]

Frederick, Anne F., Kay, Lewis E., and Prestegard, James H. (1988). Location of divalent ion sites in acyl carrier protein using relaxation perturbed 2D NMR. *FEBS Letters* 238: 43-48.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

The T1-accordion COSY experiment has been applied to acyl carrier protein (ACP) to locate the divalent ion binding sites in the protein using the paramagnetic ion, Mn2+, as a substitute for Ca2+. Replacement with Mn2+ leads to an enhancement of proton spin-lattice (T1) relaxation rates. These enhancements have a l/r6, distance dependence that makes them extremely useful in structural analyses. Ion-proton distances ranging from 3.0 to 9.0 A have been obtained from this experiment and subsequently used as constraints in the molecular mechanics module of AMBER to refine a protein structure.

FULLER BW and BOETEL MA (1999). Efficacy of regent insecticide using several combinations of formulation and output volume, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 212-213.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA MAYS DIABROTICA BARBERI DIABROTICA VIRGIFERA VIRGIFERA FIELD CORN NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM CULTIVAR-DEKALB 493 HOST CROP PEST LARVA CONTROL AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT COUNTER OUTPUT VOLUME INSECTICIDE FORMULATION COMPARISON EFFICACY REGENT NEW HOLLAND AURORA CAVOUR SOUTH DAKOTA USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

FULLER BW and BOETEL MA (1998). GRASSHOPPER CONTROL IN WINTER WHEAT IN EASTERN SOUTH DAKOTA 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 309.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

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BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER TRITICUM-AESTIVUM MELANOPLUS-SANGUINIPES WINTER WHEAT MIGRATORY GRASSHOPPER CROP CULTIVAR-ARAPAHOE PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES FIPRONIL INSECTICIDE LORSBAN MALATHION SCOUT X-TRA SPINOSAD SOUTH DAKOTA USA Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Animals/ Arachnida/ Entomology/Economics/ Pest Control/ Animal/ Disease/ Insects/Parasitology/ Grasses/ Orthoptera

FULLER BW and BOETEL MA (1998). INSECTCIDE RESCUE TREATMENTS FOR CONTROL FOR FIRST-GENERATION EUROPEAN CORN BORER IN SOUTH DAKOTA 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 195-196.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS OSTRINIA-NUBILALIS CORN EUROPEAN CORN BORER CULTIVAR-PIONEER 3751 CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES POUNCE INSECTICIDE REGENT ABG-6478G FURADAN DIPEL MUSTANG WARRIOR SOUTH DAKOTA USA Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Lepidoptera

FULLER BW and BOETEL MA (1999). Insecticide evaluations using artificial infestation of rootworm eggs to maximize pest pressure, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 212.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA MAYS DIABROTICA VIRGIFERA VIRGIFERA FIELD CORN WESTERN CORN ROOTWORM HOST CULTIVAR-DEKALB 493 CROP ARTIFICIAL INFESTATION CONTROL PEST AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT COUNTER EFFICACY INSECTICIDE EVALUATION FORCE REGENT PEST PRESSURE AURORA SOUTH DAKOTA USA USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

FULLER BW and BOETEL MA (1999). Performance evaluations of planting-time insecticides to control wireworms in no-till corn, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 211.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA MAYS MELANOTUS FIELD CORN WIREWORM CROP NO-TILL HOST CULTIVAR-DEKALB 493 PEST CONTROL AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT AZTEC PLANTING-TIME APPLICATION PERFORMANCE EVALUATION INSECTICIDE EFFICACY FORCE LORSBAN REGENT SOUTH DAKOTA USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

Fung, H. T., Chan, K. K., Ching, W. M., and Kam, C. W. (A Case of Accidental Ingestion of Ant Bait Containing Fipronil. *Journal of Toxicology: Clinical Toxicology [J. Toxicol.: Clin. Toxicol.]. Vol. 41, no. 3, pp. 245-248. Apr 2003.*
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

A 77-year-old woman accidentally ingested a commercial ant bait containing fipronil without development of obvious toxicity, supporting the safety of this new insecticide as demonstrated in animal studies. However, concentrated agricultural products may be more toxic, and the potential for seizures should not be overlooked. The pharmacological action, mechanism of selective insect toxicity, and clinical effects of fipronil are discussed. Pesticides/ Poisoning/ fipronil/ man/ case reports

US EPA ARCHIVE DOCUMENT

Fyfe, M. J., Chand, P., McCutchen, C., Long, J. S., Walia, A. S., Edwards, C., and Liu, R. H. (Performance characteristics of phencyclidine assay using Reply analyzer and Emit d.a.u., Emit 700, and 1:1 Emit d.a.u.-Emit 700) reagents. *Journal of Analytical Toxicology [J. ANAL. TOXICOL.]. Vol. 17, no. 3, pp. 188-189. 1993.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT .

Although the analyzer and reagent kits are based on the same principle, enzyme immunoassay performance characteristics may range if the adopted analyzer, analyzer operation parameters, and regent formulation are varied. Therefore, the performance characteristics should should be fully evaluated before a set of operation parameters is adopted for routine use. We wish to report our experience using Reply super(TM) Automated Chemistry Analyzer (Olympus Corporation, Lake Success, NY) and reagent formulations om Syva Company (Palo Alto, CA) for the assay of phencyclidine (PCP) in urine samples. enzyme immunoassay/ urine/ phencyclidine

Gant, D. B., Chalmers, A. E., Wolff, M. A., Hoffman, H. B., and Bushey, D. F. (Fipronil: Action at the GABA receptor. *Reviews in Toxicology [Rev. Toxicol.]. Vol. 2, no. 1-4, pp. 147-156. 1998.*
Chem Codes: Chemical of Concern: FPN Rejection Code: REVIEW.

Fipronil is a versatile insecticide which, when used at low dose rates, is highly effective against a broad range of insect pests of crops, animals and public health. Fipronil belongs to a class of insecticides known as phenylpyrazoles, which have been studied for several years to better understand the relationship between structure and toxicity, both insecticidal and mammalian. Electrophysiological, biochemical and molecular biological studies provide strong evidence that fipronil interferes with the passage of chloride ions through the gamma-aminobutyric acid (GABA)-regulated chloride channel, disrupting CNS activity. Biochemical assays also indicate that fipronil binds to the insect GABA receptor with higher affinity than it does to the vertebrate site. These differences in affinities may account for fipronil's selective toxicity. Chloride channels/ Insecticides/ fipronil/ g-Aminobutyric acid receptors

Gant, D. B., Chalmers, A. E., Wolff, M. A., Hoffman, H. B., & Bushey, D. F. Fipronil: Action at the GABA Receptor. Rev.Toxicol. 2[1-4], 147-156. 1998. Kisarazu (Japan), Dep. of Biochem., Rhone-Poulenc Ag Co., 2 T. W. Alexander Dr., Research Triangle Park, NC 27709.
Rec #: 80
Keywords: IN VITRO
Call Number: NO IN VITRO
Notes: Chemical of Concern: FPN

Garzo, E. I., Di(acute)az, B., and Fereres, A. (Evaluation of fipronil for controlling the transmission of Tomato spotted wilt virus (TSWV). *Zeitschrift fur Pflanzenkrankheiten und Pflanzenschutz, 108 (1) pp. 62-65, 2001.*
Chem Codes: Chemical of Concern: FPN Rejection Code: VIRUS.

This work reports the efficacy of the insecticide fipronil for reducing the transmission rate of TSWV by its main vector, Frankliniella occidentalis. First, a Petunia leaf disc bioassay was used for testing the efficacy of fipronil and formetanate (used as "standard" for comparison purposes). The results indicated that fipronil was able to reduce but not to suppress the transmission rate of TSWV by F. occidentalis. In a second series of experiments, insecticide solutions (5 g/hl of active ingredient) were applied on the leaves of pepper and tomato seedlings. In this case, we found that fipronil, but not formetanate, reduced the incidence of TSWV when compared to the untreated control. However, no statistical differences between treatments were obtained in the case of cv. 'Negral' (a pepper cultivar very susceptible to TSWV). TSWV/ Fipronil/ Pepper/ Tomato/ Frankliniella occidentalis/ Control/ Transmission/ Petunia/ Frankliniella occidentalis

Gentile, Alberto G, Sartini, Jose L, Campo, Maria C, and Sanchez, Juan F (Efficacy of Fipronil in the control of the peridomiciliary cycle of Triatoma infestans in an area resistant to Deltamethrin. *Cadernos De Saude Publica / Ministerio Da Saude, Fundacao Oswaldo Cruz, Escola Nacional De Saude Publica* 20: 1240-1248.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO FOREIGN.

This study tested the efficacy of liquid Fipronil (1.0%) against Triatoma infestans, administered by pouring on birds and mammals both in laboratory and field conditions. In the laboratory a chicken, dog, and goat were treated with Fipronil, after which deltamethrin-resistant stage III T. infestans nymphs were fed on them. The control group used same-stage nymphs reared in laboratory. During the field phase, Fipronil was

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used to treat 4 dogs, 1 cat, and 2 broody hens. Intradomiciliary infestation was treated using aerothermics. In laboratory, nymphal mortality was 100.0% after 7 days and 88.8% after 30 days. In the field, there was a 65.4% decrease in the triatomine density rate after 30 days. [Journal Article; In Spanish; Brazil]

GERACE, D. and CRANSHAW, W. (1998). CONTROL OF GREEN PEACH APHID ON HIBISCUS. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 346.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER HIBISCUS-ROSEUS HIBISCUS MYZUS-PERSICAE GREEN PEACH APHID ORNAMENTAL PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES NAF-85 INSECTICIDE SPINOSAD EXP 60720A FIPRONIL TALSTAR BOTANIGARD EXP 80667A ACETAMIPRID MARATHON PINPOINT Plants/Growth & Development/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Insects

Goring, D R, Banks, P, Fallis, L, Baszczynski, C L, Beversdorf, W D, and Rothstein, S J (1992). Identification of an S-locus glycoprotein allele introgressed from B. napus ssp. rapifera to B. napus ssp. oleifera. *The Plant Journal: For Cell And Molecular Biology* 2: 983-989.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Self-incompatible Brassica napus ssp. oleifera lines were generated by introgressing the S-locus from the self-incompatible B. napus ssp. rapifera Z line into the self-compatible cultivars, Topas and Regent, resulting in T2 and R2, respectively. Screening of a cDNA library made from R2 stigma RNA produced several candidate SLG (S-locus glycoprotein) cDNAs. One of the cDNAs, A14, was found to be represented in only the R2, T2 and Z lines. In addition, the corresponding A14 gene was demonstrated to segregate with the T2 self-incompatibility phenotype in an F2 population derived from a cross between T2 and Topas, and to exhibit high mRNA levels in the stigmas prior to anthesis. Sequence analysis of the A14 cDNA revealed close homology to B. oleracea SLG alleles associated with a Class I high activity self-incompatibility phenotype. [Journal Article; In English; England]

Grayston, S. J. and Germida, J. J. (1990). Influence of crop rhizospheres on populations and activity of heterotrophic sulfur-oxidizing microorganisms. *Soil Biology and Biochemistry* 22: 457-463.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Heterotrophic microorganisms are the most abundant S-oxidizers in Saskatchewan soils. This study investigated the S-oxidizing activity of heterotrophic microorganisms as influenced by crop rhizospheres. Spring wheat (Triticum aestivum L. var. Neepawa) and canola (Brassica napus L. var Regent) were grown in four different Saskatchewan soils under growth chamber conditions. Populations of total and S-oxidizing heterotrophs were enumerated using the most-probable-number method with selective media. The S-oxidizing potential of the soils was followed using a standard 6 day incubation assay. In all four soils the number of total heterotrophic organisms was greater in rhizospheres than in the non-rhizosphere controls, and the largest increase in their numbers was 11.0 and 14.3% in wheat and canola rhizosphere soils, respectively. Similarly, the numbers of S-oxidizing heterotrophs in rhizosphere soils was greater than in non-rhizosphere soils. Thiosulfate producing heterotrophs increased by up to 10.4 and 8.8%, and sulfale-producing heterotrophs by up to 32.4 and 18.7% in wheat and canola rhizosphere soils, respectively. In general, S-oxidation was significantly greater in all the rhizosphere soils. These results demonstrate the stimulatory nature of the rhizosphere on heterotrophic S-oxidizing activity, and suggest that S[deg] fertilizer efficiency will be affected by the type of crop.

Gressel, J. and Ben-Sinai, G. (1985). Low intraspecific competitive fitness in a triazine-resistant, nearly nuclear-isogenic line of Brassica napus. *Plant Science* 38: 29-32.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

The maternally-inherited triazine-resistant biotypes that have appeared usually have had a much reduced competitive fitness. As such studies did not use nuclear isogenic material, we tested rapeseed cv. Regent that had had triazine resistance introduced from Brassica campestris and was then extensively backcrossed to cv. Regent. Seeds of each biotype were alternated at 5-cm spacing to ascertain competitive fitness and various growth parameters were followed. The fresh weight, dry weight, number and weights of siliques (seed pods) and yield of seed of the interplanted triazine-resistant biotype were all less than one-third of the

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susceptible biotype.

Grotjan, H E Jr and Steinberger, E (1978). On the relative biological and immunoreactive potencies of luteinizing hormone in the oestradiol benzoate-treated male rat. *Acta Endocrinologica* 89: 538-550.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO COC.

Mature male Sprague-Dawley rats were treated with 50 microgram oestradiol benzoate (OeB) per day for 7 days and killed 24 h after the last injection. Serum and pituitary luteinzing hormone (LH) levels were measured by RIA using NIAMDD rat hormone for iodination code I4 (rLH-I4) combined with either NIAMDD-anti-rat LH serum 3 (AS3) or serum 1 (AS1). Pituitary LH levels were also measured by an in vitro bioassay procedure in which testosterone production by dispersed rat testicular interstitial cells is related to the concentration of LH. Pituitary LH levels were reduced in OeB-treated rats regardless of which of the three assay systems was used. However, absolute values obtained in all three assays systems were statistically correlated. OeB-treatment did not significantly alter the relative bioassayable and immunoassayable potencies of LH present in pituitaries at autopsy. OeB-treated rats had non-detectable serum LH levels as measured by RIA using either AS1 or AS3 in combination with [125I]rLH-I4. These results confirm that chronic OeB-treatment decreases pituitary LH and suggest a decrease in serum LH as well. Comparison of the present with previous results revealed particular combinations of RIA reagents yield divergent estimates for serum LH in OeB-treated male rats. This situation emphasizes the need to carefully specify all RIA reagents used in any study since the results may very with different lots of RIA regents. [Journal Article; In English; Denmark]

Grout, T. G., Richards, G. I., and Stephen, P. R. (Further non-target effects of citrus pesticides on Euseius addoensis and Euseius citri (Acari: Phytoseiidae). *Experimental and Applied Acarology, 21 (3) pp. 171-177, 1997.*
Chem Codes: Chemical of Concern: ALSV Rejection Code: MIXTURE.

A series of leaf-disc bioassays were conducted to determine the detrimental effect of field-weathered residues of various pesticides used on citrus in southern Africa on the adult females of two species of Euseius (Wainstein). Acaricides, insecticides and stem- or soil-applied systemics were tested against E. addoensis (van der Merwe and Ryke). Fungicides were tested against E. citri (van der Merwe and Ryke) because it is the dominant predatory mite on citrus in the regions where most fungicides are used. The residual toxicity and persistence of most acaricides and fungicides were relatively low. Aldicarb was the only systemic product to cause more than 5% mortality. The most detrimental insecticides tested were cypermethrin, formetanate, fluvalinate, on ethoate plus mineral oil and fipronil. Of the insect growth regulators tested, diofenolan was the most detrimental. All the fungicides suppressed fecundity whereas most of the systemic products stimulated fecundity. The other compounds had variable effects on fecundity. Classification: 92.10.1.5 CROP SCIENCE: Crop Physiology: Fertilizer effects; 92.10.2.5 CROP SCIENCE: Agronomy and Horticulture: Fruit and nuts; 92.10.4.3 CROP SCIENCE: Crop Protection: Pests; 92.10.4.6 CROP SCIENCE: Crop Protection: Integrated pest management Euseius addoensis/ Euseius citri/ non-target effects/ IPM/ South Africa/ Euseius citri/ Euseius addoensis

Guenoun, A S (1999). The use of medicines by Gerard de Solo, XIVth century doctor of medicine of Montpellier. *Revue d'Histoire De La Pharmacie* 47: 465-474.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO FOREIGN.

Gerard de Solo occupied the position of maitre-regent at the University of Montpellier during the first half of the XIVth century. He wrote four major treatises, including a Commentary of the IXth book of Almansor of Rhazes, renowned for its medicinal compounds. The best witness of his age, the work of Gerard de Solo enables us to draw conclusions on the character of pharmacopoeia of Montpellier in the middle of the XIVth century. [Biography, Historical Article, Journal Article; In French; France]

Gulland, F M, Reid, H W, Buxton, D, Lewis, J C, Kock, R A, and Kirkwood, J K (1989). Malignant catarrhal fever in a roan antelope (Hippotragus equinus) at Regent's Park. *The Veterinary Record* 124: 42-43.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

[Case Reports, Journal Article; In English; England]

Guo, W., Yuan, L., Chen, P., and Guo, J. (Determination of glucosinolates in rapeseeds by liquid chromatography-electrospray mass spectrometry. *Analytical Letters, 38 (3) pp. 343-351, 2005.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

US EPA ARCHIVE DOCUMENT

A reliable method of separating and identifying glucosinolates in rapeseed has been developed by using reversed-phase high-performance liquid chromatography (HPLC) with confirmation by electrospray mass spectrometry and ultraviolet spectroscopy. Volatile ion-pairing regent and acetic acid was added to modify the mobile phase. After extraction, deproteinization, and centrifugation, glucosinolates were first purified by a column packed with Diethylaminoethyl-(DEAE)-sephadex A-25 and then were injected into the chromatographic system. Confirmation of identity was accomplished using both negative-ion electrospray mass spectrometry and ultraviolet spectroscopy. Seven species of glucosinolates were determined by using this method. HPLC/MS/ Glucosinolates/ DEAE-sephadex A-25/ Rapeseed/ Sinapis arvensis/ Brassica napus

Hadley, R D (1976). Board of Regents votes to dissolve U. of Tex. System School of Nursing. *The American Nurse* 8: 5.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Hadley, R D (1976). Texas regents refuse delay, begin dismantling UTSSN. *The American Nurse* 8: 3.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Haefs, R., Schmitz-Eiberger, M., Mohr, H. D., and Noga, G. (Improvement of Mg uptake of grapevine by use of rapeseed oil ethoxylates for foliar application of Mg. *Vitis, 41 (1) pp. 7-10, 2002.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

To improve the uptake of foliar-applied Mg a new group of toxicological and ecotoxicological harmless surfactants (rapeseed oil ethoxylates) with an average of 5 (Agnique RSO 5(registered trademark)), 10 (Agnique RSO 10(registered trademark)), 30 (Agnique RSO 30(registered trademark)) and 60 (Agnique RSO 60(registered trademark)) units of ethylene oxide (EO) was evaluated as adjuvants for a MgSO<inf>4</inf> and Mg(NO<inf>3</inf>)<inf>2</inf> formulation. The impact of the surfactants on Mg penetration was studied using astomatous cuticular membranes isolated from mature tomato fruit. The biological efficacy of a formulation, containing castor oil, ionic and non-ionic surfactants with and without addition of RSO 5 was investigated in two vineyards at the Moselle valley, cvs Riesling and Regent. EspeciallyRSO 5-surfactant increased Mg penetration through isolated cuticles. Under field conditions, Mg application enhanced significantly the Mg content in leaves. The Mg level in bunch stems merely increased when formulated 'Bittersalz' was applied. 'Magnisal' and formulated 'Magnisal' reduced markedly Mg deficiency symptoms in leaves and increased Mg content in leaves of cv. Regent. Adjuvants/ Cuticular penetration/ Leaf fertilizer/ Magnesium/ Foliar nutrition/ Surfactants

Hainzl, D and Casida, J E (1996). Fipronil insecticide: novel photochemical desulfinylation with retention of neurotoxicity. *Proceedings Of The National Academy Of Sciences Of The United States Of America* 93: 12764-12767.
Chem Codes: Chemical of Concern: FPN Rejection Code: METABOLISM.

Fipronil is an outstanding new insecticide for crop protection with good selectivity between insects and mammals. The insecticidal action involves blocking the lambda-aminobutyric acid-gated chloride channel with much greater sensitivity of this target in insects than in mammals. Fipronil contains a trifluoromethylsulfinyl moiety that is unique among the agrochemicals and therefore presumably important in its outstanding performance. We find that this substituent unexpectedly undergoes a novel and facile photoextrusion reaction on plants upon exposure to sunlight, yielding the corresponding trifluoromethylpyrazole, i.e., the desulfinyl derivative. The persistence of this photoproduct and its high neuroactivity, resulting from blocking the lambda-aminobutyric acid-gated chloride channel, suggest that it may be a significant contributor to the effectiveness of fipronil. In addition, desulfinylfipronil is not a metabolite in mammals, so the safety evaluations must take into account not only the parent compound but also this completely new environmental product. [Journal Article; In English; United States]

Hainzl, D., Cole, L. M., and Casida, J. E. *. (Mechanisms for selective toxicity of fipronil insecticide and its sulfone metabolite and desulfinyl photoproduct. *Chemical Research in Toxicology [Chem. Res. Toxicol.]. Vol. 11, no. 12, pp. 1529-1535. Dec 1998.*
Chem Codes: Chemical of Concern: PPB Rejection Code: IN VITRO.

US EPA ARCHIVE DOCUMENT

Fipronil, an N-phenylpyrazole with a trifluoromethylsulfinyl substituent, initiated the second generation of insecticides acting at the gamma -aminobutyric acid (GABA) receptor to block the chloride channel. The first generation includes the polychlorocycloalkanes alpha -endosulfan and lindane. In this study, we examine the mechanisms for selective toxicity of the sulfoxide fipronil and its sulfone metabolite and desulfinyl photoproduct relative to their target site interactions in vitro and ex vivo and the importance in fipronil action of biooxidation to the sulfone. Differences in GABA receptor sensitivity, assayed by displacement of 4 theta -ethynyl-4-n-[2,3 super(3)H sub(2)]-propylbicycloorthobenzoate ([super(3)H]EBOB) from the noncompetitive blocker site, appear to be a major factor in fipronil being much more toxic to the insects (housefly and fruit fly) than to the vertebrates (humans, dogs, mice, chickens, quail, and salmon) examined; in insects, the IC sub(50)s range from 3 to 12 nM for fipronil and its sulfone and desulfinyl derivatives, while in vertebrates, the IC sub(50) average values are 1103, 175, and 129 nM for fipronil, fipronil sulfone, and desulfinyl fipronil, respectively. The insect relative to the vertebrate specificity decreases in the following order: fipronil > lindane > desulfinyl fipronil > fipronil sulfone > alpha -endosulfan. Ex vivo inhibition of [super(3)H]EBOB binding in mouse brain is similar for fipronil and its sulfone and desulfinyl derivatives at the LD sub(50) dose, but surprisingly, at higher doses fipronil can be lethal without detectably blocking the [super(3)H]EBOB site. The P450 inhibitor piperonyl butoxide, acting in houseflies, increases the metabolic stability and effectiveness of fipronil and the sulfone but not those of the desulfinyl compound, and in mice it completely blocks the sulfoxide to sulfone conversion without altering the poisoning. Thus, the selective toxicity of fipronil and fipronil-derived residues is due in part to the higher potency of the parent compound at the insect versus the mammalian GABA receptor but is also dependent on the relative rates of conversion to the more persistent and less selective sulfone metabolite and desulfinyl photoproduct. Insecticides/ fipronil/ gamma -Aminobutyric acid receptors/ Toxicity testing/ sulfone/ Musca domestica/ House fly Classification: X 24133 Metabolism; Z 05183 Toxicology & resistance

HAINZL, D., COLE LM, and CASIDA JE (1998). ROLE OF THE SULFONE METABOLITE IN FIPRONIL TOXICOLOGY. *215TH AMERICAN CHEMICAL SOCIETY NATIONAL MEETING, DALLAS, TEXAS, USA, MARCH* 29-APRIL 2, 1998. ABSTRACTS OF PAPERS AMERICAN CHEMICAL SOCIETY; 215: AGRO 64.
Chem Codes: Chemical of Concern: PPB

BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT HOUSEFLY FIPRONIL INSECTICIDE SULFONE METABOLITE GABA GAMMA-AMINOBUTYRIC ACID CHLORIDE CHANNEL PIPERONYL BUTOXIDE BRAIN PESTICIDES TOXICOLOGY NERVOUS SYSTEM Congresses/ Biology/ Biochemistry/ Diagnosis/ Nervous System/ Poisoning/ Animals, Laboratory/ Herbicides/ Pest Control/ Pesticides/ Diptera

HAINZL, D., COLE LM, and CASIDA JE (1998). ROLE OF THE SULFONE METABOLITE IN FIPRONIL TOXICOLOGY. *215TH* AMERICAN CHEMICAL SOCIETY NATIONAL MEETING, DALLAS, TEXAS, USA, MARCH 29-APRIL 2, 1998. ABSTRACTS OF PAPERS AMERICAN CHEMICAL SOCIETY; 215: AGRO 64.
Chem Codes: Chemical of Concern: FPN Rejection Code: ABSTRACT.

BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT HOUSEFLY FIPRONIL INSECTICIDE SULFONE METABOLITE GABA GAMMA-AMINOBUTYRIC ACID CHLORIDE CHANNEL PIPERONYL BUTOXIDE BRAIN PESTICIDES TOXICOLOGY NERVOUS SYSTEM Congresses/ Biology/ Biochemistry/ Diagnosis/ Nervous System/ Poisoning/ Animals, Laboratory/ Herbicides/ Pest Control/ Pesticides/ Diptera

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Rec #: 100
Keywords: REVIEW
Call Number: NO REVIEW
Notes: EcoReference No.: 71262
Chemical of Concern: FPN

HAMMOND, A., STORY RN, MURRAY MJ, MCCOWN CR, and RING, D. (1997). EVALUATION OF SELECTED SOIL AND FOLIAR INSECTICIDES ON SWEET POTATO WEEVIL WHITE GRUBS AND BANDED CUCUMBER BEETLES 1995. *SAXENA,* C. R. ARTHROPOD MANAGEMENT

US EPA ARCHIVE DOCUMENT

TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 167-169.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER DIABROTICA-BALTEATA IPOMOEA-BATATAS PHYLLOPHAGA CYLAS-FORMICARIUS-FORMICARIUS BANDED CUCUMBER BEETLE SWEET POTATO WHITE GRUB SWEETPOTATO WEEVIL WIREWORM AGRICULTURAL PEST VEGETABLE CROP CULTIVAR-BEAUREGARD HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST FIPRONIL PREPLANTING FOLIAR APPLICATION INSECTICIDE BROADCAST APPLICATION IN-FURROW APPLICATION SEVIN THIODAN MOCAP HESSMER LOUISIANA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

HAMMOND, A., STORY RN, MURRAY MJ, MCCOWN CR, and RING, D. (1997). EVALUATION OF SELECTED SOIL AND FOLIAR INSECTICIDES ON SWEETPOTATOES FOR CONTROL OF WHITE GRUBS AND BANDED CUCUMBER BEETLES 1995. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 169-170.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER DIABROTICA-BALTEATA IPOMOEA-BATATAS PHYLLOPHAGA BANDED CUCUMBER BEETLE SWEET POTATO WHITE GRUB AGRICULTURAL PEST VEGETABLE CROP CULTIVAR-BEAUREGARD HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST FIPRONIL IN-FURROW APPLICATION PREPLANTING FOLIAR APPLICATION INSECTICIDE BROADCAST APPLICATION SEVIN THIODAN MOCAP EVANGELINE PARISH LOUISIANA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER DIABROTICA BALTEATA IPOMOEA BATATAS PHYLLOPHAGA BANDED CUCUMBER BEETLE SWEET POTATO WHITE GRUB PEST LARVA CONTROL VEGETABLE CROP HOST CULTIVAR-BEAUREGARD ADMIRE SOIL INSECTICIDE EFFICACY AGENDA HORTICULTURE AZTEC ECONOMIC ENTOMOLOGY LORSBAN MOCAP PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT BATON ROUGE LOUISIANA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER IPOMOEA BATATAS DIABROTICA BALTEATA PHYLLOPHAGA SWEET POTATO BANDED CUCUMBER BEETLE WHITE GRUB VEGETABLE CROP HOST CULTIVAR-BEAUREGARD PEST CONTROL LARVA HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT MOCAP EFFICACY SOIL INSECTICIDE LORSBAN AZTEC AGENDA ADMIRE CHASE LOUISIANA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

US EPA ARCHIVE DOCUMENT

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER IPOMOEA-BATATAS DIABROTICA-BALTEATA SWEETPOTATO BANDED CUCUMBER BEETLE CROP CULTIVAR-BEAUREGARD PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES AGENDA INSECTICIDE IMIDAN PENNCAP MOCAP ALERT Plants/Growth & Development/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Plants/ Coleoptera

HAMPTON, J W (1965). A SUMMARY OF THE STATE REGENTS' REPORT ON MEDICAL EDUCATION IN OKLAHOMA. *Journal-Oklahoma State Medical Association* 58: 384-387.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Hardy, Sally and Lloyd, Greg (1994). Regional studies association annual conference, ‘sustainable regions: Regional economic development and environment’ : Regent's College, London, 17 November 1993. *Land Use Policy* 11: 323-325.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

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Chem Codes: Chemical of Concern: FPN Rejection Code: NO MIXTURE.

[Journal Article; In English; England]

HAWLEY, P R (Regents define unethical practices. *Bulletin Of The American College Of Surgeons* 39: 72.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; Not Available]Specialty IndexingSource ID: CLML - 5425:48141:170NLM
Keywords: * ETHICS, MEDICAL

Hodges, C V (1976). 1976 reports from nine American surgical specialty boards to the Board of Regents of the American College of Surgeons. Presented at the meeting of the Board of Regents, October 10, 1976, in Chicago, Illinois. Report of the American Board of Urology. *Bulletin Of The American College Of Surgeons* 61: 30.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). Fiber-supported pesticidal compositions. 41 pp.
Chem Codes: Chemical of Concern: FVL, RSM SPM,CaPS Rejection Code: NO TOX DATA.

The invention provides fibrous pest deterrents that combine the useful properties of a phys. barrier in the form of a nonwoven fibrous matrix with a chem. deterrent such as a pesticide, behavior-modifying compd. or a pest repellent. The use of such fibrous pest deterrents protects plants, animals and structures in both agricultural and nonagricultural settings from damage inflicted by pests. Unlike traditional pesticides, the behavior-modifying compd., pesticide or chem. deterrent of the invention is adsorbed or attached to a fibrous matrix, and so it is not so readily dispersed into the environment. Hence, use of the fibrous pest deterrents can reduce the levels of pesticides that inadvertently contaminate nontarget areas and pollute water supplies. [on SciFinder (R)] fiber/ supported/ pesticide/ compn Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2003:836400
Chemical Abstracts Number: CAN 139:318718

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Section Code: 5-4
Section Title: Agrochemical Bioregulators
Coden: USXXCO
Index Terms: Glycols Role: MOA (Modifier or additive use), USES (Uses) (alyplastic, fiber; support for pest-behavior-modifying compn.); Polyester fibers Role: MOA (Modifier or additive use), USES (Uses) (arom.; support for pest-behavior-modifying compn.); Naphthenic acids Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (copper salts, mammal repellent; fiber-supported pest-behavior-modifying compn.); Anethum graveolens; Insect attractants; Insect feeding inhibitors; Insect repellents; Nepeta cataria; Piper; Repellents; Zingiber officinale (fiber-supported pest-behavior-modifying compn.); Allomones; Kairomones; Monoterpenes; Phenols; Pheromones Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pest-behavior-modifying compn.); Bacillus thuringiensis; Pesticides; Quassia; Schoenocaulon (fiber-supported pesticidal compn.); Pyrethrins Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pesticidal compn.); Fibers Role: MOA (Modifier or additive use), USES (Uses) (fiber-supported pesticidal compn.); Albumins; Collagens; Gelatins; Neoprene rubber; Ovalbumin; Polyamides; Polyanhydrides; Polycarbonates; Polyoxyalkylenes; Polysiloxanes; Polyurethane fibers; Rayon Role: MOA (Modifier or additive use), USES (Uses) (fiber; support for pest-behavior-modifying compn.); Polyesters Role: MOA (Modifier or additive use), USES (Uses) (glycolide-based, fiber; support for pest-behavior-modifying compn.); Polyesters Role: MOA (Modifier or additive use), USES (Uses) (hydroxycarboxylic acid-based, fiber; support for pest-behavior-modifying compn.); Polyesters Role: MOA (Modifier or additive use), USES (Uses) (lactide, fiber; support for pest-behavior-modifying compn.); Capsicum annuum annuum (longum group, paprika; fiber-supported pest-behavior-modifying compn.); Capsicum annuum annuum (longum group; fiber-supported pest-behavior-modifying compn.); Polyethers Role: MOA (Modifier or additive use), USES (Uses) (polyamide-, fiber; support for pest-behavior-modifying compn.); Synthetic polymeric fibers Role: MOA (Modifier or additive use), USES (Uses) (polyamide-polyethers; support for pest-behavior-modifying compn.); Synthetic polymeric fibers Role: MOA (Modifier or additive use), USES (Uses) (polycarbonates; support for pest-behavior-modifying compn.); Polyamide fibers Role: MOA (Modifier or additive use), USES (Uses) (polyether-; support for pest-behavior-modifying compn.); Aves (repellents; fiber-supported pest-behavior-modifying compn.); Insecticides (sterilants; fiber-supported pest-behavior-modifying compn.); Polyester fibers; Polyolefin fibers Role: MOA (Modifier or additive use), USES (Uses) (support for pest-behavior-modifying compn.); Naphthenic acids Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (zinc salts, mammal repellent; fiber-supported pest-behavior-modifying compn.)
CAS Registry Numbers: 84-65-1 (Anthraquinone); 137-30-4 (Ziram.); 333-41-5 (Diazinon); 1332-40-7 (Copper oxychloride); 2032-65-7 (Methiocarb); 12407-86-2 (Trimethacarb); 15879-93-3 (Chloralose); 108173-90-6 (Guazatine) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (bird repellent; fiber-supported pest-behavior-modifying compn.); 57-50-1D (Sugar); 58-08-2 (, Caffein); 404-86-4 (Capsaicin) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pest-behavior-modifying compn.); 50-14-6 (> Ergocalciferol); 50-29-3 (DDT); 52-68-6 (Trichlorfon); 52-85-7 (Famphur); 54-11-5 (Nicotine); 55-38-9 (Fenthion); 55-98-1 (Busulfan); 56-23-5 (Carbon tetrachloride); 56-38-2 (Parathion); 56-72-4 (Coumaphos); 56-75-7 (Chloramphenicol); 57-24-9 (Strychnine); 58-89-9 (Lindane); 60-51-5 (Dimethoate); 60-57-1 (Dieldrin); 62-73-7 (Dichlorvos); 62-74-8 (Sodium fluoroacetate); 63-25-2 (Carbaryl); 67-66-3 (Chloroform); 70-38-2 (Dimethrin); 70-43-9 (Barthrin); 71-55-6 (Methylchloroform); 72-43-5 (Methoxychlor); 74-83-9 (Methyl bromide); 74-90-8 (Hydrogen cyanide); 75-09-2 (Methylene chloride); 75-21-8 (Ethylene oxide); 76-06-2 (,Chloropicrin); 76-44-8 (Heptachlor); 78-34-2 (Dioxathion); 78-53-5 (Amiton); 78-57-9 (Menazon); 78-87-5 (1,2-Dichloropropane); 79-34-5 (Tetrachloroethane); 80-05-7 (Bisphenol A); 81-81-2 (Warfarin); 81-82-3 (Coumachlor); 82-66-6 (Diphacinone); 83-26-1 (Pindone); 83-79-4 (Rotenone); 85-34-7 (Chlorfenac); 86-50-0 (Azinphosmethyl); 86-88-4 (Antu); 87-86-5 (Pentachlorophenol); 91-20-3 (Naphthalene); 96-24-2 (a-Chlorohydrin); 97-11-0 (Cyclethrin); 97-17-6 (Dichlofenthion); 97-27-8 (Chlorbetamide); 104-29-0 (Chlorphenesin); 106-46-7 (Paradichlorobenzene); 106-93-4 (Ethylene Dibromide); 107-06-2 (Ethylene dichloride); 107-13-1 (Acrylonitrile); 109-94-4 (Ethyl formate); 114-26-1 (Propoxur); 115-90-2 (Fensulfothion); 115-93-5 (Cythioate); 116-01-8 (Ethoatemethyl); 116-06-3 (Aldicarb); 118-75-2 (Chloranil); 119-12-0 (Pyridaphenthion); 121-20-0 (Cinerin II); 121-21-1 (Pyrethrin I); 121-29-9 (Pyrethrin II); 121-75-5 (Malathion); 122-14-5 (Fenitrothion); 122-15-6 (Dimetan); 126-22-7 (Butonate); 126-75-0 (Demeton-S); 131-89-5 (Dinex); 133-06-2 (Captan); 133-90-4 (,Chloramben); 141-66-2 (Dicrotophos); 143-50-0 (Chlordecone); 144-41-2 (Morphothion); 152-16-9 (Schradan); 288-14-2 (Isoxazole); 298-00-0 (Parathionmethyl); 298-02-2 (Phorate); 298-03-3 (Demeton-O); 298-04-4 (Disulfoton); 299-84-3 (Fenchlorphos); 299-86-5 (Crufomate); 300-76-5 (Naled); 301-12-2 (Oxydemetonmethyl); 302-04-5 (Thiocyanate); 309-00-2 (Aldrin); 314-40-9 (Bromacil); 315-18-4 (Mexacarbate); 327-98-0 (Trichloronat); 333-20-0 (Potassium thiocyanate); 370-50-3 (Flucofuron); 371-86-8 (Mipafox); 470-90-6

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(Chlorfenvinphos); 483-63-6 (Crotamiton); 485-31-4 (Binapacryl); 494-52-0 (Anabasine); 500-28-7 (Chlorothion.); 507-60-8 (Scilliroside); 535-89-7 (Crimidine); 555-89-5 (Bis(p-chlorophenoxy)methane); 563-12-2 (Ethion); 572-48-5 (Coumithoate); 584-79-2 (Bioallethrin); 640-15-3 (Thiometon); 640-19-7 (Fluoroacetamide); 644-06-4 (Precocene II); 644-64-4 (Dimetilan); 671-04-5 (Carbanolate); 682-80-4 (Demephion-O); 732-11-6 (Phosmet); 786-19-6 (Carbophenothion); 867-27-6 (Demeton-O-methyl); 919-54-0 (Acethion); 919-76-6 (Amidithion); 919-86-8 (Demeton-S-methyl); 944-22-9 (FOnofos); 947-02-4 (Phosfolan); 950-10-7 (Mephosfolan); 950-37-8 (Methidathion); 991-42-4 (Norbormide); 1113-02-6 (Omethoate); 1129-41-5 (Metolcarb); 1172-63-0 (Jasmolin II); 1303-96-4 (Borax); 1314-84-7 (Zinc phosphide); 1327-53-3 (Arsenous oxide); 1344-81-6 (Calcium Polysulfide); 1403-17-4 (Candicidin); 1491-41-4 (Naftalofos); 1563-66-2 (Carbofuran); 1563-67-3 (Decarbofuran); 1646-88-4 (Aldoxycarb); 1716-09-2 (Fenthionethyl); 2032-59-9 (Aminocarb); 2104-96-3 (Bromophos); 2274-67-1 (Dimethylvinphos); 2275-14-1 (Phenkapton); 2275-18-5 (Prothoate); 2275-23-2 (Vamidothion); 2310-17-0 (Phosalone); 2385-85-5 (Mirex); 2425-10-7 (Xylylcarb); 2463-84-5 (Dicapthon); 2540-82-1 (Formothion); 2550-75-6 (Chlorbicyclen); 2587-90-8 (Demephion-S); 2595-54-2 (Mecarbam); 2597-03-7 (Phenthoate); 2631-37-0 (Promecarb); 2631-40-5 (Isoprocarb); 2633-54-7 (Trichlormetaphos-3); 2636-26-2 (Cyanophos); 2642-71-9 (Azinphosethyl); 2655-19-8 (Butacarb); 2669-32-1 (Lythidathion); 2674-91-1 (Oxydeprofos); 2699-79-8 (Sulfuryl fluoride); 2778-04-3 (Endothion); 2921-88-2 (Chlorpyrifos); 3383-96-8 (,Temephos); 3604-87-3 (.a.-Ecdysone); 3689-24-5 (Sulfotep); 3691-35-8 (Chlorophacinone); 3734-95-0 (Cyanthoate); 3761-41-9 (,Mesulfenfos); 3766-81-2 (Fenobucarb); 3811-49-2 (Dioxabenzofos); 4097-36-3 (Dinosam); 4104-14-7 (Phosacetim); 4151-50-2 (Sulfluramid); 4466-14-2 (Jasmolin I); 4824-78-6 (Bromophosethyl); 5221-49-8 (Pyrimitate); 5598-13-0 (Chlorpyrifosmethyl); 5598-52-7 (Fospirate); 5826-76-6 (Phosnichlor); 5834-96-8 (Azothoate); 5836-29-3 (Coumatetralyl); 5989-27-5; 6164-98-3 (Chlordimeform); 6392-46-7 (Allyxycarb); 6923-22-4 (Monocrotophos); 6988-21-2 (Dioxacarb); 7219-78-5 (Mazidox); 7257-41-2 (Dinoprop); 7292-16-2 (Propaphos); 7446-18-6 (Thallium sulfate); 7645-25-2 (Lead arsenate); 7696-12-0 (Tetramethrin); 7700-17-6 (Crotoxyphos); 7723-14-0 (Phosphorus); 7778-44-1 (Calcium arsenate); 7786-34-7 (Mevinphos); 7803-51-2 (Phosphine); 8001-35-2 (Camphechlor); 8022-00-2 (Demetonmethyl); 8065-36-9 (Bufencarb); 8065-48-3 (Demeton); 8065-62-1 (Demephion); 10112-91-1 (Mercurous chloride); 10124-50-2 (Potassium Arsenite); 10265-92-6 (Methamidophos); 10311-84-9 (Dialifos); 10453-86-8 (Resmethrin); 10537-47-0 (Malonoben); 10605-21-7 (Carbendazim); 11141-17-6 (Azadirachtin); 12002-03-8 (C.I. Pigment Green 21); 12789-03-6 (Chlordane); 13067-93-1 (Cyanofenphos); 13071-79-9 (Terbufos); 13171-21-6 (Phosphamidon); 13194-48-4 (Ethoprophos); 13457-18-6 (Pyrazophos); 13464-37-4 (Sodium arsenite;); 13593-03-8 (Quinalphos); 13593-08-3 (Quinalphosmethyl); 13804-51-8 (Juvenile hormone I); 14168-01-5 (Dilor); 14255-88-0 (Fenazaflor); 14816-16-1 (Phoximmethyl); 14816-18-3 (Phoxim); 14816-20-7 (Chlorphoxim); 15096-52-3 (Cryolite); 15263-53-3 (Cartap); 15589-31-8 (Terallethrin); 15662-33-6 (Ryania); 16752-77-5 (Methomyl); 16893-85-9 (Sodium hexafluorosilicate); 16984-48-8 (Fluoride); 17080-02-3 (Furethrin); 17125-80-3 (Barium hexafluorosilicate); 17598-02-6 (Precocene I); 17606-31-4 (Bensultap); 17702-57-7 (Formparanate); 18181-70-9 (Jodfenphos); 18181-80-1 (Bromopropylate); 18854-01-8 (Isoxathion); 19691-80-6 (Athidathion); 20276-83-9 (Prothidathion); 20425-39-2 (Pyresmethrin); 21548-32-3 (Fosthietan); 21609-90-5 (Leptophos); 22248-79-9 (>Tetrachlorvinphos); 22259-30-9 (Formetanate); 22431-62-5 (Bioethanomethrin); 22439-40-3 (Quinothion); 22569-71-7 (Phosphide); 22662-39-1 (Rafoxanide); 22781-23-3 (Bendiocarb); 22868-13-9 (Sodium Disulfide,<); 22963-93-5 (Juvenile hormone III); 23031-36-9 (Prallethrin); 23103-98-2 (Pirimicarb); 23135-22-0 (Oxamyl); 23505-41-1 (Pirimiphosethyl); 23526-02-5 (Thuringiensin,<); 23560-59-0 (Heptenophos); 24017-47-8 (Triazophos); 24019-05-4 (Sulcofuron); 24934-91-6 (Chlormephos); 25171-63-5 (Thiocarboxime); 25311-71-1 (Isofenphos); 25402-06-6 (Cinerin); 25601-84-7 (Methocrotophos); 26002-80-2 (Phenothrin); 26097-80-3 (Cambendazole); 28434-01-7 (Bioresmethrin); 28772-56-7 (Bromadiolone); 29173-31-7 (Mecarphon); 29232-93-7 (Pirimiphosmethyl); 29672-19-3 (Nitrilacarb); 29871-13-4 (Copper arsenate); 30087-47-9 (Fenethacarb); 30560-19-1 (Acephate); 30864-28-9 (Methacrifos); 31218-83-4 (Propetamphos); 31377-69-2 (Pirimetaphos); 31895-21-3 (Thiocyclam); 33089-61-1 (Amitraz); 33399-00-7 (Bromfenvinfos); 33629-47-9 (Butralin); 34218-61-6 (Juvenile hormone II); 34264-24-9 (Promacyl); 34643-46-4 (Prothiofos); 34681-10-2 (Butocarboxim); 34681-23-7 (Butoxycarboxim); 35367-31-8 (Penfluron); 35367-38-5 (Diflubenzuron); 35400-43-2 (Sulprofos); 35575-96-3 (Azamethiphos); 35764-59-1 (Cismethrin); 36145-08-1 (Chlorprazophos); 37032-15-8 (Sophamide); 38260-63-8 (Lirimfos); 38524-82-2 (Trifenofos); 38527-91-2 (Etaphos); 39196-18-4 (Thiofanox); 39247-96-6 (Primidophos); 39515-40-7 (Cyphenothrin); 39515-41-8 (Fenpropathrin); 40085-57-2 (Tazimcarb); 40596-69-8 (Methoprene); 40596-80-3 (Triprene); 40626-35-5 (Heterophos); 41096-46-2 (Hydroprene); 41198-08-7 (Profenofos); 41219-31-2 (Dithicrofos); 41483-43-6 (Bupirimate); 42509-80-8 (Isazofos); 42588-37-4 (Kinoprene); 50512-35-1; 51487-69-5 (Cloethocarb); 51596-10-2 (Milbemectin); 51630-58-1 (Fenvalerate); 51877-74-8 (Biopermethrin); 52315-07-8 (,Zetacypermethrin); 52645-53-1 (Permethrin); 52918-63-5 (Deltamethrin); 53558-25-1 (Pyrinuron); 54406-48-3 (Empenthrin); 54593-83-8 (Chlorethoxyfos); 55179-31-2 (Bitertanol); 55285-14-8 (Carbosulfan); 56073-07-5 (Difenacoum); 56073-10-0 (Brodifacoum); 56716-21-3

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(Hyquincarb); 57808-65-8 (Closantel); 58481-70-2 (Dicresyl); 58842-20-9 (Nithiazine); 59669-26-0 (Thiodicarb); 60238-56-4 (Chlorthiophos); 60589-06-2 (Metoxadiazone); 60628-96-8 (Bifonazole); 61444-62-0 (Nifluridide); 61949-77-7 (Trans-Permethrin); 63333-35-7 (Bromethalin); 63771-69-7 (Zolaprofos); 63837-33-2 (Diofenolan); 63935-38-6 (Cycloprothrin); 64628-44-0 (Triflumuron); 64902-72-3 (Chlorsulfuron); 65383-73-5 (Precocene III); 65400-98-8 (Fenoxacrim); 65691-00-1 (Triarathene); 65907-30-4 (,Furathiocarb); 66215-27-8 (Cyromazine); 66230-04-4 (Esfenvalerate); 66841-25-6 (Tralomethrin); 67485-29-4 (Hydramethylnon); 68359-37-5 (Betacyfluthrin); 68523-18-2 (Fenpirithrin); 69327-76-0 (Buprofezin); 69409-94-5 (Fluvalinate); 70124-77-5 (Flucythrinate); 70288-86-7 (Ivermectin); 71422-67-8 (Chlorfluazuron); 71697-59-1 (Thetacypermethrin); 71751-41-2 (Abamectin); 72490-01-8 (Fenoxycarb); 72963-72-5 (Imiprothrin); 75867-00-4 (Fenfluthrin); 79538-32-2 (Tefluthrin); 80060-09-9 (Diafenthiuron); 80844-07-1 (Etofenprox); 81613-59-4 (Flupropadine); 82560-54-1 (Benfuracarb); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 83130-01-2 (Alanycarb); 83733-82-8 (Fosmethilan); 86479-06-3 (Hexaflumuron); 89784-60-1 (Pyraclofos); 90035-08-8 (Flocoumafen); 90338-20-8 (Butathiofos); 95465-99-9 (Cadusafos); 95737-68-1 (Pyriproxyfen); 96182-53-5 (Tebupirimfos); 96489-71-3 (Pyridaben); 101007-06-1 (Acrinathrin); 101463-69-8 (,Flufenoxuron); 102851-06-9 (Taufluvalinate); 103055-07-8 (Lufenuron); 103782-08-7 (Allosamidin); 104653-34-1 (Difethialone); 105024-66-6 (Silafluofen); 105779-78-0 (Pyrimidifen); 107713-58-6 (Flufenprox); 111872-58-3 (Halfenprox); 112143-82-5 (Triazamate.); 112226-61-6 (Halofenozide); 112410-23-8 (Tebufenozide); 112636-83-6 (Dicyclanil); 113036-88-7 (Flucycloxuron); 116714-46-6 (NOvaluron); 117704-25-3 (Doramectin); 118712-89-3 (Transfluthrin); 119168-77-3 (Tebufenpyrad); 119791-41-2 (Emamectin); 120068-37-3 (Fipronil); 121451-02-3 (Noviflumuron); 122453-73-0 (Chlorfenapyr); 123997-26-2 (Eprinomectin); 129558-76-5 (TOlfenpyrad); 143807-66-3 (Chromafenozide); 150824-47-8 (Nitenpyram); 153719-23-4 (Thiamethoxam); 158062-67-0 (Flonicamid); 161050-58-4 (Methoxyfenozide); 165252-70-0 (Dinotefuran); 168316-95-8 (Spinosad); 170015-32-4 (Flufenerim); 173584-44-6 (Indoxacarb); 179101-81-6 (Pyridalyl); 181587-01-9 (Ethiprole); 201593-84-2 (Bistrifluron); 209861-58-5 (Acetoprole); 210880-92-5 (Clothianidin); 220119-17-5 (Selamectin); 223419-20-3 (Profluthrin); 240494-70-6 (Metofluthrin); 283594-90-1 (Spiromesifen) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pesticidal compn.); 51-79-6 (Urethane); 78-79-5 (Isoprene); 108-05-4 (Vinyl acetate); 7782-42-5 (Graphite); 9002-88-4 (Polyethylene); 9002-89-5 (Poly(vinyl alcohol); 9003-05-8; 9003-39-8 (Poly(vinylpyrrolidone); 9003-53-6 (,Polystyrene); 9004-32-4 (Carboxymethyl cellulose sodium salt); 9004-34-6D (Cellulose); 9004-65-3 (Hydroxypropyl methylcellulose); 9005-25-8 (Starch); 9005-32-7 (Alginic acid); 9005-49-6 (Heparin sulfate); 9007-28-7 (Chondroitin sulfate); 24980-41-4 (Polycaprolactone); 25085-53-4 (Isotactic polypropylene); 25248-42-4 (Polycaprolactone); 25322-68-3 (Poly(ethylene oxide); 25702-74-3 (Polysucrose); 25805-17-8 (Poly(ethyloxazoline); 26023-30-3 (Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)]); 26100-51-6 (Polylactic acid); 26780-50-7 (Poly(Lactide-co-glycolide); 31621-87-1 (Polydioxanone) Role: MOA (Modifier or additive use), USES (Uses) (fiber; support for pest-behavior-modifying compn.); 84-74-2 (Dibutyl phthalate); 94-96-2 (Ethohexadiol); 131-11-3 (Dimethyl phthalate); 134-62-3 (DEET); 532-34-3 (Butopyronoxyl); 3653-39-2 (,Hexamide); 19764-43-3 (Methoquin-butyl); 39589-98-5 (Dimethyl carbate); 66257-53-2 (Oxamate); 105726-67-8 (Methylneodecanamide); 119515-38-7 (Picaridin) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (insect repellent; fiber-supported pest-behavior-modifying compn.); 7783-06-4 (Hydrogen sulfide) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (mammal repellent; fiber-supported pest-behavior-modifying compn.); 9010-98-4 Role: MOA (Modifier or additive use), USES (Uses) (neoprene rubber, fiber; support for pest-behavior-modifying compn.)
Patent Application Country: Application: US
Priority Application Country: US
Priority Application Number: 2001-345349
Priority Application Date: 20011025

Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). **<04 Article Title>.** <25 Page(s)>.

Chemical of Concern: FVL, RSM, SPM; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). Fiber-supported pesticidal compositions. 41 pp.
Chem Codes: Chemical of Concern: SPM,BDL Rejection Code: NO TOX DATA.

The invention provides fibrous pest deterrents that combine the useful properties of a phys. barrier in the form of a nonwoven fibrous matrix with a chem. deterrent such as a pesticide, behavior-modifying compd. or a pest repellent. The use of such fibrous pest deterrents protects plants, animals and structures in both agricultural and nonagricultural settings from damage inflicted by pests. Unlike traditional pesticides, the

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behavior-modifying compd., pesticide or chem. deterrent of the invention is adsorbed or attached to a fibrous matrix, and so it is not so readily dispersed into the environment. Hence, use of the fibrous pest deterrents can reduce the levels of pesticides that inadvertently contaminate nontarget areas and pollute water supplies. [on SciFinder (R)] fiber/ supported/ pesticide/ compn Copyright: Copyright 2004 ACS on SciFinder (R))
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Accession Number: AN 2003:836400
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Section Code: 5-4
Section Title: Agrochemical Bioregulators
Coden: USXXCO
Index Terms: Glycols Role: MOA (Modifier or additive use), USES (Uses) (alyplastic, fiber; support for pest-behavior-modifying compn.); Polyester fibers Role: MOA (Modifier or additive use), USES (Uses) (arom.; support for pest-behavior-modifying compn.); Naphthenic acids Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (copper salts, mammal repellent; fiber-supported pest-behavior-modifying compn.); Anethum graveolens; Insect attractants; Insect feeding inhibitors; Insect repellents; Nepeta cataria; Piper; Repellents; Zingiber officinale (fiber-supported pest-behavior-modifying compn.); Allomones; Kairomones; Monoterpenes; Phenols; Pheromones Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pest-behavior-modifying compn.); Bacillus thuringiensis; Pesticides; Quassia; Schoenocaulon (fiber-supported pesticidal compn.); Pyrethrins Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pesticidal compn.); Fibers Role: MOA (Modifier or additive use), USES (Uses) (fiber-supported pesticidal compn.); Albumins; Collagens; Gelatins; Neoprene rubber; Ovalbumin; Polyamides; Polyanhydrides; Polycarbonates; Polyoxyalkylenes; Polysiloxanes; Polyurethane fibers; Rayon Role: MOA (Modifier or additive use), USES (Uses) (fiber; support for pest-behavior-modifying compn.); Polyesters Role: MOA (Modifier or additive use), USES (Uses) (glycolide-based, fiber; support for pest-behavior-modifying compn.); Polyesters Role: MOA (Modifier or additive use), USES (Uses) (hydroxycarboxylic acid-based, fiber; support for pest-behavior-modifying compn.); Polyesters Role: MOA (Modifier or additive use), USES (Uses) (lactide, fiber; support for pest-behavior-modifying compn.); Capsicum annuum annuum (longum group, paprika; fiber-supported pest-behavior-modifying compn.); Capsicum annuum annuum (longum group; fiber-supported pest-behavior-modifying compn.); Polyethers Role: MOA (Modifier or additive use), USES (Uses) (polyamide-, fiber; support for pest-behavior-modifying compn.); Synthetic polymeric fibers Role: MOA (Modifier or additive use), USES (Uses) (polyamide-polyethers; support for pest-behavior-modifying compn.); Synthetic polymeric fibers Role: MOA (Modifier or additive use), USES (Uses) (polycarbonates; support for pest-behavior-modifying compn.); Polyamide fibers Role: MOA (Modifier or additive use), USES (Uses) (polyether-; support for pest-behavior-modifying compn.); Aves (repellents; fiber-supported pest-behavior-modifying compn.); Insecticides (sterilants; fiber-supported pest-behavior-modifying compn.); Polyester fibers; Polyolefin fibers Role: MOA (Modifier or additive use), USES (Uses) (support for pest-behavior-modifying compn.); Naphthenic acids Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (zinc salts, mammal repellent; fiber-supported pest-behavior-modifying compn.)
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support for pest-behavior-modifying compn.)
Patent Application Country: Application: US
Priority Application Country: US
Priority Application Number: 2001-345349
Priority Application Date: 20011025

Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). Fiber-supported pesticidal compositions. 41 pp.
Chem Codes: Chemical of Concern: AZD,SPM Rejection Code: NO TOX DATA.

