

US EPA ARCHIVE DOCUMENT

DP Barcode : D220169
 PC Code No : 111601
 EEB Out : OCT 25 1995

To: Teung Chin
 Product Manager 41
 Registration Division (7505C)

From: Anthony F. Maciorowski, Chief
 Ecological Effects Branch/EFED (7507C)

Attached, please find the EEB review of...

Reg./File # : 94WA0001
 Chemical Name : Oxyfluorfen
 Type Product : Herbicide
 Product Name : Goal Herbicide
 Company Name : Washington Department of Agriculture
 Purpose : Proposed Section 18 for use on strawberries.

Action Code : 510 Date Due : 11/07/95
 Scientist : A. Vaughan Date In : 10/19/95

EEB Guideline/MRID Summary Table: The review in this package contains an evaluation of the following:

GDLN NO	MRID NO	CAT	GDLN NO	MRID NO	CAT	GDLN NO	MRID NO	CAT
71-1(A)			72-2(A)			72-7(A)		
71-1(B)			72-2(B)			72-7(B)		
71-2(A)			72-3(A)			122-1(A)		
71-2(B)			72-3(B)			122-1(B)		
71-3			72-3(C)			122-2		
71-4(A)			72-3(D)			123-1(A)		
71-4(B)			72-3(E)			123-1(B)		
71-5(A)			72-3(F)			123-2		
71-5(B)			72-4(A)			124-1		
72-1(A)			72-4(B)			124-2		
72-1(B)			72-5			141-1		
72-1(C)			72-6			141-2		
72-1(D)						141-5		

Y=Acceptable (Study satisfied Guideline)/Concur
 P=Partial (Study partially fulfilled Guideline but additional information is needed)
 S=Supplemental (Study provided useful information but Guideline was not satisfied)
 N=Unacceptable (Study was rejected)/Nonconcur



DP BARCODE: D220169

CASE: 287084
SUBMISSION: S495358

DATA PACKAGE RECORD
BEAN SHEET

DATE: 10/18/95
Page 1 of 1

* * * CASE/SUBMISSION INFORMATION * * *

CASE TYPE: EMERGENCY EXEMP ACTION: 510 SEC18-OC F/F USE
RANKING : 75 POINTS (A)
CHEMICALS: 111601 Oxyfluorfen (ANSI)

ID#: 96WA0001

COMPANY:

PRODUCT MANAGER: 41 TEUNG CHIN 703-308-8417 ROOM: CS1 6-G
PM TEAM REVIEWER: KERRY LEIFER 703-308-8323 ROOM: CS1 6-W43
RECEIVED DATE: 10/17/95 DUE OUT DATE: 12/06/95

* * * DATA PACKAGE INFORMATION * * *

DP BARCODE: 220169 EXPEDITE: N DATE SENT: 10/18/95 DATE RET.: / /
CHEMICAL: 111601 Oxyfluorfen (ANSI)
DP TYPE: 001 Submission Related Data Package

CSF: N LABEL: Y

ASSIGNED TO	DATE IN	DATE OUT	ADMIN DUE DATE: 11/07/95
DIV : EFED	10/18/95	/ /	NEGOT DATE: / /
BRAN: EEB	10/19/95	/ /	PROJ DATE: / /
SECT:	/ /	/ /	
REVR :	/ /	/ /	
CONTR:	/ /	/ /	

* * * DATA REVIEW INSTRUCTIONS * * *

The State of Washington has requested a specific exemption under section 18 of FIFRA for the use of oxyfluorfen for weed control in strawberries. Please review this request and determine whether there are concerns for nontarget organisms, including endangered/threatened species.

Thank you.

Kerry Leifer

* * * DATA PACKAGE EVALUATION * * *

No evaluation is written for this data package

* * * ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION * * *

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL
220167	BAB	10/18/95	11/07/95	Y	N	Y
220168	EAB	10/18/95	11/07/95	Y	N	Y

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ECOLOGICAL EFFECTS BRANCH REVIEW
SECTION 18

Oxyfluorfen (Goal)

100 Section 18 Application

100.1 Nature and Scope of Emergency

The state of Washington is requesting an emergency exemption (Section 18) for the use of Goal 1.6E Herbicide to control broad leaf weeds in strawberries. No new data were submitted with this request.