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The invention provides fibrous pest deterrents that combine the useful properties of a phys. barrier in the form of a nonwoven fibrous matrix with a chem. deterrent such as a pesticide, behavior-modifying compd. or a pest repellent. The use of such fibrous pest deterrents protects plants, animals and structures in both agricultural and nonagricultural settings from damage inflicted by pests. Unlike traditional pesticides, the behavior-modifying compd., pesticide or chem. deterrent of the invention is adsorbed or attached to a fibrous matrix, and so it is not so readily dispersed into the environment. Hence, use of the fibrous pest deterrents can reduce the levels of pesticides that inadvertently contaminate nontarget areas and pollute water supplies. [on SciFinder (R)] fiber/ supported/ pesticide/ compn Copyright: Copyright 2004 ACS on SciFinder (R))
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Section Title: Agrochemical Bioregulators
Coden: USXXCO
Index Terms: Glycols Role: MOA (Modifier or additive use), USES (Uses) (alyplastic, fiber; support for pest-behavior-modifying compn.); Polyester fibers Role: MOA (Modifier or additive use), USES (Uses) (arom.; support for pest-behavior-modifying compn.); Naphthenic acids Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (copper salts, mammal repellent; fiber-supported pest-behavior-modifying compn.); Anethum graveolens; Insect attractants; Insect feeding inhibitors; Insect repellents; Nepeta cataria; Piper; Repellents; Zingiber officinale (fiber-supported pest-behavior-modifying compn.); Allomones; Kairomones; Monoterpenes; Phenols; Pheromones Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pest-behavior-modifying compn.); Bacillus thuringiensis; Pesticides; Quassia; Schoenocaulon (fiber-supported pesticidal compn.); Pyrethrins Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pesticidal compn.); Fibers Role: MOA (Modifier or additive use), USES (Uses) (fiber-supported pesticidal compn.); Albumins; Collagens; Gelatins; Neoprene rubber; Ovalbumin; Polyamides; Polyanhydrides; Polycarbonates; Polyoxyalkylenes; Polysiloxanes; Polyurethane fibers; Rayon Role: MOA (Modifier or additive use), USES (Uses) (fiber; support for pest-behavior-modifying compn.); Polyesters Role: MOA (Modifier or additive use), USES (Uses) (glycolide-based, fiber; support for pest-behavior-modifying compn.); Polyesters Role: MOA (Modifier or additive use), USES (Uses) (hydroxycarboxylic acid-based, fiber; support for pest-behavior-modifying compn.); Polyesters Role: MOA (Modifier or additive use), USES (Uses) (lactide, fiber; support for pest-behavior-modifying compn.); Capsicum annuum annuum (longum group, paprika; fiber-supported pest-behavior-modifying compn.); Capsicum annuum annuum (longum group; fiber-supported pest-behavior-modifying compn.); Polyethers Role: MOA (Modifier or additive use), USES (Uses) (polyamide-, fiber; support for pest-behavior-modifying compn.); Synthetic polymeric fibers Role: MOA (Modifier or additive use), USES (Uses) (polyamide-polyethers; support for pest-behavior-modifying compn.); Synthetic polymeric fibers Role: MOA (Modifier or additive use), USES (Uses) (polycarbonates; support for pest-behavior-modifying compn.); Polyamide fibers Role: MOA (Modifier or additive use), USES (Uses) (polyether-; support for pest-behavior-modifying compn.); Aves (repellents; fiber-supported pest-behavior-modifying compn.); Insecticides (sterilants; fiber-supported pest-behavior-modifying compn.); Polyester fibers; Polyolefin fibers Role: MOA (Modifier or additive use), USES (Uses) (support for pest-behavior-modifying compn.); Naphthenic acids Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (zinc salts, mammal repellent; fiber-supported pest-behavior-modifying compn.)
CAS Registry Numbers: 84-65-1 (Anthraquinone); 137-30-4 (Ziram.); 333-41-5 (Diazinon); 1332-40-7 (Copper oxychloride); 2032-65-7 (Methiocarb); 12407-86-2 (Trimethacarb); 15879-93-3 (Chloralose); 108173-90-6 (Guazatine) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (bird repellent; fiber-supported pest-behavior-modifying compn.); 57-50-1D (Sugar); 58-08-2 (, Caffein); 404-86-4 (Capsaicin) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pest-behavior-modifying compn.); 50-14-6 (> Ergocalciferol); 50-29-3 (DDT); 52-68-6 (Trichlorfon); 52-85-7 (Famphur); 54-11-5 (Nicotine); 55-38-9 (Fenthion); 55-98-1 (Busulfan); 56-23-5 (Carbon tetrachloride); 56-38-2 (Parathion); 56-72-4 (Coumaphos); 56-75-7 (Chloramphenicol); 57-24-9 (Strychnine); 58-89-9 (Lindane); 60-51-5 (Dimethoate); 60-57-1 (Dieldrin); 62-73-7 (Dichlorvos); 62-74-8 (Sodium fluoroacetate); 63-25-2 (Carbaryl); 67-66-3 (Chloroform); 70-38-2 (Dimethrin); 70-43-9 (Barthrin); 71-55-6 (Methylchloroform); 72-43-5 (Methoxychlor); 74-83-9 (Methyl bromide); 74-90-8 (Hydrogen cyanide); 75-09-2 (Methylene chloride); 75-21-8 (Ethylene oxide); 76-06-2 (,Chloropicrin); 76-44-8 (Heptachlor); 78-34-2 (Dioxathion); 78-53-5 (Amiton); 78-57-9 (Menazon); 78-87-5 (1,2-Dichloropropane); 79-34-5 (Tetrachloroethane); 80-05-7 (Bisphenol A); 81-81-2 (Warfarin); 81-82-3 (Coumachlor); 82-66-6 (Diphacinone); 83-26-1 (Pindone); 83-79-4 (Rotenone); 85-34-7 (Chlorfenac); 86-50-0 (Azinphosmethyl); 86-88-4 (Antu); 87-86-5 (Pentachlorophenol); 91-20-3 (Naphthalene); 96-24-2 (a-

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Chlorohydrin); 97-11-0 (Cyclethrin); 97-17-6 (Dichlofenthion); 97-27-8 (Chlorbetamide); 104-29-0 (Chlorphenesin); 106-46-7 (Paradichlorobenzene); 106-93-4 (Ethylene Dibromide); 107-06-2 (Ethylene dichloride); 107-13-1 (Acrylonitrile); 109-94-4 (Ethyl formate); 114-26-1 (Propoxur); 115-90-2 (Fensulfothion); 115-93-5 (Cythioate); 116-01-8 (Ethoatemethyl); 116-06-3 (Aldicarb); 118-75-2 (Chloranil); 119-12-0 (Pyridaphenthion); 121-20-0 (Cinerin II); 121-21-1 (Pyrethrin I); 121-29-9 (Pyrethrin II); 121-75-5 (Malathion); 122-14-5 (Fenitrothion); 122-15-6 (Dimetan); 126-22-7 (Butonate); 126-75-0 (Demeton-S); 131-89-5 (Dinex); 133-06-2 (Captan); 133-90-4 (,Chloramben); 141-66-2 (Dicrotophos); 143-50-0 (Chlordecone); 144-41-2 (Morphothion); 152-16-9 (Schradan); 288-14-2 (Isoxazole); 298-00-0 (Parathionmethyl); 298-02-2 (Phorate); 298-03-3 (Demeton-O); 298-04-4 (Disulfoton); 299-84-3 (Fenchlorphos); 299-86-5 (Crufomate); 300-76-5 (Naled); 301-12-2 (Oxydemetonmethyl); 302-04-5 (Thiocyanate); 309-00-2 (Aldrin); 314-40-9 (Bromacil); 315-18-4 (Mexacarbate); 327-98-0 (Trichloronat); 333-20-0 (Potassium thiocyanate); 370-50-3 (Flucofuron); 371-86-8 (Mipafox); 470-90-6 (Chlorfenvinphos); 483-63-6 (Crotamiton); 485-31-4 (Binapacryl); 494-52-0 (Anabasine); 500-28-7 (Chlorothion.); 507-60-8 (Scilliroside); 535-89-7 (Crimidine); 555-89-5 (Bis(p-chlorophenoxy)methane); 563-12-2 (Ethion); 572-48-5 (Coumithoate); 584-79-2 (Bioallethrin); 640-15-3 (Thiometon); 640-19-7 (Fluoroacetamide); 644-06-4 (Precocene II); 644-64-4 (Dimetilan); 671-04-5 (Carbanolate); 682-80-4 (Demephion-O); 732-11-6 (Phosmet); 786-19-6 (Carbophenothion); 867-27-6 (Demeton-O-methyl); 919-54-0 (Acethion); 919-76-6 (Amidithion); 919-86-8 (Demeton-S-methyl); 944-22-9 (FOnofos); 947-02-4 (Phosfolan); 950-10-7 (Mephosfolan); 950-37-8 (Methidathion); 991-42-4 (Norbormide); 1113-02-6 (Omethoate); 1129-41-5 (Metolcarb); 1172-63-0 (Jasmolin II); 1303-96-4 (Borax); 1314-84-7 (Zinc phosphide); 1327-53-3 (Arsenous oxide); 1344-81-6 (Calcium Polysulfide); 1403-17-4 (Candicidin); 1491-41-4 (Naftalofos); 1563-66-2 (Carbofuran); 1563-67-3 (Decarbofuran); 1646-88-4 (Aldoxycarb); 1716-09-2 (Fenthionethyl); 2032-59-9 (Aminocarb); 2104-96-3 (Bromophos); 2274-67-1 (Dimethylvinphos); 2275-14-1 (Phenkapton); 2275-18-5 (Prothoate); 2275-23-2 (Vamidothion); 2310-17-0 (Phosalone); 2385-85-5 (Mirex); 2425-10-7 (Xylylcarb); 2463-84-5 (Dicapthon); 2540-82-1 (Formothion); 2550-75-6 (Chlorbicyclen); 2587-90-8 (Demephion-S); 2595-54-2 (Mecarbam); 2597-03-7 (Phenthoate); 2631-37-0 (Promecarb); 2631-40-5 (Isoprocarb); 2633-54-7 (Trichlormetaphos-3); 2636-26-2 (Cyanophos); 2642-71-9 (Azinphosethyl); 2655-19-8 (Butacarb); 2669-32-1 (Lythidathion); 2674-91-1 (Oxydeprofos); 2699-79-8 (Sulfuryl fluoride); 2778-04-3 (Endothion); 2921-88-2 (Chlorpyrifos); 3383-96-8 (,Temephos); 3604-87-3 (.a.-Ecdysone); 3689-24-5 (Sulfotep); 3691-35-8 (Chlorophacinone); 3734-95-0 (Cyanthoate); 3761-41-9 (,Mesulfenfos); 3766-81-2 (Fenobucarb); 3811-49-2 (Dioxabenzofos); 4097-36-3 (Dinosam); 4104-14-7 (Phosacetim); 4151-50-2 (Sulfluramid); 4466-14-2 (Jasmolin I); 4824-78-6 (Bromophosethyl); 5221-49-8 (Pyrimitate); 5598-13-0 (Chlorpyrifosmethyl); 5598-52-7 (Fospirate); 5826-76-6 (Phosnichlor); 5834-96-8 (Azothoate); 5836-29-3 (Coumatetralyl); 5989-27-5; 6164-98-3 (Chlordimeform); 6392-46-7 (Allyxycarb); 6923-22-4 (Monocrotophos); 6988-21-2 (Dioxacarb); 7219-78-5 (Mazidox); 7257-41-2 (Dinoprop); 7292-16-2 (Propaphos); 7446-18-6 (Thallium sulfate); 7645-25-2 (Lead arsenate); 7696-12-0 (Tetramethrin); 7700-17-6 (Crotoxyphos); 7723-14-0 (Phosphorus); 7778-44-1 (Calcium arsenate); 7786-34-7 (Mevinphos); 7803-51-2 (Phosphine); 8001-35-2 (Camphechlor); 8022-00-2 (Demetonmethyl); 8065-36-9 (Bufencarb); 8065-48-3 (Demeton); 8065-62-1 (Demephion); 10112-91-1 (Mercurous chloride); 10124-50-2 (Potassium Arsenite); 10265-92-6 (Methamidophos); 10311-84-9 (Dialifos); 10453-86-8 (Resmethrin); 10537-47-0 (Malonoben); 10605-21-7 (Carbendazim); 11141-17-6 (Azadirachtin); 12002-03-8 (C.I. Pigment Green 21); 12789-03-6 (Chlordane); 13067-93-1 (Cyanofenphos); 13071-79-9 (Terbufos); 13171-21-6 (Phosphamidon); 13194-48-4 (Ethoprophos); 13457-18-6 (Pyrazophos); 13464-37-4 (Sodium arsenite;); 13593-03-8 (Quinalphos); 13593-08-3 (Quinalphosmethyl); 13804-51-8 (Juvenile hormone I); 14168-01-5 (Dilor); 14255-88-0 (Fenazaflor); 14816-16-1 (Phoximmethyl); 14816-18-3 (Phoxim); 14816-20-7 (Chlorphoxim); 15096-52-3 (Cryolite); 15263-53-3 (Cartap); 15589-31-8 (Terallethrin); 15662-33-6 (Ryania); 16752-77-5 (Methomyl); 16893-85-9 (Sodium hexafluorosilicate); 16984-48-8 (Fluoride); 17080-02-3 (Furethrin); 17125-80-3 (Barium hexafluorosilicate); 17598-02-6 (Precocene I); 17606-31-4 (Bensultap); 17702-57-7 (Formparanate); 18181-70-9 (Jodfenphos); 18181-80-1 (Bromopropylate); 18854-01-8 (Isoxathion); 19691-80-6 (Athidathion); 20276-83-9 (Prothidathion); 20425-39-2 (Pyresmethrin); 21548-32-3 (Fosthietan); 21609-90-5 (Leptophos); 22248-79-9 (>Tetrachlorvinphos); 22259-30-9 (Formetanate); 22431-62-5 (Bioethanomethrin); 22439-40-3 (Quinothion); 22569-71-7 (Phosphide); 22662-39-1 (Rafoxanide); 22781-23-3 (Bendiocarb); 22868-13-9 (Sodium Disulfide,<); 22963-93-5 (Juvenile hormone III); 23031-36-9 (Prallethrin); 23103-98-2 (Pirimicarb); 23135-22-0 (Oxamyl); 23505-41-1 (Pirimiphosethyl); 23526-02-5 (Thuringiensin,<); 23560-59-0 (Heptenophos); 24017-47-8 (Triazophos); 24019-05-4 (Sulcofuron); 24934-91-6 (Chlormephos); 25171-63-5 (Thiocarboxime); 25311-71-1 (Isofenphos); 25402-06-6 (Cinerin); 25601-84-7 (Methocrotophos); 26002-80-2 (Phenothrin); 26097-80-3 (Cambendazole); 28434-01-7 (Bioresmethrin); 28772-56-7 (Bromadiolone); 29173-31-7 (Mecarphon); 29232-93-7 (Pirimiphosmethyl); 29672-19-3 (Nitrilacarb); 29871-13-4 (Copper arsenate); 30087-47-9 (Fenethacarb); 30560-19-1 (Acephate); 30864-28-9 (Methacrifos); 31218-83-4 (Propetamphos); 31377-69-2 (Pirimetaphos); 31895-21-3 (Thiocyclam); 33089-61-1 (Amitraz); 33399-00-

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7 (Bromfenvinfos); 33629-47-9 (Butralin); 34218-61-6 (Juvenile hormone II); 34264-24-9 (Promacyl); 34643-46-4 (Prothiofos); 34681-10-2 (Butocarboxim); 34681-23-7 (Butoxycarboxim); 35367-31-8 (Penfluron); 35367-38-5 (Diflubenzuron); 35400-43-2 (Sulprofos); 35575-96-3 (Azamethiphos); 35764-59-1 (Cismethrin); 36145-08-1 (Chlorprazophos); 37032-15-8 (Sophamide); 38260-63-8 (Lirimfos); 38524-82-2 (Trifenofos); 38527-91-2 (Etaphos); 39196-18-4 (Thiofanox); 39247-96-6 (Primidophos); 39515-40-7 (Cyphenothrin); 39515-41-8 (Fenpropathrin); 40085-57-2 (Tazimcarb); 40596-69-8 (Methoprene); 40596-80-3 (Triprene); 40626-35-5 (Heterophos); 41096-46-2 (Hydroprene); 41198-08-7 (Profenofos); 41219-31-2 (Dithicrofos); 41483-43-6 (Bupirimate); 42509-80-8 (Isazofos); 42588-37-4 (Kinoprene); 50512-35-1; 51487-69-5 (Cloethocarb); 51596-10-2 (Milbemectin); 51630-58-1 (Fenvalerate); 51877-74-8 (Biopermethrin); 52315-07-8 (,Zetacypermethrin); 52645-53-1 (Permethrin); 52918-63-5 (Deltamethrin); 53558-25-1 (Pyrinuron); 54406-48-3 (Empenthrin); 54593-83-8 (Chlorethoxyfos); 55179-31-2 (Bitertanol); 55285-14-8 (Carbosulfan); 56073-07-5 (Difenacoum); 56073-10-0 (Brodifacoum); 56716-21-3 (Hyquincarb); 57808-65-8 (Closantel); 58481-70-2 (Dicresyl); 58842-20-9 (Nithiazine); 59669-26-0 (Thiodicarb); 60238-56-4 (Chlorthiophos); 60589-06-2 (Metoxadiazone); 60628-96-8 (Bifonazole); 61444-62-0 (Nifluridide); 61949-77-7 (Trans-Permethrin); 63333-35-7 (Bromethalin); 63771-69-7 (Zolaprofos); 63837-33-2 (Diofenolan); 63935-38-6 (Cycloprothrin); 64628-44-0 (Triflumuron); 64902-72-3 (Chlorsulfuron); 65383-73-5 (Precocene III); 65400-98-8 (Fenoxacrim); 65691-00-1 (Triarathene); 65907-30-4 (,Furathiocarb); 66215-27-8 (Cyromazine); 66230-04-4 (Esfenvalerate); 66841-25-6 (Tralomethrin); 67485-29-4 (Hydramethylnon); 68359-37-5 (Betacyfluthrin); 68523-18-2 (Fenpirithrin); 69327-76-0 (Buprofezin); 69409-94-5 (Fluvalinate); 70124-77-5 (Flucythrinate); 70288-86-7 (Ivermectin); 71422-67-8 (Chlorfluazuron); 71697-59-1 (Thetacypermethrin); 71751-41-2 (Abamectin); 72490-01-8 (Fenoxycarb); 72963-72-5 (Imiprothrin); 75867-00-4 (Fenfluthrin); 79538-32-2 (Tefluthrin); 80060-09-9 (Diafenthiuron); 80844-07-1 (Etofenprox); 81613-59-4 (Flupropadine); 82560-54-1 (Benfuracarb); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 83130-01-2 (Alanycarb); 83733-82-8 (Fosmethilan); 86479-06-3 (Hexaflumuron); 89784-60-1 (Pyraclofos); 90035-08-8 (Flocoumafen); 90338-20-8 (Butathiofos); 95465-99-9 (Cadusafos); 95737-68-1 (Pyriproxyfen); 96182-53-5 (Tebupirimfos); 96489-71-3 (Pyridaben); 101007-06-1 (Acrinathrin); 101463-69-8 (,Flufenoxuron); 102851-06-9 (Taufluvalinate); 103055-07-8 (Lufenuron); 103782-08-7 (Allosamidin); 104653-34-1 (Difethialone); 105024-66-6 (Silafluofen); 105779-78-0 (Pyrimidifen); 107713-58-6 (Flufenprox); 111872-58-3 (Halfenprox); 112143-82-5 (Triazamate.); 112226-61-6 (Halofenozide); 112410-23-8 (Tebufenozide); 112636-83-6 (Dicyclanil); 113036-88-7 (Flucycloxuron); 116714-46-6 (NOvaluron); 117704-25-3 (Doramectin); 118712-89-3 (Transfluthrin); 119168-77-3 (Tebufenpyrad); 119791-41-2 (Emamectin); 120068-37-3 (Fipronil); 121451-02-3 (Noviflumuron); 122453-73-0 (Chlorfenapyr); 123997-26-2 (Eprinomectin); 129558-76-5 (TOlfenpyrad); 143807-66-3 (Chromafenozide); 150824-47-8 (Nitenpyram); 153719-23-4 (Thiamethoxam); 158062-67-0 (Flonicamid); 161050-58-4 (Methoxyfenozide); 165252-70-0 (Dinotefuran); 168316-95-8 (Spinosad); 170015-32-4 (Flufenerim); 173584-44-6 (Indoxacarb); 179101-81-6 (Pyridalyl); 181587-01-9 (Ethiprole); 201593-84-2 (Bistrifluron); 209861-58-5 (Acetoprole); 210880-92-5 (Clothianidin); 220119-17-5 (Selamectin); 223419-20-3 (Profluthrin); 240494-70-6 (Metofluthrin); 283594-90-1 (Spiromesifen) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pesticidal compn.); 51-79-6 (Urethane); 78-79-5 (Isoprene); 108-05-4 (Vinyl acetate); 7782-42-5 (Graphite); 9002-88-4 (Polyethylene); 9002-89-5 (Poly(vinyl alcohol); 9003-05-8; 9003-39-8 (Poly(vinylpyrrolidone); 9003-53-6 (,Polystyrene); 9004-32-4 (Carboxymethyl cellulose sodium salt); 9004-34-6D (Cellulose); 9004-65-3 (Hydroxypropyl methylcellulose); 9005-25-8 (Starch); 9005-32-7 (Alginic acid); 9005-49-6 (Heparin sulfate); 9007-28-7 (Chondroitin sulfate); 24980-41-4 (Polycaprolactone); 25085-53-4 (Isotactic polypropylene); 25248-42-4 (Polycaprolactone); 25322-68-3 (Poly(ethylene oxide); 25702-74-3 (Polysucrose); 25805-17-8 (Poly(ethyloxazoline); 26023-30-3 (Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)]); 26100-51-6 (Polylactic acid); 26780-50-7 (Poly(Lactide-co-glycolide); 31621-87-1 (Polydioxanone) Role: MOA (Modifier or additive use), USES (Uses) (fiber; support for pest-behavior-modifying compn.); 84-74-2 (Dibutyl phthalate); 94-96-2 (Ethohexadiol); 131-11-3 (Dimethyl phthalate); 134-62-3 (DEET); 532-34-3 (Butopyronoxyl); 3653-39-2 (,Hexamide); 19764-43-3 (Methoquin-butyl); 39589-98-5 (Dimethyl carbate); 66257-53-2 (Oxamate); 105726-67-8 (Methylneodecanamide); 119515-38-7 (Picaridin) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (insect repellent; fiber-supported pest-behavior-modifying compn.); 7783-06-4 (Hydrogen sulfide) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (mammal repellent; fiber-supported pest-behavior-modifying compn.); 9010-98-4 Role: MOA (Modifier or additive use), USES (Uses) (neoprene rubber, fiber; support for pest-behavior-modifying compn.)
Patent Application Country: Application: US
Priority Application Country: US
Priority Application Number: 2001-345349
Priority Application Date: 20011025

US EPA ARCHIVE DOCUMENT

Hoffmann, Michael P., Gardner, Jeffrey, and Curtis, Paul D (20031023). Fiber-supported pesticidal compositions. 41 pp.
Chem Codes: Chemical of Concern: RTN, SPM Rejection Code: NO TOX DATA.

The invention provides fibrous pest deterrents that combine the useful properties of a phys. barrier in the form of a nonwoven fibrous matrix with a chem. deterrent such as a pesticide, behavior-modifying compd. or a pest repellent. The use of such fibrous pest deterrents protects plants, animals and structures in both agricultural and nonagricultural settings from damage inflicted by pests. Unlike traditional pesticides, the behavior-modifying compd., pesticide or chem. deterrent of the invention is adsorbed or attached to a fibrous matrix, and so it is not so readily dispersed into the environment. Hence, use of the fibrous pest deterrents can reduce the levels of pesticides that inadvertently contaminate nontarget areas and pollute water supplies. [on SciFinder (R)] fiber/ supported/ pesticide/ compn Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2003:836400
Chemical Abstracts Number: CAN 139:318718
Section Code: 5-4
Section Title: Agrochemical Bioregulators
Coden: USXXCO
Index Terms: Glycols Role: MOA (Modifier or additive use), USES (Uses) (alyplastic, fiber; support for pest-behavior-modifying compn.); Polyester fibers Role: MOA (Modifier or additive use), USES (Uses) (arom.; support for pest-behavior-modifying compn.); Naphthenic acids Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (copper salts, mammal repellent; fiber-supported pest-behavior-modifying compn.); Anethum graveolens; Insect attractants; Insect feeding inhibitors; Insect repellents; Nepeta cataria; Piper; Repellents; Zingiber officinale (fiber-supported pest-behavior-modifying compn.); Allomones; Kairomones; Monoterpenes; Phenols; Pheromones Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pest-behavior-modifying compn.); Bacillus thuringiensis; Pesticides; Quassia; Schoenocaulon (fiber-supported pesticidal compn.); Pyrethrins Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pesticidal compn.); Fibers Role: MOA (Modifier or additive use), USES (Uses) (fiber-supported pesticidal compn.); Albumins; Collagens; Gelatins; Neoprene rubber; Ovalbumin; Polyamides; Polyanhydrides; Polycarbonates; Polyoxyalkylenes; Polysiloxanes; Polyurethane fibers; Rayon Role: MOA (Modifier or additive use), USES (Uses) (fiber; support for pest-behavior-modifying compn.); Polyesters Role: MOA (Modifier or additive use), USES (Uses) (glycolide-based, fiber; support for pest-behavior-modifying compn.); Polyesters Role: MOA (Modifier or additive use), USES (Uses) (hydroxycarboxylic acid-based, fiber; support for pest-behavior-modifying compn.); Polyesters Role: MOA (Modifier or additive use), USES (Uses) (lactide, fiber; support for pest-behavior-modifying compn.); Capsicum annuum annuum (longum group, paprika; fiber-supported pest-behavior-modifying compn.); Capsicum annuum annuum (longum group; fiber-supported pest-behavior-modifying compn.); Polyethers Role: MOA (Modifier or additive use), USES (Uses) (polyamide-, fiber; support for pest-behavior-modifying compn.); Synthetic polymeric fibers Role: MOA (Modifier or additive use), USES (Uses) (polyamide-polyethers; support for pest-behavior-modifying compn.); Synthetic polymeric fibers Role: MOA (Modifier or additive use), USES (Uses) (polycarbonates; support for pest-behavior-modifying compn.); Polyamide fibers Role: MOA (Modifier or additive use), USES (Uses) (polyether-; support for pest-behavior-modifying compn.); Aves (repellents; fiber-supported pest-behavior-modifying compn.); Insecticides (sterilants; fiber-supported pest-behavior-modifying compn.); Polyester fibers; Polyolefin fibers Role: MOA (Modifier or additive use), USES (Uses) (support for pest-behavior-modifying compn.); Naphthenic acids Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (zinc salts, mammal repellent; fiber-supported pest-behavior-modifying compn.)
CAS Registry Numbers: 84-65-1 (Anthraquinone); 137-30-4 (Ziram.); 333-41-5 (Diazinon); 1332-40-7 (Copper oxychloride); 2032-65-7 (Methiocarb); 12407-86-2 (Trimethacarb); 15879-93-3 (Chloralose); 108173-90-6 (Guazatine) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (bird repellent; fiber-supported pest-behavior-modifying compn.); 57-50-1D (Sugar); 58-08-2 (, Caffein); 404-86-4 (Capsaicin) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pest-behavior-modifying compn.); 50-14-6 (> Ergocalciferol); 50-29-3 (DDT); 52-68-6 (Trichlorfon); 52-85-7 (Famphur); 54-11-5 (Nicotine); 55-38-9 (Fenthion); 55-98-1 (Busulfan); 56-23-5 (Carbon tetrachloride); 56-38-2 (Parathion); 56-72-4 (Coumaphos); 56-75-7 (Chloramphenicol); 57-24-9 (Strychnine); 58-89-9 (Lindane); 60-51-5 (Dimethoate); 60-57-1 (Dieldrin); 62-73-7 (Dichlorvos); 62-74-8 (Sodium fluoroacetate); 63-25-2 (Carbaryl); 67-66-3 (Chloroform); 70-38-2 (Dimethrin); 70-43-9 (Barthrin); 71-55-6 (Methylchloroform); 72-43-5 (Methoxychlor); 74-83-9 (Methyl bromide); 74-90-8 (Hydrogen cyanide); 75-09-2 (Methylene chloride); 75-21-8 (Ethylene oxide); 76-06-2 (,Chloropicrin); 76-

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44-8 (Heptachlor); 78-34-2 (Dioxathion); 78-53-5 (Amiton); 78-57-9 (Menazon); 78-87-5 (1,2-Dichloropropane); 79-34-5 (Tetrachloroethane); 80-05-7 (Bisphenol A); 81-81-2 (Warfarin); 81-82-3 (Coumachlor); 82-66-6 (Diphacinone); 83-26-1 (Pindone); 83-79-4 (Rotenone); 85-34-7 (Chlorfenac); 86-50-0 (Azinphosmethyl); 86-88-4 (Antu); 87-86-5 (Pentachlorophenol); 91-20-3 (Naphthalene); 96-24-2 (a-Chlorohydrin); 97-11-0 (Cyclethrin); 97-17-6 (Dichlofenthion); 97-27-8 (Chlorbetamide); 104-29-0 (Chlorphenesin); 106-46-7 (Paradichlorobenzene); 106-93-4 (Ethylene Dibromide); 107-06-2 (Ethylene dichloride); 107-13-1 (Acrylonitrile); 109-94-4 (Ethyl formate); 114-26-1 (Propoxur); 115-90-2 (Fensulfothion); 115-93-5 (Cythioate); 116-01-8 (Ethoatemethyl); 116-06-3 (Aldicarb); 118-75-2 (Chloranil); 119-12-0 (Pyridaphenthion); 121-20-0 (Cinerin II); 121-21-1 (Pyrethrin I); 121-29-9 (Pyrethrin II); 121-75-5 (Malathion); 122-14-5 (Fenitrothion); 122-15-6 (Dimetan); 126-22-7 (Butonate); 126-75-0 (Demeton-S); 131-89-5 (Dinex); 133-06-2 (Captan); 133-90-4 (,Chloramben); 141-66-2 (Dicrotophos); 143-50-0 (Chlordecone); 144-41-2 (Morphothion); 152-16-9 (Schradan); 288-14-2 (Isoxazole); 298-00-0 (Parathionmethyl); 298-02-2 (Phorate); 298-03-3 (Demeton-O); 298-04-4 (Disulfoton); 299-84-3 (Fenchlorphos); 299-86-5 (Crufomate); 300-76-5 (Naled); 301-12-2 (Oxydemetonmethyl); 302-04-5 (Thiocyanate); 309-00-2 (Aldrin); 314-40-9 (Bromacil); 315-18-4 (Mexacarbate); 327-98-0 (Trichloronat); 333-20-0 (Potassium thiocyanate); 370-50-3 (Flucofuron); 371-86-8 (Mipafox); 470-90-6 (Chlorfenvinphos); 483-63-6 (Crotamiton); 485-31-4 (Binapacryl); 494-52-0 (Anabasine); 500-28-7 (Chlorothion.); 507-60-8 (Scilliroside); 535-89-7 (Crimidine); 555-89-5 (Bis(p-chlorophenoxy)methane); 563-12-2 (Ethion); 572-48-5 (Coumithoate); 584-79-2 (Bioallethrin); 640-15-3 (Thiometon); 640-19-7 (Fluoroacetamide); 644-06-4 (Precocene II); 644-64-4 (Dimetilan); 671-04-5 (Carbanolate); 682-80-4 (Demephion-O); 732-11-6 (Phosmet); 786-19-6 (Carbophenothion); 867-27-6 (Demeton-O-methyl); 919-54-0 (Acethion); 919-76-6 (Amidithion); 919-86-8 (Demeton-S-methyl); 944-22-9 (FOnofos); 947-02-4 (Phosfolan); 950-10-7 (Mephosfolan); 950-37-8 (Methidathion); 991-42-4 (Norbormide); 1113-02-6 (Omethoate); 1129-41-5 (Metolcarb); 1172-63-0 (Jasmolin II); 1303-96-4 (Borax); 1314-84-7 (Zinc phosphide); 1327-53-3 (Arsenous oxide); 1344-81-6 (Calcium Polysulfide); 1403-17-4 (Candicidin); 1491-41-4 (Naftalofos); 1563-66-2 (Carbofuran); 1563-67-3 (Decarbofuran); 1646-88-4 (Aldoxycarb); 1716-09-2 (Fenthionethyl); 2032-59-9 (Aminocarb); 2104-96-3 (Bromophos); 2274-67-1 (Dimethylvinphos); 2275-14-1 (Phenkapton); 2275-18-5 (Prothoate); 2275-23-2 (Vamidothion); 2310-17-0 (Phosalone); 2385-85-5 (Mirex); 2425-10-7 (Xylylcarb); 2463-84-5 (Dicapthon); 2540-82-1 (Formothion); 2550-75-6 (Chlorbicyclen); 2587-90-8 (Demephion-S); 2595-54-2 (Mecarbam); 2597-03-7 (Phenthoate); 2631-37-0 (Promecarb); 2631-40-5 (Isoprocarb); 2633-54-7 (Trichlormetaphos-3); 2636-26-2 (Cyanophos); 2642-71-9 (Azinphosethyl); 2655-19-8 (Butacarb); 2669-32-1 (Lythidathion); 2674-91-1 (Oxydeprofos); 2699-79-8 (Sulfuryl fluoride); 2778-04-3 (Endothion); 2921-88-2 (Chlorpyrifos); 3383-96-8 (,Temephos); 3604-87-3 (.a.-Ecdysone); 3689-24-5 (Sulfotep); 3691-35-8 (Chlorophacinone); 3734-95-0 (Cyanthoate); 3761-41-9 (,Mesulfenfos); 3766-81-2 (Fenobucarb); 3811-49-2 (Dioxabenzofos); 4097-36-3 (Dinosam); 4104-14-7 (Phosacetim); 4151-50-2 (Sulfluramid); 4466-14-2 (Jasmolin I); 4824-78-6 (Bromophosethyl); 5221-49-8 (Pyrimitate); 5598-13-0 (Chlorpyrifosmethyl); 5598-52-7 (Fospirate); 5826-76-6 (Phosnichlor); 5834-96-8 (Azothoate); 5836-29-3 (Coumatetralyl); 5989-27-5; 6164-98-3 (Chlordimeform); 6392-46-7 (Allyxycarb); 6923-22-4 (Monocrotophos); 6988-21-2 (Dioxacarb); 7219-78-5 (Mazidox); 7257-41-2 (Dinoprop); 7292-16-2 (Propaphos); 7446-18-6 (Thallium sulfate); 7645-25-2 (Lead arsenate); 7696-12-0 (Tetramethrin); 7700-17-6 (Crotoxyphos); 7723-14-0 (Phosphorus); 7778-44-1 (Calcium arsenate); 7786-34-7 (Mevinphos); 7803-51-2 (Phosphine); 8001-35-2 (Camphechlor); 8022-00-2 (Demetonmethyl); 8065-36-9 (Bufencarb); 8065-48-3 (Demeton); 8065-62-1 (Demephion); 10112-91-1 (Mercurous chloride); 10124-50-2 (Potassium Arsenite); 10265-92-6 (Methamidophos); 10311-84-9 (Dialifos); 10453-86-8 (Resmethrin); 10537-47-0 (Malonoben); 10605-21-7 (Carbendazim); 11141-17-6 (Azadirachtin); 12002-03-8 (C.I. Pigment Green 21); 12789-03-6 (Chlordane); 13067-93-1 (Cyanofenphos); 13071-79-9 (Terbufos); 13171-21-6 (Phosphamidon); 13194-48-4 (Ethoprophos); 13457-18-6 (Pyrazophos); 13464-37-4 (Sodium arsenite;); 13593-03-8 (Quinalphos); 13593-08-3 (Quinalphosmethyl); 13804-51-8 (Juvenile hormone I); 14168-01-5 (Dilor); 14255-88-0 (Fenazaflor); 14816-16-1 (Phoximmethyl); 14816-18-3 (Phoxim); 14816-20-7 (Chlorphoxim); 15096-52-3 (Cryolite); 15263-53-3 (Cartap); 15589-31-8 (Terallethrin); 15662-33-6 (Ryania); 16752-77-5 (Methomyl); 16893-85-9 (Sodium hexafluorosilicate); 16984-48-8 (Fluoride); 17080-02-3 (Furethrin); 17125-80-3 (Barium hexafluorosilicate); 17598-02-6 (Precocene I); 17606-31-4 (Bensultap); 17702-57-7 (Formparanate); 18181-70-9 (Jodfenphos); 18181-80-1 (Bromopropylate); 18854-01-8 (Isoxathion); 19691-80-6 (Athidathion); 20276-83-9 (Prothidathion); 20425-39-2 (Pyresmethrin); 21548-32-3 (Fosthietan); 21609-90-5 (Leptophos); 22248-79-9 (>Tetrachlorvinphos); 22259-30-9 (Formetanate); 22431-62-5 (Bioethanomethrin); 22439-40-3 (Quinothion); 22569-71-7 (Phosphide); 22662-39-1 (Rafoxanide); 22781-23-3 (Bendiocarb); 22868-13-9 (Sodium Disulfide,<); 22963-93-5 (Juvenile hormone III); 23031-36-9 (Prallethrin); 23103-98-2 (Pirimicarb); 23135-22-0 (Oxamyl); 23505-41-1 (Pirimiphosethyl); 23526-02-5 (Thuringiensin,<); 23560-59-0 (Heptenophos); 24017-47-8 (Triazophos); 24019-05-4 (Sulcofuron); 24934-91-6 (Chlormephos); 25171-63-5 (Thiocarboxime); 25311-71-1 (Isofenphos); 25402-06-6 (Cinerin); 25601-84-7 (Methocrotophos); 26002-80-2 (Phenothrin); 26097-

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80-3 (Cambendazole); 28434-01-7 (Bioresmethrin); 28772-56-7 (Bromadiolone); 29173-31-7 (Mecarphon); 29232-93-7 (Pirimiphosmethyl); 29672-19-3 (Nitrilacarb); 29871-13-4 (Copper arsenate); 30087-47-9 (Fenethacarb); 30560-19-1 (Acephate); 30864-28-9 (Methacrifos); 31218-83-4 (Propetamphos); 31377-69-2 (Pirimetaphos); 31895-21-3 (Thiocyclam); 33089-61-1 (Amitraz); 33399-00-7 (Bromfenvinfos); 33629-47-9 (Butralin); 34218-61-6 (Juvenile hormone II); 34264-24-9 (Promacyl); 34643-46-4 (Prothiofos); 34681-10-2 (Butocarboxim); 34681-23-7 (Butoxycarboxim); 35367-31-8 (Penfluron); 35367-38-5 (Diflubenzuron); 35400-43-2 (Sulprofos); 35575-96-3 (Azamethiphos); 35764-59-1 (Cismethrin); 36145-08-1 (Chlorprazophos); 37032-15-8 (Sophamide); 38260-63-8 (Lirimfos); 38524-82-2 (Trifenofos); 38527-91-2 (Etaphos); 39196-18-4 (Thiofanox); 39247-96-6 (Primidophos); 39515-40-7 (Cyphenothrin); 39515-41-8 (Fenpropathrin); 40085-57-2 (Tazimcarb); 40596-69-8 (Methoprene); 40596-80-3 (Triprene); 40626-35-5 (Heterophos); 41096-46-2 (Hydroprene); 41198-08-7 (Profenofos); 41219-31-2 (Dithicrofos); 41483-43-6 (Bupirimate); 42509-80-8 (Isazofos); 42588-37-4 (Kinoprene); 50512-35-1; 51487-69-5 (Cloethocarb); 51596-10-2 (Milbemectin); 51630-58-1 (Fenvalerate); 51877-74-8 (Biopermethrin); 52315-07-8 (,Zetacypermethrin); 52645-53-1 (Permethrin); 52918-63-5 (Deltamethrin); 53558-25-1 (Pyrinuron); 54406-48-3 (Empenthrin); 54593-83-8 (Chlorethoxyfos); 55179-31-2 (Bitertanol); 55285-14-8 (Carbosulfan); 56073-07-5 (Difenacoum); 56073-10-0 (Brodifacoum); 56716-21-3 (Hyquincarb); 57808-65-8 (Closantel); 58481-70-2 (Dicresyl); 58842-20-9 (Nithiazine); 59669-26-0 (Thiodicarb); 60238-56-4 (Chlorthiophos); 60589-06-2 (Metoxadiazone); 60628-96-8 (Bifonazole); 61444-62-0 (Nifluridide); 61949-77-7 (Trans-Permethrin); 63333-35-7 (Bromethalin); 63771-69-7 (Zolaprofos); 63837-33-2 (Diofenolan); 63935-38-6 (Cycloprothrin); 64628-44-0 (Triflumuron); 64902-72-3 (Chlorsulfuron); 65383-73-5 (Precocene III); 65400-98-8 (Fenoxacrim); 65691-00-1 (Triarathene); 65907-30-4 (,Furathiocarb); 66215-27-8 (Cyromazine); 66230-04-4 (Esfenvalerate); 66841-25-6 (Tralomethrin); 67485-29-4 (Hydramethylnon); 68359-37-5 (Betacyfluthrin); 68523-18-2 (Fenpirithrin); 69327-76-0 (Buprofezin); 69409-94-5 (Fluvalinate); 70124-77-5 (Flucythrinate); 70288-86-7 (Ivermectin); 71422-67-8 (Chlorfluazuron); 71697-59-1 (Thetacypermethrin); 71751-41-2 (Abamectin); 72490-01-8 (Fenoxycarb); 72963-72-5 (Imiprothrin); 75867-00-4 (Fenfluthrin); 79538-32-2 (Tefluthrin); 80060-09-9 (Diafenthiuron); 80844-07-1 (Etofenprox); 81613-59-4 (Flupropadine); 82560-54-1 (Benfuracarb); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 83130-01-2 (Alanycarb); 83733-82-8 (Fosmethilan); 86479-06-3 (Hexaflumuron); 89784-60-1 (Pyraclofos); 90035-08-8 (Flocoumafen); 90338-20-8 (Butathiofos); 95465-99-9 (Cadusafos); 95737-68-1 (Pyriproxyfen); 96182-53-5 (Tebupirimfos); 96489-71-3 (Pyridaben); 101007-06-1 (Acrinathrin); 101463-69-8 (,Flufenoxuron); 102851-06-9 (Taufluvalinate); 103055-07-8 (Lufenuron); 103782-08-7 (Allosamidin); 104653-34-1 (Difethialone); 105024-66-6 (Silafluofen); 105779-78-0 (Pyrimidifen); 107713-58-6 (Flufenprox); 111872-58-3 (Halfenprox); 112143-82-5 (Triazamate.); 112226-61-6 (Halofenozide); 112410-23-8 (Tebufenozide); 112636-83-6 (Dicyclanil); 113036-88-7 (Flucycloxuron); 116714-46-6 (NOvaluron); 117704-25-3 (Doramectin); 118712-89-3 (Transfluthrin); 119168-77-3 (Tebufenpyrad); 119791-41-2 (Emamectin); 120068-37-3 (Fipronil); 121451-02-3 (Noviflumuron); 122453-73-0 (Chlorfenapyr); 123997-26-2 (Eprinomectin); 129558-76-5 (TOlfenpyrad); 143807-66-3 (Chromafenozide); 150824-47-8 (Nitenpyram); 153719-23-4 (Thiamethoxam); 158062-67-0 (Flonicamid); 161050-58-4 (Methoxyfenozide); 165252-70-0 (Dinotefuran); 168316-95-8 (Spinosad); 170015-32-4 (Flufenerim); 173584-44-6 (Indoxacarb); 179101-81-6 (Pyridalyl); 181587-01-9 (Ethiprole); 201593-84-2 (Bistrifluron); 209861-58-5 (Acetoprole); 210880-92-5 (Clothianidin); 220119-17-5 (Selamectin); 223419-20-3 (Profluthrin); 240494-70-6 (Metofluthrin); 283594-90-1 (Spiromesifen) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (fiber-supported pesticidal compn.); 51-79-6 (Urethane); 78-79-5 (Isoprene); 108-05-4 (Vinyl acetate); 7782-42-5 (Graphite); 9002-88-4 (Polyethylene); 9002-89-5 (Poly(vinyl alcohol); 9003-05-8; 9003-39-8 (Poly(vinylpyrrolidone); 9003-53-6 (,Polystyrene); 9004-32-4 (Carboxymethyl cellulose sodium salt); 9004-34-6D (Cellulose); 9004-65-3 (Hydroxypropyl methylcellulose); 9005-25-8 (Starch); 9005-32-7 (Alginic acid); 9005-49-6 (Heparin sulfate); 9007-28-7 (Chondroitin sulfate); 24980-41-4 (Polycaprolactone); 25085-53-4 (Isotactic polypropylene); 25248-42-4 (Polycaprolactone); 25322-68-3 (Poly(ethylene oxide); 25702-74-3 (Polysucrose); 25805-17-8 (Poly(ethyloxazoline); 26023-30-3 (Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)]); 26100-51-6 (Polylactic acid); 26780-50-7 (Poly(Lactide-co-glycolide); 31621-87-1 (Polydioxanone) Role: MOA (Modifier or additive use), USES (Uses) (fiber; support for pest-behavior-modifying compn.); 84-74-2 (Dibutyl phthalate); 94-96-2 (Ethohexadiol); 131-11-3 (Dimethyl phthalate); 134-62-3 (DEET); 532-34-3 (Butopyronoxyl); 3653-39-2 (,Hexamide); 19764-43-3 (Methoquin-butyl); 39589-98-5 (Dimethyl carbate); 66257-53-2 (Oxamate); 105726-67-8 (Methylneodecanamide); 119515-38-7 (Picaridin) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (insect repellent; fiber-supported pest-behavior-modifying compn.); 7783-06-4 (Hydrogen sulfide) Role: BUU (Biological use, unclassified), BIOL (Biological study), USES (Uses) (mammal repellent; fiber-supported pest-behavior-modifying compn.); 9010-98-4 Role: MOA (Modifier or additive use), USES (Uses) (neoprene rubber, fiber; support for pest-behavior-modifying compn.)
Patent Application Country: Application: US

US EPA ARCHIVE DOCUMENT

Priority Application Country: US
Priority Application Number: 2001-345349
Priority Application Date: 20011025

HOGMIRE HW and WINFIELD, T. (1997). ACARICIDE-INSECTICIDE EVALUATION 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 4-5.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER APHIS-SPIRAECOLA MALUS-DOMESTICA PANONYCHUS-ULMI PHYLLONORYCTER-BLANCARDELLA SPIREA APHID APPLE EUROPEAN RED MITE SPOTTED TENTIFORM LEAFMINER AGRICULTURAL PEST FRUIT CROP CULTIVAR-DELICIOUS HORTICULTURE PEST MANAGEMENT DAMOIL INSECTICIDE SAVEY ARTHROPOD MANAGEMENT TEST APOLLO AGRI-MEK VYDATE CARZOL WEST VIRGINIA USA Climate/ Fruit/ Nuts/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants, Medicinal/ Insects/ Lepidoptera/ Arthropods

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MALUS-DOMESTICA DYSAPHIS-PLANTAGINEA APHIS-SPIRAECOLA PANONYCHUS-ULMI PHYLLONORYCTER-BLANCARDELLA APPLE ROSY APPLE APHID SPIREA APHID EUROPEAN RED MITE SPOTTED TENTIFORM LEAFMINER FRUIT CROP CULTIVAR-ROME AGRICULTURAL PEST HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST ENDOSULFAN INSECTICIDE SAVEY IMIDAN CONFIRM LATRON EXP80667A GUTHION LARVIN PROVADO LANNATE WEST VIRGINIA USA Climate/ Fruit/ Nuts/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants, Medicinal/ Insects/ Lepidoptera/ Arthropods

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HOPPER DA and MCINTYRE JA (1997). ALTERNATIVE METHODS TO CONTROL WESTERN FLOWER THRIPS FRANKLINIELLA OCCIDENTALIS IN GREENHOUSE CROPS. *94TH ANNUAL INTERNATIONAL CONFERENCE OF THE AMERICAN SOCIETY FOR HORTICULTURAL SCIENCE, SALT LAKE CITY, UTAH, USA, JULY* 23-26, 1997. HORTSCIENCE; 32: 435.
Chem Codes: Chemical of Concern: AZD Rejection Code: ABSTRACT.

BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT MEETING POSTER FRANKLINIELLA-OCCIDENTALIS WESTERN FLOWER THRIP GREENHOUSE CROPS NEMATODE PEST HOST BIOSAFE PRODUCT BASE ENTOMOPATHOGEN BIOLOGICAL CONTROL AGENT HORTICULTURE ALTERNATIVE PEST CONTROLS FENOXYCARB INSECTICIDE PRECISION BIFENTHRIN TALSTAR ABAMECTIN AVID SPINOSYN A SPINOSYN D SPINOSAD AZADIRACHTIN NEEM EXTRACT MARGOSAN-O DIATOMACEOUS EARTH NATURALIS-O MICROBIAL INSECTICIDE MYCOTROL FIPRONIL CHEMICAL CONTROLS PHYSICAL CONTROLS BIOLOGICAL CONTROLS ECONOMIC ENTOMOLOGY PEST MANAGEMENT PHYSICAL CONTROL PUPATION DETERRENT Congresses/ Biology/ Microbiological Techniques/ Plants/Growth & Development/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Pest Control, Biological/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Animals, Laboratory/ Animals, Wild/ Parasitic Diseases/Veterinary/ Anatomy, Comparative/ Animal/ Helminths/Physiology/ Physiology, Comparative/ Pathology/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Animal/ Disease/ Insects/Parasitology/ Plants/ Nematoda/ Insects

US EPA ARCHIVE DOCUMENT

HOPPER DA and MCINTYRE JA (1997). ALTERNATIVE METHODS TO CONTROL WESTERN FLOWER THRIPS FRANKLINIELLA OCCIDENTALIS IN GREENHOUSE CROPS. *94TH ANNUAL INTERNATIONAL CONFERENCE OF THE AMERICAN SOCIETY FOR HORTICULTURAL SCIENCE, SALT LAKE CITY, UTAH, USA, JULY 23-26, 1997. HORTSCIENCE; 32* 435.
Chem Codes: Chemical of Concern: BFT Rejection Code: ABSTRACT.

BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT MEETING POSTER FRANKLINIELLA-OCCIDENTALIS WESTERN FLOWER THRIP GREENHOUSE CROPS NEMATODE PEST HOST BIOSAFE PRODUCT BASE ENTOMOPATHOGEN BIOLOGICAL CONTROL AGENT HORTICULTURE ALTERNATIVE PEST CONTROLS FENOXYCARB INSECTICIDE PRECISION BIFENTHRIN TALSTAR ABAMECTIN AVID SPINOSYN A SPINOSYN D SPINOSAD AZADIRACHTIN NEEM EXTRACT MARGOSAN-O DIATOMACEOUS EARTH NATURALIS-O MICROBIAL INSECTICIDE MYCOTROL FIPRONIL CHEMICAL CONTROLS PHYSICAL CONTROLS BIOLOGICAL CONTROLS ECONOMIC ENTOMOLOGY PEST MANAGEMENT PHYSICAL CONTROL PUPATION DETERRENT Congresses/ Biology/ Microbiological Techniques/ Plants/Growth & Development/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Pest Control, Biological/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Animals, Laboratory/ Animals, Wild/ Parasitic Diseases/Veterinary/ Anatomy, Comparative/ Animal/ Helminths/Physiology/ Physiology, Comparative/ Pathology/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Animal/ Disease/ Insects/Parasitology/ Plants/ Nematoda/ Insects

HOPPER DA and MCINTYRE JA (1997). ALTERNATIVE METHODS TO CONTROL WESTERN FLOWER THRIPS FRANKLINIELLA OCCIDENTALIS IN GREENHOUSE CROPS. *94TH* ANNUAL INTERNATIONAL CONFERENCE OF THE AMERICAN SOCIETY FOR HORTICULTURAL SCIENCE, SALT LAKE CITY, UTAH, USA, JULY 23-26, 1997. HORTSCIENCE; 32: 435.
Chem Codes: Chemical of Concern: FPN Rejection Code: ABSTRACT.

BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT MEETING POSTER FRANKLINIELLA-OCCIDENTALIS WESTERN FLOWER THRIP GREENHOUSE CROPS NEMATODE PEST HOST BIOSAFE PRODUCT BASE ENTOMOPATHOGEN BIOLOGICAL CONTROL AGENT HORTICULTURE ALTERNATIVE PEST CONTROLS FENOXYCARB INSECTICIDE PRECISION BIFENTHRIN TALSTAR ABAMECTIN AVID SPINOSYN A SPINOSYN D SPINOSAD AZADIRACHTIN NEEM EXTRACT MARGOSAN-O DIATOMACEOUS EARTH NATURALIS-O MICROBIAL INSECTICIDE MYCOTROL FIPRONIL CHEMICAL CONTROLS PHYSICAL CONTROLS BIOLOGICAL CONTROLS ECONOMIC ENTOMOLOGY PEST MANAGEMENT PHYSICAL CONTROL PUPATION DETERRENT Congresses/ Biology/ Microbiological Techniques/ Plants/Growth & Development/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Pest Control, Biological/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Animals, Laboratory/ Animals, Wild/ Parasitic Diseases/Veterinary/ Anatomy, Comparative/ Animal/ Helminths/Physiology/ Physiology, Comparative/ Pathology/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Animal/ Disease/ Insects/Parasitology/ Plants/ Nematoda/ Insects

Hovda, Lynn R and Hooser, Stephen B (2002). Toxicology of newer pesticides for use in dogs and cats. *The Veterinary Clinics Of North America. Small Animal Practice* 32: 455-467.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

The past 10 years have witnessed the development of several new insecticides that have been specifically designed to exploit physiologic differences between insects and mammals. This has resulted in products that seem to have a wide margin of safety when used in dogs and cats. Compared with the more acutely toxic organophosphorous, carbamate, and heavy metal insecticides as well as with the environmental problems of bioaccumulation associated with some of the organochlorine insecticides, these newer insecticides such as fipronil, imidacloprid, selamectin, lufenuron, and nitenpyram seem to alleviate these known problems while still providing satisfactory insecticidal activity. [Journal Article, Review, Review, Tutorial; 55 Refs; In English; United States]

HOWELL MS and REED JT (1998). EVALUATION OF TREATED SEED AND IN-FURROW INSECTICIDES FOR CONTROL OF THRIPS ON COTTON 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 236-237.*

US EPA ARCHIVE DOCUMENT

Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER FRANKLINIELLA-FUSCA FRANKLINIELLA-OCCIDENTALIS FRANKLINIELLA-TRITICI GOSSYPIUM-HIRSUTUM NEOHYDATOTHRIPS-VARIABILIS TOBACCO THRIPS WESTERN FLOWER THRIPS FLOWER THRIPS COTTON SOYBEAN THRIPS PEST IMMATURE CULTIVAR-DPL50 FIBER CROP GAUCHO 480 4 FL INSECTICIDE EXP 80698 A ECONOMIC ENTOMOLOGY LSO84 L PEST MANAGEMENT TEMIK 15 G ORTHENE 90 S ADMIRE 2 F GARLIC BARRIOR L VERONA MISSISSIPPI USA Biochemistry/ Plants/Growth & Development/ Soil/ Textiles/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Insects

HOWELL MS and REED JT (1998). FIELD CAGE EVALUATION OF INSECTICIDES FOR CONTROL OF TARNISHED PLANT BUGS 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 237-238.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM-HIRSUTUM LYGUS-LINEOLARIS COTTON TARNISHED PLANT BUG CULTIVAR-SUREGRO 501 FIBER CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT BIDRIN 8 EC INSECTICIDE PROVADO 1.6 F ORTHENE 90 S MONITOR 4 EC REGENT 2.5 EC EXP 61096A 0.83 EC Biochemistry/ Plants/Growth & Development/ Soil/ Textiles/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Insects

HOY CW and DUNLAP MJ (1997). POTATO INSECT PEST CONTROL 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 151-152.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA-DECEMLINEATA SOLANUM-TUBEROSUM EMPOASCA-FABAE MYZUS-EUPHORBIAE MACROSIPHUM-EUPHORBIAE COLORADO POTATO BEETLE POTATO POTATO LEAFHOPPER GREEN PEACH APHID POTATO APHID AGRICULTURAL PEST CULTIVAR-KENNEBEC VEGETABLE CROP HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST ADMIRE INSECTICIDE PROVADO GUTHION FIPRONIL WOOSTER OHIO USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera/ Insects

HOY CW and DUNLAP MJ (1999). Potato pest control, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 151-152.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SOLANUM TUBEROSUM LEPTINOTARSA DECEMLINEATA EMPOASCA FABAE MYZUS PERSICAE MACROSIPHUM EUPHORBIAE POTATO COLORADO POTATO BEETLE POTATO LEAFHOPPER GREEN PEACH APHID POTATO APHID CULTIVAR-KENNEBEC HOST VEGETABLE CROP CONTROL PEST HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT ADMIRE EFFICACY INSECTICIDE PROVADO AGRI-MEK CGA-293343 AGENDA SUCCESS M-TRAK BOND NEEMAZAD ALERT LEGEND GUTHION WOOSTER OHIO USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera/ Insects

HUANG, J. and CASIDA JE (1996). Characterization of (3H)ethynylbicycloorthobenzoate ((3H)EBOB) binding and the action of insecticides in the gamma-aminobutyric acid-gated chloride channel in cultured cerebellar granule neurons. *JOURNAL* OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS; 279: 1191-1196.

US EPA ARCHIVE DOCUMENT

Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

BIOSIS COPYRIGHT: BIOL ABS. (3H)Ethynylbicycloorthobenzoate ((3H)EBOB) is a recently developed specific radioligand for the noncompetitive blocker site of the gamma-aminobutyric acid (GABA) receptor, which is the target of many polychlorocycloalkane and heterocyclic insecticides. This study characterizes (3H)EBOB binding and the action of insecticides on the GABA-gated chloride channel of cerebellar granule neurons in primary culture. Specific (3H)EBOB binding increases rapidly between days 3 and 7 and then remains constant for days 7 to 12 in culture. A single, high-affinity and saturable binding site is involved with Kd = 0.51 nM and Bmax = 239 fmol/mg protein. GABA and muscimol are 6- to 12-fold more potent as inhibitors of (3H)EBOB binding to membranes from cultured cerebellar granule neurons than from cerebellar tissue, possibly because of localization of specific subunits in the granule cells. GABA-stimulated 36Cl- influx is also inhibited by seven insecticidal compounds (including EBOB, 12 Animals/ Cytology/ Histocytochemistry/ Biochemistry/ Amino Acids/ Peptides/ Proteins/ Biophysics/ Membranes/Physiology/ Neurosecretory Systems/ Nervous System Diseases/Pathology/ Herbicides/ Pest Control/ Pesticides/ Muridae

Hughes, Kenneth Andrew, Lahm, George Philip, Selby, Thomas Paul, and Stevenson, Thomas Martin (20040812). Preparation of cyano anthranilamide insecticides. 63 pp.
Chem Codes: Chemical of Concern: SPM,MAL,AZD,RTN Rejection Code: CHEM METHODS.

The title compds. [I; R1 = Me, Cl, Br, F; R2 = F, Cl, Br, haloalkyl or haloalkoxy; R3 = F, Cl, Br; R4 = H, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl, each optionally substituted with one substituent selected from the group consisting of halo, CN, SMe S(O)Me, S(O)2Me and OMe; R5 = H, Me; R6 = H, F, Cl; R7 = H, F, Cl], useful for controlling an invertebrate pest, were prepd. E.g., a multi-step synthesis of compd. I [R1 = Me; R2 = CF3; R3 = Cl; R4, R5 = H], was given. The compds. I were tested in various biol. tests (data given). This invention also pertains to a compn. for controlling an invertebrate pest comprising a biol. effective amt. of a compd. I, an N-oxide thereof or a suitable salt of the compd. I and at least one addnl. component selected from the group consisting of a surfactant, a solid diluent and a liq. diluent. [on SciFinder (R)] cyano/ anthranilamide/ prepn/ insecticide/ invertebrate/ pest Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2004:648522
Chemical Abstracts Number: CAN 141:190786
Section Code: 28-8
Section Title: Heterocyclic Compounds (More Than One Hetero Atom)
CA Section Cross-References: 5
Coden: PIXXD2
Index Terms: Bacillus thuringiensis (co-administration with a member of Bacillus thuringiensis; prepn. of cyano anthranilamide insecticides); Macrolides Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (co-administration with insecticidal macrocyclic lactone; prepn. of cyano anthranilamide insecticides); Hormones Role: BSU (Biological study, unclassified), BIOL (Biological study) (co-administration with juvenile hormone mimic; prepn. of cyano anthranilamide insecticides); GABA antagonists (co-administration with g-aminobutyric acid (GABA) antagonist; prepn. of cyano anthranilamide insecticides); Bacillus thuringiensis aizawai; Bacillus thuringiensis kurstaki; Baculoviridae (co-administration; prepn. of cyano anthranilamide insecticides for use in combination with other biol. active compds.); Microorganism (entomopathogenic, co-administration with entomopathogenic virus; prepn. of cyano anthranilamide insecticides for use in combination with other biol. active compds.); Eubacteria; Fungi (entomopathogenic,·co-administration; prepn. of cyano anthranilamide insecticides for use in combination with other biol. active compds.); Tabanidae (horse fly, deer fly; prepn. of cyano anthranilamide insecticides for controlling the invertebrate pest); Acari; Araneae; Culicidae; Formicidae; Gnat; Simuliidae; Stomoxys calcitrans; Vespa; Vespula; Wasp (prepn. of cyano anthranilamide insecticides for controlling the invertebrate pest); Insecticides (prepn. of cyano anthranilamide insecticides for use in combination with other biol. active compds.); Pyrethrins Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (pyrethroids, co-administration; prepn. of cyano anthranilamide insecticides); Toxins Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (d-endotoxins, co-administration with a Bacillus thuringiensis d-endotoxin; prepn. of cyano anthranilamide insecticides)
CAS Registry Numbers: 57-13-6D (Urea) Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (co-administration with insecticidal ureas; prepn. of cyano anthranilamide insecticides); 52-68-6 (Trichlorfon); 56-38-2 (Parathion); 60-51-5 (Dimethoate); 72-43-5 (Methoxychlor); 83-79-4 (Rotenone); 86-50-0 (Azinphosmethyl); 108-62-3 (Metaldehyde); 115-29-7 (Endosulfan); 115-32-2 (Dicofol); 116-06-3

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(Aldicarb); 121-75-5 (Malathion); 298-00-0 (Parathionmethyl); 298-02-2 (Phorate); 333-41-5 (Diazinon); 510-15-6 (Chlorobenzilate); 732-11-6 (Phosmet); 950-37-8 (Methidathion); 1563-66-2 (Carbofuran); 2227-17-0 (Dienochlor); 2310-17-0 (Phosalone); 2312-35-8 (Propargite); 2439-01-2 (Chinomethionat); 2921-88-2 (Chlorpyrifos); 5598-13-0 (Chlorpyrifosmethyl); 6923-22-4 (Monocrotophos); 10265-92-6 (Methamidophos); 11141-17-6 (Azadirachtin); 13071-79-9 (Terbufos); 13121-70-5 (Cyhexatin); 13171-21-6 (Phosphamidon); 13356-08-6 (Fenbutatin oxide); 16752-77-5 (Methomyl); 22224-92-6 (Fenamiphos); 22248-79-9 (Tetrachlorvinphos); 23103-98-2 (Pirimicarb); 23135-22-0 (Oxamyl); 25311-71-1 (Isofenphos); 30560-19-1 (Acephate); 33089-61-1 (Amitraz); 35367-38-5 (Diflubenzuron); 35400-43-2 (Sulprofos); 39515-41-8 (Fenpropathrin); 40596-69-8 (Methoprene); 41198-08-7 (Profenofos); 51630-58-1 (Fenvalerate); 52207-48-4 (Thiosultapsodium); 52315-07-8 (Cypermethrin); 52645-53-1 (Permethrin); 52918-63-5 (Deltamethrin); 59669-26-0 (Thiodicarb); 62850-32-2 (Fenothiocarb); 63837-33-2 (Diofenolan); 64628-44-0 (Triflumuron); 66215-27-8 (Cyromazine); 66230-04-4 (Esfenvalerate); 66841-25-6 (Tralomethrin); 68085-85-8 (Cyhalothrin); 68359-37-5 (Beta-Cyfluthrin); 69327-76-0 (Buprofezin); 70124-77-5 (Flucythrinate); 71422-67-8 (Chlorfluazuron); 71751-41-2 (Abamectin); 72490-01-8 (Fenoxycarb); 73989-17-0 (Avermectin); 76703-62-3; 78587-05-0 (Hexythiazox); 79538-32-2 (Tefluthrin); 80060-09-9 (Diafenthiuron); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 84466-05-7 (Amidoflumet); 86479-06-3 (Hexaflumuron); 91465-08-6; 95737-68-1 (Pyriproxyfen); 96489-71-3 (Pyridaben); 101463-69-8 (Flufenoxuron); 102851-06-9 (Taufluvalinate); 103055-07-8 (Lufenuron); 111988-49-9 (Thiacloprid); 112226-61-6 (Halofenozide); 112410-23-8 (Tebufenozide); 116714-46-6 (Novaluron); 119168-77-3 (Tebufenpyrad); 119791-41-2 (Emamectin); 120068-37-3 (Fipronil); 120928-09-8 (Fenazaquin); 121451-02-3 (Noviflumuron); 122453-73-0 (Chlorfenapyr); 123312-89-0 (Pymetrozine); 129558-76-5 (Tolfenpyrad); 134098-61-6 (Fenpyroximate); 135410-20-7 (Acetamiprid); 138261-41-3 (Imidacloprid); 143807-66-3 (Chromafenozide); 149877-41-8 (Bifenazate); 153233-91-1 (Etoxazole); 153719-23-4 (Thiamethoxam); 158062-67-0 (Flonicamid); 161050-58-4 (Methoxyfenozide); 165252-70-0 (Dinotefuran); 170015-32-4 (Flufenerim); 173584-44-6 (Indoxacarb); 179101-81-6 (Pyridalyl); 181587-01-9 (Ethiprole); 201593-84-2 (Bistrifluron); 209861-58-5 (Acetoprole); 210880-92-5 (Clothianidin); 223419-20-3 (Profluthrin); 240494-70-6 (Metofluthrin); 283594-90-1 (Spiromesifen) Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (co-administration; prepn. of cyano anthranilamide insecticides for use in combination with other biol. active compds.); 500011-03-0P; 736994-59-5P; 736994-60-8P; 736994-61-9P; 736994-62-0P; 736994-63-1P; 736994-64-2P; 736994-65-3P; 736994-66-4P; 736994-67-5P; 736994-68-6P; 736994-69-7P; 736994-70-0P; 736994-71-1P; 736994-72-2P; 736994-73-3P; 736994-74-4P; 736994-75-5P; 736994-76-6P; 736994-77-7P; 736994-78-8P; 736994-79-9P; 736994-80-2P; 736994-81-3P; 736994-82-4P; 736994-83-5P; 736994-84-6P; 736994-85-7P; 736994-86-8P; 736994-87-9P; 736994-88-0P; 736994-89-1P; 736994-90-4P; 736994-91-5P; 736994-92-6P; 736994-93-7P; 736994-94-8P; 736994-95-9P; 736994-96-0P; 736994-97-1P; 736994-98-2P; 736994-99-3P; 736995-00-9P; 736995-01-0P; 736995-02-1P; 736995-03-2P; 736995-04-3P; 736995-05-4P; 736995-06-5P; 736995-07-6P; 736995-08-7P; 736995-09-8P; 736995-10-1P; 736995-11-2P; 736995-12-3P; 736995-13-4P; 736995-14-5P; 736995-15-6P; 736995-16-7P; 736995-17-8P; 736995-18-9P; 736995-19-0P; 736995-20-3P; 736995-21-4P; 736995-22-5P; 736995-23-6P; 736995-24-7P; 736995-25-8P; 736995-26-9P; 736995-27-0P; 736995-28-1P; 736995-29-2P; 736995-30-5P; 736995-31-6P; 736995-32-7P; 736995-33-8P; 736995-34-9P; 736995-35-0P; 736995-36-1P; 736995-37-2P; 736995-38-3P; 736995-39-4P; 736995-40-7P; 736995-41-8P; 736995-42-9P; 736995-43-0P; 736995-44-1P; 736995-45-2P; 736995-46-3P; 736995-47-4P; 736995-48-5P; 736995-49-6P; 736995-50-9P; 736995-51-0P; 736995-52-1P; 736995-53-2P; 736995-54-3P; 736995-55-4P; 736995-56-5P; 736995-57-6P; 736995-58-7P; 736995-59-8P Role: AGR (Agricultural use), BSU (Biological study, unclassified), SPN (Synthetic preparation), BIOL (Biological study), PREP (Preparation), USES (Uses) (prepn. of cyano anthranilamide insecticides); 2402-77-9 (2,3-Dichloropyridine); 6388-47-2 (2-Amino-3-chlorobenzoic acid); 20154-03-4 (3-Trifluoromethylpyrazole) Role: RCT (Reactant), RACT (Reactant or reagent) (prepn. of cyano anthranilamide insecticides); 4389-45-1P; 14339-33-4P; 14521-80-3P; 101012-31-1P; 438450-38-5P; 438450-39-6P; 458543-77-6P; 458543-78-7P; 458543-79-8P; 500008-69-5P; 500011-84-7P; 500011-85-8P; 500011-86-9P; 500028-90-0P; 736995-60-1P; 736995-61-2P; 736995-62-3P; 736995-63-4P; 736995-64-5P; 736995-65-6P; 736995-66-7P Role: RCT (Reactant), SPN (Synthetic preparation), PREP (Preparation), RACT (Reactant or reagent) (prepn. of cyano anthranilamide insecticides)
PCT Designated States: Designated States W: AE.
Patent Application Country: Application: WO
Priority Application Country: US
Priority Application Number: 2003-443256
Priority Application Date: 20030128

Hurley, P M (1998). Mode of carcinogenic action of pesticides inducing thyroid follicular cell tumors in rodents. *Environmental Health Perspectives* 106: 437-445.

Chem Codes: Chemical of Concern: FPN Rejection Code: REVIEW.

Of 240 pesticides screened for carcinogenicity by the U.S. Environmental Protection Agency Office of Pesticide Programs, at least 24 (10%) produce thyroid follicular cell tumors in rodents. Thirteen of the thyroid carcinogens also induce liver tumors, mainly in mice, and 9 chemicals produce tumors at other sites. Some mutagenic data are available on all 24 pesticides producing thyroid tumors. Mutagenicity does not seem to be a major determinant in thyroid carcinogenicity, except for possibly acetochlor; evidence is less convincing for ethylene thiourea and etridiazole. Studies on thyroid-pituitary functioning, including indications of thyroid cell growth and/or changes in thyroxine, triiodothyronine, or thyroid-stimulating hormone levels, are available on 19 pesticides. No such antithyroid information is available for etridiazole, N-octyl bicycloheptene dicarboximide, terbutryn, triadimefon, and trifluralin. Of the studied chemicals, only bromacil lacks antithyroid activity under study conditions. Intrathyroidal and extrathyroidal sites of action are found: amitrole, ethylene thiourea, and mancozeb are thyroid peroxidase inhibitors; and acetochlor, clofentezine, fenbuconazole, fipronil, pendimethalin, pentachloronitrobenzene, prodiamine, pyrimethanil, and thiazopyr seem to enhance the hepatic metabolism and excretion of thyroid hormone. Thus, with 12 pesticides that mode of action judgments can be made, 11 disrupt thyroid-pituitary homeostasis only; no chemical is mutagenic only; and acetochlor may have both antithyroid and some mutagenic activity. More information is needed to identify other potential antithyroid modes of thyroid carcinogenic action. [Journal Article; In English; United States]

Hutt, John H C (2004). Off-label treatment for otoacariosis. *The Veterinary Record* 154: 574; author reply 574.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

[Case Reports, Letter; In English; England]

Hyde, A (1980). Hospital life: a breath of good sea air. *Health And Social Service Journal* 90: 78-79.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

Founded in 1792 under the patronage of the Prince Regent, the Royal Sea Bathing Hospital at Margate has a history and a location which make it unique. Although, today, the hospital faces many problems, Alison Hyde found enthusiasm and commitment among the staff. [Historical Article, Journal Article; In English; England]

Ikeda, T, Zhao, X, Nagata, K, Kono, Y, Shono, T, Yeh, J Z, and Narahashi, T (2001). Fipronil modulation of gamma-aminobutyric acid(A) receptors in rat dorsal root ganglion neurons. *The Journal Of Pharmacology And Experimental Therapeutics* 296: 914-921.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

The gamma-aminobutyric acid (GABA) receptor is an important site of action of a variety of chemicals, including barbiturates, benzodiazepines, picrotoxin, bicuculline, general anesthetics, alcohols, and certain insecticides. Fipronil is the first phenylpyrazole insecticide introduced for pest control. It is effective against some insects that have become resistant to the existing insecticides. To elucidate the mechanism of fipronil interaction with the mammalian GABA system, whole-cell patch-clamp experiments were performed using rat dorsal root ganglion neurons in primary culture. Fipronil suppressed the GABA-induced whole-cell currents reversibly in both closed and activated states. The IC(50) values and Hill coefficients for fipronil block of the GABA(A) receptor were estimated to be 1.66 +/- 0.18 microM and 1.23 +/- 0.14 for the closed receptor, respectively, and 1.61 +/- 0.14 microM and 0.96 +/- 0.06 for the activated receptor, respectively. The association rate and dissociation rate constants of fipronil effect were estimated to be 673 +/- 220 M(-1) s(-1) and 0.018 +/- 0.0035 s(-1) for the closed GABA(A) receptor, respectively, and 6600 +/- 380 M(-1) s(-1) and 0.11 +/- 0.0054 s(-1) for the activated GABA(A) receptor, respectively. Thus, both the association and dissociation rate constants of fipronil for the activated GABA(A) receptor are approximately 10 times as large as those for the closed receptor. Experiments with coapplication of fipronil and picrotoxinin indicated that they did not compete for the same binding site to block the receptor. It is concluded that although fipronil binds to the GABA(A) receptor without activation, channel opening facilitates fipronil binding to and unbinding from the receptor. [Journal Article; In English; United States]

Ikeda, Tomoko, Nagata, Keiichi, Kono, Yoshiaki, Yeh, Jay Z, and Narahashi, Toshio (2004). Fipronil modulation of GABAA receptor single-channel currents. *Pest Management Science* 60: 487-492.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

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Fipronil is the first phenylpyrazole insecticide introduced for pest control. Although fipronil is known to inhibit GABA receptors, the detailed mechanism of action remains to be seen. In order to elucidate the mechanism of fipronil interaction with the mammalian GABAA system, single-channel patch clamp experiments were performed using rat dorsal root ganglion neurons. The amplitude of main conductance state (27pS) current was not significantly altered by co-application of 10 microM fipronil and 10 microM GABA. The histograms of open time distribution were fitted to a sum of three exponential functions. After application of 10 microM fipronil, the proportion of the fastest component increased slightly and that of the slowest component decreased slightly. Thus, the mean open time was decreased from 11.4 ms to 7.8 ms by fipronil. The histograms of closed time distribution were fitted to a sum of four exponential functions. Fipronil 10 microM prolonged the slowest time constant resulting in a prolongation of the mean closed time from 29.7 ms to 52.8 ms. Thus, the frequency of channel openings was reduced. Thus, the fipronil suppression of GABA-induced whole-cell currents is caused in part by decreases in the channel open time and the frequency of channel openings. [Journal Article; In English; United States]

JARVI, K., ECHTENKAMP, J., and WITKOWSKI, J. (1997). CORN ROOTWORM INSECTICIDE SCREENING 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 215-216.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER DIABROTICA-BARBERI DIABROTICA-VIRGIFERA-VIRGIFERA ZEA-MAYS NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM FIELD CORN AGRICULTURAL PEST CULTIVAR-PIONEER 3394 CROP AGRONOMY AZTEC INSECTICIDE FORCE FORTRESS LORSBAN NAF-287 NAF-288 PEST MANAGEMENT NAF-289 COUNTER DYFONATE II THIMET REGENT ARTHROPOD MANAGEMENT TEST NEBRASKA USA Cereals/ Plants/Growth & Development/ Soil/ Oils/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

JARVI, K., ECHTENKAMP, J., and WITKOWSKI, J. (1998). CORN ROOTWORM INSECTICIDE SCREENING 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 198-199.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DIABROTICA-VIRGIFERA-VIRGIFERA DIABROTICA-BARBERI CORN WESTERN CORN ROOTWORM NORTHERN CORN ROOTWORM CROP CULTIVAR-PIONEER 3394 PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES FORCE INSECTICIDE AZTEC REGENT C-FOS COUNTER LORSBAN Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Coleoptera

Jennings, K. A., Canerdy, T. D., Keller, R. J., Atieh, B. H., Doss, R. B., and Gupta, R. C. (Human Exposure to Fipronil from Dogs Treated with Frontline. *Veterinary and Human Toxicology [Vet. Hum. Toxicol.]. Vol. 44, no. 5, pp. 301-303. Oct 2002.*
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

This investigation determined fipronil residues on gloves worn while petting dogs after Frontline application. Frontline contains 9.8% fipronil, which controls fleas and ticks on dogs for at least 30 d. Frontline (1.34 ml) was applied topically on adult household dogs and gloves worn for 5 min during petting were collected 24 hr and 1, 2, 3, 4 and 5 w post-Frontline application for fipronil residue determinations using GC/MS. The highest concentration of fipronil (589.3 plus or minus 205.7 ppm) was detected 24 h after Frontline application and was undetectable in the gloves collected at 5 w. Repeated exposure to such contamination can pose human health risks. Pesticides/ fipronil/ man/ dogs/ exposure

Jochle, W. (1975). Maternal nutrition and the sex ratio at birth : River, J. P. & M. A. Crawford: Nature, : 297, 1974. Nuffield Institute of Comparative Medicine, Zoological Society of London, Regent's Park, London NW1 4RY, England. *Theriogenology* 3: 128.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

US EPA ARCHIVE DOCUMENT

Kamijima, M and Casida, J E (2000). Regional modification of [(3)H]Ethynylbicycloorthobenzoate binding in mouse brain GABA(A) receptor by endosulfan, fipronil, and avermectin B(1a). *Toxicology And Applied Pharmacology* 163: 188-194.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

[(3)H]Ethynylbicycloorthobenzoate ([(3)H]EBOB), a high affinity radioligand for the noncompetitive blocker site of the GABA(A) receptor, is used here for quantitative autoradiography to determine regional binding in mouse brain and the effects on this binding of administering toxic doses of endosulfan, fipronil, and avermectin B(1a) (AVM). Animals were euthanized 4-8 min after 1 LD50 or 2 LD50 doses of the two channel blockers and 32 min after 1 LD50 or 4 LD50 doses of the channel activator AVM. Specific binding of [(3)H]EBOB was determined for 20-microm brain sections as the difference in labeling on incubation with 2 nM [(3)H]EBOB either alone (total binding) or with 5 microM alpha-endosulfan (nonspecific binding). The highest specific labeling was observed for layers I and IV of the cerebral cortex, the globus pallidus, and the medial septal nucleus/nucleus of the vertical limb of the diagonal band. Dose-dependent inhibition by endosulfan was highest in the nucleus accumbens and least in the cerebellum and periaqueductal gray matter. Fipronil had much less effect on binding even at severely toxic doses. AVM increased [(3)H]EBOB binding in most regions and was the only one of the three agents inhibiting in vitro [(3)H]strychnine binding to the glycine receptor. In summary, the noncompetitive blocker site was strongly inhibited with dose dependence and regional selectively by alpha-endosulfan but was generally poorly inhibited or activated by fipronil and was activated by avermectin. Copyright 2000 Academic Press. [Journal Article; In English; United States]

Kamijima, M. and Casida, J. E. *. (Regional Modification of [super(3)H]Ethynylbicycloorthobenzoate Binding in Mouse Brain GABA sub(A) Receptor by Endosulfan, Fipronil, and Avermectin B sub(1a). *Toxicology and Applied Pharmacology [Toxicol. Appl. Pharmacol.]. Vol. 163, no. 2, pp. 188-194. 1 Mar 2000.*
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

[super(3)H]Ethynylbicycloorthobenzoate ([super(3)H]EBOB), a high affinity radioligand for the noncompetitive blocker site of the GABA sub(A) receptor, is used here for quantitative autoradiography to determine regional binding in mouse brain and the effects on this binding of administering toxic doses of endosulfan, fipronil, and avermectin B sub(1a) (AVM). Animals were euthanized 4-8 min after 1 LD50 or 2 LD50 doses of the two channel blockers and 32 min after 1 LD50 or 4 LD50 doses of the channel activator AVM. Specific binding of [super(3)H]EBOB was determined for 20- mu m brain sections as the difference in labeling on incubation with 2 nM [super(3)H]EBOB either alone (total binding) or with 5 mu M alpha -endosulfan (nonspecific binding). The highest specific labeling was observed for layers I and IV of the cerebral cortex, the globus pallidus, and the medial septal nucleus/nucleus of the vertical limb of the diagonal band. Dose-dependent inhibition by endosulfan was highest in the nucleus accumbens and least in the cerebellum and periaqueductal gray matter. Fipronil had much less effect on binding even at severely toxic doses. AVM increased [super(3)H]EBOB binding in most regions and was the only one of the three agents inhibiting in vitro [super(3)H]strychnine binding to the glycine receptor. In summary, the noncompetitive blocker site was strongly inhibited with dose dependence and regional selectively by alpha -endosulfan but was generally poorly inhibited or activated by fipronil and was activated by avermectin. Copyright 2000 Academic Press. Brain/ Endosulfan/ Avermectin/ gamma -Aminobutyric acid receptors/ Autoradiography/ fipronil/ ethynylbicycloorthobenzoate/ mice

Kataoka, M and Tavassoli, M (1984). Synthetic neoglycoproteins: a class of regents for detection of sugar-recognizing substances. *The Journal Of Histochemistry And Cytochemistry: Official Journal Of The Histochemistry Society* 32: 1091-1098.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

Specific interactions between proteins and sugars have recently been emphasized in many biological systems. To detect sugar-recognizing substances, known as lectin-like substances or endogenous lectins, we describe a method in which various sugars were covalently bound to a carrier protein such as albumin. This neoglycoprotein was stable at -20 degrees C for a period of 6 months. It was conjugated to various cytochemical markers (125I, fluorescein isothiocyanate, colloidal gold, or latex minibead). Detection of the marker then indicates the presence of the sugar-binding protein. Control experiments in the presence of unlabeled neoglycoprotein or specific sugar indicated the specificity of the reaction. This method was used to analyze the kinetics of binding for a mannose-recognition system in the mouse peritoneal macrophages. The data obtained were in agreement with those previously reported. The method can be used for detection of other sugar-recognizing systems as virtually every simple sugar can be bound to a carrier protein to produce these neoglycoproteins. Some of the consideration required for successful production of these

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reagents are discussed. These synthetic neoglycoproteins are useful in studying the distribution and kinetics of sugar-recognizing systems and may help to further our understanding of this rapidly developing area. [Journal Article; In English; United States]

KERNS DL and TELLEZ, T. (1997). EFFICACY OF EXPERIMENTAL INSECTICIDES TO CITRUS THRIPS ON LEMONS 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 62-63.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER CITRUS-LIMON SCIRTOTHRIPS-CITRI LEMON CITRUS THRIPS HOST CULTIVAR-LISBON PEST ALERT EFFICACY INSECTICIDE HORTICULTURE PEST MANAGEMENT SUCCESS NEXTER CARZOL EXP 80667A EXPERIMENTAL INSECTICIDE TRIALS Fruit/ Nuts/ Tropical Climate/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Fruit/ Nuts/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

KERNS DL and TELLEZ, T. (1997). EFFICACY OF FIPRONIL FOR THRIPS CONTROL ON ONIONS 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 144-145.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ALLIUM-CEPA THRIPS-TABACI FRANKLINELLA-OCCIDENTALIS ONION ONION THRIPS WESTERN FLOWER THRIPS VEGETABLE CROP AGRICULTURAL PEST HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST FIPRONIL EFFICACY INSECTICIDE LANNATE AMMO SOMERTON ARIZONA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Invertebrates/ Insects

KERNS DL and TELLEZ, T. (1997). EFFICACY OF INSECTICIDES TO LYGUS IN COTTON 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 257-258.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM-HIRSUTUM LYGUS-HESPERUS COTTON LYGAEID BUG CULTIVAR-DPL 5415 FIBER CROP AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST FIPRONIL EFFICACY INSECTICIDE ORTHENE DIBROM VYDATE SUPRACIDE YUMA ARIZONA USA Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

Keymer, I F, Ridealgh, D, and Fretwell, G (1968). Salmonella regent: a new species associated with colitis in a Pacific hawksbill turtle (Eretmochelys imbricata bissa). *The Journal Of Pathology And Bacteriology* 96: 215-217.
Chem Codes: Chemical of Concern: FPN Rejection Code: BACTERIA.

[Journal Article; In English; England]

Kirkwood, J K, Gaskin, C D, and Markham, J (1987). Perinatal mortality and season of birth in captive wild ungulates. *The Veterinary Record* 120: 386-390.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

The magnitude of perinatal mortality in 50 species of captive wild ungulates born at the Zoological Society of London's collections at Regent's Park and Whipsnade between 1975 and 1985 is reviewed. Thirty-five per cent of 2471 ungulates born during this 11 year period died before six months old and most deaths occurred in the first week after birth. Similar findings have been reported at other zoos and in the wild. The seasonal distribution of births is described in 43 species. Significantly higher perinatal mortality was found in species which breed throughout the year (notably axis deer and sitatunga) than in seasonal breeders, and

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differences associated with system of management were apparent in some species (eg, mouflon and scimitar-horned oryx) kept at Regent's Park and Whipsnade. Considerable advances have been made in the management of captive wild ungulates in recent years but it is likely that perinatal mortality rates could be further reduced by improved management and veterinary care of the dams and neonates. [Journal Article; In English; England]

KOLARIK, P., BYRNE, A., BISHOP, B., PETT, W., GRAFIUS, E., NELSON, N., OSBORN, M., SCHILLING, E., JULIEN, L., AYOTTE, A., and SHUNN, S. (1999). Colorado potato beetle control, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 152-153.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SOLANUM TUBEROSUM LEPTINOTARSA DECEMLINEATA POTATO COLORADO POTATO BEETLE CULTIVAR-SNOWDEN VEGETABLE CROP HOST PEST CONTROL HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT ADMIRE EFFICACY INSECTICIDE AGENDA AGRI-MEK ALERT CAPSYN M-PEDE CGA-293343 GAUCHO MAXIM ADAGE ENTRICAN MICHIGAN USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

KOLARIK, P., GRAFIUS, E., BISHOP, B., NELSON, N., HOFFMAN, H., AYOTTE, A., MILLER, K., and PATRICK, J. (1998). COLORADO POTATO BEETLE CONTROL 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 124-126.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA-DECEMLINEATA SOLANUM-TUBEROSUM COLORADO POTATO BEETLE POTATO PEST CROP CULTIVAR-SNOWDEN HOST PEST MANAGEMENT PESTICIDES APPLICATION RATE AGRI-MEK INSECTICIDE ADMIRE CONFIRM TEMIK AGENDA ALERT ACROBAT TRIGARD CGA-293343 CGA-173506 SPINOSAD TEMIK 15 G CGA-293343 4 FS CROP DAMAGE Biochemistry/ Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Coleoptera

KRAMER-WILSON, K. and CRANSHAW, W. (1998). CONTROL OF ONION THRIPS WITH PLANTING TIME SOIL DRENCH TREATMENTS 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 110-111.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ALLIUM-CEPA THRIPS-TABACI ONION ONION THRIPS HOST CULTIVAR-TANGO CROP PEST PEST MANAGEMENT PESTICIDES APPLICATION RATE ORTHENE 75 S INSECTICIDE ADMIRE AGENDA 1.67 SC COLORADO USA Biochemistry/ Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Insects

KRAMER-WILSON, K. and CRANSHAW, W. (1998). ONION THRIPS CONTROL FOLIAR TRIAL 2 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 111-112.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ALLIUM-CEPA THRIPS-TABACI BEAUVERIA-BASSIANA ONION ONION THRIPS CROP HOST CULTIVAR-VEGA PEST PATHOGEN BIOLOGICAL CONTROL AGENT PEST MANAGEMENT PESTICIDES APPLICATION RATE BIOLOGICAL CONTROL SUCCESS INSECTICIDE KINETIC TRIOLOGY AGENDA 1.67 SC PEST CONTROL METHOD COLORADO USA Biochemistry/ Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/

US EPA ARCHIVE DOCUMENT

Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Mitosporic Fungi/ Plants/ Insects

Lahm, George Philip, McCann, Stephen Frederick, Patel, Kanu Maganbhai, Selby, Thomas Paul, and Stevenson, Thomas Martin (20030227). **<04 Article Title>.** <25 Page(s)>.

Chemical of Concern: FVL, SPM,MAL; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

Lahm, George Philip, McCann, Stephen Frederick, Patel, Kanu Maganbhai, Selby, Thomas Paul, and Stevenson, Thomas Martin (20030227). Method for controlling particular insect pests by applying anthranilamide compounds. 150 pp.
Chem Codes: Chemical of Concern: AZD,SPM Rejection Code: CHEM METHODS.

Anthranilamide compds. I (Markush included), N-oxides or an agriculturally suitable salts thereof are prepd. as insecticides for controlling lepidopteran, homopteran, hemipteran, thysanopteran and coleopteran insect pests. Insecticidal compn. contg. anthranilamide compds. I may further comprise addnl. biol. active compds. selected from arthropodicides of the group consisting of pyrethroids, carbamates, neonicotinoids, neuronal sodium channel blockers, insecticidal macrocyclic lactones, g-aminobutyric acid (GABA) antagonists, insecticidal ureas, and juvenile hormone mimics. [on SciFinder (R)] insecticide/ anthranilamide/ prepn Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2003:154154
Chemical Abstracts Number: CAN 138:200331
Section Code: 5-4
Section Title: Agrochemical Bioregulators
CA Section Cross-References: 28
Coden: PIXXD2
Index Terms: Insecticides (anthranilamide compds. as); Acrosternum hilare; Acyrthosiphon pisum; Adelges; Agriotes; Alabama argillacea; Anasa tristis; Aphis craccivora; Aphis fabae; Aphis gossypii; Aphis pomi; Aphis spiraecola; Archips; Archips argyrospilus; Archips rosana; Athous; Aulacorthum solani; Bemisia argentifolia; Bemisia tabaci; Blissus leucopterus leucopterus; Chaetosiphon fragaefolii; Chilo suppressalis; Cnaphalocrocis medinalis; Coleoptera; Corythucha gossypii; Crambus caliginosellus; Crambus teterrellus; Cyrtopeltis modesta; Dialeurodes citri; Diuraphis noxia; Dysaphis plantaginea; Dysdercus suturellus; Earias insulana; Earias vitella; Empoasca fabae; Epilachna varivestis; Eriosoma lanigerum; Erythroneura; Euschistus servus; Euschistus variolarius; Frankliniella occidentalis; Grapholitha pomonella; Graptostethus; Helicoverpa armigera; Helicoverpa zea; Heliothis virescens; Hemiptera; Herpetogramma licarsisalis; Homoptera; Hyalopterus pruni; Icerya purchasi; Laodelphax striatellus; Lepidoptera; Leptinotarsa decemlineata; Leptoglossus corculus; Limonius; Lipaphis erysimi; Lobesia botrana; Lygus lineolaris; Macrosiphum dirhodum; Macrosiphum euphorbiae; Macrosteles quadrilineatus; Magicicada septendecim; Myzus persicae; Nasonovia ribisnigri; Nephotettix cincticeps; Nephotettix nigropictus; Nezara viridula; Nilaparvata lugens; Oebalus pugnax; Oncopeltus fasciatus; Pectinophora gossypiella; Pemphigus; Peregrinus maidis; Phyllocnistis citrella; Phylloxera devastatrix; Pieris brassicae; Pieris rapae; Planococcus citri; Plutella xylostella; Prodenia litura; Pseudatomoscelis seriatus; Pseudococcus; Psylla pyricola; Quadraspidiotus perniciosus; Rhopalosiphum fitchii; Rhopalosiphum maidis; Schizaphis graminum; Scirtothrips citri; Sericothrips variabilis; Sitobion avenae; Sogatella furcifera; Sogatodes oryzicola; Spodoptera exigua; Spodoptera frugiperda; Therioaphis maculata; Thrips tabaci; Thysanoptera; Toxoptera aurantii; Toxoptera citricida; Trialeurodes vaporariorum; Trichoplusia ni; Trioza diospyri; Tuta absoluta; Typhlocyba pomaria (anthranilamide compds. as insecticides against); Insecticides (carbamate; in insecticidal compns. contg. anthranilamide compds.); Eubacteria; Fungi; Virus (entomopathogenic; in insecticidal compns. contg. anthranilamide compds.); Bacillus thuringiensis aizawai; Bacillus thuringiensis kurstaki; Baculoviridae; GABA antagonists (in insecticidal compns. contg. anthranilamide compds.); Macrolides Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (in insecticidal compns. contg. anthranilamide compds.); Juvenile hormones Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (mimics; in insecticidal compns. contg. anthranilamide compds.); Insecticides (neonicotinoid; in insecticidal compns. contg. anthranilamide compds.); Pyrethrins Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (pyrethroids; in insecticidal compns. contg. anthranilamide compds.); Ion channel blockers (sodium; in insecticidal compns. contg. anthranilamide compds.); Toxins Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (d-endotoxins; in insecticidal compns. contg. anthranilamide compds.)
CAS Registry Numbers: 362637-52-3; 362637-54-5; 362637-55-6; 362637-56-7; 362637-57-8; 362637-58-

US EPA ARCHIVE DOCUMENT

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2312-35-8 (Propargite); 2439-01-2 (Chinomethionat); 2921-88-2 (Chlorpyrifos); 5598-13-0 (Chlorpyrifos-methyl); 6923-22-4 (Monocrotophos); 10265-92-6 (Methamidophos); 11141-17-6 (Azadirachtin); 13071-79-9 (Terbufos); 13121-70-5 (Cyhexatin); 13171-21-6 (Phosphamidon); 13356-08-6 (Fenbutatin oxide); 16752-77-5 (Methomyl); 22224-92-6 (Fenamiphos); 22248-79-9 (Tetrachlorvinphos); 23103-98-2 (Pirimicarb); 23135-22-0 (Oxamyl); 25311-71-1 (Isofenphos); 30560-19-1 (Acephate); 33089-61-1 (Amitraz); 35367-38-5 (Diflubenzuron); 35400-43-2 (Sulprofos); 39515-41-8 (Fenpropathrin); 40596-69-8 (Methoprene); 41198-08-7 (Profenofos); 51630-58-1 (Fenvalerate); 52207-48-4 (Thiosultap-sodium); 52315-07-8 (Cypermethrin); 52645-53-1 (Permethrin); 52918-63-5 (Deltamethrin); 58842-20-9 (Nithiazine); 59669-26-0 (Thiodicarb); 62850-32-2 (Fenothiocarb); 63837-33-2 (Diofenolan); 64628-44-0 (Triflumuron); 66215-27-8 (Cyromazine); 66230-

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04-4 (Esfenvalerate); 66841-25-6 (Tralomethrin); 68085-85-8 (Cyhalothrin); 68359-37-5 (Cyfluthrin); 69327-76-0 (Buprofezin); 70124-77-5 (Flucythrinate); 71422-67-8 (Chlorfluazuron); 71751-41-2 (Abamectin); 72490-01-8 (Fenoxycarb); 73989-17-0 (Avermectin); 78587-05-0 (Hexythiazox); 79538-32-2 (Tefluthrin); 80060-09-9 (Diafenthiuron); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 84466-05-7 (Amidoflumet); 86479-06-3 (Hexaflumuron); 91465-08-6; 95737-68-1 (Pyriproxyfen); 96489-71-3 (Pyridaben); 101463-69-8 (Flufenoxuron); 102851-06-9 (Tau-fluvalinate); 103055-07-8 (Lufenuron); 111988-49-9 (Thiacloprid); 112226-61-6 (Halofenozide); 112410-23-8 (Tebufenozide); 116714-46-6 (Novaluron); 119168-77-3 (Tebufenpyrad); 119791-41-2 (Emamectin); 120068-37-3 (Fipronil); 120928-09-8 (Fenazaquin); 121451-02-3 (Noviflumuron); 122453-73-0 (Chlorfenapyr); 123312-89-0 (Pymetrozine); 134098-61-6 (Fenpyroximate); 135410-20-7 (Acetamiprid); 138261-41-3 (Imidacloprid); 143807-66-3 (Chromafenozide); 149877-41-8 (Bifenazate); 153233-91-1 (Etoxazole); 153719-23-4 (Thiamethoxam); 158062-67-0 (Flonicamid); 161050-58-4 (Methoxyfenozide); 168316-95-8 (Spinosad); 170015-32-4 (Flufenerim); 173584-44-6 (Indoxacarb); 179101-81-6 (Pyridalyl); 181587-01-9 (Ethiprole); 210880-92-5 (Clothianidin); 283594-90-1 (Spiromesifen) Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (in insecticidal compns. contg. anthranilamide compds.); 362637-53-4P; 362637-70-5P; 362638-30-0P; 362639-62-1P; 438450-41-0P (N-[4-Chloro-2-methyl-6-[(methylamino)carbonyl]phenyl]-1-(3-chloro-2-pyridinyl)-3-(trifluoromethyl)-1H-pyrazole-5-carboxamide); 500008-00-4P; 500008-44-6P; 500008-45-7P; 500008-60-6P; 500008-62-8P; 500010-10-6P Role: AGR (Agricultural use), BSU (Biological study, unclassified), SPN (Synthetic preparation), BIOL (Biological study), PREP (Preparation), USES (Uses) (prepn. of anthranilamide compds. as insecticides); 129585-50-8P Role: BYP (Byproduct), SPN (Synthetic preparation), PREP (Preparation) (prepn. of anthranilamide compds. as insecticides); 74-89-5 (Methylamine); 75-03-6 (Iodoethane); 75-31-0 (Isopropylamine); 76-05-1 (Trifluoroacetic acid); 79-37-8 (Oxalyl chloride); 98-59-9 (p-Toluenesulfonyl chloride); 100-63-0 (Phenylhydrazine); 109-72-8 (n-Butyllithium); 112-02-7 (Cetyltrimethylammonium chloride); 121-44-8 (Triethylamine); 124-63-0 (Methanesulfonyl chloride); 128-09-6 (N-Chlorosuccinimide); 367-57-7; 421-50-1 (1,1,1-Trifluoroacetone); 503-38-8 (Trichloromethyl chloroformate); 541-41-3 (Ethyl chloroformate); 584-08-7 (Potassium carbonate); 630-25-1 (1,2-Dibromotetrachloroethane); 1310-58-3 (Potassium hydroxide); 2402-77-9 (2,3-Dichloropyridine); 4111-54-0 (Lithium diisopropylamide); 4389-45-1 (2-Amino-3-methylbenzoic acid); 4755-77-5 (Ethyl chlorooxoacetate); 5437-38-7 (3-Methyl-2-nitrobenzoic acid); 6226-25-1 (2,2,2-Trifluoroethyl trifluoromethanesulfonate); 7087-68-5 (N,N-Diisopropylethylamine); 7664-93-9 (Sulfuric acid); 7789-69-7 (Phosphorus pentabromide); 10025-87-3 (Phosphorus oxychloride); 10035-10-6 (Hydrogen bromide); 14521-80-3 (3-Bromopyrazole); 20154-03-4 (3-Trifluoromethylpyrazole); 22206-57-1 (Tetrabutylammonium fluoride hydrate); 22841-92-5; 65753-47-1 (2-Chloro-3-trifluoromethylpyridine); 66176-17-8 (3-Methylisatoic anhydride); 133228-21-4; 458543-79-8; 499790-43-1; 500011-81-4; 500011-88-1; 500011-94-9 Role: RCT (Reactant), RACT (Reactant or reagent) (prepn. of anthranilamide compds. as insecticides); 14339-33-4P (3-Chloropyrazole); 20776-67-4P (2-Amino-3-methyl-5-chlorobenzoic acid); 68289-10-1P (2-Amino-3-methyl-N-(1-methylethyl)benzamide); 120374-68-7P; 128694-66-6P; 362640-53-7P (3-Methyl-N-(1-methylethyl)-2-nitrobenzamide); 362640-58-2P; 362640-59-3P; 362640-60-6P; 362640-61-7P; 362640-62-8P; 438450-38-5P (3-Chloro-2-[3-(trifluoromethyl)-1H-pyrazol-1-yl]pyridine); 438450-39-6P; 438450-40-9P (6-Chloro-2-[1-(3-chloro-2-pyridinyl)-3-(trifluoromethyl)-1H-pyrazol-5-yl]-8-methyl-4H-3,1-benzoxazin-4-one); 458543-77-6P; 458543-78-7P; 499790-45-3P; 499790-46-4P; 500011-82-5P; 500011-83-6P; 500011-84-7P; 500011-85-8P; 500011-86-9P; 500011-87-0P; 500011-89-2P; 500011-90-5P; 500011-91-6P; 500011-92-7P; 500011-95-0P; 500011-96-1P; 500011-97-2P; 500011-98-3P Role: RCT (Reactant), SPN (Synthetic preparation), PREP (Preparation), RACT (Reactant or reagent) (prepn. of anthranilamide compds. as insecticides); 500007-49-8 Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (anthranilamide compds. as insecticides)

Patent Application Country: Application: WO
Priority Application Country: US
Priority Application Number: 2001-311919
Priority Application Date: 20010813

Lahm, George Philip, McCann, Stephen Frederick, Patel, Kanu Maganbhai, Selby, Thomas Paul, and Stevenson, Thomas Martin (20030227). Method for controlling particular insect pests by applying anthranilamide compounds. 150 pp.
Chem Codes: Chemical of Concern: RTN, SPM Rejection Code: CHEM METHODS.

Anthranilamide compds. I (Markush included), N-oxides or an agriculturally suitable salts thereof are

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prepd. as insecticides for controlling lepidopteran, homopteran, hemipteran, thysanopteran and coleopteran insect pests. Insecticidal compn. contg. anthranilamide compds. I may further comprise addnl. biol. active compds. selected from arthropodicides of the group consisting of pyrethroids, carbamates, neonicotinoids, neuronal sodium channel blockers, insecticidal macrocyclic lactones, g-aminobutyric acid (GABA) antagonists, insecticidal ureas, and juvenile hormone mimics. [on SciFinder (R)] insecticide/ anthranilamide/ prepn Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2003:154154
Chemical Abstracts Number: CAN 138:200331
Section Code: 5-4
Section Title: Agrochemical Bioregulators
CA Section Cross-References: 28
Coden: PIXXD2
Index Terms: Insecticides (anthranilamide compds. as); Acrosternum hilare; Acyrthosiphon pisum; Adelges; Agriotes; Alabama argillacea; Anasa tristis; Aphis craccivora; Aphis fabae; Aphis gossypii; Aphis pomi; Aphis spiraecola; Archips; Archips argyrospilus; Archips rosana; Athous; Aulacorthum solani; Bemisia argentifolia; Bemisia tabaci; Blissus leucopterus leucopterus; Chaetosiphon fragaefolii; Chilo suppressalis; Cnaphalocrocis medinalis; Coleoptera; Corythucha gossypii; Crambus caliginosellus; Crambus teterrellus; Cyrtopeltis modesta; Dialeurodes citri; Diuraphis noxia; Dysaphis plantaginea; Dysdercus suturellus; Earias insulana; Earias vitella; Empoasca fabae; Epilachna varivestis; Eriosoma lanigerum; Erythroneura; Euschistus servus; Euschistus variolarius; Frankliniella occidentalis; Grapholitha pomonella; Graptostethus; Helicoverpa armigera; Helicoverpa zea; Heliothis virescens; Hemiptera; Herpetogramma licarsisalis; Homoptera; Hyalopterus pruni; Icerya purchasi; Laodelphax striatellus; Lepidoptera; Leptinotarsa decemlineata; Leptoglossus corculus; Limonius; Lipaphis erysimi; Lobesia botrana; Lygus lineolaris; Macrosiphum dirhodum; Macrosiphum euphorbiae; Macrosteles quadrilineatus; Magicicada septendecim; Myzus persicae; Nasonovia ribisnigri; Nephotettix cincticeps; Nephotettix nigropictus; Nezara viridula; Nilaparvata lugens; Oebalus pugnax; Oncopeltus fasciatus; Pectinophora gossypiella; Pemphigus; Peregrinus maidis; Phyllocnistis citrella; Phylloxera devastatrix; Pieris brassicae; Pieris rapae; Planococcus citri; Plutella xylostella; Prodenia litura; Pseudatomoscelis seriatus; Pseudococcus; Psylla pyricola; Quadraspidiotus perniciosus; Rhopalosiphum fitchii; Rhopalosiphum maidis; Schizaphis graminum; Scirtothrips citri; Sericothrips variabilis; Sitobion avenae; Sogatella furcifera; Sogatodes oryzicola; Spodoptera exigua; Spodoptera frugiperda; Therioaphis maculata; Thrips tabaci; Thysanoptera; Toxoptera aurantii; Toxoptera citricida; Trialeurodes vaporariorum; Trichoplusia ni; Trioza diospyri; Tuta absoluta; Typhlocyba pomaria (anthranilamide compds. as insecticides against); Insecticides (carbamate; in insecticidal compns. contg. anthranilamide compds.); Eubacteria; Fungi; Virus (entomopathogenic; in insecticidal compns. contg. anthranilamide compds.); Bacillus thuringiensis aizawai; Bacillus thuringiensis kurstaki; Baculoviridae; GABA antagonists (in insecticidal compns. contg. anthranilamide compds.); Macrolides Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (in insecticidal compns. contg. anthranilamide compds.); Juvenile hormones Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (mimics; in insecticidal compns. contg. anthranilamide compds.); Insecticides (neonicotinoid; in insecticidal compns. contg. anthranilamide compds.); Pyrethrins Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (pyrethroids; in insecticidal compns. contg. anthranilamide compds.); Ion channel blockers (sodium; in insecticidal compns. contg. anthranilamide compds.); Toxins Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (d-endotoxins; in insecticidal compns. contg. anthranilamide compds.)
CAS Registry Numbers: 362637-52-3; 362637-54-5; 362637-55-6; 362637-56-7; 362637-57-8; 362637-58-9; 362637-59-0; 362637-60-3; 362637-61-4; 362637-62-5; 362637-63-6; 362637-64-7; 362637-65-8; 362637-66-9; 362637-67-0; 362637-68-1; 362637-69-2; 362637-71-6; 362637-72-7; 362637-73-8; 362637-74-9; 362637-75-0; 362637-76-1; 362637-77-2; 362637-78-3; 362637-79-4; 362637-80-7; 362637-81-8; 362637-82-9; 362637-83-0; 362637-84-1; 362637-85-2; 362637-86-3; 362637-87-4; 362637-88-5; 362637-89-6; 362637-90-9; 362637-91-0; 362637-92-1; 362637-93-2; 362637-94-3; 362637-95-4; 362637-96-5; 362637-97-6; 362637-98-7; 362637-99-8; 362638-00-4; 362638-03-7; 362638-04-8; 362638-05-9; 362638-06-0; 362638-07-1; 362638-08-2; 362638-09-3; 362638-10-6; 362638-11-7; 362638-12-8; 362638-13-9; 362638-14-0; 362638-15-1; 362638-16-2; 362638-17-3; 362638-18-4; 362638-19-5; 362638-20-8; 362638-21-9; 362638-22-0; 362638-23-1; 362638-24-2; 362638-25-3; 362638-26-4; 362638-27-5; 362638-28-6; 362638-29-7; 362638-31-1; 362638-32-2; 362638-33-3; 362638-34-4; 362638-35-5; 362638-36-6; 362638-37-7; 362638-38-8; 362638-39-9; 362638-40-2; 362638-41-3; 362638-42-4; 362638-43-5; 362638-44-6; 362638-45-7; 362638-46-8; 362638-47-9; 362638-48-0; 362638-49-1; 362638-50-4; 362638-51-5; 362638-52-6; 362638-53-7; 362638-54-8; 362638-55-9; 362638-56-0; 362638-57-1; 362638-58-2; 362638-59-3;

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500011-74-5; 500011-75-6; 500011-76-7; 500011-77-8; 500011-78-9; 500011-79-0; 500011-80-3 Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (anthranilamide compds. as insecticides); 52-68-6 (Trichlorfon); 56-38-2 (Parathion); 57-13-6D (Urea); 60-51-5 (Dimethoate); 72-43-5 (Methoxychlor); 83-79-4 (Rotenone); 86-50-0 (Azinphos-methyl); 108-62-3 (Metaldehyde); 115-29-7 (Endosulfan); 115-32-2 (Dicofol); 116-06-3 (Aldicarb); 121-75-5 (Malathion); 298-00-0 (Parathion-methyl); 298-02-2 (Phorate); 333-41-5 (Diazinon); 510-15-6 (Chlorobenzilate); 732-11-6 (Phosmet); 944-22-9 (Fonophos); 950-37-8 (Methidathion); 1563-66-2 (Carbofuran); 2227-17-0 (Dienochlor); 2310-17-0 (Phosalone); 2312-35-8 (Propargite); 2439-01-2 (Chinomethionat); 2921-88-2 (Chlorpyrifos); 5598-13-0 (Chlorpyrifos-methyl); 6923-22-4 (Monocrotophos); 10265-92-6 (Methamidophos); 11141-17-6 (Azadirachtin); 13071-79-9 (Terbufos); 13121-70-5 (Cyhexatin); 13171-21-6 (Phosphamidon); 13356-08-6 (Fenbutatin oxide); 16752-77-5 (Methomyl); 22224-92-6 (Fenamiphos); 22248-79-9 (Tetrachlorvinphos); 23103-98-2 (Pirimicarb); 23135-22-0 (Oxamyl); 25311-71-1 (Isofenphos); 30560-19-1 (Acephate); 33089-61-1 (Amitraz); 35367-38-5 (Diflubenzuron); 35400-43-2 (Sulprofos); 39515-41-8 (Fenpropathrin); 40596-69-8 (Methoprene); 41198-08-7 (Profenofos); 51630-58-1 (Fenvalerate); 52207-48-4 (Thiosultap-sodium); 52315-07-8 (Cypermethrin); 52645-53-1 (Permethrin); 52918-63-5 (Deltamethrin); 58842-20-9 (Nithiazine); 59669-26-0 (Thiodicarb); 62850-32-2 (Fenothiocarb); 63837-33-2 (Diofenolan); 64628-44-0 (Triflumuron); 66215-27-8 (Cyromazine); 66230-04-4 (Esfenvalerate); 66841-25-6 (Tralomethrin); 68085-85-8 (Cyhalothrin); 68359-37-5 (Cyfluthrin); 69327-76-0 (Buprofezin); 70124-77-5 (Flucythrinate); 71422-67-8 (Chlorfluazuron); 71751-41-2 (Abamectin); 72490-01-8 (Fenoxycarb); 73989-17-0 (Avermectin); 78587-05-0 (Hexythiazox); 79538-32-2 (Tefluthrin); 80060-09-9 (Diafenthiuron); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 84466-05-7 (Amidoflumet); 86479-06-3 (Hexaflumuron); 91465-08-6; 95737-68-1 (Pyriproxyfen); 96489-71-3 (Pyridaben); 101463-69-8 (Flufenoxuron); 102851-06-9 (Tau-fluvalinate); 103055-07-8 (Lufenuron); 111988-49-9 (Thiacloprid); 112226-61-6 (Halofenozide); 112410-23-8 (Tebufenozide); 116714-46-6 (Novaluron); 119168-77-3 (Tebufenpyrad); 119791-41-2 (Emamectin); 120068-37-3 (Fipronil); 120928-09-8 (Fenazaquin); 121451-02-3 (Noviflumuron); 122453-73-0 (Chlorfenapyr); 123312-89-0 (Pymetrozine); 134098-61-6 (Fenpyroximate); 135410-20-7 (Acetamiprid); 138261-41-3 (Imidacloprid); 143807-66-3 (Chromafenozide); 149877-41-8 (Bifenazate); 153233-91-1 (Etoxazole); 153719-23-4 (Thiamethoxam); 158062-67-0 (Flonicamid); 161050-58-4 (Methoxyfenozide); 168316-95-8 (Spinosad); 170015-32-4 (Flufenerim); 173584-44-6 (Indoxacarb); 179101-81-6 (Pyridalyl); 181587-01-9 (Ethiprole);

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210880-92-5 (Clothianidin); 283594-90-1 (Spiromesifen) Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (in insecticidal compns. contg. anthranilamide compds.); 362637-53-4P; 362637-70-5P; 362638-30-0P; 362639-62-1P; 438450-41-0P (N-[4-Chloro-2-methyl-6-[(methylamino)carbonyl]phenyl]-1-(3-chloro-2-pyridinyl)-3-(trifluoromethyl)-1H-pyrazole-5-carboxamide); 500008-00-4P; 500008-44-6P; 500008-45-7P; 500008-60-6P; 500008-62-8P; 500010-10-6P Role: AGR (Agricultural use), BSU (Biological study, unclassified), SPN (Synthetic preparation), BIOL (Biological study), PREP (Preparation), USES (Uses) (prepn. of anthranilamide compds. as insecticides); 129585-50-8P Role: BYP (Byproduct), SPN (Synthetic preparation), PREP (Preparation) (prepn. of anthranilamide compds. as insecticides); 74-89-5 (Methylamine); 75-03-6 (Iodoethane); 75-31-0 (Isopropylamine); 76-05-1 (Trifluoroacetic acid); 79-37-8 (Oxalyl chloride); 98-59-9 (p-Toluenesulfonyl chloride); 100-63-0 (Phenylhydrazine); 109-72-8 (n-Butyllithium); 112-02-7 (Cetyltrimethylammonium chloride); 121-44-8 (Triethylamine); 124-63-0 (Methanesulfonyl chloride); 128-09-6 (N-Chlorosuccinimide); 367-57-7; 421-50-1 (1,1,1-Trifluoroacetone); 503-38-8 (Trichloromethyl chloroformate); 541-41-3 (Ethyl chloroformate); 584-08-7 (Potassium carbonate); 630-25-1 (1,2-Dibromotetrachloroethane); 1310-58-3 (Potassium hydroxide); 2402-77-9 (2,3-Dichloropyridine); 4111-54-0 (Lithium diisopropylamide); 4389-45-1 (2-Amino-3-methylbenzoic acid); 4755-77-5 (Ethyl chlorooxoacetate); 5437-38-7 (3-Methyl-2-nitrobenzoic acid); 6226-25-1 (2,2,2-Trifluoroethyl trifluoromethanesulfonate); 7087-68-5 (N,N-Diisopropylethylamine); 7664-93-9 (Sulfuric acid); 7789-69-7 (Phosphorus pentabromide); 10025-87-3 (Phosphorus oxychloride); 10035-10-6 (Hydrogen bromide); 14521-80-3 (3-Bromopyrazole); 20154-03-4 (3-Trifluoromethylpyrazole); 22206-57-1 (Tetrabutylammonium fluoride hydrate); 22841-92-5; 65753-47-1 (2-Chloro-3-trifluoromethylpyridine); 66176-17-8 (3-Methylisatoic anhydride); 133228-21-4; 458543-79-8; 499790-43-1; 500011-81-4; 500011-88-1; 500011-94-9 Role: RCT (Reactant), RACT (Reactant or reagent) (prepn. of anthranilamide compds. as insecticides); 14339-33-4P (3-Chloropyrazole); 20776-67-4P (2-Amino-3-methyl-5-chlorobenzoic acid); 68289-10-1P (2-Amino-3-methyl-N-(1-methylethyl)benzamide); 120374-68-7P; 128694-66-6P; 362640-53-7P (3-Methyl-N-(1-methylethyl)-2-nitrobenzamide); 362640-58-2P; 362640-59-3P; 362640-60-6P; 362640-61-7P; 362640-62-8P; 438450-38-5P (3-Chloro-2-[3-(trifluoromethyl)-1H-pyrazol-1-yl]pyridine); 438450-39-6P; 438450-40-9P (6-Chloro-2-[1-(3-chloro-2-pyridinyl)-3-(trifluoromethyl)-1H-pyrazol-5-yl]-8-methyl-4H-3,1-benzoxazin-4-one); 458543-77-6P; 458543-78-7P; 499790-45-3P; 499790-46-4P; 500011-82-5P; 500011-83-6P; 500011-84-7P; 500011-85-8P; 500011-86-9P; 500011-87-0P; 500011-89-2P; 500011-90-5P; 500011-91-6P; 500011-92-7P; 500011-95-0P; 500011-96-1P; 500011-97-2P; 500011-98-3P Role: RCT (Reactant), SPN (Synthetic preparation), PREP (Preparation), RACT (Reactant or reagent) (prepn. of anthranilamide compds. as insecticides); 500007-49-8 Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (anthranilamide compds. as insecticides)

Patent Application Country: Application: WO
Priority Application Country: US
Priority Application Number: 2001-311919
Priority Application Date: 20010813

Lahm, George Philip, McCann, Stephen Frederick, Patel, Kanu Maganbhai, Selby, Thomas Paul, and Stevenson, Thomas Martin (2003). Method for controlling particular insect pests by applying anthranilamide compounds. 150 pp.
Chem Codes: Chemical of Concern: SPM,MAL Rejection Code: CHEM METHODS.