100.2 Formulation Information

ACTIVE INGREDIENT

Oxyfluorfen.....19.4%

100.3 Target Organisms

Following are the pests to be suppressed or controlled:

Common groundsel	<u>Senecio vulgaris</u>
Common lambsquarter	<u>Chenopodium album</u>
Redroot pigweed	<u>Amaranthus retroflexus</u>
Prostrate knotweed	<u>Polygonum aviculare</u>
Smartweed (Ladysthumb)	<u>Polygonum persicaria</u>
Corn spurry	<u>Spergula arvensis</u>
Wild buckwheat	<u>Polygonum convolvulus</u>
Mayweed	<u>Anthemis cotula</u>
Pineappleweed	<u>Capsella bursa-pastoris</u>

100.4 Date, Duration

The use period for established plantings is from December 15, 1995 through January 15, 1996 while the strawberry plants are dormant. The 1996 preplant treatments will be from March 15 through May 15, 1996.

Note - Renovation treatments are in late June and July following harvest. Per telephone discussion with Glenn Smerdon (AG Resources, Inc., Olympia, WA) on 10/23/95, oxyfluorfen will not be used for renovation treatments under this exemption.

100.5 Application Methods, Directions, Rates

Ground application only in the following situations:

1) Postemergence to dormant crop. Goal may be applied from December 15, 1995 through January 15, 1996. Strawberry plants must be dormant at the time of application.

2) Preplant, prior to transplanting.

The application rate will be 1.25 - 2.5 pints (0.25 - 0.50 lbs. a.i.) per acre. A single application is allowed per growing season under this exemption.

100.6 Precautionary Labeling

"Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters.

This product is highly toxic to aquatic invertebrates, aquatic plants, wildlife and fish. Use with care when apply in areas frequented by wildlife or adjacent to any body of water or wetland area. Do not apply when weather conditions favor drift or erosion from target areas.

101 Hazard Assessment

101.1 Discussion

The state of Washington is requesting an emergency exemption (Section 18) for the use of Goal 1.6E Herbicide for control of weeds in strawberries. A single application is allowed per growing season, not to exceed 0.5 lb ai per acre. Application will be made postemergence to dormant strawberries or preplant (prior to transplanting). A maximum of 1300 acres will be treated, statewide.

Goal Herbicide is currently registered for use on a number of crops grown in Washington, including crucifers, onions, tree fruits, and grapes.

101.2 Likelihood of Adverse Effects on Nontarget Organisms

Environmental Fate Data (information obtained from Environmental Fate and Groundwater Branch (EFGWB) Pesticide Environmental Fate One Line Summary, last update, 04/01/93).

(V) = validated study (S) = supplemental study

- Oxyfluorfen is stable to hydrolysis at pH 4, 7, and 10. (V)
- Oxyfluorfen is stable to photolysis. (S)
- Oxyfluorfen has a half life of 291 days - 130 weeks in Clay Loam, >393 day in Sand Loam and Silty Loam and 556-596 days in Sandy Loam. (S)

- Oxyfluorfen degraded to 2-7% of the applied in 60 days with half lives to 554 and 605 days in anaerobic soils. (S)
- Runoff study showed that oxyfluorfen will not translocate to nearby aquatic compartments.
- Bluegill sunfish bioaccumulation: muscle 605 x; viscera 4360 x; whole fish 2200 x. 83-94% depurates in 14 days.

Terrestrial Organisms

Based on data in the Ecological Effects Branch (EEB) files, oxyfluorfen is considered to be practically nontoxic to moderately toxic to birds and practically nontoxic to mammals (bobwhite LD₅₀ >2150 mg/kg; bobwhite LC₅₀ = 390 ppm; mallard LC₅₀ >4000 ppm; rat LD₅₀ >5000 mg/kg). Supplemental data shows the avian reproductive NOEC <50 ppm. Recently reviewed avian dietary LC₅₀ studies with bobwhite quail and mallard duck showed that the LC₅₀ of oxyfluorfen technical, based on nominal concentrations, was >5000 ppm for both studies. In light of the new data as well as the previously reviewed avian acute oral LD₅₀ and avian dietary LC₅₀ studies, EEB believes it appropriate for this Section 18 that it bases its hazard assessment on these new data.

If oxyfluorfen is applied at 0.5 lbs. a.i./ acre, the following residues (ppm) are expected to occur on terrestrial food items immediately after treatment: 120 ppm on short grass; 55 ppm on long grass; 63 ppm on leaves/leafy crops. These data indicate that oxyfluorfen is not expected to pose acute hazard to nontarget mammals or avian species.