Anthranilamide compds. I (Markush included), N-oxides or an agriculturally suitable salts thereof are prepd. as insecticides for controlling lepidopteran, homopteran, hemipteran, thysanopteran and coleopteran insect pests. Insecticidal compn. contg. anthranilamide compds. I may further comprise addnl. biol. active compds. selected from arthropodicides of the group consisting of pyrethroids, carbamates, neonicotinoids, neuronal sodium channel blockers, insecticidal macrocyclic lactones, g-aminobutyric acid (GABA) antagonists, insecticidal ureas, and juvenile hormone mimics. [on SciFinder (R)] insecticide/ anthranilamide/ prepn Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2003:154154
Chemical Abstracts Number: CAN 138:200331
Section Code: 5-4
Section Title: Agrochemical Bioregulators
CA Section Cross-References: 28
Coden: PIXXD2

US EPA ARCHIVE DOCUMENT

Index Terms: Insecticides (anthranilamide compds. as); Acrosternum hilare; Acyrthosiphon pisum; Adelges; Agriotes; Alabama argillacea; Anasa tristis; Aphis craccivora; Aphis fabae; Aphis gossypii; Aphis pomi; Aphis spiraecola; Archips; Archips argyrospilus; Archips rosana; Athous; Aulacorthum solani; Bemisia argentifolia; Bemisia tabaci; Blissus leucopterus leucopterus; Chaetosiphon fragaefolii; Chilo suppressalis; Cnaphalocrocis medinalis; Coleoptera; Corythucha gossypii; Crambus caliginosellus; Crambus teterrellus; Cyrtopeltis modesta; Dialeurodes citri; Diuraphis noxia; Dysaphis plantaginea; Dysdercus suturellus; Earias insulana; Earias vitella; Empoasca fabae; Epilachna varivestis; Eriosoma lanigerum; Erythroneura; Euschistus servus; Euschistus variolarius; Frankliniella occidentalis; Grapholitha pomonella; Graptostethus; Helicoverpa armigera; Helicoverpa zea; Heliothis virescens; Hemiptera; Herpetogramma licarsisalis; Homoptera; Hyalopterus pruni; Icerya purchasi; Laodelphax striatellus; Lepidoptera; Leptinotarsa decemlineata; Leptoglossus corculus; Limonius; Lipaphis erysimi; Lobesia botrana; Lygus lineolaris; Macrosiphum dirhodum; Macrosiphum euphorbiae; Macrosteles quadrilineatus; Magicicada septendecim; Myzus persicae; Nasonovia ribisnigri; Nephotettix cincticeps; Nephotettix nigropictus; Nezara viridula; Nilaparvata lugens; Oebalus pugnax; Oncopeltus fasciatus; Pectinophora gossypiella; Pemphigus; Peregrinus maidis; Phyllocnistis citrella; Phylloxera devastatrix; Pieris brassicae; Pieris rapae; Planococcus citri; Plutella xylostella; Prodenia litura; Pseudatomoscelis seriatus; Pseudococcus; Psylla pyricola; Quadraspidiotus perniciosus; Rhopalosiphum fitchii; Rhopalosiphum maidis; Schizaphis graminum; Scirtothrips citri; Sericothrips variabilis; Sitobion avenae; Sogatella furcifera; Sogatodes oryzicola; Spodoptera exigua; Spodoptera frugiperda; Therioaphis maculata; Thrips tabaci; Thysanoptera; Toxoptera aurantii; Toxoptera citricida; Trialeurodes vaporariorum; Trichoplusia ni; Trioza diospyri; Tuta absoluta; Typhlocyba pomaria (anthranilamide compds. as insecticides against); Insecticides (carbamate; in insecticidal compns. contg. anthranilamide compds.); Eubacteria; Fungi; Virus (entomopathogenic; in insecticidal compns. contg. anthranilamide compds.); Bacillus thuringiensis aizawai; Bacillus thuringiensis kurstaki; Baculoviridae; GABA antagonists (in insecticidal compns. contg. anthranilamide compds.); Macrolides Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (in insecticidal compns. contg. anthranilamide compds.); Juvenile hormones Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (mimics; in insecticidal compns. contg. anthranilamide compds.); Insecticides (neonicotinoid; in insecticidal compns. contg. anthranilamide compds.); Pyrethrins Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (pyrethroids; in insecticidal compns. contg. anthranilamide compds.); Ion channel blockers (sodium; in insecticidal compns. contg. anthranilamide compds.); Toxins Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (d-endotoxins; in insecticidal compns. contg. anthranilamide compds.)

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56-38-2 (Parathion); 57-13-6D (Urea); 60-51-5 (Dimethoate); 72-43-5 (Methoxychlor); 83-79-4 (Rotenone); 86-50-0 (Azinphos-methyl); 108-62-3 (Metaldehyde); 115-29-7 (Endosulfan); 115-32-2 (Dicofol); 116-06-3 (Aldicarb); 121-75-5 (Malathion); 298-00-0 (Parathion-methyl); 298-02-2 (Phorate); 333-41-5 (Diazinon); 510-15-6 (Chlorobenzilate); 732-11-6 (Phosmet); 944-22-9 (Fonophos); 950-37-8 (Methidathion); 1563-66-2 (Carbofuran); 2227-17-0 (Dienochlor); 2310-17-0 (Phosalone); 2312-35-8 (Propargite); 2439-01-2 (Chinomethionat); 2921-88-2 (Chlorpyrifos); 5598-13-0 (Chlorpyrifos-methyl); 6923-22-4 (Monocrotophos); 10265-92-6 (Methamidophos); 11141-17-6 (Azadirachtin); 13071-79-9 (Terbufos); 13121-70-5 (Cyhexatin); 13171-21-6 (Phosphamidon); 13356-08-6 (Fenbutatin oxide); 16752-77-5 (Methomyl); 22224-92-6 (Fenamiphos); 22248-79-9 (Tetrachlorvinphos); 23103-98-2 (Pirimicarb); 23135-22-0 (Oxamyl); 25311-71-1 (Isofenphos); 30560-19-1 (Acephate); 33089-61-1 (Amitraz); 35367-38-5 (Diflubenzuron); 35400-43-2 (Sulprofos); 39515-41-8 (Fenpropathrin); 40596-69-8 (Methoprene); 41198-08-7 (Profenofos); 51630-58-1 (Fenvalerate); 52207-48-4 (Thiosultap-sodium); 52315-07-8 (Cypermethrin); 52645-53-1 (Permethrin); 52918-63-5 (Deltamethrin); 58842-20-9 (Nithiazine); 59669-26-0 (Thiodicarb); 62850-32-2 (Fenothiocarb); 63837-33-2 (Diofenolan); 64628-44-0 (Triflumuron); 66215-27-8 (Cyromazine); 66230-04-4 (Esfenvalerate); 66841-25-6 (Tralomethrin); 68085-85-8 (Cyhalothrin); 68359-37-5 (Cyfluthrin); 69327-76-0 (Buprofezin); 70124-77-5 (Flucythrinate); 71422-67-8 (Chlorfluazuron); 71751-41-2 (Abamectin); 72490-01-8 (Fenoxycarb); 73989-17-0 (Avermectin); 78587-05-0 (Hexythiazox); 79538-32-2 (Tefluthrin); 80060-09-9 (Diafenthiuron); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 84466-05-7 (Amidoflumet); 86479-06-3 (Hexaflumuron); 91465-08-6; 95737-68-1 (Pyriproxyfen); 96489-71-3 (Pyridaben); 101463-69-8 (Flufenoxuron); 102851-06-9 (Tau-fluvalinate); 103055-07-8 (Lufenuron); 111988-49-9 (Thiacloprid); 112226-61-6 (Halofenozide); 112410-23-8 (Tebufenozide); 116714-46-6 (Novaluron); 119168-77-3 (Tebufenpyrad); 119791-41-2 (Emamectin); 120068-37-3 (Fipronil); 120928-09-8 (Fenazaquin); 121451-02-3 (Noviflumuron); 122453-73-0 (Chlorfenapyr); 123312-89-0 (Pymetrozine); 134098-61-6 (Fenpyroximate); 135410-20-7 (Acetamiprid); 138261-41-3 (Imidacloprid); 143807-66-3 (Chromafenozide); 149877-41-8 (Bifenazate); 153233-91-1 (Etoxazole); 153719-23-4 (Thiamethoxam); 158062-67-0 (Flonicamid); 161050-58-4 (Methoxyfenozide); 168316-95-8 (Spinosad); 170015-32-4 (Flufenerim); 173584-44-6 (Indoxacarb); 179101-81-6 (Pyridalyl); 181587-01-9 (Ethiprole); 210880-92-5 (Clothianidin); 283594-90-1 (Spiromesifen) Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (in insecticidal compns. contg. anthranilamide compds.); 362637-53-4P; 362637-70-5P; 362638-30-0P; 362639-62-1P; 438450-41-0P (N-[4-Chloro-2-methyl-6-[(methylamino)carbonyl]phenyl]-1-(3-chloro-2-pyridinyl)-3-(trifluoromethyl)-1H-pyrazole-5-carboxamide); 500008-00-4P; 500008-44-6P; 500008-45-7P; 500008-60-6P; 500008-62-8P; 500010-10-6P Role: AGR (Agricultural use), BSU (Biological study, unclassified), SPN (Synthetic preparation), BIOL (Biological study), PREP (Preparation), USES (Uses) (prepn. of anthranilamide compds. as insecticides); 129585-50-8P Role: BYP (Byproduct), SPN (Synthetic preparation), PREP (Preparation) (prepn. of anthranilamide compds. as insecticides); 74-89-5 (Methylamine); 75-03-6 (Iodoethane); 75-31-0 (Isopropylamine); 76-05-1 (Trifluoroacetic acid); 79-37-8 (Oxalyl chloride); 98-59-9 (p-Toluenesulfonyl chloride); 100-63-0 (Phenylhydrazine); 109-72-8 (n-Butyllithium); 112-02-7 (Cetyltrimethylammonium chloride); 121-44-8 (Triethylamine); 124-63-0 (Methanesulfonyl chloride); 128-09-6 (N-Chlorosuccinimide); 367-57-7; 421-50-1 (1,1,1-Trifluoroacetone); 503-38-8 (Trichloromethyl

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chloroformate); 541-41-3 (Ethyl chloroformate); 584-08-7 (Potassium carbonate); 630-25-1 (1,2-Dibromotetrachloroethane); 1310-58-3 (Potassium hydroxide); 2402-77-9 (2,3-Dichloropyridine); 4111-54-0 (Lithium diisopropylamide); 4389-45-1 (2-Amino-3-methylbenzoic acid); 4755-77-5 (Ethyl chlorooxoacetate); 5437-38-7 (3-Methyl-2-nitrobenzoic acid); 6226-25-1 (2,2,2-Trifluoroethyl trifluoromethanesulfonate); 7087-68-5 (N,N-Diisopropylethylamine); 7664-93-9 (Sulfuric acid); 7789-69-7 (Phosphorus pentabromide); 10025-87-3 (Phosphorus oxychloride); 10035-10-6 (Hydrogen bromide); 14521-80-3 (3-Bromopyrazole); 20154-03-4 (3-Trifluoromethylpyrazole); 22206-57-1 (Tetrabutylammonium fluoride hydrate); 22841-92-5; 65753-47-1 (2-Chloro-3-trifluoromethylpyridine); 66176-17-8 (3-Methylisatoic anhydride); 133228-21-4; 458543-79-8; 499790-43-1; 500011-81-4; 500011-88-1; 500011-94-9 Role: RCT (Reactant), RACT (Reactant or reagent) (prepn. of anthranilamide compds. as insecticides); 14339-33-4P (3-Chloropyrazole); 20776-67-4P (2-Amino-3-methyl-5-chlorobenzoic acid); 68289-10-1P (2-Amino-3-methyl-N-(1-methylethyl)benzamide); 120374-68-7P; 128694-66-6P; 362640-53-7P (3-Methyl-N-(1-methylethyl)-2-nitrobenzamide); 362640-58-2P; 362640-59-3P; 362640-60-6P; 362640-61-7P; 362640-62-8P; 438450-38-5P (3-Chloro-2-[3-(trifluoromethyl)-1H-pyrazol-1-yl]pyridine); 438450-39-6P; 438450-40-9P (6-Chloro-2-[1-(3-chloro-2-pyridinyl)-3-(trifluoromethyl)-1H-pyrazol-5-yl]-8-methyl-4H-3,1-benzoxazin-4-one); 458543-77-6P; 458543-78-7P; 499790-45-3P; 499790-46-4P; 500011-82-5P; 500011-83-6P; 500011-84-7P; 500011-85-8P; 500011-86-9P; 500011-87-0P; 500011-89-2P; 500011-90-5P; 500011-91-6P; 500011-92-7P; 500011-95-0P; 500011-96-1P; 500011-97-2P; 500011-98-3P Role: RCT (Reactant), SPN (Synthetic preparation), PREP (Preparation), RACT (Reactant or reagent) (prepn. of anthranilamide compds. as insecticides); 500007-49-8 Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (anthranilamide compds. as insecticides)

Patent Application Country: Application: WO
Priority Application Country: US
Priority Application Number: 2001-311919
Priority Application Date: 20010813

Lahm, George Philip, Selby, Thomas Paul, and Stevenson, Thomas Martin (20030227). **<04 Article Title>.** <25 Page(s)>.

Chemical of Concern: FVL, SPM,MAL; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

Lahm, George Philip, Selby, Thomas Paul, and Stevenson, Thomas Martin (20030227). Arthropodicidal anthranilamides. 82 pp.
Chem Codes: Chemical of Concern: AZD,SPM Rejection Code: BACTERIA.

Anthranilamides I (Markush included), their N-oxides and agriculturally suitable salts are prepd. as arthropodicides for controlling invertebrate pests. Arthropodicidal compns. contg. anthranilamides I may further include addnl. biol. active compds. or agents selected from arthropodicides of the group consisting of pyrethroids, carbamates, neonicotinoids, neuronal sodium channel blockers, insecticidal macrocyclic lactones, g-aminobutyric acid (GABA) antagonists, insecticidal ureas, and juvenile hormone mimics, Bacillus thuringiensis sp. aizawai, B. thuringiensis sp. kurstaki, B. thuringiensis delta endotoxin, baculoviruses, and entomopathogenic bacteria, viruses and fungi. [on SciFinder (R)] anthranilamides/ insecticide/ arthropodicide/ prepn Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2003:154155
Chemical Abstracts Number: CAN 138:200332
Section Code: 5-4
Section Title: Agrochemical Bioregulators
CA Section Cross-References: 28
Coden: PIXXD2
Index Terms: Insecticides (carbamates; in arthropodicidal compns. contg. anthranilamide); Eubacteria; Fungi; Virus (entomopathogenic; in arthropodicidal compns. contg. anthranilamide); Acaricides; Bacillus thuringiensis aizawai; Bacillus thuringiensis kurstaki; Baculoviridae; GABA antagonists; Insecticides; Nematocides (in arthropodicidal compns. contg. anthranilamide); Macrolides Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (insecticidal; in arthropodicidal compns. contg. anthranilamide); Juvenile hormones Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (mimics; in arthropodicidal compns. contg. anthranilamide); Insecticides (neonicotinoid; in arthropodicidal compns. contg.

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anthranilamide); Pyrethrins Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (pyrethroids; in arthropodicidal compns. contg. anthranilamide); Ion channel blockers (sodium; in arthropodicidal compns. contg. anthranilamide); Toxins Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (d-endotoxins, Bacillus thuringiensis; in arthropodicidal compns. contg. anthranilamide)
CAS Registry Numbers: 500007-97-6; 500008-03-7; 500008-04-8; 500008-05-9; 500008-07-1; 500008-14-0; 500008-18-4; 500008-19-5; 500008-20-8; 500008-21-9; 500008-23-1; 500008-25-3; 500008-27-5; 500008-29-7; 500008-30-0; 500008-32-2; 500008-34-4; 500008-36-6; 500008-47-9; 500008-49-1; 500008-51-5; 500008-53-7; 500008-54-8; 500008-55-9; 500008-56-0; 500008-58-2; 500008-59-3; 500008-64-0; 500008-66-2; 500008-67-3; 500008-68-4; 500008-69-5; 500008-70-8; 500008-71-9; 500008-72-0; 500008-73-1; 500008-74-2; 500008-75-3; 500008-76-4; 500008-77-5; 500008-79-7; 500008-80-0; 500008-81-1; 500008-82-2; 500008-84-4; 500008-85-5; 500008-86-6; 500008-87-7; 500008-88-8; 500008-89-9; 500008-90-2; 500008-91-3; 500008-92-4; 500008-93-5; 500008-94-6; 500008-95-7; 500008-98-0; 500008-99-1; 500009-00-7; 500009-01-8; 500009-03-0; 500009-04-1; 500009-05-2; 500009-06-3; 500009-07-4; 500009-08-5; 500009-26-7; 500009-47-2; 500009-52-9; 500009-66-5; 500009-86-9; 500009-97-2; 500010-06-0; 500010-07-1; 500010-08-2; 500010-09-3; 500010-11-7; 500010-12-8; 500010-15-1; 500010-22-0; 500010-32-2; 500010-33-3; 500010-34-4; 500010-35-5; 500010-46-8; 500010-47-9; 500010-48-0; 500010-49-1; 500010-50-4; 500010-51-5; 500010-52-6; 500010-53-7; 500010-54-8; 500010-55-9; 500010-57-1; 500010-58-2; 500010-59-3; 500010-60-6; 500010-61-7; 500010-62-8; 500010-67-3; 500010-68-4; 500010-69-5; 500010-70-8; 500010-71-9; 500010-72-0; 500010-73-1; 500010-74-2; 500010-75-3; 500010-76-4; 500010-77-5; 500010-79-7; 500010-80-0; 500010-95-7; 500010-96-8; 500010-98-0; 500010-99-1; 500011-00-7; 500011-01-8; 500011-02-9; 500011-05-2; 500011-13-2; 500011-15-4; 500011-17-6; 500011-18-7; 500011-19-8; 500021-31-8; 500021-32-9; 500021-33-0; 500021-35-2; 500021-36-3; 500021-37-4; 500021-38-5; 500021-39-6; 500021-40-9; 500021-41-0; 500021-42-1 Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (arthropodicidal anthranilamide); 52-68-6 (Trichlorfon); 56-38-2 (Parathion); 60-51-5 (Dimethoate); 72-43-5 (Methoxychlor); 83-79-4 (Rotenone); 86-50-0 (Azinphos-methyl); 108-62-3 (Metaldehyde); 115-29-7 (Endosulfan); 115-32-2 (Dicofol); 116-06-3 (Aldicarb); 121-75-5 (Malathion); 298-00-0 (Parathion-methyl); 298-02-2 (Phorate); 333-41-5 (Diazinon); 510-15-6 (Chlorobenzilate); 732-11-6 (Phosmet); 944-22-9 (Fonophos); 950-37-8 (Methidathion); 1563-66-2 (Carbofuran); 2227-17-0 (Dienochlor); 2310-17-0 (Phosalone); 2312-35-8 (Propargite); 2439-01-2 (Chinomethionat); 2921-88-2 (Chlorpyrifos); 5598-13-0 (Chlorpyrifos-methyl); 6923-22-4 (Monocrotophos); 10265-92-6 (Methamidophos); 11141-17-6 (Azadirachtin); 13071-79-9 (Terbufos); 13121-70-5 (Cyhexatin); 13171-21-6 (Phosphamidon); 13356-08-6 (Fenbutatin oxide); 16752-77-5 (Methomyl); 22224-92-6 (Fenamiphos); 22248-79-9 (Tetrachlorvinphos); 23103-98-2 (Pirimicarb); 23135-22-0 (Oxamyl); 25311-71-1 (Isofenphos); 30560-19-1 (Acephate); 33089-61-1 (Amitraz); 35367-38-5 (Diflubenzuron); 35400-43-2 (Sulprofos); 39515-41-8 (Fenpropathrin); 40596-69-8 (Methoprene); 41198-08-7 (Profenofos); 51630-58-1 (Fenvalerate); 52207-48-4 (Thiosultap-sodium); 52315-07-8 (Cypermethrin); 52645-53-1 (Permethrin); 52918-63-5 (Deltamethrin); 58842-20-9 (Nithiazine); 59669-26-0 (Thiodicarb); 62850-32-2 (Fenothiocarb); 63837-33-2 (Diofenolan); 64628-44-0 (Triflumuron); 66215-27-8 (Cyromazine); 66230-04-4 (Esfenvalerate); 66841-25-6 (Tralomethrin); 68085-85-8 (Cyhalothrin); 68359-37-5 (Cyfluthrin); 69327-76-0 (Buprofezin); 70124-77-5 (Flucythrinate); 71422-67-8 (Chlorfluazuron); 71751-41-2 (Abamectin); 72490-01-8 (Fenoxycarb); 73989-17-0 (Avermectin); 78587-05-0 (Hexythiazox); 79538-32-2 (Tefluthrin); 80060-09-9 (Diafenthiuron); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 84466-05-7 (Amidoflumet); 86479-06-3 (Hexaflumuron); 91465-08-6; 95737-68-1 (Pyriproxyfen); 96489-71-3 (Pyridaben); 101463-69-8 (Flufenoxuron); 102851-06-9 (Tau-fluvalinate); 103055-07-8 (Lufenuron); 111988-49-9 (Thiacloprid); 112226-61-6 (Halofenozide); 112410-23-8 (Tebufenozide); 116714-46-6 (Novaluron); 119791-41-2 (Emamectin); 120068-37-3 (Fipronil); 120928-09-8 (Fenazaquin); 121451-02-3 (Noviflumuron); 122453-73-0 (Chlorfenapyr); 123312-89-0 (Pymetrozine); 134098-61-6 (Fenpyroximate); 135410-20-7 (Acetamiprid); 138261-41-3 (Imidacloprid); 143807-66-3 (Chromafenozide); 149877-41-8 (Bifenazate); 153233-91-1 (Etoxazole); 153719-23-4 (Thiamethoxam); 158062-67-0 (Flonicamid); 161050-58-4 (Methoxyfenozide); 168316-95-8 (Spinosad); 170015-32-4 (Flufenerim); 173584-44-6 (Indoxacarb); 179101-81-6 (Pyridalyl); 181587-01-9 (Ethiprole); 210880-92-5 (Clothianidin); 283594-90-1 (Spiromesifen) Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (in arthropodicidal compns. contg. anthranilamide); 57-13-6D (Urea) Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (insecticidal; in arthropodicidal compns. contg. anthranilamide); 438450-41-0P (N-[4-Chloro-2-methyl-6-[(methylamino)carbonyl]phenyl]-1-(3-chloro-2-pyridinyl)-3-(trifluoromethyl)-1H-pyrazole-5-carboxamide); 500008-00-4P; 500008-44-6P; 500008-45-7P; 500008-60-6P; 500008-62-8P; 500011-91-6P Role: AGR (Agricultural use), BSU (Biological study, unclassified), SPN (Synthetic preparation), BIOL (Biological study), PREP (Preparation), USES (Uses) (prepn. of arthropodicidal anthranilamide); 64-17-5 (Ethanol); 67-72-1 (Hexachloroethane); 68-12-2 (N,N-

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Dimethylformamide); 74-89-5 (Methylamine); 75-31-0 (Isopropylamine); 76-05-1 (Trifluoroacetic acid); 79-37-8 (Oxalyl chloride); 98-59-9 (p-Toluenesulfonyl chloride); 109-72-8 (n-Butyllithium); 121-44-8 (Triethylamine); 124-63-0 (Methanesulfonyl chloride); 128-09-6 (N-Chlorosuccinimide); 141-52-6 (Sodium ethoxide); 421-50-1 (1,1,1-Trifluoroacetone); 503-38-8 (Trichloromethyl chloroformate); 584-08-7 (Potassium carbonate); 2402-77-9 (2,3-Dichloropyridine); 4111-54-0 (Lithium diisopropylamide); 4389-45-1 (2-Amino-3-methylbenzoic acid); 4755-77-5 (Ethyl chlorooxoacetate); 6226-25-1 (2,2,2-Trifluoroethyl trifluoromethanesulfonate); 7664-93-9 (Sulfuric acid); 7789-69-7 (Phosphorus pentabromide); 10025-87-3 (Phosphorus oxychloride); 10035-10-6 (Hydrogen bromide); 20154-03-4 (3-(Trifluoromethyl)pyrazole); 22206-57-1 (Tetrabutylammonium fluoride hydrate); 22841-92-5; 133228-21-4 Role: RCT (Reactant), RACT (Reactant or reagent) (prepn. of arthropodicidal anthranilamide); 14339-33-4P (3-Chloropyrazole); 14521-80-3P (3-Bromopyrazole); 20776-67-4P (2-Amino-3-methyl-5-chlorobenzoic acid); 120374-68-7P; 438450-38-5P (3-Chloro-2-[3-(trifluoromethyl)-1H-pyrazol-1-yl]pyridine); 438450-39-6P; 438450-40-9P (6-Chloro-2-[1-(3-chloro-2-pyridinyl)-3-(trifluoromethyl)-1H-pyrazol-5-yl]-8-methyl-4H-3,1-benzoxazin-4-one); 458543-77-6P; 458543-78-7P; 458543-79-8P; 499790-43-1P; 499790-45-3P; 499790-46-4P; 500011-83-6P; 500011-84-7P; 500011-85-8P; 500011-86-9P; 500011-87-0P; 500011-88-1P; 500011-89-2P; 500011-92-7P; 500011-93-8P; 500011-95-0P; 500011-96-1P; 500011-97-2P; 500011-98-3P Role: RCT (Reactant), SPN (Synthetic preparation), PREP (Preparation), RACT (Reactant or reagent) (prepn. of arthropodicidal anthranilamide); 500010-10-6P Role: SPN (Synthetic preparation), PREP (Preparation) (prepn. of arthropodicidal anthranilamide)
Patent Application Country: Application: WO
Priority Application Country: US
Priority Application Number: 2001-311919
Priority Application Date: 20010813
Citations: Rijkslandbouwhogeschool; NL 9202078 A 1994
Citations: James, M; WO 0248115 A 2002
Citations: Du Pont; WO 0170671 A 2001
Citations: Du Pont; WO 02070483 A 2002

Lahm, George Philip, Selby, Thomas Paul, and Stevenson, Thomas Martin (20030227). Arthropodicidal anthranilamides. 82 pp.
Chem Codes: Chemical of Concern: RTN, SPM Rejection Code: BACTERIA.

Anthranilamides I (Markush included), their N-oxides and agriculturally suitable salts are prepd. as arthropodicides for controlling invertebrate pests. Arthropodicidal compns. contg. anthranilamides I may further include addnl. biol. active compds. or agents selected from arthropodicides of the group consisting of pyrethroids, carbamates, neonicotinoids, neuronal sodium channel blockers, insecticidal macrocyclic lactones, g-aminobutyric acid (GABA) antagonists, insecticidal ureas, and juvenile hormone mimics, Bacillus thuringiensis sp. aizawai, B. thuringiensis sp. kurstaki, B. thuringiensis delta endotoxin, baculoviruses, and entomopathogenic bacteria, viruses and fungi. [on SciFinder (R)] anthranilamides/ insecticide/ arthropodicide/ prepn Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2003:154155
Chemical Abstracts Number: CAN 138:200332
Section Code: 5-4
Section Title: Agrochemical Bioregulators
CA Section Cross-References: 28
Coden: PIXXD2
Index Terms: Insecticides (carbamates; in arthropodicidal compns. contg. anthranilamide); Eubacteria; Fungi; Virus (entomopathogenic; in arthropodicidal compns. contg. anthranilamide); Acaricides; Bacillus thuringiensis aizawai; Bacillus thuringiensis kurstaki; Baculoviridae; GABA antagonists; Insecticides; Nematocides (in arthropodicidal compns. contg. anthranilamide); Macrolides Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (insecticidal; in arthropodicidal compns. contg. anthranilamide); Juvenile hormones Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (mimics; in arthropodicidal compns. contg. anthranilamide); Insecticides (neonicotinoid; in arthropodicidal compns. contg. anthranilamide); Pyrethrins Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (pyrethroids; in arthropodicidal compns. contg. anthranilamide); Ion channel blockers (sodium; in arthropodicidal compns. contg. anthranilamide); Toxins Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (d-endotoxins, Bacillus thuringiensis; in arthropodicidal compns. contg. anthranilamide)
CAS Registry Numbers: 500007-97-6; 500008-03-7; 500008-04-8; 500008-05-9; 500008-07-1; 500008-14-

US EPA ARCHIVE DOCUMENT

0; 500008-18-4; 500008-19-5; 500008-20-8; 500008-21-9; 500008-23-1; 500008-25-3; 500008-27-5; 500008-29-7; 500008-30-0; 500008-32-2; 500008-34-4; 500008-36-6; 500008-47-9; 500008-49-1; 500008-51-5; 500008-53-7; 500008-54-8; 500008-55-9; 500008-56-0; 500008-58-2; 500008-59-3; 500008-64-0; 500008-66-2; 500008-67-3; 500008-68-4; 500008-69-5; 500008-70-8; 500008-71-9; 500008-72-0; 500008-73-1; 500008-74-2; 500008-75-3; 500008-76-4; 500008-77-5; 500008-79-7; 500008-80-0; 500008-81-1; 500008-82-2; 500008-84-4; 500008-85-5; 500008-86-6; 500008-87-7; 500008-88-8; 500008-89-9; 500008-90-2; 500008-91-3; 500008-92-4; 500008-93-5; 500008-94-6; 500008-95-7; 500008-98-0; 500008-99-1; 500009-00-7; 500009-01-8; 500009-03-0; 500009-04-1; 500009-05-2; 500009-06-3; 500009-07-4; 500009-08-5; 500009-26-7; 500009-47-2; 500009-52-9; 500009-66-5; 500009-86-9; 500009-97-2; 500010-06-0; 500010-07-1; 500010-08-2; 500010-09-3; 500010-11-7; 500010-12-8; 500010-15-1; 500010-22-0; 500010-32-2; 500010-33-3; 500010-34-4; 500010-35-5; 500010-46-8; 500010-47-9; 500010-48-0; 500010-49-1; 500010-50-4; 500010-51-5; 500010-52-6; 500010-53-7; 500010-54-8; 500010-55-9; 500010-57-1; 500010-58-2; 500010-59-3; 500010-60-6; 500010-61-7; 500010-62-8; 500010-67-3; 500010-68-4; 500010-69-5; 500010-70-8; 500010-71-9; 500010-72-0; 500010-73-1; 500010-74-2; 500010-75-3; 500010-76-4; 500010-77-5; 500010-79-7; 500010-80-0; 500010-95-7; 500010-96-8; 500010-98-0; 500010-99-1; 500011-00-7; 500011-01-8; 500011-02-9; 500011-05-2; 500011-13-2; 500011-15-4; 500011-17-6; 500011-18-7; 500011-19-8; 500021-31-8; 500021-32-9; 500021-33-0; 500021-35-2; 500021-36-3; 500021-37-4; 500021-38-5; 500021-39-6; 500021-40-9; 500021-41-0; 500021-42-1 Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (arthropodicidal anthranilamide); 52-68-6 (Trichlorfon); 56-38-2 (Parathion); 60-51-5 (Dimethoate); 72-43-5 (Methoxychlor); 83-79-4 (Rotenone); 86-50-0 (Azinphos-methyl); 108-62-3 (Metaldehyde); 115-29-7 (Endosulfan); 115-32-2 (Dicofol); 116-06-3 (Aldicarb); 121-75-5 (Malathion); 298-00-0 (Parathion-methyl); 298-02-2 (Phorate); 333-41-5 (Diazinon); 510-15-6 (Chlorobenzilate); 732-11-6 (Phosmet); 944-22-9 (Fonophos); 950-37-8 (Methidathion); 1563-66-2 (Carbofuran); 2227-17-0 (Dienochlor); 2310-17-0 (Phosalone); 2312-35-8 (Propargite); 2439-01-2 (Chinomethionat); 2921-88-2 (Chlorpyrifos); 5598-13-0 (Chlorpyrifos-methyl); 6923-22-4 (Monocrotophos); 10265-92-6 (Methamidophos); 11141-17-6 (Azadirachtin); 13071-79-9 (Terbufos); 13121-70-5 (Cyhexatin); 13171-21-6 (Phosphamidon); 13356-08-6 (Fenbutatin oxide); 16752-77-5 (Methomyl); 22224-92-6 (Fenamiphos); 22248-79-9 (Tetrachlorvinphos); 23103-98-2 (Pirimicarb); 23135-22-0 (Oxamyl); 25311-71-1 (Isofenphos); 30560-19-1 (Acephate); 33089-61-1 (Amitraz); 35367-38-5 (Diflubenzuron); 35400-43-2 (Sulprofos); 39515-41-8 (Fenpropathrin); 40596-69-8 (Methoprene); 41198-08-7 (Profenofos); 51630-58-1 (Fenvalerate); 52207-48-4 (Thiosultap-sodium); 52315-07-8 (Cypermethrin); 52645-53-1 (Permethrin); 52918-63-5 (Deltamethrin); 58842-20-9 (Nithiazine); 59669-26-0 (Thiodicarb); 62850-32-2 (Fenothiocarb); 63837-33-2 (Diofenolan); 64628-44-0 (Triflumuron); 66215-27-8 (Cyromazine); 66230-04-4 (Esfenvalerate); 66841-25-6 (Tralomethrin); 68085-85-8 (Cyhalothrin); 68359-37-5 (Cyfluthrin); 69327-76-0 (Buprofezin); 70124-77-5 (Flucythrinate); 71422-67-8 (Chlorfluazuron); 71751-41-2 (Abamectin); 72490-01-8 (Fenoxycarb); 73989-17-0 (Avermectin); 78587-05-0 (Hexythiazox); 79538-32-2 (Tefluthrin); 80060-09-9 (Diafenthiuron); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 84466-05-7 (Amidoflumet); 86479-06-3 (Hexaflumuron); 91465-08-6; 95737-68-1 (Pyriproxyfen); 96489-71-3 (Pyridaben); 101463-69-8 (Flufenoxuron); 102851-06-9 (Tau-fluvalinate); 103055-07-8 (Lufenuron); 111988-49-9 (Thiacloprid); 112226-61-6 (Halofenozide); 112410-23-8 (Tebufenozide); 116714-46-6 (Novaluron); 119791-41-2 (Emamectin); 120068-37-3 (Fipronil); 120928-09-8 (Fenazaquin); 121451-02-3 (Noviflumuron); 122453-73-0 (Chlorfenapyr); 123312-89-0 (Pymetrozine); 134098-61-6 (Fenpyroximate); 135410-20-7 (Acetamiprid); 138261-41-3 (Imidacloprid); 143807-66-3 (Chromafenozide); 149877-41-8 (Bifenazate); 153233-91-1 (Etoxazole); 153719-23-4 (Thiamethoxam); 158062-67-0 (Flonicamid); 161050-58-4 (Methoxyfenozide); 168316-95-8 (Spinosad); 170015-32-4 (Flufenerim); 173584-44-6 (Indoxacarb); 179101-81-6 (Pyridalyl); 181587-01-9 (Ethiprole); 210880-92-5 (Clothianidin); 283594-90-1 (Spiromesifen) Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (in arthropodicidal compns. contg. anthranilamide); 57-13-6D (Urea) Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (insecticidal; in arthropodicidal compns. contg. anthranilamide); 438450-41-0P (N-[4-Chloro-2-methyl-6-[(methylamino)carbonyl]phenyl]-1-(3-chloro-2-pyridinyl)-3-(trifluoromethyl)-1H-pyrazole-5-carboxamide); 500008-00-4P; 500008-44-6P; 500008-45-7P; 500008-60-6P; 500008-62-8P; 500011-91-6P Role: AGR (Agricultural use), BSU (Biological study, unclassified), SPN (Synthetic preparation), BIOL (Biological study), PREP (Preparation), USES (Uses) (prepn. of arthropodicidal anthranilamide); 64-17-5 (Ethanol); 67-72-1 (Hexachloroethane); 68-12-2 (N,N-Dimethylformamide); 74-89-5 (Methylamine); 75-31-0 (Isopropylamine); 76-05-1 (Trifluoroacetic acid); 79-37-8 (Oxalyl chloride); 98-59-9 (p-Toluenesulfonyl chloride); 109-72-8 (n-Butyllithium); 121-44-8 (Triethylamine); 124-63-0 (Methanesulfonyl chloride); 128-09-6 (N-Chlorosuccinimide); 141-52-6 (Sodium ethoxide); 421-50-1 (1,1,1-Trifluoroacetone); 503-38-8 (Trichloromethyl chloroformate); 584-08-7 (Potassium carbonate); 2402-77-9 (2,3-Dichloropyridine); 4111-54-0 (Lithium diisopropylamide); 4389-45-1 (2-Amino-3-methylbenzoic acid); 4755-77-5 (Ethyl chlorooxoacetate); 6226-25-1 (2,2,2-

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Trifluoroethyl trifluoromethanesulfonate); 7664-93-9 (Sulfuric acid); 7789-69-7 (Phosphorus pentabromide); 10025-87-3 (Phosphorus oxychloride); 10035-10-6 (Hydrogen bromide); 20154-03-4 (3-(Trifluoromethyl)pyrazole); 22206-57-1 (Tetrabutylammonium fluoride hydrate); 22841-92-5; 133228-21-4 Role: RCT (Reactant), RACT (Reactant or reagent) (prepn. of arthropodicidal anthranilamide); 14339-33-4P (3-Chloropyrazole); 14521-80-3P (3-Bromopyrazole); 20776-67-4P (2-Amino-3-methyl-5-chlorobenzoic acid); 120374-68-7P; 438450-38-5P (3-Chloro-2-[3-(trifluoromethyl)-1H-pyrazol-1-yl]pyridine); 438450-39-6P; 438450-40-9P (6-Chloro-2-[1-(3-chloro-2-pyridinyl)-3-(trifluoromethyl)-1H-pyrazol-5-yl]-8-methyl-4H-3,1-benzoxazin-4-one); 458543-77-6P; 458543-78-7P; 458543-79-8P; 499790-43-1P; 499790-45-3P; 499790-46-4P; 500011-83-6P; 500011-84-7P; 500011-85-8P; 500011-86-9P; 500011-87-0P; 500011-88-1P; 500011-89-2P; 500011-92-7P; 500011-93-8P; 500011-95-0P; 500011-96-1P; 500011-97-2P; 500011-98-3P Role: RCT (Reactant), SPN (Synthetic preparation), PREP (Preparation), RACT (Reactant or reagent) (prepn. of arthropodicidal anthranilamide); 500010-10-6P Role: SPN (Synthetic preparation), PREP (Preparation) (prepn. of arthropodicidal anthranilamide)
Patent Application Country: Application: WO
Priority Application Country: US
Priority Application Number: 2001-311919
Priority Application Date: 20010813
Citations: Rijkslandbouwhogeschool; NL 9202078 A 1994
Citations: James, M; WO 0248115 A 2002
Citations: Du Pont; WO 0170671 A 2001
Citations: Du Pont; WO 02070483 A 2002

Lahm, George Philip, Selby, Thomas Paul, and Stevenson, Thomas Martin (2003). Arthropodicidal anthranilamides. 82 pp.
Chem Codes: Chemical of Concern: SPM,MAL Rejection Code: BACTERIA.

Anthranilamides I (Markush included), their N-oxides and agriculturally suitable salts are prepd. as arthropodicides for controlling invertebrate pests. Arthropodicidal compns. contg. anthranilamides I may further include addnl. biol. active compds. or agents selected from arthropodicides of the group consisting of pyrethroids, carbamates, neonicotinoids, neuronal sodium channel blockers, insecticidal macrocyclic lactones, g-aminobutyric acid (GABA) antagonists, insecticidal ureas, and juvenile hormone mimics, Bacillus thuringiensis sp. aizawai, B. thuringiensis sp. kurstaki, B. thuringiensis delta endotoxin, baculoviruses, and entomopathogenic bacteria, viruses and fungi. [on SciFinder (R)] anthranilamides/ insecticide/ arthropodicide/ prepn Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2003:154155
Chemical Abstracts Number: CAN 138:200332
Section Code: 5-4
Section Title: Agrochemical Bioregulators
CA Section Cross-References: 28
Coden: PIXXD2
Index Terms: Insecticides (carbamates; in arthropodicidal compns. contg. anthranilamide); Eubacteria; Fungi; Virus (entomopathogenic; in arthropodicidal compns. contg. anthranilamide); Acaricides; Bacillus thuringiensis aizawai; Bacillus thuringiensis kurstaki; Baculoviridae; GABA antagonists; Insecticides; Nematocides (in arthropodicidal compns. contg. anthranilamide); Macrolides Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (insecticidal; in arthropodicidal compns. contg. anthranilamide); Juvenile hormones Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (mimics; in arthropodicidal compns. contg. anthranilamide); Insecticides (neonicotinoid; in arthropodicidal compns. contg. anthranilamide); Pyrethrins Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (pyrethroids; in arthropodicidal compns. contg. anthranilamide); Ion channel blockers (sodium; in arthropodicidal compns. contg. anthranilamide); Toxins Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (d-endotoxins, Bacillus thuringiensis; in arthropodicidal compns. contg. anthranilamide)
CAS Registry Numbers: 500007-97-6; 500008-03-7; 500008-04-8; 500008-05-9; 500008-07-1; 500008-14-0; 500008-18-4; 500008-19-5; 500008-20-8; 500008-21-9; 500008-23-1; 500008-25-3; 500008-27-5; 500008-29-7; 500008-30-0; 500008-32-2; 500008-34-4; 500008-36-6; 500008-47-9; 500008-49-1; 500008-51-5; 500008-53-7; 500008-54-8; 500008-55-9; 500008-56-0; 500008-58-2; 500008-59-3; 500008-64-0; 500008-66-2; 500008-67-3; 500008-68-4; 500008-69-5; 500008-70-8; 500008-71-9; 500008-72-0; 500008-73-1; 500008-74-2; 500008-75-3; 500008-76-4; 500008-77-5; 500008-79-7; 500008-80-0; 500008-81-1; 500008-82-2; 500008-84-4; 500008-85-5; 500008-86-6; 500008-87-7; 500008-88-8; 500008-89-9; 500008-

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90-2; 500008-91-3; 500008-92-4; 500008-93-5; 500008-94-6; 500008-95-7; 500008-98-0; 500008-99-1; 500009-00-7; 500009-01-8; 500009-03-0; 500009-04-1; 500009-05-2; 500009-06-3; 500009-07-4; 500009-08-5; 500009-26-7; 500009-47-2; 500009-52-9; 500009-66-5; 500009-86-9; 500009-97-2; 500010-06-0; 500010-07-1; 500010-08-2; 500010-09-3; 500010-11-7; 500010-12-8; 500010-15-1; 500010-22-0; 500010-32-2; 500010-33-3; 500010-34-4; 500010-35-5; 500010-46-8; 500010-47-9; 500010-48-0; 500010-49-1; 500010-50-4; 500010-51-5; 500010-52-6; 500010-53-7; 500010-54-8; 500010-55-9; 500010-57-1; 500010-58-2; 500010-59-3; 500010-60-6; 500010-61-7; 500010-62-8; 500010-67-3; 500010-68-4; 500010-69-5; 500010-70-8; 500010-71-9; 500010-72-0; 500010-73-1; 500010-74-2; 500010-75-3; 500010-76-4; 500010-77-5; 500010-79-7; 500010-80-0; 500010-95-7; 500010-96-8; 500010-98-0; 500010-99-1; 500011-00-7; 500011-01-8; 500011-02-9; 500011-05-2; 500011-13-2; 500011-15-4; 500011-17-6; 500011-18-7; 500011-19-8; 500021-31-8; 500021-32-9; 500021-33-0; 500021-35-2; 500021-36-3; 500021-37-4; 500021-38-5; 500021-39-6; 500021-40-9; 500021-41-0; 500021-42-1 Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (arthropodicidal anthranilamide); 52-68-6 (Trichlorfon); 56-38-2 (Parathion); 60-51-5 (Dimethoate); 72-43-5 (Methoxychlor); 83-79-4 (Rotenone); 86-50-0 (Azinphos-methyl); 108-62-3 (Metaldehyde); 115-29-7 (Endosulfan); 115-32-2 (Dicofol); 116-06-3 (Aldicarb); 121-75-5 (Malathion); 298-00-0 (Parathion-methyl); 298-02-2 (Phorate); 333-41-5 (Diazinon); 510-15-6 (Chlorobenzilate); 732-11-6 (Phosmet); 944-22-9 (Fonophos); 950-37-8 (Methidathion); 1563-66-2 (Carbofuran); 2227-17-0 (Dienochlor); 2310-17-0 (Phosalone); 2312-35-8 (Propargite); 2439-01-2 (Chinomethionat); 2921-88-2 (Chlorpyrifos); 5598-13-0 (Chlorpyrifos-methyl); 6923-22-4 (Monocrotophos); 10265-92-6 (Methamidophos); 11141-17-6 (Azadirachtin); 13071-79-9 (Terbufos); 13121-70-5 (Cyhexatin); 13171-21-6 (Phosphamidon); 13356-08-6 (Fenbutatin oxide); 16752-77-5 (Methomyl); 22224-92-6 (Fenamiphos); 22248-79-9 (Tetrachlorvinphos); 23103-98-2 (Pirimicarb); 23135-22-0 (Oxamyl); 25311-71-1 (Isofenphos); 30560-19-1 (Acephate); 33089-61-1 (Amitraz); 35367-38-5 (Diflubenzuron); 35400-43-2 (Sulprofos); 39515-41-8 (Fenpropathrin); 40596-69-8 (Methoprene); 41198-08-7 (Profenofos); 51630-58-1 (Fenvalerate); 52207-48-4 (Thiosultap-sodium); 52315-07-8 (Cypermethrin); 52645-53-1 (Permethrin); 52918-63-5 (Deltamethrin); 58842-20-9 (Nithiazine); 59669-26-0 (Thiodicarb); 62850-32-2 (Fenothiocarb); 63837-33-2 (Diofenolan); 64628-44-0 (Triflumuron); 66215-27-8 (Cyromazine); 66230-04-4 (Esfenvalerate); 66841-25-6 (Tralomethrin); 68085-85-8 (Cyhalothrin); 68359-37-5 (Cyfluthrin); 69327-76-0 (Buprofezin); 70124-77-5 (Flucythrinate); 71422-67-8 (Chlorfluazuron); 71751-41-2 (Abamectin); 72490-01-8 (Fenoxycarb); 73989-17-0 (Avermectin); 78587-05-0 (Hexythiazox); 79538-32-2 (Tefluthrin); 80060-09-9 (Diafenthiuron); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 84466-05-7 (Amidoflumet); 86479-06-3 (Hexaflumuron); 91465-08-6; 95737-68-1 (Pyriproxyfen); 96489-71-3 (Pyridaben); 101463-69-8 (Flufenoxuron); 102851-06-9 (Tau-fluvalinate); 103055-07-8 (Lufenuron); 111988-49-9 (Thiacloprid); 112226-61-6 (Halofenozide); 112410-23-8 (Tebufenozide); 116714-46-6 (Novaluron); 119791-41-2 (Emamectin); 120068-37-3 (Fipronil); 120928-09-8 (Fenazaquin); 121451-02-3 (Noviflumuron); 122453-73-0 (Chlorfenapyr); 123312-89-0 (Pymetrozine); 134098-61-6 (Fenpyroximate); 135410-20-7 (Acetamiprid); 138261-41-3 (Imidacloprid); 143807-66-3 (Chromafenozide); 149877-41-8 (Bifenazate); 153233-91-1 (Etoxazole); 153719-23-4 (Thiamethoxam); 158062-67-0 (Flonicamid); 161050-58-4 (Methoxyfenozide); 168316-95-8 (Spinosad); 170015-32-4 (Flufenerim); 173584-44-6 (Indoxacarb); 179101-81-6 (Pyridalyl); 181587-01-9 (Ethiprole); 210880-92-5 (Clothianidin); 283594-90-1 (Spiromesifen) Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (in arthropodicidal compns. contg. anthranilamide); 57-13-6D (Urea) Role: AGR (Agricultural use), BSU (Biological study, unclassified), BIOL (Biological study), USES (Uses) (insecticidal; in arthropodicidal compns. contg. anthranilamide); 438450-41-0P (N-[4-Chloro-2-methyl-6-[(methylamino)carbonyl]phenyl]-1-(3-chloro-2-pyridinyl)-3-(trifluoromethyl)-1H-pyrazole-5-carboxamide); 500008-00-4P; 500008-44-6P; 500008-45-7P; 500008-60-6P; 500008-62-8P; 500011-91-6P Role: AGR (Agricultural use), BSU (Biological study, unclassified), SPN (Synthetic preparation), BIOL (Biological study), PREP (Preparation), USES (Uses) (prepn. of arthropodicidal anthranilamide); 64-17-5 (Ethanol); 67-72-1 (Hexachloroethane); 68-12-2 (N,N-Dimethylformamide); 74-89-5 (Methylamine); 75-31-0 (Isopropylamine); 76-05-1 (Trifluoroacetic acid); 79-37-8 (Oxalyl chloride); 98-59-9 (p-Toluenesulfonyl chloride); 109-72-8 (n-Butyllithium); 121-44-8 (Triethylamine); 124-63-0 (Methanesulfonyl chloride); 128-09-6 (N-Chlorosuccinimide); 141-52-6 (Sodium ethoxide); 421-50-1 (1,1,1-Trifluoroacetone); 503-38-8 (Trichloromethyl chloroformate); 584-08-7 (Potassium carbonate); 2402-77-9 (2,3-Dichloropyridine); 4111-54-0 (Lithium diisopropylamide); 4389-45-1 (2-Amino-3-methylbenzoic acid); 4755-77-5 (Ethyl chlorooxoacetate); 6226-25-1 (2,2,2-Trifluoroethyl trifluoromethanesulfonate); 7664-93-9 (Sulfuric acid); 7789-69-7 (Phosphorus pentabromide); 10025-87-3 (Phosphorus oxychloride); 10035-10-6 (Hydrogen bromide); 20154-03-4 (3-(Trifluoromethyl)pyrazole); 22206-57-1 (Tetrabutylammonium fluoride hydrate); 22841-92-5; 133228-21-4 Role: RCT (Reactant), RACT (Reactant or reagent) (prepn. of arthropodicidal anthranilamide); 14339-33-4P (3-Chloropyrazole); 14521-80-3P (3-Bromopyrazole); 20776-67-4P (2-Amino-3-methyl-5-chlorobenzoic acid); 120374-68-7P; 438450-38-5P (3-Chloro-2-[3-(trifluoromethyl)-1H-pyrazol-1-

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yl]pyridine); 438450-39-6P; 438450-40-9P (6-Chloro-2-[1-(3-chloro-2-pyridinyl)-3-(trifluoromethyl)-1H-pyrazol-5-yl]-8-methyl-4H-3,1-benzoxazin-4-one); 458543-77-6P; 458543-78-7P; 458543-79-8P; 499790-43-1P; 499790-45-3P; 499790-46-4P; 500011-83-6P; 500011-84-7P; 500011-85-8P; 500011-86-9P; 500011-87-0P; 500011-88-1P; 500011-89-2P; 500011-92-7P; 500011-93-8P; 500011-95-0P; 500011-96-1P; 500011-97-2P; 500011-98-3P Role: RCT (Reactant), SPN (Synthetic preparation), PREP (Preparation), RACT (Reactant or reagent) (prepn. of arthropodicidal anthranilamide); 500010-10-6P Role: SPN (Synthetic preparation), PREP (Preparation) (prepn. of arthropodicidal anthranilamide)
Patent Application Country: Application: WO
Priority Application Country: US
Priority Application Number: 2001-311919
Priority Application Date: 20010813
Citations: Rijkslandbouwhogeschool; NL 9202078 A 1994
Citations: James, M; WO 0248115 A 2002
Citations: Du Pont; WO 0170671 A 2001
Citations: Du Pont; WO 02070483 A 2002

Lahr, J. An Ecological Assessment of the Hazard of Eight Insecticides Used in Desert Locust Control, to Invertebrates in Temporary Ponds in the Sahel. Aquat.Ecol. 32[2], 153-162. 1998. Vrije Universiteit, Faculty of Biology, Department of Ecology and Ecotoxicology, De Boelelaan 1087, 1081 HV Amsterdam, The Netherlands; E-mail: joost.lahr@wxs.nl.
Rec #: 70
Keywords: REFS CHECKED/REVIEW
Call Number: NO REVIEW
Notes: Chemical of Concern: FPN

Lamb, J (1979). The New York State Regents External Degree Program. *Supervisor Nurse* 10: 20-21.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Lasky, R E (1978). The Regents: New York's silent power brokers. *The New York State Dental Journal* 44: 153-155.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Le Corronc, H., Alix, P., & Hue, B. Differential Sensitivity of Two Insect GABA-Gated Chloride Channels to Dieldrin, Fipronil and Picrotoxinin. J.Insect Physiol. 48[4], 419-431. 2002. H.Le Corronc, Univ. of Angers, Lab. of Neurophysiol., UPRES EA 2647, Faculty of Sciences, 2 boulevard Lavoisier, 49045 Angers Cedex, France.
Rec #: 120
Keywords: IN VITRO
Call Number: NO IN VITRO
Notes: Chemical of Concern: DLD,FPN

Lenburg, C B (1974). Innovations in nursing education-the Regents External Degree Program in Nursing. *NLN Publ* 36-41.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Lenburg, C B (1974). The New York Regents external degree: opportunity for non-traditional students in nursing. No. B-38. *ANA Publ* 27-32.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Lenburg, C B (1975). Student evaluation program--University of the State of New York Regents External Degree Program in Nursing . *NLN Publ* 124-133.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

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[Journal Article; In English; United States]

Lenburg, C B (1974). University of the State of New York. Regents External Degree Program in Nursing; Albany, New York. *NLN Publ* 93-96.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Lenburg, C B (An update on the Regents External Degree Program. *Nursing Outlook* 32: 250-254.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

Many new pathways to learning are being developed as nursing and higher education respond to current societal conditions. Cooperation between education and service is now more important and more possible than ever. The Regents College Nursing Program, while continuing to serve the needs of individual nurses, also has an increasing commitment to develop interinstitutional partnerships designed to plan and implement learning options for other capable and motivated students. Its three-part strategy is deliberately inclusive. It is based on the belief that those already in nursing should be encouraged and helped to achieve their full potential. The process of learning is focused, but flexible; the required outcomes and methods of documentation are specifically prescribed. Opportunity, collaboration and competence are the cornerstones of this interinstitutional approach. Generic nursing programs at the undergraduate and graduate level are essential; but so are innovative adult-oriented BSN and MSN programs that capitalize on the experience and motivation of those already in the discipline of nursing. Many colleges and service agencies already have demonstrated their interest in forming partnerships for the mutual benefit of nursing students and institutions. The incorporation of assessment methods, such as those developed by Regents College, enhances individual learning options, the attainment of required competencies, and the professionalization of nursing. [Journal Article; In English; United States]

LEONARD BR (1999). Evaluation of foliar insecticides against thrips on seedling cotton, 1998. AU - COSTELLO RW. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 242-243.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM HIRSUTUM FRANKLINIELLA COTTON THRIPS CULTIVAR-STONEVILLE 474 FIBER CROP HOST SEEDLING CONTROL PEST AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT ORTHENE EFFICACY INSECTICIDE FOLIAR APPLICATION KARATE VYDATE REGENT BIDRIN DIMETHOATE PROVADO FURADON MACON RIDGE LOUISIANA USA Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

Liberty, C P (1996). Education review: Crossing borders--delivering health information management education across state lines. *Topics In Health Information Management* 17: 75-81.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

Since its inception in 1992, the associate degree program in health information management (HIM) of the University of Alaska Southeast has been distance delivered across the state; it was the first distance degree program to be approved by the university's Board of Regents. In the spring of 1995, the HIM program was selected to be part of a pilot brokering project of the Western Interstate Consortium on Higher Education, in which member institutions would offer programs to or receive programs from other member institutions. The university's HIM program was selected by New Mexico and Wyoming, and classes for two groups of Wyoming students were initiated in the fall of 1995. The article summarizes the results of the project for the HIM program and future plans. It also provides an overview of some of the challenges facing institutions with out-of-state or multistate program delivery. [Journal Article; In English; United States]

LINDUSKA JJ, ROSS, M., BAUMANN, D., CAIN, C., and BOLTZ, M. (1997). COLORADO POTATO BEETLE CONTROL ON POTATOES WITH FOLIAR INSECTICIDE SPRAYS 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 153.

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA-DECEMLINEATA SOLANUM-TUBEROSUM COLORADO POTATO BEETLE POTATO AGRICULTURAL PEST CULTIVAR-RED NORLAND VEGETABLE CROP HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST NOVODOR FOLIAR APPLICATION INSECTICIDE VYDATE ASANA-XL PRO 8 AGRI-MEK FIPRONIL AC 303 WARRIOR PROVADO YRC-2894 TD-2344-02 MARYLAND USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

LINDUSKA JJ, ROSS, M., BAUMANN, D., and LEMUIEX, M. (1999). Colorado potato beetle control on potatoes with foliar insecticide sprays, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 155.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SOLANUM TUBEROSUM LEPTINOTARSA DECEMLINEATA POTATO COLORADO POTATO BEETLE VEGETABLE CROP HOST CULTIVAR-RED NORLAND PEST CONTROL HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT WARRIOR EFFICACY FOLIAR SPRAY INSECTICIDE AGENDA PROVADO MARYLAND USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

LINDUSKA JJ, ROSS, M., BAUMANN, D., and PARR, A. (1998). COLORADO POTATO BEETLE CONTROL ON POTATOES WITH FOLIAR INSECTICIDE SPRAYS 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 126.*
Chem Codes : Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA-DECEMLINEATA SOLANUM-TUBEROSUM COLORADO POTATO BEETLE POTATO PEST CROP CULTIVAR-KENNEBEC HOST PEST MANAGEMENT PESTICIDES APPLICATION RATE VYDATE 2 L INSECTICIDE PROVADO 1.6 F PROVADO 70 WG BAYTHROID 2 EC FCR 4545 1.04 SC AGENDA 1.67 SC AGRI-MEK 0.15 EC NOVODOR 4 EC SPINTOR 2 SC Biochemistry/ Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Coleoptera

Liu, Guo-guang, Xu, Hai-juan, Wang, Li-xia, and Zheng, Li-qing (2005). Joint acute toxicity of fipronil and bata-cypermethrin to protozoa community. *Huan Jing Ke Xue= Huanjing Kexue / [Bian Ji, Zhongguo Ke Xue Yuan Huan Jing Ke Xue Wei Yuan Hui "Huan Jing Ke Xue" Bian Ji Wei Yuan Hui.]* 26: 185-189.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO FOREIGN.

Compared with the toxicity test on single organism, the effects of toxic pollutants on organisms at community level are more reliable. The acute single and joint toxic effects of Fipronil and Bata-cypermethrin on freshwater protozoa community are studied in this paper. The results show that the 48h-LC50 of Fipronil and Bata-cypermethrin to the microbial community was 35.83mg x L(- 1), 1.92mg x L(-1), the joint toxicity of Bata-cypermethrin and Fipronil was antagonism in 48h with toxicity 1: 1 to freshwater protozoa community, and Additive Index was -0.08. The structure of protozoa community would change in a low concentration of Bata-cypermethrin and Fipronil mixture; the species and population of Algivores(A) and Predators Raptors (P) would reduce but Bactivoresdetrivores(B) would become predominant relatively. [Journal Article; In Chinese; China]

Liu, J. Q., Parks, P., and Rimmer, S. R. (Development of monogenic lines for resistance to Albugo candida from a Canadian Brassica napus cultivar. *Phytopathology, 86 (9) pp. 1000-1004, 1996.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Resistance to Albugo candida race 7 in the Canadian Brassica napus cultivar Regent is conditioned by three dominant genes, designated Ac7 inferior 1, Ac7 inferior 2, and Ac7 inferior 3. Gene Ac7 inferior 3 is

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present in a heterozygous condition. Homozygous resistant BC inferior 1F inferior 3 lines carrying Ac7 inferior 1 or Ac7 inferior 2 were developed from a BC inferior 1F inferior 1 family in which segregation for white rust resistance fitted a 3 resistant (R):1 susceptible (S) ratio. To isolate the resistance genes, one BC inferior 1F inferior 3 line was assumed to have genotype Ac7 inferior 1Ac7 inferior 1ac7 inferior 2ac7 inferior 2 and was used as a tester to cross with other selected BC inferior 1F inferior 3 lines. Progenies from test crosses were self-pollinated and backcrossed to susceptible line 2282-9. Thus, two monogenic lines possessing Ac7 inferior 1 or Ac7 inferior 2 were developed as F inferior 2 and backcross populations produced from four test crosses segregated to fit 15 R:1 S and 3 R:1 S ratios, respectively, whereas the other four lines were homozygous resistant. The two single-gene lines were used as testers to develop a monogenic line with Ac7 inferior 3 from a BC inferior 1F inferior 1 family that segregated in a 7 R:1 S ratio. These single genes are being incorporated into rapid-cycling B. napus lines susceptible to several pathotypes of A. candida to develop isogenic differential lines. The monogenic lines will be used to study the mechanism(s) of resistance response conditioned by the individual genes. These lines also should facilitate molecular mapping of the loci in B. napus for resistance to A. candida race 7. inheritance of resistance/ oilseed rape/ Albugo candida/ Brassica napus

LONGTINE CA, RADCLIFFE EB, and RAGSDALE DW (1998). CONTROL OF COLORADO POTATO BEETLE 1997B. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 128.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA-DECEMLINEATA SOLANUM-TUBEROSUM COLORADO POTATO BEETLE POTATO PEST HOST CROP CULTIVAR-CASCADE PEST MANAGEMENT PESTICIDES APPLICATION RATE FURADAN 4F INSECTICIDE ASANA XL 0.66 EC TD-2344-02 0.83 EC BAYTHROID 2 EC VYDATE 2 L AGRI-MEK 0.15 EC PROVADO 1.6 F REGENT 1.67 SC ADMIRE 2 F MINNESOTA USA Biochemistry/ Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Coleoptera

LONGTINE CA, RAGSDALE DW, and RADCLIFFE EB (1997). CONTROL OF COLORADO POTATO BEETLE 1996B. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 155.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA-DECEMLINEATA SOLANUM-TUBEROSUM COLORADO POTATO BEETLE POTATO AGRICULTURAL PEST CULTIVAR-RUSSET NORKOTAH VEGETABLE CROP HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST SEVIN INSECTICIDE AC 303 630 FURADAN GUTHION IMIDAN VYDATE AGRIMEK DECIS ASANA REGENT PROVADO THIODAN KARATE ADMIRE ROSEMOUNT MINNESOTA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

LONGTINE CA, RAGSDALE DW, and RADCLIFFE EB (1998). CONTROL OF COLORADO POTATO BEETLE 1997A. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 127.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA-DECEMLINEATA SOLANUM-TUBEROSUM COLORADO POTATO BEETLE POTATO PEST CROP CULTIVAR-RUSSET BURBANK HOST PEST MANAGEMENT PESTICIDES APPLICATION RATE FURADAN 4F INSECTICIDE ASANA XL 0.66 EC SEVIN 2L VYDATE 2L PROVADO 1.6 F AGRI-MEK 0.15 EC BAYTHROID 2 EC REGENT 1.67 SC Biochemistry/ Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Coleoptera

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LONGTINE CA, SURANYI RA, RADCLIFFE EB, and RAGSDALE DW (1997). CONTROL OF COLORADO POTATO BEETLE 1996C. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 156.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA-DECEMLINEATA SOLANUM-TUBEROSUM COLORADO POTATO BEETLE POTATO AGRICULTURAL PEST VEGETABLE CROP CULTIVAR-RUSSET NORKOTAH AC 303 630 INSECTICIDE HORTICULTURE AGRIMEK ASANA DECIS FURADAN GUTHION IMIDAN KARATE PEST MANAGEMENT PROVADO REGENT THIODAN VYDATE ARTHROPOD MANAGEMENT TEST MINNESOTA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

LONGTINE CA, SURANYI RA, RADCLIFFE EB, and RAGSDALE DW (1999). Control of Colorado potato beetle, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 156-157.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SOLANUM TUBEROSUM LEPTINOTARSA DECEMLINEATA POTATO COLORADO POTATO BEETLE CULTIVAR-ATLANTIC HOST VEGETABLE CROP CONTROL PEST HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT ADMIRE INSECTICIDE EFFICACY AGENDA AGRI-MEK ALERT ASANA BAYTHROID DPX-MP062 FURADAN IMIDAN KRYOCIDE PENNCAP-M PROVADO TD-2344-03 TD-2402-1 THIODAN ROSEMOUNT MINNESOTA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

Ma, X H, Noishiki, Y, Yamane, Y, Iwai, Y, Marato, D, and Matsumoto, A (Thermal cross-linking for biologically degradable materials. Preliminary report. *ASAIO Journal (American Society For Artificial Internal Organs: 1992)* 42: M866-M871.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

To diminish undesirable side effects of chemical cross-linking of biodegradable materials, the authors developed a thermal cross-linking method that involved esterification by dehydration under dry conditions. The optimal condition for cross-linking was heating at 130-140 degrees C for 40 hr. Efficacy of the cross-linking was evaluated using enzymatic digestion of 0.01% protease in phosphate buffer at pH 7.4. Collagenous materials without cross-linking were digested completely within 30 min. However, with thermal cross-linking, it required 7 days for digestion. The capacity for holding onto water also was tested. Water content decreased when the cross-link density was increased. As an in vivo experiment, six succinylated collagen sealed vascular grafts treated with thermal cross-linking were implanted in the abdominal aortae of dogs and removed 21 days later. These grafts showed no foreign body reaction, and the collagen layer was almost completely absorbed. A collagen sealed graft cross-linked with formaldehyde used as a control showed a strong foreign body reaction. These results suggest that the physical cross-linking method was suitable for biodegradable biologicals, such as collagenous materials, without the undesirable side effects of chemical cross-linking regents. [Journal Article; In English; United States]

Malley, D (1997). Use of frontline spray in rabbits. *The Veterinary Record* 140: 664.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

[Comment, Letter; In English; England]

Marcum, K. B. (Salinity tolerance of 35 bentgrass cultivars. *HortScience, 36 (2) pp. 374-376, 2001.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Relative salinity tolerance of 33 creeping bentgrass (Agrostis palustris Huds), one colonial bentgrass (A. capillaris L.), and one velvet bentgrass (A. canina L.) cultivars were determined via hydroponics in a

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controlled-environment greenhouse. After gradual acclimation, grasses were exposed to moderate salinity stress (8 dS(middle dot)m⁻¹) for 10 weeks to determine tolerance to chronic salinity stress. Relative dry weight of leaf clippings (RLW), percentage of green leaf area (GL), root dry weight (RW), and root length (RL) were all effective parameters for predicting salinity tolerance. Following 10 weeks of salinity stress, RLW was correlated with GL (r = 0.72), with RW (r = 0.71), and with RL (r = 0.66). The range of salinity tolerance among cultivars was substantial. 'Mariner', 'Grand Prix', 'Seaside', and 'Seaside II' were salt-tolerant, 'L-93', 'Penn G-2', '18th Green', and 'Syn 96-1' were moderately salt tolerant, and 'Avalon', 'Ambrosia', 'SR1119', 'Regent', 'Putter', 'Penncross', and 'Penn G-6' were salt sensitive. Agrostis spp./ Turfgrass/ Salt tolerance/ Agrostis palustris/ Agrostis capillaris/ Agrostis canina

MAU, R. FL, GUSKUKUMA-MINUTO LR, and SHIMABUKU RS (1998). ONION THRIPS MANAGEMENT ON DRY ONION 1996. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 112-113.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ALLIUM-CEPA BEAUVERIA-BASSIANA THRIPS-TABACI ONION ONION THRIPS HOST CULTIVAR-GRANEX 33 CROP PATHOGEN BIOLOGICAL CONTROL AGENT PEST PEST MANAGEMENT PESTICIDES WARRIOR II 1 E INSECTICIDE APPLICATION RATE BIOLOGICAL CONTROL ALERT 2 SC DIAZINON AG500 FIPRONIL 80 WDG LANNATE LV MALATHION 5 EC INTEGRATED RESISTANCE MANAGEMENT PEST CONTROL METHOD COLORADO USA Biochemistry/ Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Mitosporic Fungi/ Plants/ Insects

MAU, R. FL, GUSUKUMA-MINUTO LR, and SHIMABUKU RS (1997). FIELD EVALUATION OF FIPRONIL FOR DBM CONTROL 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 101-102.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER BRASSICA-OLERACEA-VAR-CAPITATA PLUTELLA-XYLOSTELLA CABBAGE DIAMONDBACK MOTH HOST CULTIVAR-TASTIE PEST HORTICULTURE FIPRONIL EFFICACY INSECTICIDE PEST MANAGEMENT HAWAII USA Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Lepidoptera

Mawdesley-Thomas, Lionel E. (1972). Symposium on diseases of fish, held at the zoological society of London, Regents Park, 20 and 21 May 1971. *Biological Conservation* 4: 232.
Chem Codes: Chemical of Concern: FPN Rejection Code: ABSTRACT.

Mayzaud, Odile (1985). Influence des variations de la composition faunistique d'une population zooplanctonique sur l'expression des activites enzymatiques digestives au cours d'un cycle nycthemeral. *Journal of Experimental Marine Biology and Ecology* 86: 171-183.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

ResumeLes variations nycthemerales des activites enzymatiques digestives ont ete etudiees sur une population zooplanctonique capturee au filet de type Regent (700 [mu]m de vide de maille) et dominee par l'appendiculaire Oikopleura dioica Fol et plusieurs especes de copepodes. Une rythmicite marquee est observee pour plusieurs glycosidases (laminarinase, amylase, cellulase, disaccharidases) alors qu'elle est faible ou absente pour les proteases. Les variations de composition faunistique des populations etudiees expliquent une part importante de la variabilite enzymatique meme si une composante metabolique reste identifiable. Ces resultats confirment l'importance des conditions physiques et biologiques du milieu sur l'interpretation des rythmicites metaboliques.AbstractDiel changes in the digestive enzyme activities of a Zooplankton population, captured with a Regent type net (700 [mu]m mesh size) have been studied. During the period considered, the population was dominated by the appendicularian Oikopleura dioica Fol and several species of copepods. A clear rhythmicity was observed for most carbohydrases (laminarinase, amylase, cellulase, disaccharidases) but not for proteases. Changes in population composition explained a significant part of the enzymatic variability, although part of it still corresponded to nutritional rhythmicity. These results stress the importance of the physical and biological conditions of the environment when

US EPA ARCHIVE DOCUMENT

considering metabolic rhythmic changes at the population or the individual level.

Mccaffrey, J. P. and Harmon, B. L. (1996). FLEA BEETLE CONTROL IN CANOLA SEED AND GRANULAR TREATMENTS 1995. *Burditt, A. K. Jr. (Ed.). Arthropod Management Tests, Vol. 21. Iv+462p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-55-8.* 21 : 206.
Chem Codes: CBF Rejection Code: BOOK ORDERED - BURDITT VOL 21.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER BRASSICA-NAPUS PHYLLOTRETA-CRUCIFERAE CULTIVAR IMC 144 FIPRONIL 500 FS FURADAN CR-10 INSECTICIDE
KEYWORDS: Toxicology-General
KEYWORDS: Agronomy-Oil Crops
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Cruciferae
KEYWORDS: Coleoptera

MCCOWN CR, HAMMOND AM, STORY RN, MURRAY MJ, and RING, D. (1998). EVALUATION OF SELECTED SOIL INSECTICIDES AND FOLIAR INSECTICIDES FOR CONTROL OF BANDED CUCUMBER BEETLE WHITEFRINGED BEETLE WHITE GRUP AND SWEETPOTATO WEEVIL 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 147-149.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER IPOMOEA-BATATAS NAUPACTUS-SPP DIABROTICA-BALTEATA PHYLLOPHAGA-SPP CYLAS-FORMICARIUS-ELEGANTULUS SWEETPOTATO WHITEFRINGED BEETLE BANDED CUCUMBER BEETLE WHITE GRUB SWEETPOTATO WEEVIL CULTIVAR-BEAUREGARD CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES SOIL INSECTICIDE FOLIAR INSECTICIDE AGENDA INSECTICIDE IMIDAN MOCAP SEVIN Plants/Growth & Development/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Plants/ Coleoptera

McGarry, R., Ozga, J. A., and Reinecke, D. M. (Differences in fruit development among large- and small-fruited cultivars of saskatoon (Amelanchier alnifolia). *Journal of the American Society for Horticultural Science, 126 (4) pp. 381-385, 2001.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Fruit growth in saskatoons (Amelanchier alnifolia Nutt.), an emerging horticultural crop across the Canadian prairies, results from development of the mesocarp and the endocarp-locular-ovular structure which includes the developing seeds. Contribution of these tissues to fruit size was assessed using transverse sections of ovaries sampled at six developmental stages among large- and small-fruited cultivars. Mesocarp development was similar among the larger-fruited cultivars (Thiessen, Northline, and Smoky); the number of cells increased rapidly through Stage I[162 to 293 growing degree days (GDDs)] of fruit growth, and cell number increase was minimal during Stages II(293 to 577 GDDs) and III (577 to 747 GDDs). In 'Regent' fruit (a small-fruited cultivar), the maximal rate of cell division was delayed until Stage II and the mesocarp contained fewer cells than the larger-fruited cultivars at harvest maturity. Mesocarp cell enlargement was similar among all of the cultivars studied where cell expansion was maximal during Stage I and continued at a slower rate during Stages II and III. The area of the endocarp-locular-ovular structure was greatest for 'Thiessen' and 'Northline', midrange for 'Smoky', and smallest for 'Regent'. Data suggest that a minimum number of mesocarp cells early in fruit development is required to attain maximal mesocarp size, and that differences in cultivar fruit size are a function of both the mesocarp and the endocarp-locular-ovular structure. Saskatoon berry/ Service berry/ June berry/ Mesocarp/ Fruit/ Amelanchier alnifolia

McGarry, R., Ozga, J. A., and Reinecke, D. M. (Patterns of Saskatoon (Amelanchier alnifolia Nutt.) fruit and seed growth. *Journal of the American Society for Horticultural Science, 123 (1) pp. 26-29, 1998.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

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Saskatoon fruit are an emerging horticultural crop across the Canadian prairies. As fruit size varies greatly among cultivars, knowledge of fruit growth patterns and factors that affect fruit size can be used to establish breeding trials and develop orchard management strategies that could enhance the production of this crop. In this study, we 1) determined fruit and seed growth patterns among large-, medium-, and small-fruited cultivars of saskatoon using growing degree days to standardize time to crop development and 2) assessed the role of seed number on fruit size. Fruit growth patterns of four cultivars (Thiessen, Northline, Regent, and Smoky) were determined from weekly measurements of fresh and dry fruit mass during two consecutive seasons. These growth patterns exhibited three phases. The largest fruit at maturity were from 'Thiessen', followed by 'Northline', 'Smoky', and 'Regent', in descending order. Pedicel cross-sectional areas 1 week before maturity correlated linearly with increasing fresh and dry fruit mass and seed number per fruit. At maturity, seed number per fruit correlated linearly with fresh and dry fruit mass. 'Thiessen' contained significantly more seeds per fruit (4.6) than 'Northline' (3.7), 'Smoky' (3.2), and 'Regent' (3.2). The results of this research suggest potential areas for orchard management improvement and future research directions for saskatoon crop improvement. Service berry/ June berry/ Fruit growth/ Seed growth/ Amelanchier alnifolia

McLaughlin, K (Regents external degree program. *New Jersey Nurse* 10: 3.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

MCPHERSON RM, WELLS ML, and BUNDY CS (1999). Control of stink bugs and velvetbean caterpillars on Georgia soybeans, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 289-290.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GLYCINE MAX ANTICARSIA GEMMATALIS NEZARA VIRIDULA SOYBEAN VELVETBEAN CATERPILLAR SOUTHERN GREEN STINKBUG STINKBUG PENTATOMIDAE CULTIVAR-HASKELL FODDER CROP HOST OIL CROP CONTROL PEST AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT REGENT INSECTICIDE EFFICACY F1002 PENNCAP-M SCOUT X-TRA DECIS STEWARD TIFTON GEORGIA USA Animal Feed/ Plants/Growth & Development/ Soil/ Oils/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Legumes/ Insects/ Lepidoptera

McTier, T L, Evans, N A, Martin-Short, M, and Gration, K (2003). Comparison of the activity of selamectin, fipronil, and imidacloprid against flea larvae (Ctenocephalides felis felis) in vitro. *Veterinary Parasitology* 116: 45-50.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

The activity of selamectin, fipronil and imidacloprid against larval cat fleas (Ctenocephalides felis felis) was evaluated in an in vitro potency assay system. One hundred microliters of each compound at various concentrations in acetone were added to glass vials (1.5 by 3 cm) to which had been previously added 20 mg of sand and 10 mg of flea feces. Vials were then ball milled to allow the acetone to evaporate. Selamectin and fipronil were tested at 0.001, 0.003, 0.005, 0.01, 0.03, 0.05, 0.11, 0.3, and 0.5 microg of active compound per tube. Imidacloprid was tested at 0.01, 0.03, 0.05, 0.1, 0.3, 0.5, 1.0, 3.0, and 5.0 microg of active compound per tube. Thirty first instar C. felis larvae were added to each vial. The number of larvae remaining alive in each vial was determined once daily for 72 h. With selamectin, reductions of >/=93.5% were achieved at 24 h after exposure at doses of >/=0.3 microg. In contrast, at 24 h neither fipronil nor imidacloprid reached 90% reduction, even at the highest doses tested (0.5 microg for fipronil and 5.0 microg for imidacloprid). Selamectin was significantly (Pfipronil at levels >/=0.03 microg. A similar pattern of activity was observed at both 48 and 72 h, but higher percentages of larvae were killed for each of the compounds as the incubation time increased. At 72 h selamectin was significantly (Pfipronil at levels of 0.003-0.01 microg. Therefore, selamectin was more potent than either fipronil or imidacloprid in killing flea larvae in this in vitro assay system. [Journal Article; In English; Netherlands]

Mesleard, Francois, Garnero, Stephanie, Beck, Nicolas, and Rosecchi, Elisabeth (Uselessness and indirect negative

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effects of an insecticide on rice field invertebrates. *Comptes Rendus Biologies* In Press, Corrected Proof.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO SOURCE.

Macro-invertebrate assemblages on organic and conventional rice fields were quantitatively compared in the Camargue (Rhone delta, France). There was no major difference in family richness, but significant differences as regard to abundance. Fipronil, the insecticide used to control chironomid larvae, was one of the main factors explaining those differences. Its negative impact on predatory invertebrates appears to explain the paradoxical lack of difference in chironomid abundance between organic and conventional fields, observed during the study. Macro-invertebrate biomass estimation showed that, for some birds such as herons, conventional rice fields offered a lower value as foraging habitats than organic ones. To cite this article: F. Mesleard et al., C. R. Biologies --- (----).

Michalik, S., Loehr, B., and Poehling, H. M. (DEVELOPMENT OF AN INTEGRATED CROP PROTECTION PROGRAMME FOR FRENCH BEANS PHASEOLUS VULGARIS IN KENYA. *Laux, W. (Ed.). Mitteilungen Aus Der Biologischen Bundesanstalt Fuer Land- Und Forstwirtschaft Berlin-Dahlem, Heft 321; (Communications From the Federal Biological Institute for Agriculture and Forestry Berlin-Dahlem, No. 321); 50th German Meeting on Plant Protection, Muenster, Germany, September 23-26, 1996. Lx+662p. Biologische Bundesanstalt Fuer Land- Und Forstwirtschaft: Berlin-Dahlem, Germany. Isbn 3-8263-3126-5.; 0 (321). 1996. 600.*
Chem Codes: CBF Rejection Code: ABSTRACT.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT PHASEOLUS-VULGARIS MEGALUROTHRIPS-SJOSTEDTII FRANKLINIELLA-SCHULTZEI FRANKLINIELLA-OCCIDENTALIS FRENCH BEANS BEAN FLIES APHIDS VEGETABLE CROP PEST PEST MANAGEMENT HORTICULTURE INTEGRATED PEST MANAGEMENT FIPRONIL INSECTICIDE IMIDACLOPRID CARBOSULFAN CARBOFURAN KENYA ETHIOPIAN REGION
KEYWORDS: General Biology-Symposia
KEYWORDS: Horticulture-Vegetables
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Leguminosae
KEYWORDS: Diptera
KEYWORDS: Homoptera
KEYWORDS: Thysanoptera

MICHALIK, S., LOEHR, B., and POEHLING H-M (1996). DEVELOPMENT OF AN INTEGRATED CROP PROTECTION PROGRAMME FOR FRENCH BEANS PHASEOLUS VULGARIS IN KENYA. *LAUX, W. (ED.). MITTEILUNGEN AUS DER BIOLOGISCHEN BUNDESANSTALT FUER LAND- UND FORSTWIRTSCHAFT BERLIN-DAHLEM, HEFT 321; (COMMUNICATIONS FROM THE FEDERAL BIOLOGICAL INSTITUTE FOR AGRICULTURE AND FORESTRY BERLIN-DAHLEM, NO. 321); 50TH GERMAN MEETING ON PLANT PROTECTION, MUENSTER, GERMANY, SEPTEMBER 23-26, 1996. LX+662P. BIOLOGISCHE BUNDESANSTALT FUER LAND- UND FORSTWIRTSCHAFT: BERLIN-DAHLEM, GERMANY. ISBN 3-8263-3126-5.; 0 (321). 1996. 600.*
Chem Codes: Chemical of Concern: FPN Rejection Code: ABSTRACT.

BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT PHASEOLUS-VULGARIS MEGALUROTHRIPS-SJOSTEDTII FRANKLINIELLA-SCHULTZEI FRANKLINIELLA-OCCIDENTALIS FRENCH BEANS BEAN FLIES APHIDS VEGETABLE CROP PEST PEST MANAGEMENT HORTICULTURE INTEGRATED PEST MANAGEMENT FIPRONIL INSECTICIDE IMIDACLOPRID CARBOSULFAN CARBOFURAN KENYA ETHIOPIAN REGION Congresses/ Biology/ Vegetables/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Legumes/ Diptera/ Insects/ Insects

Millar, N S, Buckingham, S D, and Sattelle, D B (1994). Stable expression of a functional homo-oligomeric Drosophila GABA receptor in a Drosophila cell line. *Proceedings Of The Royal Society Of London. Series B. Biological Sciences* 258: 307-314.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

A cloned Drosophila gamma-aminobutyric acid GABA receptor subunit (Rdl) has been stably expressed as a functional homo-oligomeric ion channel in a Drosophila cell line. Stably-transfected clonal cell lines which expressed high levels of GABA receptor were identified by specific [3H]-muscimol binding.

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Expression of functional GABA-gated ion channels in these cell lines was demonstrated by electrophysiological recording. Rapid and pronounced rundown of responses to GABA during whole-cell patch clamp recordings was overcome by the inclusion of EGTA in the pipette solution, indicating a possible role for calcium-dependent processes in the functional regulation of this GABA receptor. Relative agonist potencies of the expressed receptor were found to be in the order GABA = TACA > CACA. We have observed a reversible block of the receptor by the convulsant antagonists, picrotoxinin and EBOB, and by the insecticide fipronil. Potentiation of GABA responses was seen with the anaesthetic steroid 5 alpha-pregnan-3 alpha-ol-20-one. No significant effects (either agonist, antagonist or modulatory) were observed with bicuculline (a vertebrate GABAAR antagonist), benzodiazepines or barbiturates (vertebrate GABAAR modulators), or with glycine agonist of the closely related vertebrate glycine receptors). The suitability of this Drosophila stable expression system for the characterization of receptors and ion channels is discussed. [Journal Article; In English; England]

Mitra, I, Sikdar, S, and Chatterjee, B P (1992). Effects of chemical reagents on the allergenicity of house dust. *Biochemistry International* 26: 25-33.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO COC.

Con A-Sepharose bound and unbound house dust allergens were treated with various protein modifying reagents in order to ascertain the amino acid residues responsible for their allergenicity. Modification of carboxy group and arginine residue of bound fraction led to 90 and 85% loss of allergenicity whereas carboxy group, lysine and tryptophan modified unbound allergen reduced greater than or equal to 85% of activity. Allergenicity of both fractions was highly affected by pronase. On periodate treatment the bound fraction lost its allergenicity more compared to unbound one. Chemical regents had no remarkable effect on the activity of unbound fraction. [Journal Article; In English; Australia]

Mohamed, F., Senarathna, L., Percy, A., Abeyewardene, M., Eaglesham, G., Cheng, R., Azher, S., Hittarage, A., Dissanayake, W., Sheriff, M. H., Davies, W., Buckley, N. A., and Eddleston, M. (Acute Human Self-Poisoning with the N-Phenylpyrazole Insecticide Fipronil--a GABA sub(A)-Gated Chloride Channel Blocker. *Journal of Toxicology: Clinical Toxicology [J. Toxicol.: Clin. Toxicol.]. Vol. 42, no. 7, pp. 955-963. 2004.*
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

Objective: Fipronil, a broad spectrum N-phenylpyrazole insecticide that inhibits GABA sub(A)-gated chloride channels, has been in use since the mid-1990s. A high affinity for insect compared to mammalian GABA receptors results in lower animal toxicity than other insecticides blocking this channel. To date, only two accidental cases of fipronil poisoning in humans have been published. Case Series: We report seven patients with fipronil self-poisoning seen prospectively in Sri Lanka together with pharmacokinetics for four patients. Non-sustained generalized tonic-clonic seizures were seen in two patients (peak measured plasma fipronil concentrations 1600 and 3744 mu g/L); both were managed with diazepam without complications. A patient with a peak measured plasma concentration of 1040 mu g/L was asymptomatic throughout his stay. Plasma concentration was still high at discharge 3-4 days post-ingestion when the patients were well. Retrospective review of >1000 pesticide poisoning deaths since 1995 found only one death from fipronil-based products. In contrast to the good outcome of the above cases, this patient required intubation and ventilation and had continuous fits despite therapy with barbiturates and benzodiazepines. Conclusions: Our experience with prospectively observed patients suggests that fipronil poisoning is characterized by vomiting, agitation, and seizures, and normally has a favorable outcome. Management should concentrate on supportive care and early treatment of seizures. However, further experience is needed to determine whether increased susceptibility to fipronil or larger doses can produce status epilepticus. fipronil/ Insecticides/ Seizures/ Poisoning/ Chloride channels/ Diazepam/ Barbiturates/ Intubation/ Benzodiazepine/ gamma -Aminobutyric acid A receptors/ Vomiting/ Pesticides/ Pharmacokinetics/ Epilepsy/ Discharges/ Agitation/ Ventilation

Moino, A. J. & Alves, S. B. Effects of Imidacloprid and Fipronil on Beauveria bassiana (Bals.) Vuill. and Metarhizium anisopliae (Metsch.) Sorok. and on the Grooming Behavior of Heterotermes tenuis (Hagen) (Efeito de Imidacloprid e Fipronil sobre Beauveria bassiana (Bals.) Vuill. e Metarhizium anisopliae (Metsch.) Sorok. e no Comportamento de Limpeza de Heterotermes tenuis (Hagen)). An.Soc.Entomol.Bras. 27[4], 611-619 (POR) (ENG ABS). 1998. Departamento de Entomologia, UFLA, Caixa postal 37, 37200-000, Lavras, MG.
Rec #: 90
Keywords: NON-ENGLISH
Call Number: NO FOREIGN

US EPA ARCHIVE DOCUMENT

Notes: Chemical of Concern: FPN,IML

Moore, J G (1976). 1976 reports from nine American surgical specialty boards to the Board of Regents of the American College of Surgeons. Presented at the meeting of the Board of Regents, October 10, 1976, in Chicago, Illinois. Report of the American Board of Gynecology and Obstetrics . *Bulletin Of The American College Of Surgeons* 61: 28.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Moyes, C L, Lilley, J M, Casais, C A, Cole, S G, Haeger, P D, and Dale, P J (2002). Barriers to gene flow from oilseed rape (Brassica napus) into populations of Sinapis arvensis. *Molecular Ecology* 11: 103-112.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

One concern over growing herbicide-tolerant crops is that herbicide-tolerance genes may be transferred into the weeds they are designed to control. Brassica napus (oilseed rape) has a number of wild relatives that cause weed problems and the most widespread of these is Sinapis arvensis (charlock). Sinapis arvensis seed was collected from 102 populations across the UK, within and outside B. napus-growing areas. These populations were tested for sexual compatibility with B. napus and it was found that none of them hybridized readily in the glasshouse. In contrast to previous studies, we have found that hybrids can be formed naturally with S. arvensis as the maternal parent. Six diverse B. napus cultivars (Capricorn, Drakkar, Falcon, Galaxy, Hobson and Regent) were tested for their compatibility with S. arvensis but no cultivar hybridized readily in the glasshouse. We were unable to detect gene transfer from B. napus to S. arvensis in the field, confirming the extremely low probability of hybridization predicted from the glasshouse work. [Journal Article; In English; England]

Muegge, M. A., Barbour, J. D., Rice, W. C., and Bollich, P. A. (1997). EVALUATION OF SELECTED INSECTICIDES FOR RICE WATER WEEVIL CONTROL 1996. *Saxena, C. R. Arthropod Management Tests, Vol. 22. Iv+469p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-61-2.* 22 : 293-294.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 22.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LISSORHOPTRUS-ORYZOPHILUS ORYZA-SATIVA RICE WATER WEEVIL RICE AGRICULTURAL PEST GRAIN CROP CULTIVAR-CYPRUS AGRICULTURE DIMILIN INSECTICIDE FURADAN PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST ORTHENE KARATE ADMIRE FIPRONIL CROWLEY USA LOUISIANA USA
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Muller, W A (1995). The role of PECAM-1 (CD31) in leukocyte emigration: studies in vitro and in vivo. *Journal Of Leukocyte Biology* 57: 523-528.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Platelet/endothelial cell adhesion molecule-1 (PECAM-1, CD31) is a molecule capable of mediating both homophilic and heterophilic adhesion. It is constitutively expressed and concentrated in the lateral borders between endothelial cells and expressed on the surfaces of neutrophils, monocytes, and some T cell subsets, as well as on platelets. In a quantitative in vitro assay, monoclonal antibody against PECAM-1 or soluble recombinant PECAM-1 selectively blocked passage of both neutrophils and monocytes across the endothelial monolayer by 70-90% without interfering with the ability of these cells to bind to the apical endothelial cell surface. These regents worked whether directed against leukocyte PECAM-1 or against endothelial cell PECAM-1 and were not additive, suggesting that a homophilic interaction was occurring. In a murine model of acute inflammation, thioglycollate-induced peritonitis, a monoclonal antibody against mouse PECAM-1 blocked emigration of leukocytes into the peritoneal cavity down to background levels. Examination of peritoneal venules in these mice revealed many leukocytes in apparent contact with the

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endothelial surface but unable to cross the intima. Thus, PECAM-1 has a distinct role in the transendothelial migration phase of leukocyte emigration, independent of the adhesion events on the apical surface. [Journal Article, Review, Review, Tutorial; 37 Refs; In English; United States]

Mulvin, L. and Lewis, J. O. (1994). Architectural detailing, weathering and stone decay. *Building and Environment* 29: 113-138 .
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT .

Examination of the effects of weather on the exterior of an historic facade is shown to be a necessary part of a conservation study by the information yielded from Regent House, Trinity College, Dublin. An investigation, by visual observation and recording of weathering and decay patterns, into the contribution made by the architectural features of classical detailing establishes certain points of interest. Eighteenth-century facade construction employed classical detailing for both decorative and utilitarian, protective functions, such as water flow control. As a result, water penetration within the core fabric of the construction was minimized, and mo, the degradation of the materials upon which strength and structural integrity depends was lessened. The study of patterns of weathering and deterioration is used to help identify areas in which the classical detail has failed or been improperly made or maintained. Such areas are associated with further repercussions on the stone and on iron fixings embedded in the constructions and indicate areas in need of repair attention. In this regard, a knowledge and understanding of the construction of the building becomes an essential factor in a conservation study of this nature.

NAULT BA and SPEESE, J. III (1999). Evaluation of in-furrow and foliar materials to control CPB in potatoes, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 160-161.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SOLANUM TUBEROSUM LEPTINOTARSA DECEMLINEATA POTATO COLORADO POTATO BEETLE CULTIVAR-SUPERIOR HOST VEGETABLE CROP PEST CONTROL HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT AGRI-MEK EFFICACY FOLIAR APPLICATION INSECTICIDE PROVADO AGENDA CGA-293343 IN FURROW APPLICATION ADMIRE PAINTER VIRGINIA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

NAULT BA and SPEESE, J. III (1998). EVALUATION OF NEW FOLIAR MATERIALS TO CONTROL INSECTS ON POTATOES 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 128-129.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA-DECEMLINEATA SOLANUM-TUBEROSUM OSTRINIA-NUBILALIS COLORADO POTATO BEETLE POTATO EUROPEAN CORN BORER PEST CULTIVAR-SUPERIOR CROP HOST PEST MANAGEMENT PESTICIDES APPLICATION RATE DEFOLIATION AGENDA 1.67 SC INSECTICIDE PROVADO 1.6 F CONFIRM 70 WP AGRI-MEK 0.15 EC VIRGINIA USA Biochemistry/ Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Coleoptera/ Lepidoptera

Ngim, K K and Crosby, D G (2001). Abiotic processes influencing fipronil and desthiofipronil dissipation in California, USA, rice fields. *Environmental Toxicology And Chemistry / SETAC* 20: 972-977.
Chem Codes: Chemical of Concern: FPN Rejection Code: FATE.

Fipronil insecticide dissipated in California rice fields, producing half-lives of 10.5 to 125 h in water and 44.5 to 533 h in soil, depending on the formulation applied and the resulting differences in water solubility. The major degradation products were desthiofipronil in water and fipronil-sulfide in soil, while the sulfone and amide were less abundant. Fipronil was photolyzed rapidly to desthiofipronil in deionized water in the laboratory (t1/2 = 7.97-9.42 h) and even faster in the presence of H2O2 (t1/2 = 0.874-4.51 h). Fipronil was

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also hydrolyzed to amide in base (t1/2 = 542 h at pH 9) and volatilized slowly from water (H = 6.60 x 10(-6) m3.atm/mol), properties not explaining its rapid field water dissipation. Desthiofipronil was more stable than fipronil to direct photolysis (t1/2 = 120-149 h), was indirectly photolyzed in the presence of H2O2 (t1/2 = 0.853-3.76 h), and was nonvolatile from water. The desthiofipronil observed in field water was formed photochemically from fipronil, accumulated due to slower photolysis and lack of volatility from water, but eventually dissipated. [Journal Article; In English; United States]

Ngim, K K, Mabury, S A, and Crosby, D G (2000). Elucidation of fipronil photodegradation pathways. *Journal Of Agricultural And Food Chemistry* 48: 4661-4665.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

The phenylpyrazole insecticide fipronil (I) photolyzes to its desthio product (II) in aqueous solution. However, the necessity of an intervening oxidation to a sulfone intermediate (III) has not been resolved, and the photodegradation products of II have not been identified. Using GC-MS, HPLC-UV/vis, electrospray MS, (19)F NMR, and GC-TSD, our objective was to characterize the photodegradation pathways of I, which would clarify the role of III, identify products of II, and explain unbalanced mass accounts in previous studies. Findings showed that II is formed directly and photochemically from I, confirmed by the greater stability of III (t(1/2) 112 h), and that successive oxidations of I to III and then a sulfonate (IV) comprise a second pathway. Compound II underwent photodechlorination, substitution of chlorine by trifluoromethyl, and pyrazole ring cleavage. This work is significant to understanding the photochemistry of novel phenylpyrazole pesticides in the environment. [Journal Article; In English; United States]

Nickerson, Cheryl A, Ott, C Mark, Wilson, James W, Ramamurthy, Rajee, and Pierson, Duane L (2004). Microbial responses to microgravity and other low-shear environments. *Microbiology And Molecular Biology Reviews: MMBR* 68: 345-361.
Chem Codes: Chemical of Concern: FPN Rejection Code: BACTERIA.

Microbial adaptation to environmental stimuli is essential for survival. While several of these stimuli have been studied in detail, recent studies have demonstrated an important role for a novel environmental parameter in which microgravity and the low fluid shear dynamics associated with microgravity globally regulate microbial gene expression, physiology, and pathogenesis. In addition to analyzing fundamental questions about microbial responses to spaceflight, these studies have demonstrated important applications for microbial responses to a ground-based, low-shear stress environment similar to that encountered during spaceflight. Moreover, the low-shear growth environment sensed by microbes during microgravity of spaceflight and during ground-based microgravity analogue culture is relevant to those encountered during their natural life cycles on Earth. While no mechanism has been clearly defined to explain how the mechanical force of fluid shear transmits intracellular signals to microbial cells at the molecular level, the fact that cross talk exists between microbial signal transduction systems holds intriguing possibilities that future studies might reveal common mechanotransduction themes between these systems and those used to sense and respond to low-shear stress and changes in gravitation forces. The study of microbial mechanotransduction may identify common conserved mechanisms used by cells to perceive changes in mechanical and/or physical forces, and it has the potential to provide valuable insight for understanding mechanosensing mechanisms in higher organisms. This review summarizes recent and future research trends aimed at understanding the dynamic effects of changes in the mechanical forces that occur in microgravity and other low-shear environments on a wide variety of important microbial parameters. [Journal Article, Review, Review, Tutorial; 110 Refs; In English; United States]Specialty IndexingNASA Keywords: NASA Center JSC; NASA Discipline Environmental Health; Non-NASA CenterInvestigators: Nickerson, C A (Tulane U Sch Med, New Orleans, LA); Pierson, D L (NASA JSC)General Note: NAG2-1378, NASA NAG9-1350, NASA NCC 2-1362, Louisiana Board of Regents LEQSF-1999-02-RD-A-41, NASA NAS9-02078, NASA PWC 111-30-40-97.

Nolan, D J (1974). A panel: the Regents external degree program. No. B-38. *ANA Publ* 23-25.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Novgorodov, S A, Kultayeva, E V, Yaguzhinsky, L S, and Lemeshko, V V (1987). Ion permeability induction by the SH cross-linking reagents in rat liver mitochondria is inhibited by the free radical scavenger, butylhydroxytoluene. *Journal Of Bioenergetics And Biomembranes* 19: 191-202 .
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

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The hydrophobic, potentially SH cross-linking reagent, phenylarsine oxide (PhAsO), was found to induce K+ and Ca2+ effluxes from mitochondria and to accelerate the respiration rate in state 4. The hydrophobic monofunctional electrophilic agent, N-ethylmaleimide, does not exhibit this effect but prevents the action of PhAsO. The polar potentially SH cross-linking regents (arsenite, diamide) induce ion fluxes only in the presence of Pi. Ion fluxes induced by the SH reagents are inhibited by butylhydroxytoluene (an inhibitor of free radical reactions), and N,N'-dicyclohexylcarbodiimide, not by oligomycin. It is inferred that the induction of ion fluxes in mitochondria caused by cross-linking of two juxtaposed SH groups is related to the development of free radical reactions. [Journal Article; In English; United States]

Nyquist, E B (1973). The Regents External Degrees. *NLN Publ* 1-11.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

OLESON JD, MCNUTT JJ, NOWATZKI TM, and TOLLEFSON JJ (1998). CORN ROOTWORM LARVAL CONTROL 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 199-201.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DIABROTICA-BARBERI DIABROTICA-VIRGIFERA-VIRGIFERA CORN NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM CROP CULTIVAR-PIONEER 3496 LARVA PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES AZTEC INSECTICIDE COUNTER FORCE FORTRESS FURADAN LORSBAN THIMET Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Coleoptera/ Lepidoptera

OLESON JD, MCNUTT JJ, NOWATZKI TM, and TOLLEFSON JJ (1998). SEEDCORN MAGGOT CONTROL 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 202-203.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DELIA-PLATURA CORN SEEDCORN MAGGOT CROP CULTIVAR-PIONEER 3496 PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES AC 166 002 INSECTICIDE AGROX PREMIERE AZTEC COUNTER FORCE FORTRESS H101 4-4 LORSBAN RAZE REGENT THIMET Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Diptera

OLESON JD, MCNUTT JJ, TOLLEFSON JJ, and WANG, X. (1997). CORN ROOTWORM LARVAL CONTROL 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 221-223.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DIABROTICA-BARBERI DIABROTICA-VIRGIFERA-VIRGIFERA FIELD CORN NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM CULTIVAR-ICI SEED 8532 CROP LARVA AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT AZTEC INSECTICIDE COUNTER DYFONATE II FORCE FURADAN LORSBAN FORTRESS NAF-287 NAF-288 NAF-289 REGENT THIMET XF-95050 ARTHROPOD MANAGEMENT TEST IOWA USA Cereals/ Plants/Growth & Development/ Soil/ Oils/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

OLESON JD, MCNUTT JJ, TOLLEFSON JJ, and WANG, X. (1997). FIELD CORN WIREWORM LARVAL CONTROL 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.;

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22: 225.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS HYPNOIDUS-ABBREVIATUS FIELD CORN WIREWORM CULTIVAR-ICI SEED 8532 CROP AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT AGROX D-L PLUS INSECTICIDE AZTEC COUNTER EXP 61216A FORCE FORTRESS GERMATE PLUS H101 4-4 H101 4-5 ISOTOX KERNAL GUARD RAZE REGENT WE-47C ARTHROPOD MANAGEMENT TEST GARNER IOWA USA Cereals/ Plants/Growth & Development/ Soil/ Oils/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

OLESON JD, MCNUTT JJ, TOLLEFSON JJ, and WANG, X. (1997). SEEDCORN MAGGOT CONTROL 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 224.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DELIA-PLATURA FIELD CORN SEEDCORN MAGGOT CROP CULTIVAR-ICI SEED 8532 AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT AGROX 2-WAY INSECTICIDE AGROX D-L PLUS AZTEC COUNTER EXP 61216A FORCE FORTRESS RAZE REGENT WE-47C ARTHROPOD MANAGEMENT TEST AMES IOWA USA Cereals/ Plants/Growth & Development/ Soil/ Oils/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Diptera

OLESON JD, NOWATZKI TM, and TOLLEFSON JJ (1999). Corn rootworm larval control, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 215-217.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA MAYS DIABROTICA VIRGIFERA VIRGIFERA DIABROTICA BARBERI FIELD CORN WESTERN CORN ROOTWORM SOUTHERN CORN ROOTWORM CROP HOST CULTIVAR-PIONEER 34G81 LARVA PEST CONTROL AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT ADAGE INSECTICIDE EFFICACY AZTEC COUNTER CP-1 CP-4 FORCE FORTRESS FURADAN LORSBAN NK-1 NK-4 PILOT REGENT THIMET AMES CEDAR RAPIDS BRYANT CRAWFORDSVILLE IOWA USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera/ Lepidoptera

OLESON JD, NOWATZKI TM, and TOLLEFSON JJ (1999). Field corn, wireworm larval control, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 217.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA MAYS MELANOTUS DEPRESSUS FIELD CORN WIREWORM HOST CULTIVAR-PIONEER 34G81 CROP CONTROL PEST LARVA AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT ADAGE INSECTICIDE EFFICACY AZTEC COUNTER EXP80698A FORCE FORTRESS GAUCHO GERMATE PLUS H101:4-4 KERNAL GUARD LORSBAN LSO15 RAZE REGENT THIMET WE-145 LINDEN IOWA USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

OLESON JD, NOWATZKI TM, and TOLLEFSON JJ (1999). Seedcorn maggot control, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 214.*

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA MAYS DELIA PLATURA FIELD CORN SEEDCORN MAGGOT HOST CULTIVAR-PIONEER 34G81 CROP PEST CONTROL AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT AZTEC EFFICACY INSECTICIDE COUNTER EXP 80698A FORCE FORTRESS H101:4-4 LORSBAN LSO15 MESUROL RAZE REGENT THIMET WE-145 AMES IOWA USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Diptera

Oliver, D. L. (The importance of insects and lerp in the diet of juvenile regent honeyeaters, Xanthomyza phrygia: Implications for the conservation of an endangered woodland bird. *Wildlife Research [Wildl. Res.]. Vol. 25, no. 4, pp. 409-417. 1998.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT .

The dietary items fed to regent honeyeater, Xanthomyza phrygia, nestlings and fledglings by adults were recorded in two consecutive breeding seasons in the Bundarra-Barraba region west of Armidale, New South Wales. Insects were the most common dietary items fed to juveniles (53% of identified items), followed by lerp (26.5%) and nectar (20.5%). Nestlings were fed mostly insects (58% of feeds), and carbohydrates (nectar and lerp) made up the rest of their diet. Fledglings, however, were fed mainly carbohydrates (nectar and lerp comprised 61.2% of all items) while protein from insects was the other major component of their diet. Males tended to feed juveniles more insects than did females, although there were no significant divisions of labour between parents in selecting dietary items for nestlings or fledglings. This study highlights the importance of insects and lerp in the diet of juvenile regent honeyeaters, and the diversity of plant species on which their parents foraged. The species shows a broader resource selection than was found in previous studies which considered the species to be highly nectarivorous and selective for a few key eucalypt species. The importance of insects and carbohydrates other than nectar in the diet of the regent honeyeater needs to be recognized in the development of conservation strategies for the species. Wildlife management/ Conservation/ Endangered species/ Diets/ Food organisms/ Xanthomyza phrygia/ Australia, New South Wales/ Regent Honeyeater

Ornstein, Charles, Silverstein, Stuart, and Trounson, Rebecca (2004). Cadaver case puts focus on regents. *The Los Angeles Times* A18-A19.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Newspaper Article; In English; United States]Specialty IndexingSource ID: NRCBL - VF 19.5General Note: KIE Bib: fraud and misconduct; organ and tissue donation

Ozoe, Yoshihisa, Yagi, Kazuo, Nakamura, Masafumi , Akamatsu, Miki, Miyake, Takashi, and Matsumura, Fumio (2000). Fipronil-Related Heterocyclic Compounds: Structure-Activity Relationships for Interaction with [gamma]-Aminobutyric Acid- and Voltage-Gated Ion Channels and Insecticidal Action. *Pesticide Biochemistry and Physiology* 66: 92-104.
Chem Codes: Chemical of Concern: PPB Rejection Code: IN VITRO.

To investigate the role of the heterocyclic moieties of nitrogen-containing phenyl heterocyclic compounds (PHCs) in interaction with [gamma]-aminobutyric acid (GABA)-gated chloride channels, diverse classes of PHCs were examined for their ability to inhibit the specific binding of [3H]4'-ethynyl-4-n-propylbicycloorthobenzoate (EBOB), a noncompetitive GABA antagonist, to housefly head and rat brain membranes. PHCs that inhibited [3H]EBOB binding include pyrazoles; 1H-1,2,3-triazoles; a 1H-1,2,4-triazole; 1,3,4-oxadiazol-2(3H)-ones; a 1,3,4-oxadiazole-2(3H)-thione; 1,2,4-oxadiazoles; a 1,2,4-thiadiazole; thiazoles; a 4(3H)-pyrimidinone; and a 2,4(1H,3H)-pyrimidinedione. An analogue (1) of the pyrazole insecticide fipronil, bearing an SCF3 group in place of the S(O)CF3, was found to be the most potent inhibitor with IC50s of 7.55 and 177 nM in housefly head and rat brain membranes, respectively. 3-(2,6-Dichloro-4-trifluoromethyl phenyl)-5-t-butyl-1,3,4-oxadiazol-2(3H)-one exhibited the highest selectivity for housefly GABA receptors versus rat receptors (IC50 rat/IC50 fly >204). PHCs that exhibited a comparable selectivity include a pyrazole and a 1H-1,2,3-triazole. Interaction of 16 selected PHCs with rat brain GABA-gated channels was also examined using [3S]t-butylbicyclophosphorothionate (TBPS), a radioligand for the mammalian noncompetitive antagonist site. A plot of pIC50s of 12 PHCs revealed a close correlation (r = 0.93) between their potency in inhibiting [3H]EBOB and [35S]TBPS binding. Scatchard analyses of the inhibition of [35S]TBPS binding by 1 suggested a competitive-type inhibition. A

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plot of the potency of 14 PHCs in inhibiting [3H]EBOB binding to housefly head membranes against their piperonyl butoxide-synergized insecticidal effect on German cockroaches yielded a close correlation (r = 0.89), with the exception of five triazoles and a 2,4(1H,3H)-pyrimidinedione. Although several selected PHCs also inhibited the specific binding of [3H]batrachotoxinin A 20-[alpha]-benzoate, a tritiated analogue of the sodium channel activator batrachotoxinin, to synaptosomes and membranes prepared from mouse brains, housefly heads, and American cockroach nerve cords, the concentrations required were higher than those of standard compounds producing significant effects on this system. The results demonstrate that a variety of five- and six- membered, nitrogen-containing heterocyclic compounds, bearing a 2,6-dichloro-4-trifluoromethyphenyl or 2,4,6- trichlorophenyl group, interact with ionotropic GABA receptors. Several PHCs display higher affinities for housefly GABA receptors and high selectivity as compared to rat GABA receptors. PHCs' insecticidal activity is mediated by their interaction with GABA-gated chloride channels.

Ozoe, Yoshihisa, Yagi, Kazuo, Nakamura, Masafumi , Akamatsu, Miki, Miyake, Takashi, and Matsumura, Fumio (2000). Fipronil-Related Heterocyclic Compounds: Structure-Activity Relationships for Interaction with [gamma]-Aminobutyric Acid- and Voltage-Gated Ion Channels and Insecticidal Action. *Pesticide Biochemistry and Physiology* 66: 92-104.
Chem Codes: Chemical of Concern: FPN Rejection Code: QSAR.

To investigate the role of the heterocyclic moieties of nitrogen-containing phenyl heterocyclic compounds (PHCs) in interaction with [gamma]-aminobutyric acid (GABA)-gated chloride channels, diverse classes of PHCs were examined for their ability to inhibit the specific binding of [3H]4′-ethynyl-4-n-propylbicycloorthobenzoate (EBOB), a noncompetitive GABA antagonist, to housefly head and rat brain membranes. PHCs that inhibited [3H]EBOB binding include pyrazoles; 1H-1,2,3-triazoles; a 1H-1,2,4-triazole; 1,3,4-oxadiazol-2(3H)-ones; a 1,3,4-oxadiazole-2(3H)-thione; 1,2,4-oxadiazoles; a 1,2,4-thiadiazole; thiazoles; a 4(3H)-pyrimidinone; and a 2,4(1H,3H)-pyrimidinedione. An analogue (1) of the pyrazole insecticide fipronil, bearing an SCF3 group in place of the S(O)CF3, was found to be the most potent inhibitor with IC50s of 7.55 and 177 nM in housefly head and rat brain membranes, respectively. 3-(2,6-Dichloro-4-trifluoromethyl phenyl)-5-t-butyl-1,3,4-oxadiazol-2(3H)-one exhibited the highest selectivity for housefly GABA receptors versus rat receptors (IC50 rat/IC50 fly >204). PHCs that exhibited a comparable selectivity include a pyrazole and a 1H-1,2,3-triazole. Interaction of 16 selected PHCs with rat brain GABA-gated channels was also examined using [3S]t-butylbicyclophosphorothionate (TBPS), a radioligand for the mammalian noncompetitive antagonist site. A plot of pIC50s of 12 PHCs revealed a close correlation (r = 0.93) between their potency in inhibiting [3H]EBOB and [35S]TBPS binding. Scatchard analyses of the inhibition of [35S]TBPS binding by 1 suggested a competitive-type inhibition. A plot of the potency of 14 PHCs in inhibiting [3H]EBOB binding to housefly head membranes against their piperonyl butoxide-synergized insecticidal effect on German cockroaches yielded a close correlation (r = 0.89), with the exception of five triazoles and a 2,4(1H,3H)-pyrimidinedione. Although several selected PHCs also inhibited the specific binding of [3H]batrachotoxinin A 20-[alpha]-benzoate, a tritiated analogue of the sodium channel activator batrachotoxinin, to synaptosomes and membranes prepared from mouse brains, housefly heads, and American cockroach nerve cords, the concentrations required were higher than those of standard compounds producing significant effects on this system. The results demonstrate that a variety of five- and six- membered, nitrogen-containing heterocyclic compounds, bearing a 2,6-dichloro-4-trifluoromethyphenyl or 2,4,6- trichlorophenyl group, interact with ionotropic GABA receptors. Several PHCs display higher affinities for housefly GABA receptors and high selectivity as compared to rat GABA receptors. PHCs' insecticidal activity is mediated by their interaction with GABA-gated chloride channels.