Oxyfluorfen tested practically nontoxic to bees in acute contact studies. Hazard to bees is not anticipated from the proposed use.

Since the environmental fate data indicate persistence, and the NOEC for bobwhite quail reproduction was <50 ppm (based on reduced body weights of 14 day old chicks), the proposed application would be expected to pose a chronic hazard to nontarget birds. However, due to the limited acreage to be treated (a maximum of 1300 acres), the proposed use of oxyfluorfen is not expected to pose a significant chronic hazard to avian wildlife.

Aquatic Organisms

Based on EEB data, oxyfluorfen may be characterized as very highly to moderately toxic to aquatic invertebrates

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and fish: (Daphnia magna LC₅₀=1.5 ppm; bluegill-sunfish (Lepomis macrochirus) LC₅₀=200 ppb; Rainbow trout (Oncorhynchus mykiss) LC₅₀=410 ppb. To assess potential hazard to aquatic organisms, EEB calculated an aquatic EEC using GENEEC (see attached sheet). Expected concentration in the freshwater environment would be 1.95 ppb following application at 0.5 lb ai/acre. Since the LC₅₀ for the most sensitive species (bluegill) is 200 ppb, the estimated aquatic EEC of 1.95 ppb does not approach any level of concern for aquatic organisms. On the basis of this calculation, along with the very limited acreage to be treated, the proposed use is not expected to result in adverse effects on nontarget aquatic organisms.

Nontarget Plants

In an earlier Sec. 18 review by Winnik (D198736, use on raspberries in WA), he indicated that the use of oxyfluorfen would be expected to pose hazard to terrestrial and semiaquatic plants in areas adjacent to treated fields. Similar hazard is expected from use under this exemption. However, in view of the small amount of acreage to be treated, overall hazard is unlikely to be significant.

101.3 Endangered Species Considerations

Due to the generally low toxicity of oxyfluorfen to nontargets, and the limited nature of the proposed use, hazard to endangered species of birds, mammals, and aquatic organisms is not expected. The only concern is with endangered plants, since oxyfluorfen is an herbicide.

Review of endangered species files indicates that three plant species are listed for Washington: Nelson's Checker Mallow, Water Howellia, and Golden Paintbrush. None of these species are likely to be exposed to pesticides via application to strawberries. Thus, hazard to endangered plants is not expected.

101.4 Adequacy of Data

The available data were adequate to assess hazard to nontargets under this Section 18.

101.5 Adequacy of Labeling

Environmental Hazards labeling on the product label is adequate.

102 Conclusions

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EEB has reviewed the proposed emergency exemption for the use of Goal 1.6E Herbicide on strawberries in Washington. Based upon information from previous reviews and an aquatic EEC calculation using GENECC, and considering the limited acreage to be treated, EEB concludes that use under the proposed exemption should not result in adverse effects on nontarget organisms, including endangered species.

Allen W. Vaughan 10.24.95

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Ecological Effects Branch
Environmental Fate and Effects Division (7507C)

Norman J. Cook 10.24.95

Norman J. Cook, Section Head
Ecological Effects Branch
Environmental Fate and Effects Division (7507C)

Dr. H.T. Coven 10/25/95

Anthony F. Maciorowski, Chief
Ecological Effects Branch
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RUN No. 1 FOR oxyfluorfen INPUT VALUES

RATE (#/AC) ONE (MULT)	APPLICATIONS NO. - INTERVAL	SOIL KOC	SOLUBILITY (PPB)	% SPRAY DRIFT	INCRP DEPTH (IN)
.500 (.500)	1 1	5585.0	110.0	1.0	.0

FIELD AND STANDARD POND HALFLIFE VALUES (DAYS)

METABOLIC (FIELD)	DAYS UNTIL RAIN/RUNOFF	HYDROLYSIS (POND)	PHOTOLYSIS (POND-EFF)	METABOLIC (POND)	COMBINED (POND)
910.00	2	N/A	7.50- 920.25	.00	920.25

GENERIC EECs (IN PPB)

PEAK GEEC	AVERAGE 4 DAY GEEC	AVERAGE 21 DAY GEEC	AVERAGE 56 DAY GEEC
1.95	1.73	1.02	.66

DO YOU WANT ANOTHER RUN (Y OR N) --->