Palrang, A. T. and Godfrey, L. D. (1995). EVALUATION OF INSECTICIDES FOR RICE WATER WEEVIL CONTROL IN CALIFORNIA 1994. *Burditt, A. K. Jr. (Ed.). Arthropod Management Tests, Vol. 20. Iii+399p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-53-1.* 0 : 227-228.
Chem Codes: CBF Rejection Code: BOOK ORDERED - BURDITT VOL 2O.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA-SATIVA LISSORHOPTRUS-ORYZOPHILUS CULTIVAR M-202 FIPRONIL KARATE FURADAN DIMILIN RH-0345 ADMIRE INSECTICIDE PESTICIDE EVALUATION ARTHROPOD MANAGEMENT TEST BRIGGS USA
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae

US EPA ARCHIVE DOCUMENT

KEYWORDS: Coleoptera

PALUMBO JC, MULLIS CH, and REYES FJ (1998). EVALUATION OF EXPERIMENTAL COMPOUNDS FOR WESTERN FLOWER THRIPS CONTROL IN LETTUCE 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 108-109.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LACTUCA-SATIVA FRANKLINIELLA-OCCIDENTALIS LETTUCE WESTERN FLOWER THRIPS HOST CROP CULTIVAR-VAN MAX PEST PEST MANAGEMENT PESTICIDES APPLICATION RATE LANNATE LV INSECTICIDE AMMO 2.5 EC ALERT 2 F SUCCESS 2 F MESUROL 50 WP FIPRONIL 70 WP Biochemistry/ Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Insects

PARAJULEE MN, SLOSSER JE, and IDOL GB (1998). EFFICACY OF FIPRONIL FOR CONTROL OF BOLL WEEVIL 1996. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 242-243.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM-HIRSUTUM ANTHONOMUS-GRANDIS-GRANDIS COTTON BOLL WEEVIL CULTIVAR-HS-26 FIBER CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT FIPRONIL EC INSECTICIDE GUTHION CHILLICOTHE TEXAS USA Biochemistry/ Plants/Growth & Development/ Soil/ Textiles/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Coleoptera

PARKER RD, COSPER JC, and FROMME DD (1999). Efficacy of soil insecticides on white grubs and Mexican corn rootworm, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 219-220.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA MAYS DIABROTICA VIRGIFERA ZEAE CYCLOCEPHALA LURIDA PHYLLOPHAGA SUBMUCIDA FIELD CORN MEXICAN CORN ROOTWORM WHITE GRUB CROP CULTIVAR-DEKALB 668 HOST CONTROL PEST AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT COUNTER EFFICACY INSECTICIDE AZTEC FORCE REGENT GAUCHO WHARTON COUNTY TEXAS USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

PAVLISTA AD (1997). MOCAP AND AZTEC ON REDUCING WIREWORM DAMAGE TO POTATO TUBERS 1995. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 158.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SOLANUM-TUBEROSUM HEMICREPIDUS-MEMNONIUS POTATO WIREWORM CULTIVAR-KRANTZ VEGETABLE CROP AGRICULTURAL PEST HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST MOCAP INSECTICIDE TUBER DAMAGE AZTEC EXP 60655A ADMIRE HERSHEY NEBRASKA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

Peerboom, D and Lumeij, J T (2004). Frontline contra-indicated in the rabbit. *Tijdschrift Voor Diergeneeskunde* 129: 671; discussion 672.

US EPA ARCHIVE DOCUMENT

Chem Codes: Chemical of Concern: FPN Rejection Code: NO FOREIGN.

[Letter; In Dutch; Netherlands]

Pei, Z., Yitong, L., Baofeng, L., and Gan, J. J. (Dynamics of fipronil residue in vegetable-field ecosystem. *Chemosphere, 57 (11) pp. 1691-1696, 2004.*
Chem Codes: Chemical of Concern: FPN Rejection Code: FATE.

Fipronil insecticide has been widely used to control vegetable pests in China recently. The research was conducted to evaluate the fate of fipronil in vegetable-field ecosystem and provide the scientific basis of using this insecticide. Developed on the analytical methods of fipronil residue and its four metabolisms, the degradation dynamics of their residue in a vegetable and the soil of the vegetable fields was studied. The results showed that (1) degradation of fipronil was faster in pakchoi (half-life 2.6 days) than in soil (half-life 7.3 days); (2) degradation reaction occurred in soil was governed mainly by photodegradation and oxidization accompanying with production of the metabolites, MB46513 and MB46136. Reduction and hydrolyzation played little role in the degradation process. In pakchoi, degradation was mainly contributed by reduction though oxidization and hydrolyzation occurred simultaneously. The metabolite products were MB45950, MB46136 and RPA200766; (3) the final residue in pakchoi was at a level of 0.003 mg kg⁻¹, which was much lower than the USA's upper limit of 0.04 mg kg⁻¹ in rice. Therefore, a dosage of 24 g hm⁻² was suggested and considered as safe to human beings and animals. (copyright) 2004 Elsevier Ltd. All rights reserved. Fipronil/ Insecticide/ Degradation/ Metabolite/ Residue

Pettit, Malcolm (1989). The international erosion control association symposium on soil erosion and its control : Regents college, London, UK, 21 april 1989. *Land Use Policy* 6: 351-353.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

Peumery, J J (Not Available. *Histoire Des Sciences Medicales* 33: 45-51.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO FOREIGN.

Bernard Le Bovier de Fontenelle (1657-1757) in the "Eloges des Academiciens des Sciences" who died between 1699 and 1740, allowed to Pierre Chirac - Louis XV Chief Doctor - a worthy scientific place. Born at Conques, in the Rouergue country (Aveyron), in 1650, Chirac purposed to enter the priesthood when, settling in Montpellier, he was spotted by the Chancellor and Judge of Montpellier University, Michel Chicoyneau, in 1678, who encouraged him to take up medicine studies. Became a Montpellier Faculty member in 1682, Chirac will teach, here, medicine, five years after; he got great success. Then he started practising, and in 1692, the Marechal de Noailles appointed him in the Roussillon Army Heath Service as a Doctor. In 1693, he had to fight against a dysentery epidemic and later, at Rochefort, against the "Mal de Siam" (Yellow fever) which infected him but, nevertheless, he was cured. In 1706, the Duc d'Orleans promoted him his private doctor and attached him to go to Italy and Spain. Coming back to France, Chirac went to Paris and remained here till his death. In 1715, the Duc d'Orleans became Regent and selected him for Principal Doctor, In 1718, he succeeded to Guy Crescent Fagon as "Jardin du Roy" Superintendant. In 1720, he was called in Marseille where a plague epidemic was raging. In the funeral oration, Fontenelle was very insistent about the fact that Pierre Chirac endeavoured to set up a Medicine Academy. Unfortunately, his death (March the 1st 1732) kept him from succeeding in such a way. [Biography, Historical Article, Journal Article; In French; France]

POWER KT, NIEMCZYK HD, GREWAL PG, and SHETLAR DJ (1999). Suppression of ant mound activity on a golf course fairway, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 353-354.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER POA ANNUA POA PRATENSIS LASIUS NEONIGER LOLIUM PERENNE ANNUAL BLUEGRASS KENTUCKY BLUEGRASS ANT PERENNIAL RYEGRASS ORNAMENTAL CROP HOST PEST CONTROL HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT SCIMITAR INSECTICIDE EFFICACY ANT MOUND ACTIVITY GOLF COURSE FAIRWAY ICIA 0321 MERIT NATURALIS-T CGA-293343 NAF-422 SUSPEND EXP 61508 SUPPRESSION CLYDE OHIO USA Plants/Growth & Development/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/

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Trees/ Wood/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Hymenoptera

Pratt, L W (1990). Specialization vs. fragmentation: views from a former Regent. *Bulletin Of The American College Of Surgeons* 75: 6-11.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Rabinovich, S V, Fedak, G, and Lukov, O (The high-molecular glutenins of the soft winter wheats from European countries and their relationship to the glutenin composition of the ancient and modern wheat varieties of Ukraine. *TSitologiia i Genetika* 34: 104-120.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO FOREIGN.

The sources of high-quality components of HMW glutenines determining grain quality, as initial material for breeding in the conditions of Ukraine were revealed on the base of analysis of 75 literature sources data about composition of high-molecular weight (HMW) glutenin and pedigrees of 598 European wheats from 12 countries, bred in 1923-1997, including, 449 cultivars from West and 149 East Europe. Origin of these components was observed in varieties of Great Britain, France and Germany from ancient Ukrainian wheat Red Fife and it derivative spring wheats of Canada--Marquis, Garnet, Regent, Saunders, Selkirk and of USA--spring wheat Thatcher and winter wheats--Kanred and Oro--as directly as via cultivars of European countries and Australia; in wheats of East European countries from winter wheats Myronivs'ka 808 and Bezostaya 1 (derivative of Ukrainian cultivars Ukrainka and Krymka) and their descendants; in wheats of Austria and Italy--from the both genetical sources. [Journal Article, Review, Review, Tutorial; 75 Refs; In Russian; Ukraine]

Ramesh, A and Balasubramanian, M (1999). Kinetics and hydrolysis of fenamiphos, fipronil, and trifluralin in aqueous buffer solutions. *Journal Of Agricultural And Food Chemistry* 47: 3367-3371.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

Hydrolyses of fenamiphos, fipronil, and trifluralin were studied in aqueous buffer solutions of pH 4.1, 7.1, and 9.1 at different temperatures, 5, 22 +/- 1, 32 +/- 1, and 50 +/- 1 degrees C. Fenamiphos, fipronil, and trifluralin were found to be more stable in acidic and neutral buffer solutions at temperatures of 5 and 22 +/- 1, and dissipation is rapid at 50 +/- 1 degrees C. In basic buffer and at higher temperature, degradation of fenamiphos was found to be very rapid when compared with fipronil and trifluralin. The rate constants calculated at 32 degrees C for fenamiphos were 2349.4 x 10(-)(8) (pH 4.1), 225.2 x 10(-)(8) (pH 7.1), and 30476.0 x 10(-)(8) (pH 9.1); for fipronil 1750.0 x 10(-)(8) (pH 4.1), 3103.0 x 10(-)(8) (pH 7.1), and 3883.0 x 10(-)(8) (pH 9.1); and for trifluralin 2331.0 x 10(-)(8) (pH 4.1), 2360.0 x 10(-)(8) (pH 7.1), and 3188.0 x 10(-)(8) (pH 9.1). On the basis of rate constant values, these pesticides appeared to be more susceptible to hydrolysis than synthetic organophosphorus compounds such as chlorpyriphos, diazinon, malathion, and ronnel. DT(50) values calculated at 32 degrees C were 228 (pH 4.1), 5310.24 (pH 7.1), and 37.68 (pH 9.1) h for fenamiphos; 608.6 (pH 4.1), 373.9 (pH 7.1), and 270.2 (pH 9.1) h for fipronil; and 502.1 (pH 4.1), 496.8 (pH 7.1), and 355.7 (pH 9.1) h for trifluralin. [Journal Article; In English; United States]

Ratra, G. S. and Casida, J. E. *. (GABA receptor subunit composition relative to insecticide potency and selectivity. *Toxicology Letters [Toxicol. Lett.]. Vol. 122, no. 3, pp. 215-222. 6 Jul 2001.*
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

Three observations on the 4-[super(3)H]propyl-4'-ethynylbicycloorthobenzoate ([super(3)H]EBOB) binding site in the gamma -aminobutyric acid (GABA) receptor indicate the specific target for insecticide action in human brain and a possible mechanism for selectivity. First, from published data, alpha -endosulfan, lindane and fipronil compete for the [super(3)H]EBOB binding site with affinities of 0.3-7 nM in both human recombinant homooligomeric beta 3 receptors and housefly head membranes. Second, from structure-activity studies, including new data, GABAergic insecticide binding potency on the pentameric receptor formed from the beta 3 subunit correlates well with that on the housefly receptor (r = 0.88, n = 20). This conserved inhibitor specificity is consistent with known sequence homologies in the housefly GABA receptor and the human GABA sub(A) receptor beta 3 subunit. Third, as mostly new findings, various combinations of alpha 1, alpha 6, and gamma 2 subunits coexpressed with a beta 1 or beta 3 subunit confer differential insecticide binding sensitivity, particularly to fipronil, indicating that subunit composition is a major factor in insecticide selectivity. Receptors/ gamma -Aminobutyric acid receptors/ Brain/ Insecticides/ Lindane/ alpha -Endosulfan/ fipronil/ Endosulfan/ Musca domestica/ selectivity/ Diptera/ House fly/ man

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Ratra, G. S., Erkkila, B. E., Weiss, D. S., and Casida, J. E. *. (Unique insecticide specificity of human homomeric rho 1 GABA sub(C) receptor. *Toxicology Letters [Toxicol. Lett.]. Vol. 129, no. 1-2, pp. 47-53. 24 Mar 2002.*
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

Several convulsants and major insecticides block the gamma -aminobutyric acid (GABA)-gated chloride channel in brain on binding to the GABA sub(A) receptor. The GABA sub(C) receptor, important in retina and present in brain, is also coupled to a chloride channel and is therefore a potential target for toxicant action examined here in radioligand binding and electrophysiological experiments. Human homomeric rho 1 GABA sub(C) receptor expressed in human embryonic kidney cells (HEK293) undergoes specific and saturable high-affinity binding of 4-n-[super(3)H]propyl-4'-ethynylbicycloorthobenzoate ([super(3)H]EBOB) using a cyano analog (CNBOB) to determine non-specific binding. This GABA sub(C) rho 1 receptor is very sensitive to CNBOB and lindane relative to alpha -endosulfan, tert-butylbicyclophosphorothionate, picrotoxinin and fipronil (IC sub(50) values of 23, 91, 800, 1080, 4000 and > 10000 nM, respectively, in displacing [super(3)H]EBOB). A similar potency sequence (except for picrotoxinin) is observed for inhibition of GABA-induced currents of rho 1 receptor expressed in Xenopus oocytes. The present study does not consider rho 2 homomeric and rho 1 rho 2 heteromeric GABA sub(C) receptors which are known to be more sensitive than rho 1 to picrotoxinin. The inhibitor sensitivity and specificity of this rho 1 GABA sub(C) receptor differ greatly from those of human homomeric beta 3 and native GABA sub(A) receptors. Insecticides/ Pesticides/ Chloride channels/ Brain/ gamma -Aminobutyric acid C receptors/ Electrophysiology/ gamma -Aminobutyric acid receptors/ binding/ Insecta

Ratra, G. S., Kamita, S. G., and Casida, J. E. *. (Role of Human GABA Receptor beta 3 Subunit in Insecticide Toxicity. *Toxicology and Applied Pharmacology [Toxicol. Appl. Pharmacol.]. Vol. 172, no. 3, pp. 233-240. 1 May 2001.*
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

The gamma -aminobutyric acid type A (GABA sub(A)) receptor is the target for the major insecticides alpha -endosulfan, lindane, and fipronil and for many analogs. Their action as chloride channel blockers is directly measured by binding studies with [super(3)H]ethynylbicycloorthobenzoate ([super(3)H]EBOB). This study tests the hypothesis that GABA sub(A) receptor subunit composition determines the sensitivity and selectivity of insecticide toxicity. Human receptor subtypes were expressed individually (alpha 1, alpha 6, beta 1, beta 3, and gamma 2) and in combination in insect Sf9 cells. Binding parameters were similar for [super(3)H]EBOB in the beta 3 homooligomer, alpha 1 beta 3 gamma 2 heterooligomer, and native brain membranes, but toxicological profiles were very different. Surprisingly, alpha -endosulfan, lindane, and fipronil were all remarkably potent on the recombinant beta 3 homooligomeric receptor (IC50 values of 0.5-2.4 nM), whereas they were similar in potency on the alpha 1 beta 3 gamma 2 subtype (IC50 values of 16-33 nM) and highly selective on the native receptor (IC50 values of 7.3, 306, and 2470 nM, respectively). The selectivity order for 29 insecticides and convulsants as IC50 ratios for native/ beta 3 or alpha 1 beta 3 gamma 2/ beta 3 was as follows: fipronil > lindane > 19 other insecticides including alpha -endosulfan and picrotoxinin > 4 trioxabicyclooctanes and dithianes (almost nonselective) > tetramethylenedisulfotetramine, 4-chlorophenylsilatrane, or alpha -thujone. Specificity between mammals and insects at the target site (fipronil > lindane > alpha -endosulfan) paralleled that for toxicity. Potency at the native receptor is more predictive for inhibition of GABA-stimulated chloride uptake than that at the beta 3 or alpha 1 beta 3 gamma 2 receptors. Therefore, the beta 3 subunit contains the insecticide target and other subunits differentially modulate the binding to confer compound-dependent specificity and selective toxicity. Copyright 2001 Academic Press. Insecticides/ Neurotoxicity/ gamma -Aminobutyric acid A receptors/ Lindane/ Endosulfan/ fipronil/ man

Raymond, V, Sattelle, D B, and Lapied, B (2000). Co-existence in DUM neurones of two GluCl channels that differ in their picrotoxin sensitivity. *Neuroreport* 11: 2695-2701.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

Whole cell patch-clamp electrophysiology was used to study the effects of L-glutamate on dissociated cockroach (Periplaneta americana) dorsal unpaired median (DUM) neurones. Application of L-glutamate via pressure-ejection pipette resulted in a two-component hyperpolarization, consisting of an initial transient and a second, prolonged phase. Under voltage-clamp, using isotonic chloride in the saline and intrapipette solutions, two L-glutamate-gated inward currents were characterized. Their reversal potentials were close to the equilibrium potential for chloride ions. One component was selectively activated by ibotenate and was sensitive to picrotoxin (100 microM), BIDN (10 microM) and the phenylpyrazole insecticide fipronil (10 microM), known to be potent blockers of insect GABA-gated chloride channels.

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The second component was insensitive to picrotoxin (100 microM) and BIDN (10 microM). These findings demonstrated, for the first time, the co-existence of two pharmacologically distinct native insect neuronal L-glutamate-gated chloride channels. [Journal Article; In English; England]

Reed, G F (1976). 1976 reports from nine American surgical specialty boards to the Board of Regents of the American College of Surgeons. Presented at the meeting of the Board of Regents, October 10, 1976, in Chicago, Illinois. Report of the American Board of Otolaryngology. *Bulletin Of The American College Of Surgeons* 61: 29.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Reynolds, A. G., Cliff, M., Wardle, D. A., and King, M. (Evaluation of winegrapes in British Columbia: New cultivars and selections from Germany and Hungary. *HortTechnology, 14 (3) pp. 420-436, 2004.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Eighty-five cultivars, selections and clones of winegrapes (Vitis) from European breeding and selection programs were evaluated between 1993-95 in a randomized complete-block experiment. These included selections from Alzey, Freiburg, Geilweilerhof, Geisenheim, Weinsberg, and Wu(dieresis)rzburg (Germany); Hungary; and the former USSR. Vines were grown under an organic management regime that included sodium silicate sprays for powdery mildew (Uncinula necator) control and oil + detergent for insect control but with little to no nitrogen or other nutritional inputs. The Weinsberg cultivars Heroldrebe and Helfensteiner showed promise viticulturally and sensorially as alternatives to 'Pinot noir'. Cultivars from Geisenheim ('Gm 7117-10' and 'Gm 7117-26') and Wu(dieresis)rzburg ('Cantaro' and 'Fontanara') appeared promising as 'Riesling' alternatives; many displayed similar sensory characteristics to 'Riesling', along with reasonable viticultural performance. Cultivars selected at Alzey ('Faberrebe'), Freiburg ('Nobling'), and Weinsberg ('Holder') displayed sensory characteristics superior to the standard cultivar Mu(dieresis)ller-Thurgau, with very intense muscat, pear, fig, and spicy aromas and flavors. Several muscat-flavored Hungarian white wine cultivars appeared to be superior viticulturally and sensorially to the standard 'Csabagyongye'; these included 'Kozma Paine Muscotaly', 'Zefir', and 'Zengo'. Miscellaneous red wine cultivars that showed promise included Geilweilerhof cultivar Regent, and Hungarian selections Kozma 55 and Kozma 525. Vine yields decreased substantially in the 3-year evaluation period, primarily due to lack of nitrogen. Many of these cultivars appeared to be highly adaptable to viticultural regions where cold winters and low heat units during fruit maturation presently restrict cultivar choices. Vitis/ Breeding/ Clone/ Vitis/ Uncinula necator

Rhone-Poulenc Company . Initial Submission: Letter Regarding Preliminary Results of a One-Year Dietary Study in Dogs and a 21-Day Dermal Study in Rabbits with MB 46030 Dated 042393. EPA/OTS Doc.#88-930000275 , 1-4 (NTIS/OTS0538439). 1993.
Rec #: 50
Keywords: ABSTRACT
Call Number: NO ABSTRACT
Notes: Chemical of Concern: FPN

Rhone-Poulenc Inc . Initial Submission: Acute Oral LD50 in Rats with Hand Chrome ETCH with Cover Letter Dated 102992. EPA/OTS Doc.#88-920010451 , 8 p. 1992. ORAL.
Rec #: 10
Keywords: MIXTURE
Call Number: MIXTURE
Notes: Chemical of Concern: FPN

Rhone-Poulenc Incorporated . Initial Submission: Letter from Rhone-Poulenc Inc. Submitting the Results from a Chronic Toxicity Study with M&B 46030 in Rats. EPA/OTS Doc.#88-920004633 , 4 p. (NTIS/OTS0537614). 1992.
Rec #: 30
Keywords: ABSTRACT
Call Number: NO ABSTRACT
Notes: Chemical of Concern: FPN

Rhone-Poulenc Incorporated . Initial Submission: M&B 46030 and [ ]: Preliminary Teratology Study in the Rabbit Submitted as a Letter Dated 102992 (Sanitized). EPA/OTS Doc.#88-920010823S , 6 p.

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(NTIS/OTS0571974). 1992.
Rec #: 40
Keywords: ABSTRACT
Call Number: NO ABSTRACT
Notes: Chemical of Concern: FPN

Rhone-Poulenc Incorporated . Initial Submission: Notice of Preliminary Study of M&B 46030 Effects on Rat Reproductive Performance by Letter from Rhone-Poulenc Inc. to U.S.EPA Dated 10/29/92. EPA/OTS Doc.#88-920010684 , 5 p. (NTIS/OTS0555952). 1992.
Rec #: 20
Keywords: ABSTRACT
Call Number: NO ABSTRACT
Notes: Chemical of Concern: FPN

RILEY, D., DAVIS, J., and HERZOG, G. (1997). THREE TYPES OF BIOASSAYS FOR 11 INSECTICIDE TREATMENTS 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 418-419.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SPODOPTERA-EXIGUA BEET ARMYWORM PEST PEST MANAGEMENT MK-244 INSECTICIDE ALERT 2SC DANITOL SPINOSAD KARATE MONITOR FIPRONIL POUNCE Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Lepidoptera

Riungu, T. C. and McVetty, P. B. E. (Development and evaluation of Diplotaxis muralis (mur) cytoplasmic male sterility system in summer rape. *Canadian Journal of Plant Science, 83 (2) pp. 261-269, 2003.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

The Diplotaxis muralis male sterility inducing cytoplasm (mur cytoplasm) and its maintainer genes were transferred from the winter rapeseed male sterile line Mangun mur CMS A-line and the mur CMS maintainer line Mangun mur CMS B-line, respectively, into summer rape lines genetically related to the open-pollinated population cultivars Regent and Karat using standard cross, backcross and test cross breeding procedures. Three genetically identical summer rape mur CMS A-line and B-line pairs, Karat I A-line and B-line, Karat II A-line and B-line and Regent A-line and B-line were developed. Flower morphology studies revealed that the mur CMS A-lines had anthers displaying a complete absence of pollen and floral morphology modifications similar to that seen for other CMS systems in summer rape. Seedling emergence, days to first flower, days to maturity, and height of the vernalized mur CMS Mangun A-line and B-line pair and the summer rape mur CMS A-line and B-line pairs were similar among treatments and equal for A-line and B-line pair comparisons within cultivars for plants grown in the greenhouse. There was no evidence of biological benefits or costs associated with the mur cytoplasm. The male sterility for the vernalized Mangun mur CMS A-line and the summer rape mur CMS A-lines was stable at temperatures up to 30/24EC. Brassica napus L./ Male sterility/ Temperature stability/ Diplotaxis muralis

Ronald, P. S., St-Pierre, R. G., and Bains, P. S. (Resistance to Entomosporium mespili among cultivars of saskatoon, Amelanchier alnifolia. *Canadian Journal of Plant Pathology, 23 (4) pp. 391-402, 2001.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Saskatoon (Amelanchier alnifolia Nutt.) cultivars were evaluated for their resistance to Entomosporium leaf and berry spot disease, caused by the fungal pathogen Entomosporium mespili DC. (Sacc.). Leaves and fruit from naturally infected plants of saskatoon cultivars were evaluated for disease incidence and severity. Detached leaves of these cultivars were also evaluated for disease severity after inoculation with a conidiospore suspension under controlled conditions. Leaf age was an important factor in disease response of detached leaves, with older leaves generally displaying reduced susceptibility. Comparisons of disease response for inoculated and naturally infected leaves of various cultivars revealed similar rankings and significant correlation coefficients. Analysis of data from all experiments revealed significant differences (P (less-than or equal to) 0.05) in disease response among saskatoon cultivars. Leaf disease response of saskatoon cultivars to E. mespili was classed into four groups: (1) those that restricted infection and sporulation, e.g., Success; (2) those that restricted sporulation, e.g., Regent; (3) those that reduced

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sporulation, e.g., Northline; and (4) those that reduced neither infection or sporulation, e.g., Pearson II. Most cultivars had moderate to high values for the incidence and severity of leaf and fruit infection. Resistant cultivars were distinguished by their ability to restrict fungal sporulation on leaves and fruit. Among the saskatoon cultivars evaluated in this study, Parkhill, Regent, and Success showed consistently lower values for the incidence and severity of fungal sporulation on leaves and fruit. Amelanchier alnifolia/ Saskatoon/ Entomosporium mespili/ Disease resistance/ Entomosporium mespili/ Amelanchier alnifolia

Rovelstad, G H (1987). Report of the Executive Director to the Board of Regents, American College of Dentists. *The Journal Of The American College Of Dentists* 54: 16-19.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Historical Article, Journal Article; In English; United States]

Rubin, Michael, Markov, Jelena, Chuprakov, Stepan, Wink, Donald J, and Gevorgyan, Vladimir (2003). Highly regiocontrolled Pd-catalyzed cross-coupling reaction of terminal alkynes and allenylphosphine oxides. *The Journal Of Organic Chemistry* 68: 6251-6256.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

The cross-coupling of a variety of terminal alkynes 1 with allenylphosphine oxides 2 catalyzed by a Pd(OAc)(2)-TDMPP system provided conjugated endo-enynes 3 solely, while the TCPC-catalyzed reaction of the same regents led to the exclusive formation of exo-isomers 4. The mechanistic rationale for these selective transformations was proposed. Synthetic usefulness of the prepared exo-enyne 4 was demonstrated in the synthesis of multisubstituted diarylbenzylphosphine oxides 5 via the Pd-catalyzed [4+2]-benzannulation reaction. [Journal Article; In English; United States]

Rueegg, Willy T (20040812). Synergistic herbicidal compositions comprising insecticides. 380 pp.
Chem Codes: Chemical of Concern: CYP FVL, RSM SPM,CaPS Rejection Code: NON-ENGLISH.

The title compns. comprise I (R = Cl or alkyl; R1 = H or alkyl; R2 = alkyl) and any of a large no. of known insecticides. [on SciFinder (R)] synergism/ herbicide/ compn/ insecticide Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2004:649296
Chemical Abstracts Number: CAN 141:152560
Section Code: 5-3
Section Title: Agrochemical Bioregulators
Coden: GWXXBX
Index Terms: Bacillus sphaericus; Bacillus thuringiensis; Schoenocaulon (mixts. contg.; synergistic herbicidal compns.); Pyrethrins Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (mixts. contg.; synergistic herbicidal compns.); Petroleum products (oils, mixts. contg.; synergistic herbicidal compns.); Insecticides (synergistic herbicidal compns. comprising insecticides); Cereal; Zea mays (synergistic herbicidal compns. for); Herbicides (synergistic; synergistic herbicidal compns. comprising insecticides); Toxins Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (d-endotoxins, mixts. contg.; synergistic herbicidal compns.)
CAS Registry Numbers: 143807-66-3D (Chromafenozide) Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (mixts. contg.; synergistic herbicidal compns.); 50-29-3D (DDT); 50-29-3D (DDT); 52-68-6D (Trichlorphon); 52-85-7D (Famphur); 54-11-5D (Nicotine); 55-38-9D (Fenthion); 56-23-5D (Carbon tetrachloride); 56-38-2D (Parathion); 56-72-4D (Coumaphos); 58-89-9D (g-HCH); 60-51-5D (Dimethoate); 60-57-1D (Dieldrin); 62-73-7D (Dichlorvos); 63-25-2D (Carbaryl); 70-38-2D (Dimethrin); 72-43-5D (Methoxychlor); 72-54-8D (TDE); 74-83-9D (Methyl bromide); 74-90-8D (Hydrogen cyanide); 75-15-0D (Carbon disulfide); 76-06-2D (Chloropicrin); 76-44-8D (Heptachlor); 78-34-2D (Dioxathion); 78-53-5D (Amiton); 78-57-9D (Menazon); 83-79-4D (Rotenone); 86-50-0D (Azinphos-methyl); 87-86-5D (Pentachlorophenol); 97-17-6D (Dichlofenthion); 106-93-4D (Ethylene dibromide); 107-06-2D (Ethylene dichloride); 107-13-1D (Acrylonitrile); 107-49-3D (TEPP); 112-80-1D (Oleic acid); 114-26-1D (Propoxur); 115-26-4D (Dimefox); 115-29-7D (Endosulfan); 115-90-2D (Fensulfothion); 116-01-8D (Ethoate-methyl); 116-06-3D (Aldicarb); 119-12-0D (Pyridaphenthion); 121-75-5D (Malathion); 122-14-5D (Fenitrothion); 126-22-7D (Butonate); 126-75-0D (Demeton-S); 131-89-5D (Dinex); 141-66-2D (Dicrotophos); 143-50-0D (Chlordecone); 144-41-2D (Morphothion); 144-54-7D (Metam); 152-16-9D (Schradan); 297-78-9D (Isobenzan); 298-00-0D (Parathion-methyl); 298-02-2D (Phorate); 298-03-3D (Demeton-O); 298-04-4D (Disulfoton); 299-84-3D (Fenchlorphos); 299-86-5D (Crufomate); 300-76-5D (Naled); 301-12-2D (Oxydemeton-methyl); 309-00-2D (Aldrin); 315-18-4D

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(Mexacarbate); 327-98-0D (Trichloronate); 333-41-5D (Diazinon); 370-50-3D (Flucofuron); 371-86-8D (Mipafox); 465-73-6D (Isodrin); 470-90-6D (Chlorfenvinfos); 494-52-0D (Anabasine); 533-74-4D (Dazomet); 534-52-1D (DNOC); 556-61-6D (Methyl isothiocyanate); 563-12-2D (Ethion); 572-48-5D (Coumithoate); 584-79-2D (Bioallethrin); 640-15-3D (Thiometon); 644-64-4D (Dimetilan); 671-04-5D (Carbanolate); 682-80-4D (Demephion-O); 732-11-6D (Phosmet); 786-19-6D (Carbophenothion); 867-27-6D (Demeton-O-methyl); 919-76-6D (Amidithion); 919-86-8D (Demeton-S-methyl); 944-22-9D (Fonofos); 950-10-7D; 950-37-8D (Methidathion); 1113-02-6D (Omethoate); 1129-41-5D (Metolcarb); 1303-96-4D (Borax); 1344-81-6D (Calcium polysulfide); 1563-66-2D (Carbofuran); 1563-67-3D (Decarbofuran); 1646-88-4D (Aldoxycarb); 2032-59-9D (Aminocarb); 2104-64-5D (EPN); 2104-96-3D (Bromophos); 2274-67-1D (Dimethylvinphos); 2275-14-1D (Phencapton); 2275-18-5D (Prothoate); 2275-23-2D (Vamidothion); 2310-17-0D (Phosalone); 2385-85-5D (Mirex); 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58842-20-9D (Nithiazine); 59669-26-0D (Thiodicarb); 60238-56-4D (Chlorthiophos); 60589-06-2D (Metoxadiazone); 61444-62-0D (Nifluridide); 61949-77-7D (Trans-Permethrin); 63837-33-2D (Diofenolan); 63935-38-6D (Cycloprothrin); 64628-44-0D (Triflumuron); 65907-30-4D (Furathiocarb); 66215-27-8D (Cyromazine); 66230-04-4D (Esfenvalerate); 66841-25-6D (Tralomethrin); 67375-30-8D; 67485-29-4D (Hydramethylnon); 68085-85-8D (Cyhalothrin); 68359-37-5D (Beta-Cyfluthrin); 68523-18-2D (Fenpirithrin); 69327-76-0D (Buprofezin); 69409-94-5D (Fluvalinate); 69770-45-2D (Flumethrin); 70124-77-5D (Flucythrinate); 71422-67-8D (Chlorfluazuron); 71697-59-1D (Theta-Cypermethrin); 71751-

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41-2D (Abamectin); 72490-01-8D (Fenoxycarb); 72963-72-5D (Imiprothrin); 75867-00-4D (Fenfluthrin); 79538-32-2D (Tefluthrin); 80060-09-9D (Diafenthiuron); 80844-07-1D (Etofenprox); 82560-54-1D (Benfuracarb); 82657-04-3D (Bifenthrin); 83121-18-0D (Teflubenzuron); 83130-01-2D (Alanycarb); 83733-82-8D (Fosmethilan); 84466-05-7D (Amidoflumet); 86479-06-3D (Hexaflumuron); 89784-60-1D (Pyraclofos); 90338-20-8D (Butathiophos); 91465-08-6D (l-Cyhalothrin); 95465-99-9D (Cadusafos); 95737-68-1D (Pyriproxyfen); 96182-53-5D (Tebupirimphos); 96489-71-3D (Pyridaben); 98886-44-3D (Fosthiazate); 101007-06-1D (Acrinathrin); 102851-06-9D (Tau-fluvalinate); 103055-07-8D (Lufenuron); 105024-66-6D (Silafluofen); 105779-78-0D (Pyrimidifen); 107713-58-6D (Flufenprox); 111988-49-9D (Thiacloprid); 112143-82-5D (Triazamate); 112226-61-6D (Halofenozide); 112410-23-8D (Tebufenozide); 112636-83-6D (Dicyclanil); 113036-88-7D (Flucycloxuron); 114797-39-6D (Methothrin); 116714-46-6D (Novaluron); 118712-89-3D (Transfluthrin); 119791-41-2D (Emamectin); 120068-37-3D (Fipronil); 121451-02-3D (Noviflumuron); 122453-73-0D (Chlorfenapyr); 122705-57-1; 123312-89-0D (Pymetrozine); 129558-76-5D (Tolfenpyrad); 135410-20-7D (Acetamiprid); 138261-41-3D (Imidacloprid); 148477-71-8D (Spirodiclofen); 149877-41-8D (Bifenazate); 150824-47-8D (Nitenpyram); 153233-91-1D (Etoxazole); 153719-23-4D (Thiamethoxam); 158062-67-0D (Flonicamid); 160791-64-0D (ZXI 8901); 161050-58-4D (Methoxyfenozide); 165252-70-0D (Dinotefuran); 168316-95-8D (Spinosad); 170015-32-4D (Flufenerim); 173584-44-6D (Indoxacarb); 179101-81-6D (Pyridalyl); 181587-01-9D (Ethiprole); 201593-84-2D (Bistrifluron); 209861-58-5D (Acetoprole); 210880-92-5D (Clothianidin); 229977-93-9D (Fluacrypyrim); 231937-89-6D; 283594-90-1D (Spiromesifen); 548460-64-6D Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (synergistic herbicidal compns.)
Patent Application Country: Application: DE
Priority Application Country: CH
Priority Application Number: 2003-441
Priority Application Date: 20030318

Rueegg, Willy T (20040812). **<04 Article Title>.** <25 Page(s)>.

Chemical of Concern: FVL, RSM, SPM; Habitat: <40 Habitat Code>; Effect Codes: <08 Effects Code>.

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66215-27-8D (Cyromazine); 66230-04-4D (Esfenvalerate); 66841-25-6D (Tralomethrin); 67375-30-8D; 67485-29-4D (Hydramethylnon); 68085-85-8D (Cyhalothrin); 68359-37-5D (Beta-Cyfluthrin); 68523-18-2D (Fenpirithrin); 69327-76-0D (Buprofezin); 69409-94-5D (Fluvalinate); 69770-45-2D (Flumethrin); 70124-77-5D (Flucythrinate); 71422-67-8D (Chlorfluazuron); 71697-59-1D (Theta-Cypermethrin); 71751-41-2D (Abamectin); 72490-01-8D (Fenoxycarb); 72963-72-5D (Imiprothrin); 75867-00-4D (Fenfluthrin); 79538-32-2D (Tefluthrin); 80060-09-9D (Diafenthiuron); 80844-07-1D (Etofenprox); 82560-54-1D (Benfuracarb); 82657-04-3D (Bifenthrin); 83121-18-0D (Teflubenzuron); 83130-01-2D (Alanycarb); 83733-82-8D (Fosmethilan); 84466-05-7D (Amidoflumet); 86479-06-3D (Hexaflumuron); 89784-60-1D (Pyraclofos); 90338-20-8D (Butathiophos); 91465-08-6D (l-Cyhalothrin); 95465-99-9D (Cadusafos); 95737-68-1D (Pyriproxyfen); 96182-53-5D (Tebupirimphos); 96489-71-3D (Pyridaben); 98886-44-3D (Fosthiazate); 101007-06-1D (Acrinathrin); 102851-06-9D (Tau-fluvalinate); 103055-07-8D (Lufenuron); 105024-66-6D (Silafluofen); 105779-78-0D (Pyrimidifen); 107713-58-6D (Flufenprox); 111988-49-9D (Thiacloprid); 112143-82-5D (Triazamate); 112226-61-6D (Halofenozide); 112410-23-8D (Tebufenozide); 112636-83-6D (Dicyclanil); 113036-88-7D (Flucycloxuron); 114797-39-6D (Methothrin); 116714-46-6D (Novaluron); 118712-89-3D (Transfluthrin); 119791-41-2D (Emamectin); 120068-37-3D (Fipronil); 121451-02-3D (Noviflumuron); 122453-73-0D (Chlorfenapyr); 122705-57-1; 123312-89-0D (Pymetrozine); 129558-76-5D (Tolfenpyrad); 135410-20-7D (Acetamiprid); 138261-41-3D (Imidacloprid); 148477-71-8D (Spirodiclofen); 149877-41-8D (Bifenazate); 150824-47-8D (Nitenpyram); 153233-91-1D (Etoxazole); 153719-23-4D (Thiamethoxam); 158062-67-0D (Flonicamid); 160791-64-0D (ZXI 8901); 161050-58-4D (Methoxyfenozide); 165252-70-0D (Dinotefuran); 168316-95-8D (Spinosad); 170015-32-4D (Flufenerim); 173584-44-6D (Indoxacarb); 179101-81-6D (Pyridalyl); 181587-01-9D (Ethiprole); 201593-84-2D (Bistrifluron); 209861-58-5D (Acetoprole); 210880-92-5D (Clothianidin); 229977-93-9D (Fluacrypyrim); 231937-89-6D; 283594-90-1D (Spiromesifen); 548460-64-6D Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (synergistic herbicidal compns.)
Patent Application Country: Application: DE
Priority Application Country: CH
Priority Application Number: 2003-441
Priority Application Date: 20030318

Rueegg, Willy T (20040930). Synergistic herbicidal compositions comprising isoxazolinylsulfonylbenzoylpyrazole derivs. in combination with insecticides. 49 pp.
Chem Codes: Chemical of Concern: RSM, SPM Rejection Code: NO TOX DATA.

A synergistic herbicidal compn. comprises: I (R = alkyl or Cl; R1 = H or alkyl; R2 = alkyl) and any of a very large no. of insecticides. [on SciFinder (R)] synergism/ herbicide/ compn/ isoxazolinylsulfonylbenzoylpyrazole/ deriv/ insecticide Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2004:799414
Chemical Abstracts Number: CAN 141:290557
Section Code: 5-3
Section Title: Agrochemical Bioregulators
Coden: PIXXD2
Index Terms: Bacillus sphaericus; Bacillus thuringiensis; Insecticides; Schoenocaulon (mixts. with isoxazolinylsulfonylbenzoylpyrazole derivs.; synergistic herbicidal compns.); Petroleum; Pyrethrins Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (mixts. with isoxazolinylsulfonylbenzoylpyrazole derivs.; synergistic herbicidal compns.); Herbicides (synergistic; compns. comprising isoxazolinylsulfonylbenzoylpyrazole derivs. in combination with insecticides); Toxins Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (d-endotoxins, mixts. with isoxazolinylsulfonylbenzoylpyrazole derivs.0; synergistic herbicidal compns.)
CAS Registry Numbers: 50-29-3D; 52-68-6D; 52-85-7D (Famphur); 54-11-5D (Nicotine); 55-38-9D (Fenthion); 56-23-5D (Carbon tetrachloride); 56-38-2D (Parathion); 56-72-4D (Coumaphos); 58-89-9D (GammaHCH); 60-51-5D (Dimethoate); 60-57-1D (Dieldrin); 62-73-7D (Dichlorovos); 63-25-2D (,Carbaryl); 70-38-2D (Dimethrin); 72-54-8D (TDE); 74-83-9D (Methyl bromide); 74-90-8D (Hydrogen cyanide); 75-15-0D (Carbon disulfide); 76-06-2D (Chloropicrin); 76-44-8D (Heptachlor); 78-34-2D (Dioxathion); 78-53-5D (Amiton); 78-57-9D (Menazon); 83-79-4D (Rotenone); 86-50-0D (Azinphosmethyl); 87-86-5D (Pentachlorophenol); 97-17-6D (Dichlofenthion); 106-93-4D (Ethylene dibromide); 107-06-2D (Ethylene dichloride,<); 107-13-1D (Acrylonitrile); 107-49-3D (TEPP); 112-80-1D (Oleic acid); 114-26-1D (Propoxur); 115-26-4D (Dimefox); 115-29-7D (Endosulfan); 115-90-2D (Fensulfothion); 116-01-8D (Ethoatemethyl); 116-06-3D (Aldicarb); 119-12-0D (Pyridaphenthion); 121-75-5D; 122-14-5D (Fenitrothion); 126-22-7D (Butonate); 126-75-0D (Demeton-S); 131-89-5D (Dinex); 141-66-2D (Dicrotophos); 143-50-0D; 144-41-2D (Morphothion); 144-54-7D (Metam); 152-16-9D

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(Schradan); 297-78-9D (Isobenzan); 298-00-0D (Parathion-methyl); 298-02-2D (Phorate); 298-03-3D (Demeton-O); 299-84-3D; 299-86-5D (Crufomate); 300-76-5D (Naled); 301-12-2D (Oxydemeton-methyl); 309-00-2D (Aldrin); 315-18-4D (Mexacarbate); 327-98-0D (Trichloronate); 333-41-5D; 370-50-3D (Flucofuron); 371-86-8D (Mipafox); 465-73-6D (Isodrin); 470-90-6D; 494-52-0D (Anabasine); 533-74-4D (Dazomet); 534-52-1D (DNOC); 556-61-6D (Methyl isothiocyanate); 563-12-2D (Ethion); 572-48-5D (Coumithoate); 584-79-2D (Bioallethrin); 640-15-3D (Thiometon); 644-64-4D (Dimetilan); 671-04-5D (Carbanolate); 682-80-4D (,Demephion-O); 732-11-6D (,Phosmet); 786-19-6D (Carbophenothion); 919-76-6D (Amidithion); 919-86-8D (Demeton-S-methyl); 944-22-9D (Fonofos); 947-02-4D (Phosfolan); 950-10-7D (Mephosfolan); 950-37-8D (Methidathion); 1113-02-6D (Omethoate); 1129-41-5D (Metolcarb); 1303-96-4D (Borax); 1344-81-6D (Calcium polysulfide); 1563-66-2D (Carbofuran); 1563-67-3D (Decarbofuran); 1646-88-4D (Aldoxycarb); 2032-59-9D (Aminocarb); 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58769-20-3D (RU 15525); 58842-20-9 (Nithiazine); 59669-26-0D (Thiodicarb); 60238-56-4D (Chlorthiophos); 60589-06-2D (Metoxadiazone); 61444-62-0D (Nifluridide); 61949-77-7D (Trans-Permethrin); 63837-33-2D (DIofenolan); 63935-38-6D (Cycloprothrin); 64628-44-0D (Triflumuron); 65907-30-4D (Furathiocarb); 66215-27-8D (Cyromazine); 66230-04-4D (Esfenvalerate); 66841-25-6D (Tralomethrin); 67375-30-8D (Alphacypermethrin); 67485-29-4D (Hydramethylnon); 68085-85-8D (Cyhalothrin); 68359-37-5D (Betacyfluthrin); 68523-18-2D (Fenpirithrin); 69327-76-0D (Buprofezin); 69409-94-5D (Fluvalinate); 69770-45-2D (Flumethrin); 70124-77-5D (Flucythrinate); 71422-67-8D (Chlorfluazuron); 71697-59-1D

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(Thetacypermethrin); 71751-41-2D (Abamectin); 72490-01-8D (Fenoxycarb); 72963-72-5D (Imiprothrin); 75867-00-4D (Fenfluthrin); 79538-32-2D (Tefluthrin); 80060-09-9D (Diafenthiuron); 80844-07-1D (Etofenprox); 82560-54-1D (Benfuracarb); 82657-04-3D (Bifenthrin); 83121-18-0D (Teflubenzuron); 83130-01-2D (Alanycarb); 83733-82-8D (Fosmethilan,<); 84466-05-7D (Amidoflumet); 86479-06-3D (Hexaflumuron); 89784-60-1D (Pyraclofos); 90338-20-8D (Butathiofos); 91465-08-6D; 95465-99-9D (Cadusafos); 95737-68-1D (Pyriproxyfen); 96182-53-5D (Tebupirimfos); 96489-71-3D (Pyridaben); 98886-44-3D (Fosthiazate); 101007-06-1D (Acrinathrin); 102851-06-9D (Taufluvalinate); 103055-07-8D (Lufenuron); 105024-66-6D (Silafluofen); 105779-78-0D (Pyrimidifen); 107713-58-6D (Flufenprox); 111988-49-9D (Thiacloprid); 112143-82-5D (Triazamate); 112226-61-6D (Halofenozide); 112410-23-8D (Tebufenozide); 112636-83-6D (Dicyclanil); 113036-88-7D (Flucycloxuron); 114282-89-2D (,Methoxychloro); 114797-39-6D (Methothrin); 116714-46-6D (Novaluron); 118712-89-3D (Transfluthrin); 119791-41-2D (Emamectin); 120068-37-3D (Fipronil); 121451-02-3D (Noviflumuron); 122453-73-0D (Chlorfenapyr); 122705-57-1D; 123312-89-0D (Pymetrozine); 129558-76-5D (Tolfenpyrad); 135410-20-7D (Acetamiprid); 138261-41-3D (,Imidacloprid); 143807-66-3D (Chromafenozide); 148477-71-8D (Spirodiclofen); 149877-41-8D (Bifenazate); 150824-47-8D (,Nitenpyram); 153233-91-1D (Etoxazole); 153719-23-4D (Thiamethoxam); 158062-67-0D (Flonicamid); 160791-64-0D (ZXI 8901); 161050-58-4D (Methoxyfenozide); 165252-70-0D (Dinotefuran); 168316-95-8D (,Spinosad); 170015-32-4D (,Flufenerim); 173584-44-6D (Indoxacarb); 179101-81-6D (Pyridalyl); 181587-01-9D (Ethiprole); 201593-84-2D (Bistrifluron); 209861-58-5D (Acetoprole); 210576-74-2D; 210631-68-8D; 210880-92-5D (Clothianidin); 229977-93-9D (Fluacrypyrim); 231937-89-6D; 283594-90-1D (Spiromesifen); 500790-39-6D; 548460-64-6D Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (synergistic herbicidal compns.)

Patent Application Country: Application: WO
Priority Application Country: CH
Priority Application Number: 2003-438
Priority Application Date: 20030318
Citations: Wolfgang Von, D; WO 9965314 A 1999
Citations: Rueegg, W; WO 02087322 A 2002

Ruegg, Willy T (20040923). Selective synergistic herbicidal compositions. 524 pp.
Chem Codes: Chemical of Concern: RTN, SPM Rejection Code: NON-ENGLISH.

Salective synergistic herbicidal compns. comprise the pyridine deriv. I (R1,R2 = H; R1R2 = ethylene) and any of a very large no. of known pesticides. The compns. are esp. effective in corn and cereals. [on SciFinder (R)] selective/ synergistic/ herbicide/ compn/ pyridine/ deriv Copyright: Copyright 2004 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2004:773771
Chemical Abstracts Number: CAN 141:255883
Section Code: 5-3
Section Title: Agrochemical Bioregulators
Coden: GWXXBX
Index Terms: Bacillus sphaericus; Bacillus thuringiensis; Schoenocaulon (mixts. with pyridine derivs.; selective synergistic herbicidal compns. for); Petroleum; Pyrethrins Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (mixts. with pyridine derivs.; selective synergistic herbicidal compns. for); Cereal; Zea mays (selective synergistic herbicidal compns. for); Herbicides (selective, synergistic; compns. contg. pyridine deriv.); Toxins Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (d-endotoxins, mixts. with pyridine derivs.; selective synergistic herbicidal compns. for)
CAS Registry Numbers: 352010-68-5D; 380354-72-3D Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (selective synergistic herbicidal compns.); 50-29-3D; 52-68-6D (Trichlorfon); 52-85-7D (Famphur); 54-11-5D (Nicotine); 55-38-9D (Fenthion); 56-23-5D (Carbon tetrachloride); 56-38-2D (Parathion); 56-72-4D (Coumaphos); 58-89-9D (g-HCH); 60-51-5D (Dimethoate); 60-57-1D (Dieldrin); 62-73-7D (Dichlorvos); 63-25-2D (Carbaryl); 70-38-2D (Dimethrin); 72-43-5D (Methoxychlor); 72-54-8D (TDE); 74-83-9D (Methyl bromide); 74-90-8D (Hydrogen cyanide); 75-15-0D (Carbon disulfide); 76-06-2D (Chloropicrin); 76-44-8D (Heptachlor); 78-34-2D (Dioxathion); 78-53-5D (Amiton); 78-57-9D (Menazon); 83-79-4D (Rotenone); 86-50-0D (Azinphos-methyl); 87-86-5D (Pentachlorophenol); 94-19-9D (Etazole); 97-17-6D (Dichlofenthion); 106-93-4D (Ethylene dibromide); 107-06-2D (Ethylene dichloride); 107-13-1D (ACRYLONITRILE); 107-49-3D (TEPP); 112-80-1D (Oleic acid); 114-26-1D (Propoxur); 115-26-4D (Dimefox); 115-29-7D (Endosulfan); 115-90-2D (Fensulfothion); 116-01-8D (Ethoate-methyl); 116-06-3D (Aldicarb); 119-12-0D (Pyridaphenthion); 121-75-5D (Malathion); 122-14-5D; 126-75-0D

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(Demeton-S); 131-89-5D (Dinex); 141-66-2D (Dicrotophos); 143-50-0D (Chlordecone); 144-41-2D (Morphothion); 144-54-7D (Metam); 152-16-9D (Schradan); 297-78-9D (Isobenzan); 298-00-0D (Parathion-methyl); 298-02-2D (Phorate); 298-03-3D (Demeton-O); 298-04-4D (Disulfoton); 299-84-3D (Fenchlorphos); 299-86-5D (Crufomate); 300-76-5D (Naled); 301-12-2D (Oxydemeton-methyl); 309-00-2D (Aldrin); 315-18-4D (Mexacarbate); 327-98-0D (Trichloronat); 333-41-5D (Diazinon); 370-50-3D (Flucofuron); 371-86-8D (Mipafox); 465-73-6D (Isodrin); 470-90-6D (Chlorfenvinphos); 494-52-0D (Anabasine); 533-74-4D (Dazomet); 534-52-1D (DNOC); 556-61-6D (Methyl isothiocyanate); 563-12-2D (Ethion); 572-48-5D (Coumithoate); 584-79-2D (Bioallethrin); 640-15-3D (Thiometon); 644-64-4D (Dimetilan); 671-04-5D (Carbanolate); 682-80-4D (Demephion-O); 732-11-6D (Phosmet); 786-19-6D (Carbophenothion); 867-27-6D (Demeton-O-methyl); 919-76-6D (Amidithion); 919-86-8D (Demeton-S-methyl); 944-22-9D (Fonofos); 950-10-7D; 950-37-8D (Methidathion); 1113-02-6D (Omethoate); 1129-41-5D (Metolcarb); 1303-96-4D (Borax); 1344-81-6D (Calcium polysulfide); 1563-66-2D (Carbofuran); 1563-67-3D (Decarbofuran); 1646-88-4D (Aldoxycarb); 2032-59-9D (Aminocarb); 2032-65-7D (Methiocarb); 2104-64-5D (EPN); 2104-96-3D (Bromofos); 2274-67-1D (Dimethylvinphos); 2275-14-1D (Phenkapton); 2275-18-5D (Prothoate); 2275-23-2D (Vamidothion); 2310-17-0D (Phosalone); 2385-85-5D (Mirex); 2425-10-7D (Xylylcarb); 2463-84-5D (Dicapthon); 2497-07-6D (Oxydisulfoton); 2540-82-1D (Formothion); 2550-75-6D (Chlorbicyclen); 2587-90-8D (Demephion-S); 2595-54-2D (Mecarbam); 2597-03-7D (Phenthoate); 2631-37-0D (Promecarb); 2631-40-5D (Isoprocarb); 2636-26-2D (Cyanophos); 2642-71-9D (Azinphos-ethyl); 2655-14-3D (XMC); 2655-19-8D (Butacarb); 2669-32-1D (Lythidathion); 2674-91-1D (Oxydeprofos); 2699-79-8D (Sulfuryl fluoride); 2778-04-3D (Endothion); 2921-88-2D (Chlorpyriphos); 3383-96-8D (Temefos); 3466-00-0D (Phospholane); 3689-24-5D (Sulfotep); 3734-95-0D (Cyanthoate); 3761-41-9D (Mesulfenfos); 3766-81-2D (Fenobucarb); 3811-49-2D (Dioxabenzofos); 4151-50-2D (Sulfluramid); 4234-79-1D (Kelevan); 4824-78-6D; 5221-49-8D (Pyrimitate); 5598-13-0D; 5598-52-7D (Fospirate); 5826-76-6D (Phosnichlor); 5827-05-4D (IPSP); 5834-96-8D (Azothoate); 6164-98-3D (Chlordimeform); 6392-46-7D (Allyxycarb); 6923-22-4D (Monocrotophos); 6988-21-2D (Dioxacarb); 7219-78-5D (Mazidox); 7292-16-2D (Propaphos); 7345-69-9D (GY-81); 7546-30-7D (Mercurous chloride); 7681-49-4D (Sodium fluoride); 7696-12-0D (Tetramethrin); 7700-17-6D (Crotoxyphos); 7786-34-7D (Mevinphos); 7803-51-2D (Phosphine); 8001-35-2D (Camphechlor); 8022-00-2D (Demeton-methyl); 8065-36-9D (Bufencarb); 8065-48-3D (Demeton); 8065-62-1D (Demephion); 10265-92-6D (Methamidophos); 10311-84-9D (Dialifos); 10453-86-8D (Resmethrin); 11141-17-6D (Azadirachtin); 12407-86-2D (Trimethacarb); 12789-03-6D (Chlordane); 13067-93-1D (Cyanophenphos); 13071-79-9D (Terbufos); 13171-21-6D (Phosphamidone); 13194-48-4D (Ethoprophos); 13457-18-6D (Pyrazophos); 13593-03-8D (Quinalfos); 13593-08-3D; 14816-16-1D (Phoxim-methyl); 14816-18-3D (Phoxim); 14816-20-7D (Chlorphoxim); 15096-52-3D (Cryolite); 15263-53-3D (Cartap); 15589-31-8D (Terallethrin); 16752-77-5D (Methomyl); 16893-85-9D (Sodium hexafluorosilicate); 17040-19-6D (Demeton-S-methylsulfone); 17080-02-3D (Furethrin); 17606-31-4D (Bensultap); 18181-70-9D (Jodfenphos); 18809-57-9D (EMPC); 18854-01-8D (Isoxathion); 19691-80-6D (ATHIDATHION); 20425-39-2D (Pyresmethrin); 20859-73-8D (Aluminum phosphide); 21548-32-3D (Fosthietan); 22248-79-9D (Tetrachlorvinfos); 22259-30-9D (Formetanate); 22439-40-3D (Quinothion); 22781-23-3D (Bendiocarb); 23031-36-9D (Prallethrin); 23103-98-2D (Pirimicarb); 23135-22-0D (Oxamyl); 23505-41-1D (Pirimiphos-ethyl); 23560-59-0D (Heptenophos); 24017-47-8D (Triazophos); 24019-05-4D (Sulcofuron); 24353-61-5D; 24934-91-6D (Chlormephos); 25171-63-5D (Thiocarboxime); 25311-71-1D (Isofenphos); 25601-84-7D (Methocrotophos); 26002-80-2D (Phenothrin); 28434-00-6D (S-Bioallethrin); 28434-01-7D (Bioresmethrin); 29104-30-1D (Benzoximate); 29173-31-7D (Mecarphon); 29232-93-7D (Pirimiphos-methyl); 29672-19-3D (Nitrilacarb); 29973-13-5D (Ethiofencarb); 30087-47-9D (Fenethacarb); 30560-19-1D (Acephate); 30864-28-9D (Methacrifos); 31218-83-4D (Propetamphos); 31377-69-2D (Pirimetaphos); 31895-21-3D (Thiocyclam); 33089-61-1D (Amitraz); 33399-00-7D (Bromfenvinfos); 34264-24-9D (Promacyl); 34643-46-4D (Prothiofos); 34681-10-2D (Butocarboxim); 35367-38-5D (Diflubenzuron); 35400-43-2D (Sulprofos); 35575-96-3D (Azamethiphos); 36145-08-1D (Chlorprazophos); 36614-38-7D (Isothioate); 37032-15-8D (Sophamide); 38260-54-7D (Etrimfos); 38260-63-8D (Lirimfos); 38524-82-2D (Trifenofos); 39196-18-4D (Thiofanox); 39247-96-6D (Primidophos); 39515-40-7D (Cyphenothrin); 39515-41-8D (Fenpropathrin); 40085-57-2D (Tazimcarb); 40596-69-8D (Methoprene); 40596-80-3D (Triprene); 41096-46-2D (Hydroprene); 41198-08-7 (Profenofos); 41219-31-2D (Dithicrofos); 41219-32-3D (Thicrofos); 42509-80-8D (Isazofos); 42588-37-4D (Kinoprene); 50864-67-0D (Barium polysulfide); 51596-10-2D (Milbemectin); 51630-58-1D (Fenvalerate); 51877-74-8D (Biopermethrin); 52207-48-4D (Thiosultap-sodium); 52315-07-8D (BetaCypermethrin); 52645-53-1D (Permethrin); 52918-63-5D (Deltamethrin); 54406-48-3D (Empenthrin); 54593-83-8D (Chlorethoxyfos); 55285-14-8D (Carbosulfan); 57342-02-6D (Epofenonane); 57960-19-7D (Acequinocyl); 58769-20-3D (RU 15525); 58842-20-9D (Nithiazine); 59669-26-0D (Thiodicarb); 60238-56-4D (Chlorthiophos); 60589-06-2D (Metoxadiazone); 61444-62-0D (Nifluridide); 61949-77-7D (Trans-Permethrin); 63837-33-2D (Diofenolan); 63935-38-6D (Cycloprothrin); 64628-44-0D (Triflumuron); 65907-30-4D (Furathiocarb); 66215-27-8D (Cyromazine);

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66230-04-4D (Esfenvalerate); 66841-25-6D (Tralomethrin); 67375-30-8D; 67485-29-4D (Hydramethylnon); 68085-85-8D (Cyhalothrin); 68359-37-5D (Beta-Cyfluthrin); 68523-18-2D (Fenpirithrin); 69327-76-0D (Buprofezin); 69409-94-5D (Fluvalinate); 69770-45-2D (Flumethrin); 70124-77-5D (Flucythrinate); 71422-67-8D (Chlorfluazuron); 71697-59-1D (ThetaCypermethrin); 71751-41-2D (Abamectin); 72490-01-8D (Fenoxycarb); 72963-72-5D (Imiprothrin); 75867-00-4D (Fenfluthrin); 79538-32-2D (Tefluthrin); 80060-09-9D (Diafenthiuron); 80844-07-1D (Etofenprox); 82560-54-1D (Benfuracarb); 82657-04-3D (Bifenthrin); 83121-18-0D (Teflubenzuron); 83130-01-2D (Alanycarb); 83733-82-8D (Fosmethilan); 84466-05-7D (Amidoflumet); 86479-06-3D (Hexaflumuron); 89784-60-1D (Pyraclofos); 90338-20-8D (Butathiophos); 91465-08-6D (l-Cyhalothrin); 95465-99-9D (Cadusafos); 95737-68-1D (Pyriproxyfen); 96182-53-5D (Tebupirimfos); 96489-71-3D (Pyridaben); 98886-44-3D (Fosthiazate); 101007-06-1D (Acrinathrin); 102851-06-9D (Tau-fluvalinate); 103055-07-8D (Lufenuron); 105024-66-6D (Silafluofen); 105779-78-0D (Pyrimidifen); 107713-58-6D (Flufenprox); 111988-49-9D (Thiacloprid); 112143-82-5D (Triazamate); 112226-61-6D (Halofenozide); 112410-23-8D (Tebufenozide); 112636-83-6D (Dicyclanil;); 113036-88-7D (Flucycloxuron); 114797-39-6D (Methothrin); 116714-46-6D (Novaluron); 118712-89-3D (Transfluthrin); 119791-41-2D (Emamectin); 120068-37-3D (Fipronil); 121451-02-3D (Noviflumuron); 122453-73-0D (Chlorfenapyr); 122705-57-1D; 123312-89-0D (Pymetrozine); 129558-76-5D (Tolfenpyrad); 135410-20-7D (Acetamiprid); 138261-41-3D (Imidacloprid); 143807-66-3D (Chromafenozide); 148477-71-8D (Spirodiclofen); 149877-41-8D (Bifenazate); 150824-47-8D (Nitenpyram); 153719-23-4D (Thiamethoxam); 158062-67-0D (Flonicamid); 160791-64-0D (ZXI 8901); 161050-58-4D (Methoxyfenozide); 165252-70-0D (Dinotefuran); 168316-95-8D (Spinosad); 170015-32-4D (Flufenerim); 173584-44-6D (Indoxacarb); 179101-81-6D (Pyridalyl); 181587-01-9D (Ethiprole); 201593-84-2D (Bistrifluron); 209861-58-5D (Acetoprole); 210880-92-5D (Clothianidin); 229977-93-9D (Fluacrypyrim); 231937-89-6D; 283594-90-1D (Spiromesifen); 500790-39-6D; 548460-64-6D Role: AGR (Agricultural use), BIOL (Biological study), USES (Uses) (selective synergistic herbicidal compns. for)
Patent Application Country: Application: DE
Priority Application Country: CH
Priority Application Number: 2003-442
Priority Application Date: 20030318

RUSSELL JS, GORE, J., TORREY KD, and LEONARD BR (1999). Evaluation of insecticides against boll weevil on cotton, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 255.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM HIRSUTUM ANTHONOMUS GRANDIS GRANDIS COTTON BOLL WEEVIL HOST FIBER CROP CULTIVAR-HOLLAND 121 CONTROL PEST AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT REGENT INSECTICIDE EFFICACY PHASER LOUISIANA USA Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

RUSSELL JS, GORE, J., TORREY KD, and LEONARD BR (1998). TOXICITIES OF SELECTED INSECTICIDES AGAINST TARNISHED PLANT BUG ADULTS CAGED ON SEEDLING COTTON 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 245.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM-HIRSUTUM LYGUS-LINEOLARIS COTTON TARNISHED PLANT BUG CULTIVAR-NUCOTN 35 FIBER CROP SEEDLING PEST ADULT ECONOMIC ENTOMOLOGY PEST MANAGEMENT TOXICITY BIDRIN 8 EC INSECTICIDE KARATE 1 EC MONITOR 4 EC ORTHENE 90 SP REGENT 2.5 EC Biochemistry/ Plants/Growth & Development/ Soil/ Textiles/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Insects

Sabiston, D C Jr (1984). Report of the Chairman of the Board of Regents: the current and serious issue of the

US EPA ARCHIVE DOCUMENT

oversupply of physicians in our nation today. *Bulletin Of The American College Of Surgeons* 69: 11-12.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Sakurai, J, Fujii, Y, and Matsuura, M (1980). Effect of oxidizing agents and sulfhydryl group reagents on beta toxin from Clostridium perfringens type C. *Microbiology And Immunology* 24: 595-601.
Chem Codes: Chemical of Concern: FPN Rejection Code: BACTERIA.

Purified beta toxin from Clostridium perfringens type C was inactivated by the oxidizing agents o-iodosobenzoate (OIBA), oxidized glutathione, and ferricyanide, and by the sulfhydryl group regents 5,5'-dithio-bis(2-nitrobenzoic acid) (DTNB) and N-ethylmaleimide, iodoacetamide, and iodoacetic acid, causing loss of activity in various degrees depending on the concentration used. The activity of the toxin was not influenced by exposure to 1.0 mM of p-chloromercuribenzoate. The toxin treated by OIBA or DTNB was reactivated by incubation with 2-mercaptoethanol and dithiothreitol. The data suggest that beta toxin contains thiol groups which are essential for the activity. [Journal Article; In English; Japan]

Sammelson, Robert E and Casida, John E (2003). Synthesis of a tritium-labeled, fipronil-based, highly potent, photoaffinity probe for the GABA receptor. *The Journal Of Organic Chemistry* 68: 8075-8079.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

3-[4-[1-(2,6-dichloro-4-trifluoromethylphenyl)pyrazolo]]-3-(trifluoromethyl)diazirine is a fipronil-based (i.e. fiprole), high-affinity probe for the GABA receptor. For synthesis of the tritium-labeled version of this trifluoromethyldiazirinylfiprole ([(3)H]TDF) the required intermediate, 3-[4-[1-(2,6-dichloro-3-iodo-4-trifluoromethylphenyl)-5-iodopyrazolo]]-3-(trifluoromethyl)diazirine, was prepared in 10 steps from pyrazole and 3,5-dichloro-4-fluorobenzotrifluoride. One of the key transformations was lithiation and subsequent iodination of the 4-(2,2,2-trifluoro-1-hydroxyethyl)pyrazole intermediate. The last step involved reduction of the diiodofiprole with tritium, Pd/C, and triethylamine in ethyl acetate and afforded [(3)H]TDF with a specific activity of 15 Ci/mmol and 99% radiopurity. [Journal Article; In English; United States]

SATTELLE DB and RAUCH JJ (1997). INSECT IONOTROPIC RECEPTORS AS TARGETS FOR INSECTICIDES. *SIXTH MEETING OF THE INTERNATIONAL NEUROTOXICOLOGY ASSOCIATION, SZEGED, HUNGARY, JUNE 29-JULY 4, 1997. NEUROTOXICOLOGY (LITTLE ROCK); 18 (3). 1997. 874.*
Chem Codes: Chemical of Concern: FPN Rejection Code: ABSTRACT.

BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT INSECT AMPHIBIAN BIOCHEMISTRY AND BIOPHYSICS PESTICIDES OOCYTE GAMMA-AMINOBUTYRIC ACID RECEPTOR FUNCTION IONOTROPIC RECEPTOR NICOTINIC ACETYLCHOLINE RECEPTOR CHEMICAL INSECTICIDE Congresses/ Biology/ Animals/ Cytology/ Histocytochemistry/ Amino Acids/ Peptides/ Proteins/ Biophysics/ Membranes/Physiology/ Pharmacognosy/ Plants, Medicinal/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology

SCHUSTER DJ (1997). ARMYWORM AND PEPPER WEEVIL CONTROL ON BELL PEPPER SPRING 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 150.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ANTHONOMUS-EUGENII CAPSICUM-ANNUUM SPODOPTERA-EXIGUA SPODOPTERA-ERIDANIA MYZUS-PERSICAE PEPPER WEEVIL BELL PEPPER BEET ARMYWORM SOUTHERN ARMYWORM GREEN PEACH APHID AGRICULTURAL PEST CULTIVAR-CAPISTRANO VEGETABLE CROP HORTICULTURE PEST MANAGEMENT FIPRONIL INSECTICIDE VYDATE ARTHROPOD MANAGEMENT TEST SPRING MONITOR MYCOTROL SILWET PROVADO WARRIOR FLORIDA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera/ Insects/ Lepidoptera

SCOTT WP and SNODGRASS GL (1999). Laboratory evaluation of field collected tarnished plant bug tolerance to

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM HIRSUTUM LYGUS LINEOLARIS COTTON TARNISHED PLANT BUG HOST FIBER CROP CULTIVAR-SURE GROW 125 FIELD-COLLECTED PEST INSECTICIDE TOLERANCE CONTROL ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT CURACRON EFFICACY INSECTICIDE LABORATORY BIOASSAY FULFILL ORTHENE PROVADO REGENT LABORATORY EVALUATION AGRONOMY Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

SCOTT WP and SNODGRASS GL (1999). Laboratory evaluation of insecticides for boll weevil, 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 401.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ANTHONOMUS GRANDIS GRANDIS GOSSYPIUM HIRSUTUM BOLL WEEVIL COTTON PEST CONTROL CULTIVAR-SURE GROW 125 HOST FIBER CROP ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT REGENT EFFICACY INSECTICIDE LABORATORY BIOASSAY EXP 61486A VYDATE AGRONOMY Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

SCOTT WP and SNODGRASS GL (1999). Laboratory evaluations of susceptible tarnished plant bug tolerance to insecticides, 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 402.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM HIRSUTUM LYGUS LINEOLARIS COTTON TARNISHED PLANT BUG CULTIVAR-SURE GROW 125 FIBER CROP HOST INSECTICIDE TOLERANCE CONTROL PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT REGENT LABORATORY EVALUATION INSECTICIDE EFFICACY LABORATORY BIOASSAY EXP 61685B EXP 61486A MONITOR VYDATE ORTHENE SEVIN AGRONOMY Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA-DECEMLINEATA SOLANUM-TUBEROSUM COLORADO POTATO BEETLE POTATO PEST CULTIVAR-KATAHDIN HOST CROP PEST MANAGEMENT PESTICIDES APPLICATION RATE PROVADO 1.6 F INSECTICIDE FIPRONIL 1.67 SC ALERT 2 SC TD-2344-02 0.83 EC ASANA 0.66 EC BUTACIDE 8 EC ADMIRE 2F Biochemistry/ Vegetables/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Plants/ Coleoptera

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SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 222.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA MAYS DIABROTICA VIRGIFERA VIRGIFERA FIELD CORN WESTERN CORN ROOTWORM HOST CROP CULTIVAR-DEKALB 580 LARVA PEST CONTROL AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT FURADAN EFFICACY INSECTICIDE AZTEC FORCE REGENT NORTH PLATTE NEBRASKA USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Lepidoptera

SHAMIYEH NB, PEREIRA, R., STRAW RA, FOLLUM RA, and MEISTER CW (1999). Control of wireworms in potatoes, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 164-165.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SOLANUM TUBEROSUM MELANOTUS BEAUVERIA BASSIANA METARHIZIUM ANISOPLIAE POTATO WIREWORM CULTIVAR-YUKON GOLD HOST VEGETABLE CROP PEST CONTROL BIOLOGICAL CONTROL AGENT HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT ADMIRE INSECTICIDE EFFICACY MYCOTROL TN67-97 AGENDA FIPRONIL MOCAP DIAZINON CROSSVILLE TENNESSEE USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Pest Control, Biological/ Arachnida/ Entomology/Economics/ Pest Control/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Mitosporic Fungi/ Plants/ Coleoptera

SHAW JT, GRAY ME, STEFFEY KL, and FINGER JW (1998). EFFICACY OF REGISTERED AND EXPERIMENTAL INSECTICIDES TO CONTROL CORN ROOTWORM LARVAE 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 208.*
Chem Codes : Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DIABROTICA-BARBERI DIABROTICA-VIRGIFERA-VIRGIFERA CORN NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM CULTIVAR-PIONEER 3394 CROP PEST LARVA ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES AC 166 002 INSECTICIDE AZTEC CHLOROFOS COUNTER FORCE FORTRESS FURADAN LBAS116 LORSBAN REGENT THIMET Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Coleoptera/ Lepidoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DIABROTICA-BARBERI DIABROTICA-VIRGIFERA-VIRGIFERA CORN NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM CULTIVAR-PIONEER 3394 CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES AZTEC INSECTICIDE COUNTER FORTRESS LORSBAN LABS116 FORCE REGENT THIMET Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Coleoptera/ Lepidoptera

SHAW JT, STEFFEY KL, GRAY ME, and FINGER JW (1998). EFFICACY OF REDUCED APPLICATION RATES OF SOIL INSECTICIDES FOR CONTROL OF CORN ROOTWORM LARVAE 1997.

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SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 209-210.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DIABROTICA-BARBERI DIABROTICA-VIRGIFERA-VIRGIFERA CORN NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM CROP CULTIVAR-PIONEER 3394 PEST LARVA ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES AZTEC INSECTICIDE CHLOROFOS COUNTER FORCE FORTRESS LABS 116 LORSBAN REGENT THIMET Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Coleoptera/ Lepidoptera

SHAW JT, STEFFEY KL, GRAY ME, and FINGER JW (1997). EFFICACY OF REGISTERED AND EXPERIMENTAL INSECTICIDES FOR CONTROL OF CORN ROOTWORM LARVAE AT THREE LOCATION IN ILLINOIS 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 231.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DIABROTICA-VIRGIFERA-VIRGIFERA DIABROTICA-BARBERI FIELD CORN WESTERN CORN BORER NORTHERN CORN ROOTWORM CULTIVAR-PIONEER 3394 CROP AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT AZTEC INSECTICIDE EFFICACY BWC00103 BWC00301 BWC00506 CHLOROFOS CNOVA COUNTER FORCE FORTRESS LORSBAN NAF-287 NAF-288 NAF-289 REGENT THIMET ARTHROPOD MANAGEMENT TEST MONMOUTH USA URBANA DEKALB ILLINOIS USA Cereals/ Plants/Growth & Development/ Soil/ Oils/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

SHAW JT, STEFFEY KL, GRAY ME, and FINGER JW (1998). EFFICACY OF REGISTERED AND EXPERIMENTAL INSECTICIDES FOR CONTROL OF FIRST-GENERATION EUROPEAN. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 205-206.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS OSTRINIA-NUBILALIS CORN EUROPEAN CORN BORER CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES DECIS INSECTICIDE DIPEL POUNCE REGENT TRACER Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Lepidoptera

Shen, Dazhong, Kang, Qi, Zhang, Ping, Guo, Changying, and Lan, Jing (2004). Frequency response to liquid density of a piezoelectric quartz crystal sensor with longitudinal wave. *Analytica Chimica Acta* 525: 205-211.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

Elimination of longitudinal wave effect is an important aspect in the detection cell design, although such consideration is ignored in most of references. Three detection cells were designed to investigate the influence of longitudinal wave effect on the frequency response of a piezoelectric quartz crystal (PQC) to liquid density. In the cell with horizontally mounted quartz crystal, the air/liquid interface acts the reflection surface for the longitudinal wave. The variation in liquid height by regent addition or solvent evaporation can result in fluctuation in the oscillating frequency of the PQC. The influence of the longitudinal wave is more obvious in a test liquid of lower density. In the cell with perpendicularly mounted quartz crystal, the longitudinal wave is mainly reflected back by the inner wall body. The fine structure of plotting of frequency shift ([Delta]f) versus ([rho][eta])1/2 shows a wave shape, which is different from the well-known linear relationship between of [Delta]f and ([rho][eta])1/2, where [rho] and [eta] are the density and viscosity of the liquid, respectively. And wave-shaped frequency-temperature curves were observed. The longitudinal wave was a kind of potential error source in the PQC measurements. The longitudinal wave effect can be efficiently eliminated by using a rough reflection

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surface. After eliminating the influence of reflected longitudinal wave, the stability of the sensor PQC was much improved.

SHIELDS EJ and TESTA AM (1999). Corn rootworm control in field corn, 1995. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 226-227.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA MAYS DIABROTICA BARBERI DIABROTICA VIRGIFERA VIRGIFERA FIELD CORN NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM CULTIVAR-PIONEER 3733 CROP HOST PEST CONTROL AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT AZTEC EFFICACY INSECTICIDE COUNTER DYFONATE FORCE FORTRESS LORSBAN REGENT TULLY FREEVILLE NEW YORK USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera/ Lepidoptera

SHIELDS EJ and TESTA AM (1999). Corn rootworm control in field corn, 1996. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 228.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER DIABROTICA BARBERI DIABROTICA VIRGIFERA VIRGIFERA ZEA MAYS NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM FIELD CORN PEST CONTROL HOST CULTIVAR-PIONEER 3733 CROP AGRONOMY AZTEC INSECTICIDE EFFICACY COUNTER DYFONATE ECONOMIC ENTOMOLOGY FORCE FORTRESS LORSBAN PEST MANAGEMENT PESTICIDES REGENT ARTHROPOD MANAGEMENT NAF-287 NAF-288 NAF-289 TULLY NEW YORK USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera/ Lepidoptera

SHIELDS EJ and TESTA AM (1999). Corn rootworm control in field corn, 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 228-229.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER DIABROTICA BARBERI DIABROTICA VIRGIFERA VIRGIFERA ZEA MAYS NORTHERN CORN ROOTWORM WESTERN CORN ROOTWORM FIELD CORN CONTROL PEST CROP CULTIVAR-PIONEER 3523 HOST AGRONOMY AZTEC EFFICACY INSECTICIDE COUNTER ECONOMIC ENTOMOLOGY FORCE FORTRESS LORSBAN PEST MANAGEMENT PESTICIDES REGENT ARTHROPOD MANAGEMENT TULLY AURORA NEW YORK USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera/ Lepidoptera

Shires, G T (1980). Report of the Chairman of the Board of Regents. *Bulletin Of The American College Of Surgeons* 65: 7-11.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

Smith, G R and Young, A M (1980). Clostridium botulinum in British soil. *The Journal Of Hygiene* 85: 271-274.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

Soil samples from various parts of Britain were examined for Clostridium botulinum by a sensitive technique comparable with that recently used for mud samples from British aquatic environments. The results showed beyond doubt that in Britain the prevalence of the organism in soil is much lower than in

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mud. Of 174 samples from all sites examined only 10 (5 . 7%) could be shown to contain Cl. botulinum; this finding was consistent with the results of surveys made by less sensitive techniques in 1922, 1928 and 1942. No type other than B was found. The evidence suggested that in certain localized areas the prevalence was likely to be high. Three sites associated for many years with animals were included in the survey; at the Zoological Society's premises at Regent's Park and Whipsnade, and at the Market paddocks, Gorgie, Edinburgh, the prevalence of Cl. botulinum was either very low, or nil. In an earlier survey of the redeveloped site of the former Metropolitan Cattle Market, London, 25% of soil samples gave a positive result and no less than four types (B, C, D. and E) were demonstrated. [Journal Article; In English; England]

Smith, K. E., Wall, R., Howard, J. J., Strong, L., Marchiondo, A. A., and Jeannin, Ph. (2000). In vitro insecticidal effects of fipronil and [beta]-cyfluthrin on larvae of the blowfly Lucilia sericata. *Veterinary Parasitology* 88: 261-268.
Chem Codes: Chemical of Concern: CYF Rejection Code: IN VITRO.

The insecticidal effects of the phenylpyrazole, fipronil, and a pyrethroid, beta;-cyfluthrin, on larvae of the blowfly Lucilia sericata were determined in laboratory assays. When first stage larvae of L. sericata were reared on homogenized pig liver which had been treated with known amounts of test compounds, both fipronil and beta;-cyfluthrin induced significant levels of mortality compared to acetone and water controls. However, fipronil was approximately 10 times more toxic than beta;-cyfluthrin to L. sericata larvae following ingestion. beta;-cyfluthrin had little effect on mortality until concentrations of approximately 0.5 ppm were reached. In contrast, fipronil effected L. sericata mortality at a concentration of 0.05 ppm and 100% mortality was reached by 0.5 ppm. The lethal concentration (LC50) value for beta;-cyfluthrin was 1.56 ppm as compared to 0.14 ppm for fipronil. Following contact of first and third stage larvae with cloth impregnated with known amounts of test compound, the mortality profiles of fipronil and beta;-cyfluthrin were similar. At short contact times, the LC50 values for fipronil were lower than those for beta;-cyfluthrin. However, at the highest contact time evaluated for the first stage larvae, 300 s, there was a reversal in this trend. The results suggest that the phenylpyrazole fipronil may represent a new potential insecticide for development against blowfly strike of sheep.

Smith, K. E., Wall, R., Howard, J. J., Strong, L., Marchiondo, A. A., and Jeannin, Ph. (2000). In vitro insecticidal effects of fipronil and [beta]-cyfluthrin on larvae of the blowfly Lucilia sericata. *Veterinary Parasitology* 88: 261-268.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

The insecticidal effects of the phenylpyrazole, fipronil, and a pyrethroid, [beta]-cyfluthrin, on larvae of the blowfly Lucilia sericata were determined in laboratory assays. When first stage larvae of L. sericata were reared on homogenized pig liver which had been treated with known amounts of test compounds, both fipronil and [beta]-cyfluthrin induced significant levels of mortality compared to acetone and water controls. However, fipronil was approximately 10 times more toxic than [beta]-cyfluthrin to L. sericata larvae following ingestion. [beta]-cyfluthrin had little effect on mortality until concentrations of approximately 0.5 ppm were reached. In contrast, fipronil effected L. sericata mortality at a concentration of 0.05 ppm and 100% mortality was reached by 0.5 ppm. The lethal concentration (LC50) value for [beta]-cyfluthrin was 1.56 ppm as compared to 0.14 ppm for fipronil. Following contact of first and third stage larvae with cloth impregnated with known amounts of test compound, the mortality profiles of fipronil and [beta]-cyfluthrin were similar. At short contact times, the LC50 values for fipronil were lower than those for [beta]-cyfluthrin. However, at the highest contact time evaluated for the first stage larvae, 300 s, there was a reversal in this trend. The results suggest that the phenylpyrazole fipronil may represent a new potential insecticide for development against blowfly strike of sheep.

Smith, M, Little, A J, and Payne, R B (1981). An evaluation of the first production model of the Rank Hilger Chemispek multichannel electrolyte analyser. *Annals Of Clinical Biochemistry* 18: 15-21.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

The first production model of the Rank Hilger Chemispek multichannel analyser was evaluated. It is a six-channel machine for the analysis of sodium, potassium, chloride, bicarbonate, urea, and creatinine. We chose to run it at 120 samples per hour. The machine was shown to be economical in the volumes of both samples (200 microliters) and regents, flexible, accurate, and precise. It performance was better than that of other machines with a similar capacity and it is considerably cheaper. [Journal Article; In English; England]

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SMITLEY DR, DAVIS TW, and WILLIAMS MM (1999). Ant efficacy on a golf course fairway, 1998. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 24. V+478P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-86-8; 24 (0). 1999. 337.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER AGROSTIS PALUSTRIS PRENOLEPIS IMPARIS TETRAMORIUM CAESPITUM FORMICA CREEPING BENTGRASS HONEY ANT PAVEMENT ANT BLACK FIELD ANT ORNAMENTAL CROP HOST CONTROL PEST HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT AMDRO INSECTICIDE EFFICACY GOLF COURSE FAIRWAY TEMPO DURSBAN DELTAGARD TALSTAR EXP 61508 SPRING LAKE MICHIGAN USA Plants/Growth & Development/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Insects/ Hymenoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM HIRSUTUM LYGUS LINEOLARIS COTTON TARNISHED PLANT BUG HOST FIBER CROP CULTIVAR-SURE GROW 125 PEST CONTROL INSECTICIDE TOLERANCE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT REGENT EFFICACY INSECTICIDE LABORATORY EVALUATION LABORATORY BIOASSAY EXP 61685B PROVADO MONITOR VYDATE ORTHENE SEVIN AGRONOMY Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

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Chem Codes: Chemical of Concern: FPN Rejection Code: NO FOREIGN.

A new potassium iodide--N, N-diethy1-1,4-phenylen-ediammonium sulfate (DPD) spectrophotometry method for the determination of the ozone in water was established. The method was based on the quantitative reaction between the ozone and potassium iodide in buffered solution(pH 3.35): O3 + 2I- + 2H+-->O2 + I2 + H2O. Iodine could react with DPD regent and produce pink color. Its absorption was determined at 510 nm with spectrophotometer. The range of direct determination was 0-1.00 mg/L. Beer's law was obeyed in this range. The detection limit was 0.01 mg/L. The relative standard deviations were from 1.2% to 2.7% (n = 10). The recoveries were from 98.6% to 106.6%. Water samples were determined with both this method and iodimetry. The results were comparable. The method was applied to the determination of the ozone in water sample with satisfactory results. It was practical and reliable. [Journal Article; In Chinese; China]

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS DIABROTICA-VIRGIFERA-VIRGIFERA DIABROTICA-BARBERI FIELD CORN WESTERN CORN ROOTWORM NORTHERN CORN ROOTWORM CULTIVAR-FUNKS 4394 CROP AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT FORCE INSECTICIDE DYFONATE LORSBAN COUNTER REGENT FORTRESS FURADAN AZTEC ARTHROPOD MANAGEMENT TEST UNIVERSITY PARK PENNSYLVANIA USA Cereals/ Plants/Growth & Development/ Soil/ Oils/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Coleoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER CONODERUS-VESPERTINUS DIABROTICA-UNDECIMPUNCTATA-HOWARDI MELANOTUS-COMMUNIS SYSTENA AGROTIS-IPSILON PERIDROMA-SAUCIA SOUTHERN CORN ROOTWORM WIREWORM FLEA BEETLE BLACK CUTWORM VARIEGATED CUTWORM WHITE GRUB SCARABAEIDAE AGRICULTURAL PEST AGRONOMY FIPRONIL FOLIAR APPLICATION SOIL INSECTICIDE PEST MANAGEMENT SOIL INSECT CONTROL SEVIN THIODAN IMIDAN DYFONATE ROOT SWELL APPLICATION DIAZINON ARTHROPOD MANAGEMENT TEST PAINTER VIRGINIA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Coleoptera/ Lepidoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA-DECEMLINEATA SOLANUM-TUBEROSUM EMPOASCA-FABAE OSTRINIA-NUBILALIS COLORADO POTATO BEETLE POTATO POTATO LEAFHOPPER EUROPEAN CORN BORER AGRICULTURAL PEST CULTIVAR-SUPERIOR VEGETABLE CROP HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST FIPRONIL FOLIAR APPLICATION INSECTICIDE PROVADO TD-2334-02 PAINTER VIRGINIA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera/ Insects/ Lepidoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS HELICOVERPA-ZEA SWEET CORN CORN EARWORM VEGETABLE CROP AGRICULTURAL PEST HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST PROVADO INSECTICIDE FIPRONIL AMBUSH BATON ROUGE LOUISIANA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Lepidoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER VIGNA-SINENSIS LYGUS-LINEOLARIS DREACULACEPHALA DIABROTICA-UNDECIMPUNCTATA-HOWARDII DIABROTICA-BALTEATA SPISSISTILUS-FESTINUS PHYLLOTRETA SOUTHERN PEA TARNISHED PLANT BUG LEAFHOPPER SPOTTED CUCUMBER BEETLE BANDED CUCUMBER BEETLE THREE CORNERED ALFALFA HOPPER FLEA BEETLE VEGETABLE CROP AGRICULTURAL PEST HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST THIODAN INSECTICIDE FIPRONIL SEVIN LANNATE MALATHION AMBUSH PROVADO BATON ROUGE LOUISIANA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Legumes/ Coleoptera/ Insects/ Insects

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER IPOMOEA-BATATAS CYLAS-FORMICARIUS-ELEGANTULUS DIABROTICA-BALTEATA PHYLLOPHAGA SWEET POTATO SWEETPOTATO WEEVIL BANDED CUCUMBER BEETLE WHITE GRUB VEGETABLE CROP CULTIVAR-BEAUREGARD AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT IMIDAN FOLIAR APPLICATION INSECTICIDE THIODAN SEVIN PROVADO ASANA METHYL PARATHION FIPRONIL ARTHROPOD MANAGEMENT TEST BATON ROUGE LOUISIANA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER IPOMOEA BATATAS DIABROTICA BALTEATA PHYLLOPHAGA SWEET POTATO BANDED CUCUMBER BEETLE JUNE BEETLE VEGETABLE CROP HOST CULTIVAR-BEAUREGARD PEST CONTROL HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT AGENDA INSECTICIDE FOLIAR APPLICATION EFFICACY SEVIN PENNCAP-M KARATE IMIDAN BATON ROUGE LOUISIANA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER IPOMOEA-BATATAS CYLAS-FORMICARIUS-ELEGANTULUS DIABROTICA-BALTEATA SWEETPOTATO SWEETPOTATO WEEVIL BANDED CUCUMBER WEEVIL CROP CULTIVAR-BEAUREGARD PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES AGENDA INSECTICIDE IMIDAN MOCAP ALERT PENNCAP Plants/Growth & Development/ Herbicides/ Pest Control/ Pesticides/ Arachnida/

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Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Plants/ Coleoptera

STORY RN, HAMMOND AM, MURRAY MJ, MCLEMORE WB, and CANNON JM (1998). EVALUATION OF SELECTED FOLIAR INSECTICIDES FOR CONTROL FOR WHITE GRUB AND WHITEFRINGED BEETLE ON SWEETPOTATOES 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 151.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER IPOMOEA-BATATAS NAUPACTUS-SPP PHYLLOPHAGA-SPP SWEETPOTATO WHITEFRINGED BEETLE WHITE GRUB CROP CULTIVAR-BEAUREGARD PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES AGENDA INSECTICIDE ALERT PENNCAP IMIDAN KARATE THIODAN SEVIN Plants/Growth & Development/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Plants/ Coleoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER IPOMOEA-BATATAS NAUPACTUS-SPP DIABROTICA-BALTEATA PHYLLOPHAGA-SPP SWEETPOTATO WHITEFRINGED BEETLE BANDED CUCUMBER BEETLE WHITE GRUB CULTIVAR-BEAUREGARD CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES AGENDA INSECTICIDE IMIDAN MOCAP ALERT KARATE Plants/Growth & Development/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Plants/ Coleoptera

Stout, M J, Rice, W C, Linscombe, S D, and Bollich, P K (2001). Identification of rice cultivars resistant to Lissorhoptrus oryzophilus (Coleoptera: Curculionidae), and their use in an integrated management program. *Journal Of Economic Entomology* 94: 963-970.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

The rice water weevil, Lissorhoptrus oryzophilus Kuschel, is the most destructive insect pest of rice in the United States and is a particularly severe pest in Louisiana. The current management program for this insect in Louisiana relies heavily on insecticides, most notably the seed treatment fipronil (Icon). Diversification of the management program by incorporation of alternative strategies is needed to improve the effectiveness and long-term stability of the program. In the three experiments reported here, three components of a diversified management program for the rice water weevil in Louisiana--host plant resistance, treatment of seeds with Icon, aid the cultural practice of delayed flooding--were investigated. Comparison of the densities of weevil larvae on the roots of several commercial cultivars indicated that the long-grain cultivar 'Jefferson' was more resistant to infestation by the rice water weevil than the other cultivars. The medium-grain cultivars 'Bengal', 'Earl' and 'Mars' and the long-grain variety 'Cocodrie' were the most susceptible to infestation. Comparison of yield data from untreated plots and plots treated with Icon indicated that the long-grain cultivars Cocodrie, Lemont, and Jefferson were more tolerant of weevil injury than the other cultivars. A 2-wk delay in flooding was associated with yield benefits in plots not treated with Icon. Treatment of seeds with Icon controlled weevils in all three screening experiments. The implications of these results for the development of an integrated management program for the rice water weevil are discussed. [Journal Article; In English; United States]

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

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ONION ONION THRIPS VEGETABLE CROP HOST CULTIVAR-SPARTAN BANNER PEST CONTROL HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT SPINTOR EFFICACY INSECTICIDE BAYTHROID SILWET TD2344 WARRIOR GAUCHO TRIGARD FIPRONIL NEW YORK USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

STUDEBAKER, G. (1997). CONTROL OF PLANT BUGS ON COTTON 1995. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 269.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM-HIRSUTUM LYGUS-LINEOLARIS NEUROCOLPUS-NUBILUS COTTON TARNISHED PLANT BUG CLOUDED PLANT BUG FIBER CROP CULTIVAR-HARTZ 1215 AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST BIDRIN INSECTICIDE CYGON LORSBAN ORTHENE VYDATE THIODAN REGENT PROVADO KINETIC METASYSTOX LANNATE KARATE ARKANSAS USA Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM-HIRSUTUM LYGUS-LINEOLARIS NEUROCOLPUS-NUBILU COTTON TARNISHED PLANT BUG CLOUDED PLANT BUG ARTHROPOD FIBER CROP CULTIVAR-DPL 5409 AGRICULTURAL PEST PREDATOR AGRONOMY PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST FURY INSECTICIDE EFFICACY KARATE BAYTHROID DECIS REGENT ORTHENE PROVADO BIDRIN VYDATE LANNATE METASYSTOX ARKANSAS USA Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Arthropods/ Insects

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM-HIRSUTUM THRIPS FRANKLINIELLA COTTON CULTIVAR-HARTZ 1215 FIBER CROP AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST TEMIK IN-FURROW INSECTICIDE ORTHENE DIMETHOATE DI-SYSTON PAYLOAD THIMET GAUCHO REGENT BIDRIN ARKANSAS USA Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

Sulaiman, S., Pawanchee, Z., Wahab, A., Jamal, J., Sohadi, A. R., and Rahman, A. Ra (1997). Field evaluation of Fipronil 3G, Fipronil 50 SC and Bacillus thuringiensis H-14 against the dengue vector Aedes albopictus in tires. *Medical Entomology and Zoology* 48 : 351-354.
Chem Codes: MLT Rejection Code: BIOLOGICAL TOXICANT.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The efficacies of Fipronil 3G (Regent), Fipronil 50 SC (Regent) and Bacillus thuringiensis H-14 (Vectobac 12 AS) were evaluated against the dengue vector Aedes albopictus in discarded tires in Malaysia. The dosage for both Fipronil formulations was 0.01 g

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a.i./m2 and Bacillus thuringiensis H-14 at 2 1/ha (0.2 ml/m2). Fipronil 3G was the most effective larvicide having a residual activity of up to 2 weeks with more than 80% mortality. However, Fipronil 50 SC was also effective up to one week and Bacillus thuringiensis H-14 was effective for 24 hr.
KEYWORDS: Biochemical Studies-General
KEYWORDS: Toxicology-General
KEYWORDS: Public Health-Disinfection and Vector Control
KEYWORDS: Public Health: Disease Vectors-Animate
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Chemical and Physical Control
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KEYWORDS: Endospore-Forming Gram-Positives (1992-)
KEYWORDS: Diptera

Sun, Z, Zheng, S, Wang, J, Ge, M F, and Wang, D (2001). First experimental observation on different ionic states of the tert-butoxy [(CH3)3CO*] radical. *Chemistry (Weinheim An Der Bergstrasse, Germany)* 7: 2995-2999.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

A continuous tert-butoxy (CH3)+CO* radical beam is produced in situ by respective pyrolysis of both (CH3)3CONO at 115(+/-0.5) degrees C and (CH3)3COOC(CH3)3 at 87(+/- 0.5) degrees C. By combining the HeI photoelectron (PE) spectrum with the improved density function theory (DFT) calculations, we have concluded that the (CH3)3CO* radical has C3V symmetry and X2E ground state. The study does not only provide the ionization energies of different ionic states of the (CH3)3CO* radical for the first time, but also the first example in which there have been similar vibrational structures in different ionic states caused by removal of the electron on an orbital. It is also pointed out that (CH3)3CONO is a good source for obtaining the (CH3)3CO* radical beam, and that NO is a stable regent for the active radical. The results will promote the studies in electron spin resonance (ESR) research on the mechanisms of both the initiation of the formation of a new radical and the radical-chain polymerization in which the (CH3)3CO* radical participates. [Journal Article; In English; Germany]

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LEPTINOTARSA DECEMLINEATA SOLANUM TUBEROSUM COLORADO POTATO BEETLE POTATO PEST CONTROL VEGETABLE CROP HOST CULTIVAR-RUSSET BURBANK ADMIRE EFFICACY INSECTICIDE AGENDA AGRI-MEK HORTICULTURE ASANA ECONOMIC ENTOMOLOGY FURADAN IMIDAN PEST MANAGEMENT PESTICIDES PROVADO SPINTOR THIODAN ARTHROPOD MANAGEMENT CROOKSTON NORTH DAKOTA USA MINNESOTA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER SOLANUM TUBEROSUM LEPTINOTARSA DECEMLINEATA POTATO COLORADO POTATO BEETLE VEGETABLE CROP HOST CULTIVAR-RUSSET BURBANK PEST CONTROL HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT ADMIRE EFFICACY INSECTICIDE AGENDA PROVADO SPINTOR AGRI-MEK THIODAN ASANA IMIDAN FURADAN MCLEOD NORTH DAKOTA USA Vegetables/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Letter; In English; United States]

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LOLIUM PERENNE POA PRATENSIS LASIUS NEONIGER PERENNIAL RYEGRASS KENTUCKY BLUEGRASS ANT HOST ORNAMENTAL CROP CONTROL PEST HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT SPINOSAD EFFICACY COMPARISON INSECTICIDE NAF-422 GOLF COURSE FAIRWAY ADVANCE TALSTAR FIPRONIL CHIPCO CHOICE OSSIPEE NEW HAMPSHIRE USA Plants/Growth & Development/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Trees/ Wood/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Hymenoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: ABSTRACT.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER MEETING PAPER LEPTINOTARSA-DECEMLINEATA HELIOTHIS-ARMIGERA APHIS-GOSSYPII RHOPALOSIPHUM-PADI ACYRTHOSIPHON-PISUM TETRANYCHUS-URTICAE MUSCA-DOMESTICA BLATTELLA-GERMANICA PEST MB-599 NOVEL SYNERGIST VERBUTIN CARBOFURAN POTENCY INSECTICIDE CARBARYL PERMETHRIN TETRAMETHRIN BETA-CYPERMETHRIN FIPRONIL PRIMICARB APHICIDE TRIAZAMATE IMIDACLOPRID FENAZAQUIN MITICIDE TEBUFENPYRAD DETOXIFICATION METABOLISM INHIBITION PEST MANAGEMENT AGRICHEMICALS ECONOMIC ENTOMOLOGY Biochemistry/ Metabolism/ Poisoning/ Animals, Laboratory/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Animal/ Disease/ Insects/Parasitology/ Coleoptera/ Diptera/ Insects/ Lepidoptera/ Orthoptera/ Arthropods

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BLACK VINE WEEVIL INSECTICIDE EFFICACY IN STRAWBERRY, 1998YBOOK CHAPTER FRAGARIA X ANANASSA OTIORHYNCHUS SULCATUS STRAWBERRY BLACK VINE WEEVIL HOST FRUIT CROP CULTIVAR-TOTEM CONTROL PEST HORTICULTURE ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ADMIRE EFFICACY INSECTICIDE PEST MANAGEMENT CRYOLITE ALERT FIPRONIL BRIGADE VANCOUVER WASHINGTON USA Fruit/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Fruit/ Nuts/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants, Medicinal/ Coleoptera

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BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER OTIORHYNCHUS-SULCATUS BLACK VINE WEEVIL RUBUS-IDAEUS RASPBERRY FRUIT CROP CULTIVAR-CHILLIWACK GRAPE LEAFHOPPER HORTICULTURE ALERT INSECTICIDE BRIGADE AGRICULTURAL PEST FIPRONIL GUTHION PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST VANCOUVER WASHINGTON USA Fruit/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants, Medicinal/ Coleoptera/ Insects

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER RUBUS-IDAEUS OTIORHYNCHUS-SULCATUS BLACK VINE WEEVIL RASPBERRY FRUIT CROP CULTIVAR-WILLAMETTE AGRICULTURAL PEST HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST ALERT INSECTICIDE BRIGADE FIPRONIL GUTHION LYNDEN WASHINGTON USA Fruit/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants, Medicinal/ Coleoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER FRAGARIA-ANANASSA OTIORHYNCHUS-OVATUS STRAWBERRY STRAWBERRY ROOT WEEVIL CULTIVAR-TOTEM FRUIT CROP AGRICULTURAL PEST HORTICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST ALERT EFFICACY INSECTICIDE FIPRONIL BRIGADE DANITOL GARLIC-FISH OIL BURLINGTON WASHINGTON USA Fruit/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants, Medicinal/ Coleoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LYGUS-LINEOLARIS GOSSYPIUM-HIRSUTUM TARNISHED PLANT BUG COTTON AGRICULTURAL PEST CULTIVAR-DPL 51 FIBER CROP PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST AGRONOMY FIPRONIL INSECTICIDE KARATE MARIANNA ARKANSAS USA Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM HIRSUTUM ANTHONOMUS GRANDIS COTTON BOLL WEEVIL HOST FIBER CROP CULTIVAR-SURE-GROW 125 PEST CONTROL AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT REGENT EFFICACY INSECTICIDE BAYTHROID

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BIDRIN TADS 12253 MARIANNA ARKANSAS USA Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Coleoptera

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

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Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

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Tice, Colin M (2002). Selecting the right compounds for screening: use of surface-area parameters. *Pest Management Science* 58: 219-233.
Chem Codes: Chemical of Concern:PCZ,FZS,DSP,PYZ,RTN,RSM Rejection Code: CHEM METHODS.

Polar surface area, total surface area and percentage surface area have been calcd. from three-dimensional structures of 88 post-emergence herbicides, 93 pre-emergence herbicides and 237 insecticides. Preferred ranges of values of these parameters were identified. Since the compds. in the training sets are used on a wide variety of species and target sites with various application modes, the parameter ranges are necessarily broad. The utility of the surface-area parameter ranges in selection of compds. for agrochem. screening was compared with the use of ranges of the Lipinski Rule of 5 parameters: mol. mass, calcd. log P, no. of hydrogen-bond donors and no. of hydrogen-bond acceptors. The more computationally intensive surface-area parameters did not offer any obvious advantage over the Lipinski Rule of 5 parameters. [on SciFinder (R)] Copyright: Copyright 2005 ACS on SciFinder (R))
Database: CAPLUS
Accession Number: AN 2002:210355
Chemical Abstracts Number: CAN 136:381730
Section Code: 5-4
Section Title: Agrochemical Bioregulators
Document Type: Journal
Language: written in English.
Index Terms: Surface area (mol.; use of surface-area parameters for agrochem. screening of herbicides and insecticides); Herbicides; Insecticides; Polar effect (use of surface-area parameters for agrochem. screening of herbicides and insecticides)
CAS Registry Numbers: 162320-67-4 (Flufenzine) Role: AGR (Agricultural use), PRP (Properties), BIOL (Biological study), USES (Uses) (Flufenzine; use of surface-area parameters for agrochem. screening of herbicides and insecticides); 50-29-3 (DDT); 52-68-6 (Trichlorfon); 54-11-5 (Nicotine); 55-38-9 (Fenthion); 56-38-2 (Parathion); 57-39-6 (Metepa); 58-89-9 (Lindane); 60-51-5 (Dimethoate); 61-82-5 (Amitrole); 62-73-7 (Dichlorvos); 63-25-2 (Carbaryl); 70-43-9 (Barthrin); 72-43-5 (Methoxychlor); 72-54-

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8 (TDE); 72-56-0 (Ethylan); 76-03-9 (TCA); 76-44-8 (Heptachlor); 78-57-9 (Menazon); 80-33-1 (Chlorfenson); 83-79-4 (Rotenone); 86-50-0 (Azinphos-methyl); 93-65-2 (Mecoprop); 93-71-0 (CDAA); 94-74-6 (MCPA); 94-75-7 (2,4-D); 94-81-5 (MCPB); 94-82-6 (2,4-DB); 97-17-6 (Dichlofenthion); 101-42-8 (Fenuron); 107-49-3 (TEPP); 114-26-1 (Propoxur); 115-26-4 (Dimefox); 115-32-2 (Dicofol); 115-90-2 (Fensulfothion); 116-06-3 (Aldicarb); 116-29-0 (Tetradifon); 119-12-0 (Pyridaphenthion); 120-36-5 (Dichlorprop); 121-20-0 (Cinerin II); 121-21-1 (Pyrethrin I); 121-75-5 (Malathion); 122-10-1 (Bomyl); 122-14-5 (Fenitrothion); 122-34-9 (Simazine); 126-22-7 (Butonate); 133-90-4 (Chloramben); 139-40-2 (Propazine); 141-66-2 (Dicrotophos); 143-50-0 (Chlordecone); 144-41-2 (Morphothion); 150-68-5 (Monuron); 152-16-9 (Schradan); 297-78-9 (Isobenzan); 297-97-2 (Thionazin); 298-00-0 (Parathion-methyl); 298-02-2 (Phorate); 298-04-4 (Disulfoton); 299-84-3 (Fenchlorphos); 300-76-5 (Dibrom); 301-12-2 (Oxydemeton-methyl); 311-45-5 (Paraoxon); 315-18-4 (Mexacarbate); 327-98-0 (Trichloronate); 333-41-5 (Diazinon); 470-90-6 (Chlorfenvinfos); 510-15-6 (Chlorobenzilate); 534-52-1 (DNOC); 545-55-1 (TEPA); 555-37-3 (Neburon); 563-12-2 (Ethion); 584-79-2 (Allethrin); 640-15-3 (Thiometon); 644-64-4 (Dimetilan); 709-98-8 (Propanil); 732-11-6 (Phosmet); 741-58-2 (Bensulide); 759-94-4 (EPTC); 786-19-6 (Carbophenothion); 834-12-8 (Ametryne); 841-06-5 (Methoprotryne); 886-50-0; 919-86-8 (Demeton-S-methyl); 944-22-9 (Fonofos); 947-02-4 (Phosfolan); 950-10-7; 950-37-8 (Methidation); 957-51-7 (Diphenamid); 1031-47-6 (Triamiphos); 1071-83-6 (Glyphosate); 1113-02-6 (Omethoate); 1114-71-2 (Pebulate); 1129-41-5 (Metolcarb); 1134-23-2 (Cycloate); 1172-63-0 (Jasmolin II); 1194-65-6 (Dichlobenil); 1420-07-1 (Dinoterb); 1563-66-2 (Carbofuran); 1582-09-8 (Trifluralin); 1610-18-0 (Prometon); 1646-88-4 (Aldoxycarb); 1689-83-4 (Ioxynil); 1689-84-5 (Bromoxynil); 1698-60-8 (Chloridazon); 1702-17-6 (Clopyralid); 1836-75-5 (Nitrofen); 1861-32-1 (Dacthal); 1861-40-1 (Benfluralin); 1912-24-9 (Atrazine); 1912-26-1 (Trietazine); 1918-00-9 (Dicamba); 1918-11-2 (Terbucarb); 1918-16-7 (Propachlor); 1982-47-4 (Chloroxuron); 1982-49-6 (Siduron); 2008-41-5 (Butylate); 2032-65-7 (Methiocarb); 2104-64-5 (EPN); 2104-96-3 (Bromophos); 2164-08-1 (Lenacil); 2164-17-2 (Fluometuron); 2212-67-1 (Molinate); 2227-17-0 (Dienochlor); 2275-18-5 (Prothoate); 2275-23-2 (Vamidothion); 2303-16-4 (Diallate); 2303-17-5 (Triallate); 2310-17-0 (Phosalone); 2312-35-8 (Propargite); 2385-85-5 (Mirex); 2425-10-7 (Xylylcarb); 2439-01-2 (Quinomethionate); 2463-84-5 (Dicapthon); 2497-07-6 (Oxydisulfoton); 2540-82-1 (Formothion); 2595-54-2 (Mecarbam); 2597-03-7 (Phenthoate); 2631-37-0 (Promecarb); 2631-40-5 (Isoprocarb); 2636-26-2 (Cyanophos); 2655-14-3 (XMC); 2655-19-8 (Butacarb); 2674-91-1 (Oxydeprofos); 2921-88-2 (Chlorpyriphos); 2941-55-1 (Ethiolate); 3060-89-7 (Metobromuron); 3244-90-4 (Aspon); 3309-87-3 (DMCP); 3337-71-1 (Asulam); 3689-24-5 (Sulfotep); 3766-81-2 (Fenobucarb); 3792-59-4 (EPBP); 3811-49-2 (Dioxabenzofos); 3813-05-6 (Benazolin); 3942-54-9 (CPMC); 4151-50-2 (Sulfluramid); 4824-78-6 (Bromophos-ethyl); 4849-32-5 (Karbutilate); 5598-13-0; 5827-05-4 (IPSP); 5902-51-2 (Terbacil); 5915-41-3 (Terbuthylazine); 6164-98-3 (Chlordimeform); 6923-22-4 (Monocrotophos); 6988-21-2 (Dioxacarb); 7287-19-6 (Prometryn); 7287-36-7 (Monalide); 7292-16-2 (Propaphos); 7696-12-0 (Tetramethrin); 7700-17-6 (Crotoxyphos); 7786-34-7 (Mevinphos); 8001-35-2 (Toxaphene); 10265-92-6 (Methamidophos); 10311-84-9 (Dialifor); 10453-86-8 (Resmethrin); 11141-17-6 (Azadirachtin); 12407-86-2 (Trimethacarb); 13067-93-1 (Cyanofenphos); 13071-79-9 (Terbufos); 13171-21-6 (Phosphamidon); 13181-17-4 (Bromofenoxim); 13194-48-4 (Ethoprophos); 13360-45-7 (Chlorbromuron); 13593-03-8 (Quinalphos); 13684-56-5 (Desmedipham); 13684-63-4 (Phenmedipham); 14816-18-3 (Phoxim); 14816-20-7 (Chlorphoxim); 15263-53-3 (Cartap); 15299-99-7 (Napropamide); 15972-60-8 (Alachlor); 16752-77-5 (Methomyl); 17606-31-4 (Bensultap); 18181-70-9 (Iodofenphos); 18181-80-1 (Bromopropylate); 18854-01-8 (Isoxathion); 19044-88-3 (Oryzalin); 19937-59-8 (Metoxuron); 20354-26-1 (Methazole); 21548-32-3 (Fosthietan); 21609-90-5 (Leptophos); 21725-46-2 (Cyanazine); 22224-92-6 (Fenamiphos); 22248-79-9 (Tetrachlorvinfos); 22259-30-9 (Formetanate); 22781-23-3 (Bendiocarb); 23031-36-9 (Prallethrin); 23103-98-2 (Pirimicarb); 23184-66-9 (Butachlor); 23505-41-1 (Pirimiphos-ethyl); 23560-59-0 (Heptenophos); 23950-58-5 (Pronamide); 24017-47-8 (Triazophos); 24151-93-7 (Piperophos); 24934-91-6 (Chlormephos); 25057-89-0 (Bentazone); 25171-63-5 (Thiocarboxime); 25311-71-1 (Isofenphos); 25319-90-8 (MCPA-thioethyl); 25402-06-6 (Cinerin I); 26002-80-2 (Phenothrin); 26399-36-0 (Profluralin); 27314-13-2 (Norflurazon); 28249-77-6 (Thiobencarb); 29091-05-2 (Dinitramine); 29091-21-2 (Prodiamine); 29104-30-1 (Benzoximate); 29973-13-5 (Ethiofencarb); 30560-19-1 (Acephate); 31218-83-4 (Propetamphos); 32861-85-1 (Chlomethoxyfen); 33089-61-1 (Amitraz); 33245-39-5 (Fluchloralin); 33820-53-0 (Isopropalin); 34256-82-1 (Acetochlor); 34622-58-7 (Orbencarb); 34643-46-4 (Prothiofos); 34681-10-2 (Butocarboxim); 35256-85-0 (Butam); 35367-38-5 (Diflubenzuron); 35400-43-2 (Sulprofos); 35575-96-3 (Azamethiphos); 35597-43-4 (Bialaphos); 36335-67-8 (Butamifos); 36614-38-7 (Isothioate); 36756-79-3 (Tiocarbazil); 38260-54-7 (Etrimfos); 38727-55-8 (Diethatyl-ethyl); 39196-18-4 (Thiofanox); 39300-45-3 (Dinocap); 39515-40-7 (Cyphenothrin); 39515-41-8 (Fenpropathrin); 40487-42-1 (Pendimethalin); 40596-69-8 (Methoprene); 41096-46-2 (Hydroprene); 41198-08-7 (Profenofos); 41295-28-7 (Methoxyphenone); 42509-80-8 (Isazophos); 42588-37-4 (Kinoprene); 42609-52-9 (Dymron); 42609-73-4 (Methyldymron); 50512-35-1; 50594-66-6 (Acifluorfen); 51218-45-2 (METOLACHLOR); 51218-49-6 (Pretilachlor); 51276-47-2 (Glufosinate); 51338-27-3 (Diclofop-methyl);

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51487-69-5 (Cloethocarb); 51630-58-1 (Fenvalerate); 52315-07-8 (Cypermethrin); 52570-16-8 (Naproanilide); 52645-53-1 (Permethrin); 52756-25-9 (Flamprop-methyl); 52888-80-9 (Prosulfocarb); 52918-63-5 (Deltamethrin); 54593-83-8 (Chlorethoxyfos); 55283-68-6 (Ethalfluralin); 55285-14-8 (Carbosulfan); 55335-06-3 (Triclopyr); 55512-33-9 (Pyridate); 55634-91-8 (Alloxydim); 58011-68-0 (Pyrazolate); 59669-26-0 (Thiodicarb); 59682-52-9 (Fosamine); 59756-60-4 (Fluridone); 61213-25-0 (Flurochloridone); 62850-32-2 (Fenothiocarb); 63782-90-1 (Flamprop-M-isopropyl); 63935-38-6 (Cycloprothrin); 64249-01-0 (Anilofos); 64628-44-0 (Triflumuron); 65907-30-4 (Furathiocarb); 66215-27-8 (Cyromazine); 66441-23-4 (Fenoxaprop-ethyl); 66841-25-6 (Tralomethrin); 67129-08-2 (Metazachlor); 68085-85-8 (Cyhalothrin); 68359-37-5 (Cyfluthrin); 69327-76-0 (Buprofezin); 69335-91-7 (Fluazifop); 69377-81-7 (Fluroxypyr); 69806-40-2 (Haloxyfop-methyl); 69806-50-4 (Fluazifop-butyl); 70124-77-5 (Flucythrinate); 71422-67-8 (Chlorfluazuron); 71751-41-2 (Abamectin); 73250-68-7 (Mefenacet); 74051-80-2 (Sethoxydim); 74070-46-5 (Aclonifen); 74115-24-5 (Clofentezine); 76578-12-6 (Quizalofop); 77501-63-4 (Lactofen); 77501-90-7 (Fluoroglycofen-ethyl); 78587-05-0 (Hexythiazox); 79277-27-3 (Thifensulfuron methyl); 79538-32-2 (Tefluthrin); 80060-09-9 (Diafenthiuron); 80844-01-5 (Chloproxyfen); 80844-07-1 (Etofenprox); 81335-77-5 (Imazethapyr); 81405-85-8 (Imazamethabenz-methyl); 81777-89-1 (Clomazone); 82558-50-7 (Isoxaben); 82560-54-1 (Benfuracarb); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 83130-01-2 (Alanycarb); 83164-33-4 (Diflufenican); 85785-20-2 (Esprocarb); 85830-77-9 (Triazofenamide); 86209-51-0 (Primisulfuron-methyl); 86763-47-5 (Propisochlor); 87310-56-3 (Butenachlor); 87546-18-7 (Flumiclorac-pentyl); 87674-68-8 (Dimethenamid); 87757-18-4 (Isoxapyrifop); 87818-31-3 (Cinmethylin); 87820-88-0 (Tralkoxydim); 88402-43-1 (Chlorphthalim); 89784-60-1 (Pyraclofos); 90982-32-4 (Chlorimuron-ethyl); 94593-91-6 (Cinosulfuron); 95465-99-9 (Cadusafos); 95617-09-7 (Fenoxaprop); 95737-68-1 (Pyriproxyfen); 96182-53-5 (Tebupirimphos); 96489-71-3 (Pyridaben); 96491-05-3 (Thenylchlor); 96525-23-4 (Flurtamone); 97780-06-8; 97886-45-8 (Dithiopyr); 98886-44-3 (Fosthiazate); 99105-77-8 (Sulcotrione); 99129-21-2 (Clethodim); 100646-51-3; 101007-06-1 (Acrinathrin); 101200-48-0 (Tribenuron-methyl); 101205-02-1; 101463-69-8 (Flufenoxuron); 102851-06-9 (Tau-fluvalinate); 104040-78-0 (Flazasulfuron); 104098-48-8 (Imazapic); 104770-29-8 (NC-330); 105024-66-6 (Silafluofen); 107360-34-9 (NC-170); 107713-58-6 (Flufenprox); 109293-97-2 (Diflufenzopyr); 111479-05-1 (Propaquizafop); 111578-32-6 (Metobenzuron); 111872-58-3 (Halfenprox); 111991-09-4 (Nicosulfuron); 112143-82-5 (Triazamate); 112226-61-6 (Halofenozide); 112410-23-8 (Tebufenozide); 112636-83-6 (Dicyclanil); 113036-88-7 (Flucycloxuron); 114311-32-9 (Imazamox); 114420-56-3 (Clodinafop); 117337-19-6 (Fluthiacet-methyl); 117718-60-2 (Thiazopyr); 119126-15-7 (Flupoxam); 119168-77-3 (Tebufenpyrad); 119738-06-6; 120068-37-3 (Fipronil); 120162-55-2 (Azimsulfuron); 122008-85-9 (Cyhalofop-butyl); 122453-73-0 (Chlorfenapyr); 122836-35-5 (Sulfentrazone); 122931-48-0 (RIMSULFURON); 123249-43-4 (Thidiazimin); 123312-89-0 (Pymetrozine); 125401-75-4 (Bispyribac); 126535-15-7 (Triflusulfuron-methyl); 128639-02-1 (Carfentrazone-ethyl); 129630-19-9 (Pyraflufen-ethyl); 131086-42-5 (Ethoxyfen-ethyl); 131929-63-0 (Spinosyn D); 134098-61-6 (Fenpyroximate); 135410-20-7 (Acetamiprid); 138164-12-2 (Butroxydim); 138261-41-3 (Imidacloprid); 141776-32-1 (Sulfosulfuron); 142459-58-3 (Flufenacet); 144651-06-9 (Oxasulfuron); 144740-53-4 (Flupyrsulfuron-methyl); 147838-04-8 (XR-100); 149877-41-8 (Bifenazate); 150824-47-8 (Nitenpyram); 153233-91-1 (Etoxazole); 160791-64-0 (Flubrocythrinate); 161050-58-4 (Methoxyfenozide); 168088-61-7 (Pyribenzoxim); 173584-44-6 (Indoxacarb) Role: AGR (Agricultural use), PRP (Properties), BIOL (Biological study), USES (Uses) (use of surface-area parameters for agrochem. screening of herbicides and insecticides)

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Tice, Colin M (2002). Selecting the right compounds for screening: use of surface-area parameters. *Pest Management Science* 58: 219-233.
Chem Codes: Chemical of Concern: DMB, FVL, FZS,DSP,PYZ,RSM Rejection Code: CHEM METHODS.

Polar surface area, total surface area and percentage surface area have been calcd. from three-dimensional structures of 88 post-emergence herbicides, 93 pre-emergence herbicides and 237 insecticides. Preferred ranges of values of these parameters were identified. Since the compds. in the training sets are used on a wide variety of species and target sites with various application modes, the parameter ranges are necessarily broad. The utility of the surface-area parameter ranges in selection of compds. for agrochem. screening was compared with the use of ranges of the Lipinski Rule of 5 parameters: mol. mass, calcd. log P, no. of hydrogen-bond donors and no. of hydrogen-bond acceptors. The more computationally intensive surface-area parameters did not offer any obvious advantage over the Lipinski Rule of 5 parameters. [on SciFinder (R)] Copyright: Copyright 2005 ACS on SciFinder (R))
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Accession Number: AN 2002:210355
Chemical Abstracts Number: CAN 136:381730
Section Code: 5-4
Section Title: Agrochemical Bioregulators
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CAS Registry Numbers: 162320-67-4 (Flufenzine) Role: AGR (Agricultural use), PRP (Properties), BIOL (Biological study), USES (Uses) (Flufenzine; use of surface-area parameters for agrochem. screening of herbicides and insecticides); 50-29-3 (DDT); 52-68-6 (Trichlorfon); 54-11-5 (Nicotine); 55-38-9 (Fenthion); 56-38-2 (Parathion); 57-39-6 (Metepa); 58-89-9 (Lindane); 60-51-5 (Dimethoate); 61-82-5 (Amitrole); 62-73-7 (Dichlorvos); 63-25-2 (Carbaryl); 70-43-9 (Barthrin); 72-43-5 (Methoxychlor); 72-54-8 (TDE); 72-56-0 (Ethylan); 76-03-9 (TCA); 76-44-8 (Heptachlor); 78-57-9 (Menazon); 80-33-1 (Chlorfenson); 83-79-4 (Rotenone); 86-50-0 (Azinphos-methyl); 93-65-2 (Mecoprop); 93-71-0 (CDAA); 94-74-6 (MCPA); 94-75-7 (2,4-D); 94-81-5 (MCPB); 94-82-6 (2,4-DB); 97-17-6 (Dichlofenthion); 101-42-8 (Fenuron); 107-49-3 (TEPP); 114-26-1 (Propoxur); 115-26-4 (Dimefox); 115-32-2 (Dicofol); 115-90-2 (Fensulfothion); 116-06-3 (Aldicarb); 116-29-0 (Tetradifon); 119-12-0 (Pyridaphenthion); 120-36-5 (Dichlorprop); 121-20-0 (Cinerin II); 121-21-1 (Pyrethrin I); 121-75-5 (Malathion); 122-10-1 (Bomyl); 122-14-5 (Fenitrothion); 122-34-9 (Simazine); 126-22-7 (Butonate); 133-90-4 (Chloramben); 139-40-2 (Propazine); 141-66-2 (Dicrotophos); 143-50-0 (Chlordecone); 144-41-2 (Morphothion); 150-68-5 (Monuron); 152-16-9 (Schradan); 297-78-9 (Isobenzan); 297-97-2 (Thionazin); 298-00-0 (Parathion-methyl); 298-02-2 (Phorate); 298-04-4 (Disulfoton); 299-84-3 (Fenchlorphos); 300-76-5 (Dibrom); 301-12-

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2 (Oxydemeton-methyl); 311-45-5 (Paraoxon); 315-18-4 (Mexacarbate); 327-98-0 (Trichloronate); 333-41-5 (Diazinon); 470-90-6 (Chlorfenvinfos); 510-15-6 (Chlorobenzilate); 534-52-1 (DNOC); 545-55-1 (TEPA); 555-37-3 (Neburon); 563-12-2 (Ethion); 584-79-2 (Allethrin); 640-15-3 (Thiometon); 644-64-4 (Dimetilan); 709-98-8 (Propanil); 732-11-6 (Phosmet); 741-58-2 (Bensulide); 759-94-4 (EPTC); 786-19-6 (Carbophenothion); 834-12-8 (Ametryne); 841-06-5 (Methoprotryne); 886-50-0; 919-86-8 (Demeton-S-methyl); 944-22-9 (Fonofos); 947-02-4 (Phosfolan); 950-10-7; 950-37-8 (Methidation); 957-51-7 (Diphenamid); 1031-47-6 (Triamiphos); 1071-83-6 (Glyphosate); 1113-02-6 (Omethoate); 1114-71-2 (Pebulate); 1129-41-5 (Metolcarb); 1134-23-2 (Cycloate); 1172-63-0 (Jasmolin II); 1194-65-6 (Dichlobenil); 1420-07-1 (Dinoterb); 1563-66-2 (Carbofuran); 1582-09-8 (Trifluralin); 1610-18-0 (Prometon); 1646-88-4 (Aldoxycarb); 1689-83-4 (Ioxynil); 1689-84-5 (Bromoxynil); 1698-60-8 (Chloridazon); 1702-17-6 (Clopyralid); 1836-75-5 (Nitrofen); 1861-32-1 (Dacthal); 1861-40-1 (Benfluralin); 1912-24-9 (Atrazine); 1912-26-1 (Trietazine); 1918-00-9 (Dicamba); 1918-11-2 (Terbucarb); 1918-16-7 (Propachlor); 1982-47-4 (Chloroxuron); 1982-49-6 (Siduron); 2008-41-5 (Butylate); 2032-65-7 (Methiocarb); 2104-64-5 (EPN); 2104-96-3 (Bromophos); 2164-08-1 (Lenacil); 2164-17-2 (Fluometuron); 2212-67-1 (Molinate); 2227-17-0 (Dienochlor); 2275-18-5 (Prothoate); 2275-23-2 (Vamidothion); 2303-16-4 (Diallate); 2303-17-5 (Triallate); 2310-17-0 (Phosalone); 2312-35-8 (Propargite); 2385-85-5 (Mirex); 2425-10-7 (Xylylcarb); 2439-01-2 (Quinomethionate); 2463-84-5 (Dicapthon); 2497-07-6 (Oxydisulfoton); 2540-82-1 (Formothion); 2595-54-2 (Mecarbam); 2597-03-7 (Phenthoate); 2631-37-0 (Promecarb); 2631-40-5 (Isoprocarb); 2636-26-2 (Cyanophos); 2655-14-3 (XMC); 2655-19-8 (Butacarb); 2674-91-1 (Oxydeprofos); 2921-88-2 (Chlorpyriphos); 2941-55-1 (Ethiolate); 3060-89-7 (Metobromuron); 3244-90-4 (Aspon); 3309-87-3 (DMCP); 3337-71-1 (Asulam); 3689-24-5 (Sulfotep); 3766-81-2 (Fenobucarb); 3792-59-4 (EPBP); 3811-49-2 (Dioxabenzofos); 3813-05-6 (Benazolin); 3942-54-9 (CPMC); 4151-50-2 (Sulfluramid); 4824-78-6 (Bromophos-ethyl); 4849-32-5 (Karbutilate); 5598-13-0; 5827-05-4 (IPSP); 5902-51-2 (Terbacil); 5915-41-3 (Terbuthylazine); 6164-98-3 (Chlordimeform); 6923-22-4 (Monocrotophos); 6988-21-2 (Dioxacarb); 7287-19-6 (Prometryn); 7287-36-7 (Monalide); 7292-16-2 (Propaphos); 7696-12-0 (Tetramethrin); 7700-17-6 (Crotoxyphos); 7786-34-7 (Mevinphos); 8001-35-2 (Toxaphene); 10265-92-6 (Methamidophos); 10311-84-9 (Dialifor); 10453-86-8 (Resmethrin); 11141-17-6 (Azadirachtin); 12407-86-2 (Trimethacarb); 13067-93-1 (Cyanofenphos); 13071-79-9 (Terbufos); 13171-21-6 (Phosphamidon); 13181-17-4 (Bromofenoxim); 13194-48-4 (Ethoprophos); 13360-45-7 (Chlorbromuron); 13593-03-8 (Quinalphos); 13684-56-5 (Desmedipham); 13684-63-4 (Phenmedipham); 14816-18-3 (Phoxim); 14816-20-7 (Chlorphoxim); 15263-53-3 (Cartap); 15299-99-7 (Napropamide); 15972-60-8 (Alachlor); 16752-77-5 (Methomyl); 17606-31-4 (Bensultap); 18181-70-9 (Iodofenphos); 18181-80-1 (Bromopropylate); 18854-01-8 (Isoxathion); 19044-88-3 (Oryzalin); 19937-59-8 (Metoxuron); 20354-26-1 (Methazole); 21548-32-3 (Fosthietan); 21609-90-5 (Leptophos); 21725-46-2 (Cyanazine); 22224-92-6 (Fenamiphos); 22248-79-9 (Tetrachlorvinfos); 22259-30-9 (Formetanate); 22781-23-3 (Bendiocarb); 23031-36-9 (Prallethrin); 23103-98-2 (Pirimicarb); 23184-66-9 (Butachlor); 23505-41-1 (Pirimiphos-ethyl); 23560-59-0 (Heptenophos); 23950-58-5 (Pronamide); 24017-47-8 (Triazophos); 24151-93-7 (Piperophos); 24934-91-6 (Chlormephos); 25057-89-0 (Bentazone); 25171-63-5 (Thiocarboxime); 25311-71-1 (Isofenphos); 25319-90-8 (MCPA-thioethyl); 25402-06-6 (Cinerin I); 26002-80-2 (Phenothrin); 26399-36-0 (Profluralin); 27314-13-2 (Norflurazon); 28249-77-6 (Thiobencarb); 29091-05-2 (Dinitramine); 29091-21-2 (Prodiamine); 29104-30-1 (Benzoximate); 29973-13-5 (Ethiofencarb); 30560-19-1 (Acephate); 31218-83-4 (Propetamphos); 32861-85-1 (Chlomethoxyfen); 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52645-53-1 (Permethrin); 52756-25-9 (Flamprop-methyl); 52888-80-9 (Prosulfocarb); 52918-63-5 (Deltamethrin); 54593-83-8 (Chlorethoxyfos); 55283-68-6 (Ethalfluralin); 55285-14-8 (Carbosulfan); 55335-06-3 (Triclopyr); 55512-33-9 (Pyridate); 55634-91-8 (Alloxydim); 58011-68-0 (Pyrazolate); 59669-26-0 (Thiodicarb); 59682-52-9 (Fosamine); 59756-60-4 (Fluridone); 61213-25-0 (Flurochloridone); 62850-32-2 (Fenothiocarb); 63782-90-1 (Flamprop-M-isopropyl); 63935-38-6 (Cycloprothrin); 64249-01-0 (Anilofos); 64628-44-0 (Triflumuron); 65907-30-4 (Furathiocarb); 66215-27-8 (Cyromazine); 66441-23-4 (Fenoxaprop-ethyl); 66841-25-6 (Tralomethrin); 67129-08-2 (Metazachlor); 68085-85-8 (Cyhalothrin); 68359-37-5 (Cyfluthrin); 69327-76-0 (Buprofezin); 69335-91-7 (Fluazifop); 69377-81-7 (Fluroxypyr); 69806-40-2 (Haloxyfop-methyl); 69806-50-4 (Fluazifop-butyl); 70124-77-5

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(Flucythrinate); 71422-67-8 (Chlorfluazuron); 71751-41-2 (Abamectin); 73250-68-7 (Mefenacet); 74051-80-2 (Sethoxydim); 74070-46-5 (Aclonifen); 74115-24-5 (Clofentezine); 76578-12-6 (Quizalofop); 77501-63-4 (Lactofen); 77501-90-7 (Fluoroglycofen-ethyl); 78587-05-0 (Hexythiazox); 79277-27-3 (Thifensulfuron methyl); 79538-32-2 (Tefluthrin); 80060-09-9 (Diafenthiuron); 80844-01-5 (Chloproxyfen); 80844-07-1 (Etofenprox); 81335-77-5 (Imazethapyr); 81405-85-8 (Imazamethabenz-methyl); 81777-89-1 (Clomazone); 82558-50-7 (Isoxaben); 82560-54-1 (Benfuracarb); 82657-04-3 (Bifenthrin); 83121-18-0 (Teflubenzuron); 83130-01-2 (Alanycarb); 83164-33-4 (Diflufenican); 85785-20-2 (Esprocarb); 85830-77-9 (Triazofenamide); 86209-51-0 (Primisulfuron-methyl); 86763-47-5 (Propisochlor); 87310-56-3 (Butenachlor); 87546-18-7 (Flumiclorac-pentyl); 87674-68-8 (Dimethenamid); 87757-18-4 (Isoxapyrifop); 87818-31-3 (Cinmethylin); 87820-88-0 (Tralkoxydim); 88402-43-1 (Chlorphthalim); 89784-60-1 (Pyraclofos); 90982-32-4 (Chlorimuron-ethyl); 94593-91-6 (Cinosulfuron); 95465-99-9 (Cadusafos); 95617-09-7 (Fenoxaprop); 95737-68-1 (Pyriproxyfen); 96182-53-5 (Tebupirimphos); 96489-71-3 (Pyridaben); 96491-05-3 (Thenylchlor); 96525-23-4 (Flurtamone); 97780-06-8; 97886-45-8 (Dithiopyr); 98886-44-3 (Fosthiazate); 99105-77-8 (Sulcotrione); 99129-21-2 (Clethodim); 100646-51-3; 101007-06-1 (Acrinathrin); 101200-48-0 (Tribenuron-methyl); 101205-02-1; 101463-69-8 (Flufenoxuron); 102851-06-9 (Tau-fluvalinate); 104040-78-0 (Flazasulfuron); 104098-48-8 (Imazapic); 104770-29-8 (NC-330); 105024-66-6 (Silafluofen); 107360-34-9 (NC-170); 107713-58-6 (Flufenprox); 109293-97-2 (Diflufenzopyr); 111479-05-1 (Propaquizafop); 111578-32-6 (Metobenzuron); 111872-58-3 (Halfenprox); 111991-09-4 (Nicosulfuron); 112143-82-5 (Triazamate); 112226-61-6 (Halofenozide); 112410-23-8 (Tebufenozide); 112636-83-6 (Dicyclanil); 113036-88-7 (Flucycloxuron); 114311-32-9 (Imazamox); 114420-56-3 (Clodinafop); 117337-19-6 (Fluthiacet-methyl); 117718-60-2 (Thiazopyr); 119126-15-7 (Flupoxam); 119168-77-3 (Tebufenpyrad); 119738-06-6; 120068-37-3 (Fipronil); 120162-55-2 (Azimsulfuron); 122008-85-9 (Cyhalofop-butyl); 122453-73-0 (Chlorfenapyr); 122836-35-5 (Sulfentrazone); 122931-48-0 (RIMSULFURON); 123249-43-4 (Thidiazimin); 123312-89-0 (Pymetrozine); 125401-75-4 (Bispyribac); 126535-15-7 (Triflusulfuron-methyl); 128639-02-1 (Carfentrazone-ethyl); 129630-19-9 (Pyraflufen-ethyl); 131086-42-5 (Ethoxyfen-ethyl); 131929-63-0 (Spinosyn D); 134098-61-6 (Fenpyroximate); 135410-20-7 (Acetamiprid); 138164-12-2 (Butroxydim); 138261-41-3 (Imidacloprid); 141776-32-1 (Sulfosulfuron); 142459-58-3 (Flufenacet); 144651-06-9 (Oxasulfuron); 144740-53-4 (Flupyrsulfuron-methyl); 147838-04-8 (XR-100); 149877-41-8 (Bifenazate); 150824-47-8 (Nitenpyram); 153233-91-1 (Etoxazole); 160791-64-0 (Flubrocythrinate); 161050-58-4 (Methoxyfenozide); 168088-61-7 (Pyribenzoxim); 173584-44-6 (Indoxacarb) Role: AGR (Agricultural use), PRP (Properties), BIOL (Biological study), USES (Uses) (use of surface-area parameters for agrochem. screening of herbicides and insecticides)

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Citations: 2) Herman, R; Rev Toxicol 1998, 2, 445
Citations: 3) Walsh, J; J Biomol Screening 1998, 3, 175
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Citations: 5) Tice, C; Pest Manag Sci 2001, 57, 3
Citations: 6) Palm, K; Pharm Res 1997, 14, 568
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Citations: 8) Winiwarter, S; J Med Chem 1998, 41, 4939
Citations: 9) Van de Waterbeemd, H; J Drug Targeting 1998, 6, 151
Citations: 10) Oprca, T; J Mol Graph Modelling 1999, 17, 261
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Citations: 38) Reynolds, C; J Chem Inf Comput Sci 1998, 38, 305 surface/ area/ parameter/ herbicide/ insecticide/ screening

TORREY KD, LEONARD BR, and FIFE JH (1997). CHINCH BUG MANAGEMENT WITH FOLIAR INSECTICIDES IN CORN 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 233-234.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS BLISSUS-LEUCOPTERUS-LEUCOPTERUS FIELD CORN CHINCH BUG CULTIVAR-PIONEER 3163 CROP AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT FIPRONIL INSECTICIDE FOLIAR APPLICATION KARATE ASANA PROVADO ARTHROPOD MANAGEMENT TEST WINNSBORO LOUISIANA USA Cereals/ Plants/Growth & Development/ Soil/ Oils/ Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Insects

TORREY KD, LEONARD BR, and FIFE JH (1997). EVALUATION OF FOLIAR INSECTICIDE EFFICACY AGAINST THRIPS IN COTTON 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 278.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER GOSSYPIUM-HIRSUTUM FRANKLINIELLA-FUSCA FRANKLINIELLA COTTON TOBACCO THRIPS THRIPS FIBER CROP CULTIVAR-STONEVILLE 887 AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST FIPRONIL EFFICACY FOLIAR APPLICATION INSECTICIDE ORTHENE BIDRIN DECIS WINNSBORO LOUISIANA USA Plants/Growth & Development/ Soil/ Textiles/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Plants/ Insects

Valles, S. M., Koehler, P. G., & Brenner, R. J. Antagonism of Fipronil Toxicity by Piperonyl Butoxide and S,S,S-Tributyl Phosphorotrithioate in the German Cockroach (Dictyoptera: Blattellidae). J.Econ.Entomol. 90[5], 1254-1258. 1997. Cent. for Med., Agric. and Veterinary Entomol., USDA-ARS, P.O. Box 14565, 1600 SW 23rd Dr., Gainesville, FL 32604, USA.
Rec #: 60
Keywords: NO DURATION
Call Number: NO DURATION
Notes: Chemical of Concern: PPB,FPN

Vannatta, J B (2000). A history of the University of Oklahoma College of Medicine: perspectives on funding the educational mission. *Journal-Oklahoma State Medical Association* 93: 475-482.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

This paper discusses the history of the University of Oklahoma College of Medicine. The history from the perspective of the political environment has been published by Mark R. Everett and Alice A. Everett, and the third edition of that series will be published soon by Regents Professor Mark Allen Everett, MD. These volumes are essential reading for a thorough understanding of the history of the college. In this paper, I will concentrate on the history of funding the educational mission. It is an interesting study of the politics of a state institution and reflects the history of the chronic underfunding of higher education in the state of

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Oklahoma. [Historical Article, Journal Article; In English; United States]

Vear, H J, Lee, H K, and Keating, J C (1997). Early Canadian chiropractic colleges. *Chiropractic History: The Archives And Journal Of The Association For The History Of Chiropractic* 17: 57-68.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

Chiropractic education arrived in Canada, principally in Ontario, in 1909 with Robbins Chiropractic Institute, (RIC) in Sault Ste. Marie, Ontario. After the RIC's closure in 1913, the Canadian Chiropractic College (CCC) Hamilton, Ontario, held its first classes in 1914 under Dr. Ernest Du Val, 1911 Palmer School of Chiropractic graduate. It was during this period that the Hodgins Commission on Ontario Medical Education held public sessions with presentations from all health professions including chiropractic. It was the outcome of this Commissions Report that dealt a devastating blow to chiropractic. The CCC, which moved to Toronto in 1919, remained the only chiropractic college in Canada until 1920 with the opening of the Toronto Chiropractic College (TCC). The CCC closed in 1923; and the TCC, in 1926. Although all three colleges taught a "straight" program, the "mixers," largely from American schools, became the dominant political force in the province, particularly on the Board of Regents for the enforcement of the 1925 Drugless Practitioners Act, a mixed Board of chiropractors, osteopaths and drugless therapists. [Historical Article, Journal Article; In English; United States]

Vojtiskova, M, Pokorna, Z, Kristofova, H, Polackova, M, and Ricarova-Voracova, B (1981). H-2 antigenicity of Leydig cells. *Folia Biologica* 27: 163-170.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

Partial absorption of oligospecific reagents by the particulate membrane fraction prepared from isolated interstitial cells grown in culture (the harvested cell population contained about 80% Leydig cells)suggests that membranes of Leydig cells carry antigenic specificities H-2K (11,25) and H-2D (4) but not antigens controlled by the I region. The results of absorption experiments have been confirmed by the methods at the level of individual cells; the native Leydig cells gave a positive reaction in the dye exclusion cytotoxic and immunofluorescent tests with he polyvalent regent B10D2 and B10 (directed against antigens of the regions H-2K through H-2I-E). [Journal Article; In English; Czechoslovakia]

Walse, Spencer S, Morgan, Stephen L, Kong, Li, and Ferry, John L (2004). Role of dissolved organic matter, nitrate, and bicarbonate in the photolysis of aqueous fipronil. *Environmental Science & Technology* 38: 3908-3915.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO SPECIES.

A multivariate kinetic model of aqueous fipronil photodegradation was developed as a function of dissolved organic matter (DOM), bicarbonate, and nitrate at concentrations that bracketthose commonly observed in natural waters (ca. 0-10 mg/L). Several pathways were available for fipronil photodegradation in this system, including direct photolysis and indirect photooxidation by species produced during the illumination of natural waters (e.g., 3NOM*, 1O2*, *OH, *CO3(1-), *OOR, *OOH, e(aq)-, O2(*-)). Product studies indicated thatfipronil was quantitatively converted to fipronil desulfinyl, a product that is associated with direct photolysis alone. DOM was the only variable that affected fipronil degradation; it decreased the rate of fipronil photodegradation primarily through competitive light absorption (i.e., attenuation) and the quenching of fipronil*. The addition of sodium chloride (30 percent per thousand) resulted in a more rapid rate (approximately 20%) of fipronil loss in comparison to equivalent experiments performed without sodium chloride, implying that fipronil may be more photolabile in marine environments. [Journal Article; In English; United States]

Walse, Spencer S, Pennington, Paul L, Scott, Geoffrey I, and Ferry, John L (2004). The fate of fipronil in modular estuarine mesocosms. *Journal Of Environmental Monitoring: JEM* 6: 58-64.
Chem Codes: Chemical of Concern: FPN Rejection Code: FATE.

The degradation and corresponding product manifold for the pesticide fipronil was determined in three replicate estuarine mesocosms. Aqueous fipronil concentrations rapidly decreased over the 672 h timescale of the experiment (95% removal). Loss was apparently first-order in fipronil, although there appeared to be a change in the removal mechanism after 96 h that corresponded to a dramatic slowdown in its disappearance. The reduction product of fipronil, fipronil sulfide, was not detected in the water column; however, it formed rapidly in sediments and was identified as the major product of fipronil degradation in the system (20% yield at 672 h, with respect to initial fipronil concentration). Fipronil sulfone is thought to form primarily via biological oxidation; and, although it was generated rapidly in the water column (10%

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yield), only trace amounts were detected in the sediment (1% yield). The direct photolysis product of fipronil, fipronil desulfinyl, was present in all samples; it formed rapidly in the water column (4% yield) and partitioned into the sediment phase (7% yield) over the course of the experiment. The mass balance on fipronil and associated products was 42% at 672 h. [Journal Article; In English; England]

Wang, Yong-Fei, Fan, Liu-Min, Zhang, Wen-Zheng, Zhang, Wei, and Wu, Wei-Hua (2004). Ca2+-permeable channels in the plasma membrane of Arabidopsis pollen are regulated by actin microfilaments. *Plant Physiology* 136: 3892-3904.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

Cytosolic free Ca2+ and actin microfilaments play crucial roles in regulation of pollen germination and tube growth. The focus of this study is to test the hypothesis that Ca2+ channels, as well as channel-mediated Ca2+ influxes across the plasma membrane (PM) of pollen and pollen tubes, are regulated by actin microfilaments and that cytoplasmic Ca2+ in pollen and pollen tubes is consequently regulated. In vitro Arabidopsis (Arabidopsis thaliana) pollen germination and tube growth were significantly inhibited by Ca2+ channel blockers La3+ or Gd3+ and F-actin depolymerization regents. The inhibitory effect of cytochalasin D (CD) or cytochalasin B (CB) on pollen germination and tube growth was enhanced by increasing external Ca2+. Ca2+ fluorescence imaging showed that addition of actin depolymerization reagents significantly increased cytoplasmic Ca2+ levels in pollen protoplasts and pollen tubes, and that cytoplasmic Ca2+ increase induced by CD or CB was abolished by addition of Ca2+ channel blockers. By using patch-clamp techniques, we identified the hyperpolarization-activated inward Ca2+ currents across the PM of Arabidopsis pollen protoplasts. The activity of Ca2+-permeable channels was stimulated by CB or CD, but not by phalloidin. However, preincubation of the pollen protoplasts with phalloidin abolished the effects of CD or CB on the channel activity. The presented results demonstrate that the Ca2+-permeable channels exist in Arabidopsis pollen and pollen tube PMs, and that dynamic actin microfilaments regulate Ca2+ channel activity and may consequently regulate cytoplasmic Ca2+. [Journal Article; In English; United States]

Ward, A T and Reichert, R D (1986). Comparison of the effect of cell wall and hull fiber from canola and soybean on the bioavailability for rats of minerals, protein and lipid. *The Journal Of Nutrition* 116: 233-241.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Hull or cell wall material, isolated from canola (Brassica napus cv. Regent) or soybean (Glycine max) or cellulose was added to a basal, semipurified diet at a level of 12% and fed to growing male Wistar rats. The apparent availability of Cu, Fe, Ca, P and protein were lower when the fiber-containing diets were fed compared to the control diet. The availability of Mg was lower when the canola hull (CH) and cellulose (CE) diets were fed, whereas Zn availability was lower when the canola cell wall (CCW) and CE diets were fed, compared to the control diet. Determination of the feed transit time, by using the unabsorbable marker Cr2O3, demonstrated that the CE and soybean cell wall (SCW) diets had the fastest transit rates, followed by the CH, soybean hull (SH), CCW and control diets. Determination of the in vitro binding of the various fibers to metal ions demonstrated that CH was the strongest chelator, whereas CE had the lowest binding affinity for any of the minerals tested. At the termination of the trial, intestinal segments were removed and the in vitro mucosal transport of Cu, Fe, Mn and Zn were compared. The CCW diet consistently demonstrated lower transport for the four minerals, especially in the ileal segment. [Journal Article; In English; United States]

Way, M. O. and Wallace, R. G. (1996). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL 1995. *Burditt, A. K. Jr. (Ed.). Arthropod Management Tests, Vol. 21. Iv+462p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-55-8.* 21 : 281-282.
Chem Codes: CBF Rejection Code: BOOK ORDERED - BURDITT VOL 21.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LISSORHOPTRUS-ORYZOPHILUS ORYZA-SATIVA RICE RICE WATER WEEVIL CV.-CYPRESS IMMATURE PEST CROP ECONOMIC ENTOMOLOGY PEST MANAGEMENT EXP60720A 80WG INSECTICIDE EXP60655A 1.65 G EXP61070A EXP80658A ST EXP80659A ST FURADAN 3G BEAUMONT TEXAS USA
KEYWORDS: Ecology
KEYWORDS: Toxicology-General
KEYWORDS: Developmental Biology-Embryology-Morphogenesis
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Pest Control

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KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Way, M. O. and Wallace, R. G. (1995). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL AND ACEPHATE 1994. *Burditt, A. K. Jr. (Ed.). Arthropod Management Tests, Vol. 20. Iii+399p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-53-1.* 0 : 228.
Chem Codes: CBF Rejection Code: BOOK ORDERED - BURDITT VOL 2O.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA-SATIVA LISSORHOPTRUS-ORYZOPHILUS CULTIVAR GULFMONT PAYLOAD FURADAN INSECTICIDE PESTICIDE EVALUATION ARTHROPOD MANAGEMENT TEST BEAUMONT TEXAS USA
KEYWORDS: Agronomy-Oil Crops
KEYWORDS: Horticulture-Vegetables
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Leguminosae
KEYWORDS: Coleoptera

Way, M. O. and Wallace, R. G. (1997). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL APPLIED POST-FLOOD IN A DRY-SEEDED DELAYED FLOOD CULTURE 1996. *Saxena, C. R. Arthropod Management Tests, Vol. 22. Iv+469p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-61-2.* 22 : 299.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 22 .

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LISSORHOPTRUS-ORYZOPHILUS ORYZA-SATIVA RICE WATER WEEVIL PEST CULTIVAR-CYPRESS CROP PEST MANAGEMENT DIMILIN INSECTICIDE FURADAN KARATE FIPRONIL DELAYED FLOOD CULTURE FIELD METHOD
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Way, M. O. and Wallace, R. G. (1997). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL IN A DRILL-SEEDED DELAYED FLOOD CULTURE EUP STUDY 1996. *Saxena, C. R. Arthropod Management Tests, Vol. 22. Iv+469p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-61-2.* 22 : 297.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 22 .

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LISSORHOPTRUS-ORYZOPHILUS ORYZA-SATIVA RICE WATER WEEVIL RICE AGRICULTURAL PEST GRAIN CROP CULTIVAR-CYPRESS AGRICULTURE EXP 60720A INSECTICIDE EXP 80698A FIPRONIL FURADAN PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST DELAYED FLOOD CULTURE DRILL-SEEDED TEST EXPERIMENTAL USE PERMIT STUDY BEAUMONT TEXAS USA
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

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Way, M. O. and Wallace, R. G. (1999). Control of rice water weevil with Fipronil in a drill-seeded, delayed flood culture - EUP study, 1997. *Saxena, K. N. (Ed.). Arthropod Management Tests, Vol. 24. V+478p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-86-8* 24 : 274.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 24.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA SATIVA LISSORHOPTRUS ORYZOPHILUS RICE RICE WATER WEEVIL CULTIVAR-JEFFERSON HOST DRILL-SEEDED DELAYED FLOOD CULTURE GRAIN CROP PEST CONTROL AGRONOMY ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ARTHROPOD MANAGEMENT FIPRONIL EFFICACY EXPERIMENTAL USE PERMIT STUDY INSECTICIDE EXP 80698A FURADAN BEAUMONT TEXAS USA
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Way, M. O. and Wallace, R. G. (1997). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL IN A DRY-SEEDED DELAYED FLOOD CULTURE 1996. *Saxena, C. R. Arthropod Management Tests, Vol. 22. Iv+469p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-61-2.* 22 : 298.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 22.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LISSORHOPTRUS-ORYZOPHILUS ORYZA-SATIVA RICE WATER WEEVIL RICE AGRICULTURAL PEST CULTIVAR-CYPRESS GRAIN CROP AGRICULTURE EXP 60720A INSECTICIDE EXP 80698A FIPRONIL FURADAN PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST DELAYED FLOOD CULTURE DRY-SEEDED TEST BEAUMONT TEXAS USA
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Way, M. O. and Wallace, R. G. (1997). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL IN A WATER-SEEDED CONTINUOUS FLOOD CULTURE 1996 . *Saxena, C. R. Arthropod Management Tests, Vol. 22. Iv+469p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-61-2.* 22 : 296.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 22.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LISSORHOPTRUS-ORYZOPHILUS ORYZA-SATIVA RICE WATER WEEVIL RICE AGRICULTURAL PEST GRAIN CROP CULTIVAR-CYPRESS AGRICULTURE EXP 60720A INSECTICIDE EXP 80698A FIPRONIL FURADAN PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST CONTINUOUS FLOOD CULTURE WATER-SEEDED TEST BEAUMONT TEXAS USA
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Way, M. O. and Wallace, R. G. (1997). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL IN A WATER-SEEDED CONTINUOUS FLOOD CULTURE EUP STUDY 1996. *Saxena, C. R. Arthropod Management Tests, Vol. 22. Iv+469p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-61-2.*

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22 : 295-296.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 22 .

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA-SATIVA LISSORHOPTRUS-ORYZOPHILUS RICE RICE WATER WEEVIL GRAIN CROP CULTIVAR-CYPRESS AGRICULTURAL PEST AGRICULTURE PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST FIPRONIL INSECTICIDE WATER-SEEDED TEST CONTINUOUS FLOOD CULTURE EXP 60720A EXP 80698A FURADAN BEAUMONT TEXAS USA
KEYWORDS: Agronomy-Grain Crops
KEYWORDS: Phytopathology-Diseases Caused by Animal Parasites
KEYWORDS: Phytopathology-Disease Control
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Way, M. O. and Wallace, R. G. (1998). CONTROL OF RICE WATER WEEVIL WITH FIPRONIL IN A WATER-SEEDED PINPOINT FLOOD CULTURE-EUP STUDY. *Saxena, K. N. (Ed.). Arthropod Management Tests, Vol. 23. Iv+418p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-77-9.* 23 : 267.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 23.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA-SATIVA LISSORHOPTRUS-ORYZOPHILUS RICE RICE WATER WEEVIL CULTIVAR-CYPRESS CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES EXP 80698 INSECTICIDE FURADAN
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-General
KEYWORDS: Invertebrata
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Way, M. O. and Wallace, R. G. (1998). CONTROL OF RICE WATER WEEVIL WITH FURY 1.5 EC IN A DRY-SEEDED DELAYED FLOOD CULTURE 1997. *Saxena, K. N. (Ed.). Arthropod Management Tests, Vol. 23. Iv+418p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-77-9.* 23 : 265-266.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 23.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA-SATIVA LISSORHOPTRUS-ORYZOPHILUS RICE RICE WATER WEEVIL CROP CULTIVAR-CYPRESS PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES FURY INSECTICIDE KARATE FIPRONIL FURADAN
KEYWORDS: Agronomy-General
KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-General
KEYWORDS: Invertebrata
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

Way, M. O. and Wallace, R. G. (1997). CONTROL OF RICE WATER WEEVIL WITH KARATE IN A DRY-SEEDED DELAYED FLOOD CULTURE 1996. *Saxena, C. R. Arthropod Management Tests, Vol. 22. Iv+469p. Entomological Society of America: Lanham, Maryland, Usa. Isbn 0-938522-61-2.* 22 : 302-303.
Chem Codes: CBF Rejection Code: BOOK ORDERED SAXENA VOL 22.

ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER LISSORHOPTRUS-ORYZOPHILUS ORYZA-SATIVA RICE WATER WEEVIL PEST CROP CULTIVAR-CYPRESS PEST MANAGEMENT DELAYED FLOOD CULTURE DRY SEEDING KARATE INSECTICIDE FIPRONIL DIMILIN FURADAN FIELD METHOD
KEYWORDS: Agronomy-Grain Crops

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KEYWORDS: Pest Control
KEYWORDS: Economic Entomology-Field
KEYWORDS: Economic Entomology-Chemical and Physical Control
KEYWORDS: Invertebrata
KEYWORDS: Gramineae
KEYWORDS: Coleoptera

WAY MO and WALLACE RG (1998). CONTROL OF A SHARPSHOOTER WITH EXP 80698A AND KARATE 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 273.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ORYZA-SATIVA DRAECULACEPHALA-SP RICE SHARPSHOOTER CROP CULTIVAR-CYPRESS PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES EXP 80698A INSECTICIDE KARATE Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Insects

Webster, M (1999). Product warning: FRONTLINE. *Australian Veterinary Journal* 77: 202.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

[Letter; In English; Australia]

Weir, B. J., St Pierre RG, and Chibbar, R. N. (RAPD marker polymorphism among Saskatoon cultivars, clones, and seedlings. *HortScience, 32 (6) pp. 1109-1113, 1997.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Randomly amplified polymorphic DNA (RAPD) markers were used to distinguish among 16 cultivars of saskatoon (Amelanchier spp.). Eight 9-base, oligonucleotide primers amplified a total of 98 DNA fragments, of which 29 were useful as reproducible polymorphic markers. Twelve cultivars and two pairs of cultivars were uniquely characterized by these 29 markers. Polymorphism was not detected among five sources of the cv. Thiessen, whereas variability was found among seedlings from self-pollinated 'Thiessen'. Samples of the cvs. Regent and Parkhill were indistinguishable from one of two sources, suggesting that the cultivars were mislabelled. Polymerase chain reaction/ Cultivar identification/ Amelanchier spp./ Serviceberry/ Juneberry/ Shadbush

Wen, Z. & Scott, J. G. Genetic and Biochemical Mechanisms Limiting Fipronil Toxicity in the LPR Strain of House Fly, Musca domestica. Pestic.Sci. 55[10], 988-992. 1999. Department of Entomology, Comstock Hall, Cornell University, Ithaca, NY 14853-0901, USA; E-mail: JGS5@CORNELL.EDU, TOP.
Rec #: 110
Keywords: NO DURATION
Call Number: NO DURATION
Notes: Chemical of Concern: PPB,FPN

Whitaker, M. J. (1986). Spectrophotometric determination of nonionic surfactants by flow injection analysis utilizing ion-pair extraction and an improved phase separator. *Analytica Chimica Acta* 179: 459-462.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

The proposed flow-injection determination of nonionic surfactants of the general type RO(CH2CH2O)nH (where R is an alkyl or alkylphenyl group and n is the number of moles of oxyethylene group) is based on extraction of the colored ion-pair product formed between the nonionic surfactant and the regent tetrabromophenolphthalein ethyl ester potassium salt (TBPE-K). The complex is extracted into 1,2-dichloroethane and measured at 609 nm. A new phase separator is described. Triton X-100 is used as a model compounds, for which response is linear in the range 2-60 mg l-1. Precision of the method is excellent with a relative standard deviation of <1.0%. The sensitivity of the method depends on the type of surfactant examined.

White, W Hunter, Plummer, Philip R, Kemper, Connie J, Miller, Robert J, Davey, Ronald B, Kemp, David H, Hughes, Suzanne, Smith, Charles K 2nd, and Gutierrez et, al. (2004). An in vitro larval immersion

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microassay for identifying and characterizing candidate acaricides. *Journal Of Medical Entomology* 41: 1034-1042.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

We have optimized a larval immersion microassay (LIM) that offers superior sensitivity, flexibility to accommodate multiple formulations, and a robust capability for rapidly screening many compounds with a minimal requirement of test article for evaluation. Dose-response studies were conducted for representative members from the organophosphate, pyrethroid, pyrazole, carbamate, macrocyclic lactone, and formamidine chemistries against Amblyomma americanum (L.). Time-response experiments revealed that permethrin was the most rapid acting, whereas fipronil had the slowest speed-of-kill against A. americanum. Comparison of drug susceptibility profiles between multiple ixodid ticks suggests that A. americanum is an effective model for predicting compound potency against Boophilus spp. in this bioassay. The LIM is suitable for the identification and characterization of active molecules from small- and medium-sized compound or natural product libraries, and it can be a useful tool to prioritize molecules for further in vivo testing in animal models. [Journal Article; In English; United States]

Williams, G. A., Adam, P., and Mound, L. A. (Thrips (Thysanoptera) pollination in Australian subtropical rainforests, with particular reference to pollination of Wilkiea huegeliana (Monimiaceae). *Journal of Natural History, 35 (1) pp. 1-21, 2001.*
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOXICANT.

Approximately 23 species of thrips were recorded from flowers of 26 species of Australian subtropical rainforest trees, shrubs and vines (in 17 families) in the Manning Valley, coastal northern New South Wales. Pollination by thrips (thripophily) appears more widespread in rainforest communities than has been previously recognized. The pollination ecology of Wilkiea huegeliana (Monimiaceae) was studied in detail. Wilkiea huegeliana is a small, unisexual, annually flowering tree or shrub of rainforest and associated ecotones in eastern Australia, and is a larval food plant for the Regent Skipper butterfly Euschemon rafflesia rafflesia (Hesperiidae). At this latitude W. huegeliana is pollinated solely by a species of thrips, Thrips setipennis, but T. setipennis is not restricted to W. huegeliana and was recorded from flowers of 13 rainforest plant species. It appears to be the obligate pollinator also for Rapanea howittiana and R. variabilis (Myrsinaceae). Pollinator exclusion experiments were inconclusive but W. huegeliana may be facultatively agamospermous. The recruitment pathway to unrewarding female W. huegeliana flowers is uncertain but attraction may function by automimicry. Both male and female flowers serve as brood sites for T. setipennis larvae. Although the pollination ecology of W. huegeliana is specialized, the family Monimiaceae exhibits a broad diversity of pollination strategies. A number of these are discussed. The apparent obligate and restricted pollinator requirements of W. huegeliana may make it, and any associated phytophagous fauna, vulnerable to the impacts of habitat fragmentation. Thrips/ Thysanoptera/ Pollination/ Wilkiea huegeliana/ Monimiaceae/ Subtropical rainforest/ Conservation/ Thrips/ Wilkiea huegeliana/ Euschemon rafflesia/ Thrips setipennis/ Rapanea howittiana/ Rapanea variabilis

Willman, V L (1976). 1976 reports from nine American surgical specialty boards to the Board of Regents of the American College of Surgeons. Presented at the meeting of the Board of Regents, October 10, 1976, in Chicago, Illinois. Report of the American Board of Surgery. *Bulletin Of The American College Of Surgeons* 61: 26.
Chem Codes: Chemical of Concern: FPN Rejection Code: HUMAN HEALTH.

[Journal Article; In English; United States]

WILSON HR, EISLEY JB, JASINSKI JR, and YOUNG CE (1998). EFFICACY OF REGENT TREATMENTS FOR BLACK CUTWORM AND ROOTWORM CONTROL ON CORN 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 211.*
Chem Codes : Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS AGROTIS-IPSILON DIABROTICA-VIRGIFERA-VIRGIFERA DIABROTICA-BARBERI CORN BLACK CUTWORM WESTERN CORN ROOTWORM NORTHERN CORN ROOTWORM CROP CULTIVAR-PIONEER 3394 PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES REGENT INSECTICIDE COUNTER Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Coleoptera/ Lepidoptera

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WITKOWSKI, J. and ECHTENKAMP, J. (1997). CONTROL OF EUROPEAN CORN BORER IN WHORL STAGE CORN 1996. *SAXENA,* C. R. ARTHROPOD MANAGEMENT TESTS, VOL. 22. IV+469P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-61-2.; 22: 235.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS OSTRINIA-NUBILALIS FIELD CORN EUROPEAN CORN BORER CULTIVAR-NC+5212 WHORL STAGE CROP AGRICULTURAL PEST AGRONOMY PEST MANAGEMENT ARTHROPOD MANAGEMENT TEST REGENT INSECTICIDE POUNCE TROY BIOSCIENCES 6187 WARRIOR DIPEL M-PERIL MYD-2049 CONDOR ABG-6422 TROY BIOSCIENCES 6186 NEBRASKA USA Plants/Growth & Development/ Soil/ Arachnida/ Insects/ Nematoda/ Parasites/ Plant Diseases/ Plant Diseases/ Preventive Medicine/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Plants/ Arachnida/ Entomology/Economics/ Insecticides/ Pest Control/ Pesticides/ Grasses/ Lepidoptera

WITKOWSKI, J. and ECHTENKAMP, J. (1998). CONTROL OF EUROPEAN CORN BORER IN WHORL-STAGE CORN 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 211-212.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS OSTRINIA-NUBILALIS CORN EUROPEAN CORN BORER CULTIVAR-NC+5990 CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES REGENT INSECTICIDE DIPEL POUNCE SPINOSAD LEPINOX ABG-6478 Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Lepidoptera

WITKOWSKI, J. and ECHTENKAMP, J. (1998). CONTROL OF SECOND-GENERATION EUROPEAN CORN BORER 1997. *SAXENA, K. N. (ED.). ARTHROPOD MANAGEMENT TESTS, VOL. 23. IV+418P. ENTOMOLOGICAL SOCIETY OF AMERICA: LANHAM, MARYLAND, USA. ISBN 0-938522-77-9.; 23 (0). 1998. 212.*
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER ZEA-MAYS OSTRINIA-NUBILALIS CORN EUROPEAN CORN BORER CULTIVAR-PIONEER 3568 CROP PEST ECONOMIC ENTOMOLOGY PEST MANAGEMENT PESTICIDES ICIA 0321 INSECTICIDE WARRIOR POUNCE SPINOSAD MUSTANG DIPEL REGENT DECIS PENNCAP Plants/Growth & Development/ Soil/ Herbicides/ Pest Control/ Pesticides/ Arachnida/ Entomology/Economics/ Anatomy, Comparative/ Animal/ Insects/Physiology/ Physiology, Comparative/ Pathology/ Grasses/ Lepidoptera

Wolfenden, R (1977). Transition state analogs as potential affinity labeling regents. *Methods In Enzymology* 46: 15-28.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

[Journal Article; In English; United States]

Wolfenden, Richard (1977). [2] Transition state analogs as potential affinity labeling regents. 15-28.
Chem Codes: Chemical of Concern: FPN Rejection Code: METHODS.

Number of Volumes: William B. Jakoby and Meir Wilchek

Womersley, H. B. S. (1989). Taxonomy of economic seaweeds. With reference to some Pacific and Caribbean species. Volume II : by Isabella A. Abbott (Editor). California Sea Grant College Program, University of California, La Jolla, California, U.S.A., 1988, xv+264 pp., soft cover, US$ 10.00, publ. no. T-CSGCP-018 from UC Regents. *Aquatic Botany* 36: 99-100.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO TOX DATA.

Ying, G G and Kookana, R S (2001). Sorption of fipronil and its metabolites on soils from South Australia. *Journal Of Environmental Science And Health. Part. B, Pesticides, Food Contaminants, And Agricultural Wastes* 36: 545-558.

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Chem Codes: Chemical of Concern: FPN Rejection Code: NO SPECIES.

This paper reports on the sorption of fipronil [(+/-)-5-amino-1-(2,6-dichloro-alpha,alpha,alpha-trifluoro-p-tolyl)-4-trifluoromethyl-sulfinylpyrazole-3-carbonitrile] and its two main metabolites, desulfynil and sulfide derivatives on a range of soils from South Australia. The Freundlich sorption coefficient (Kf) values for fipronil on the soils ranged from 1.94 to 4.84 using a 5% acetonitrile/water mixture as the soil solution. Its two metabolites had a higher sorption affinity for soils, with Kf values ranging from 11.09 to 23.49 for the sulfide derivative and from 4.70 to 11.77 for the desulfynil derivative. Their sorption coefficients were found to be better related to the soil organic carbon than clay content. The presence of cosolvents in soil solutions had a significant influence on the sorption of fipronil. The Freundlich sorption coefficients showed a log linear relationship with the fractions of both acetonitrile and methanol in solutions. The sorption coefficient of fipronil on Turretfield soil in the aqueous solution was estimated to be from 13.80 to 19.19. Methanol had less effect on the sorption of fipronil than acetonitrile. The Kd values for fipronil on the eight soils using a 5% methanol/water mixture were from 5.34 to 13.85, which reflect more closely the sorption in the aqueous solution. The average Koc value for fipronil on the eight South Australian soils was calculated to be 825+/-214. [Journal Article; In English; United States]

Zhang, Song-pei, Li, Jian-yu, Chen, Juan, Xiao, Yang, and Sun, Yu-e (2004). Research of spectrum characteristics for light conversion agricultural films. *Guang Pu Xue Yu Guang Pu Fen Xi = Guang Pu* 24: 1180-1184.
Chem Codes: Chemical of Concern: FPN Rejection Code: NO FOREIGN.

The solar spectrum and the function spectrum in chrysanthemum and tomato were determined in this paper. The research for a relation plant growth to solar spectrum showed that the efficiency of plant making use of ultraviolet light of 280-380 nm and yellow-green light of 500-600 nm and near IR spectra over 720 nm are lower, that the blue-purple light of 430-480 nm and red light of 630-690 nm are beneficial to enhancing photosynthesis and promoting plant growth. According to plant photosynthesis and solar spectrum characteristic, the author developed CaS:Cu+, Cl- blue light film, and red light film added with CaS:Eu2+, Mn2+, Cl- to convert green light into red light, and discussed the spectrum characteristic of red-blue double peak in agricultural film and rare earth organic complex which could convert ultraviolet light into red light. Just now, the study on light conversion regents in farm films is going to face new breakthrough and the technology of anti-stocks displacement to study red film which can convert near infrared light are worth to attention. [Journal Article; In Chinese; China]

Zhao, Xilong, Salgado, Vincent L, Yeh, Jay Z, and Narahashi, Toshio (2003). Differential actions of fipronil and dieldrin insecticides on GABA-gated chloride channels in cockroach neurons. *The Journal Of Pharmacology And Experimental Therapeutics* 306: 914-924.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

Fipronil and dieldrin are known to inhibit GABA receptors in both mammals and insects. However, the mechanism of selective toxicity of these insecticides between mammals and insects remains to be seen. One possible mechanism is that insect GABA receptors are more sensitive than mammalian GABAA receptors to fipronil and dieldrin. We examined differential actions of fipronil and dieldrin on GABA-gated chloride channels in insects and compared them with the data on mammalian GABAA receptors. Neurons were acutely dissociated from the American cockroach thoracic ganglia, and currents evoked by GABA were recorded by the whole-cell patch-clamp technique. GABA-evoked currents were carried by chloride ions, blocked by picrotoxinin, but not by bicuculline. Fipronil inhibited GABA currents with an IC50 value of 28 nM, whereas dieldrin exhibited a dual action potentiation with an EC50 value of 4 nM followed by inhibition with an IC50 value of 16 nM. Fipronil and dieldrin acted on the resting receptor at comparable rates, whereas fipronil blocked the activated receptor 10 times faster than dieldrin. Fipronil inhibition was partially reversible, whereas dieldrin inhibition was irreversible. Fipronil was 59 times more potent on cockroach GABA receptors than on rat GABAA receptors. However, the potentiating and inhibitory potencies of dieldrin in cockroach GABA receptors were comparable with those in rat GABAA receptors. It was concluded that the higher toxicity of fipronil in insects than in mammals is due partially to the higher sensitivity of GABA receptors. The mechanism of dieldrin's selective toxicity must lie in factors other than the sensitivity of GABA receptors. [Journal Article; In English; United States]

Zhao, Xilong, Yeh, Jay Z, Salgado, Vincent L, and Narahashi, Toshio (2004). Fipronil is a potent open channel blocker of glutamate-activated chloride channels in cockroach neurons. *The Journal Of Pharmacology And Experimental Therapeutics* 310: 192-201.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

US EPA ARCHIVE DOCUMENT

Fipronil, a phenylpyrazole insecticide, displays high insecticidal activity and reduced mammalian toxicity. To better elucidate the mechanism of its selective toxicity between insects and mammals and activity against dieldrin-resistant insects, we studied fipronil action on glutamate-gated chloride channels (GluCls), unique invertebrate ligand-gated chloride channels, in cockroach thoracic ganglion neurons, using the whole-cell patch clamp technique. Glutamate evoked two types of chloride currents, a desensitizing current and a nondesensitizing current. Fipronil differentially inhibited these two types of currents with different potencies and with different rates of reversibility. Fipronil inhibited the desensitizing and nondesensitizing GluCls with IC50 values of 801 and 10 nM, respectively. Kinetic analysis revealed that fipronil blocks required channel opening. Recovery of the desensitizing current from fipronil block required channel opening, whereas recovery of nondesensitizing current from block was independent of channel opening. The high potency of fipronil against the nondesensitizing current was due to a slow unblocking rate constant. In addition, when the nondesensitizing GluCls were occupied by picrotoxinin, the receptors became less sensitive to fipronil block. It is concluded that GluCls are a critical target for fipronil, especially for the selective toxicity between mammals and insects, and that fipronil block of GluCls may play a role in the lack of the cross-resistance with dieldrin. [Journal Article; In English; United States]

Zhao, Xilong, Yeh, Jay Z, Salgado, Vincent L, and Narahashi, Toshio (2005). Sulfone metabolite of fipronil blocks gamma-aminobutyric acid- and glutamate-activated chloride channels in mammalian and insect neurons. *The Journal Of Pharmacology And Experimental Therapeutics* 314: 363-373.
Chem Codes: Chemical of Concern: FPN Rejection Code: IN VITRO.

Fipronil sulfone, a major metabolite of fipronil in both insects and mammals, binds strongly to GABA receptors and is thought to play a significant role in poisoning by fipronil. To better understand the mechanism of selective insecticidal action of fipronil, we examined the effects of its sulfone metabolite on GABA- and glutamate-activated chloride channels (GluCls) in cockroach thoracic ganglion neurons and on GABA(A) receptors in rat dorsal root ganglion neurons using the whole-cell patch-clamp technique. Fipronil sulfone blocked both desensitizing and nondesensitizing GluCls in the cockroach. Activation was required for block and unblock of desensitizing GluCls. In contrast, activation was not prerequisite for block and unblock of nondesensitizing channels. After repetitive activation of the receptors, the IC50 of fipronil sulfone to block the desensitizing GluCls was reduced from 350 to 25 nM and that for blocking nondesensitizing GluCls was reduced from 31.2 to 8.8 nM. This use-dependent block may be explained by its slow unbinding rate. In cockroach and rat neurons, fipronil sulfone blocked GABA receptors in both activated and resting states, with IC50 values ranging from 20 to 70 nM. In conclusion, although fipronil sulfone is a potent inhibitor of cockroach GABA receptors, desensitizing and nondesensitizing GluCls, and rat GABA(A) receptors, its selective toxicity in insects over mammals appears to be associated with its potent blocking action on both desensitizing and nondesensitizing GluCls, which are lacking in mammals. [Journal Article; In English; United States]

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