Shaughnessy Number: 103801

Date Out of EFGWB: SEP 17 1991

TO: Brigid Lowery
Product Manager 74
Registration Division (H7505C)

FROM: Elizabeth Behl, Acting Section Head
Ground-Water Technology Section
Environmental Fate & Ground-Water Branch/EFED (H7507C)

THRU: Henry Jacoby, Chief
Environmental Fate & Ground-Water Branch/EFED (H7507C)

Attached, please find the EFGWB review of:

Reg./File #: _____

Chemical Name: Oxamyl

Type Product: Insecticide, Nematicide, Acaricide

Company Name: Du Pont

Purpose: Review data submitted as substitution for small-scale retrospective ground-water monitoring study.

Date Received: 6/27/91 ACTION CODE: 660

Date Completed: 9/3/91 EFGWB #(s): 90-0477

Monitoring study requested: X Total Review Time: 2 days

Monitoring study voluntarily: ___

Deferrals To: _____ Biological Effects Branch

_____ Science Integration & Policy Staff, EFED

_____ Non-Dietary Exposure Branch, HED

_____ Dietary Exposure Branch, HED

_____ Toxicology Branch, HED

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
OXAMYL
Last Update on September 3, 1991
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

LOGOUT	Reviewer:	Section Head:	Date:

Common Name:OXAMYL
PC Code # :103801 CAS #:23135-22-0 Caswell #:

Chem. Name :METHYL N',N'-DIMETHYL-N-[(METHYL-CARBAMOYL)-OXY]-1-THIOOXAMINIDATE
Action Type:Insecticide; nematicide; acaricide

Trade Names:VYDATE
(Formul'tn): WATER-SOLUBLE LIQUID; GRANULES
Physical State: COLORLESS CRYS;GARLICODOR

Use :CROPS AND ORNAMENTALS (RESTRICTED USE)
Patterns :
(% Usage) :
:

Empirical Form: $C_7H_{13}SN_3O_3$
Molecular Wgt.: 219.26 Vapor Pressure: 2.30E -4 Torr
Melting Point : 101 °C Boiling Point: DEC °C
Log Kow : -.004 pKa: @ °C
Henry's : 2.38E -7 Atm. M3/Mol (Measured) 2.37E-10 (calc'd)

Solubility in ...					Comments
Water	2.80E	5	ppm	@20.0 °C	
Acetone	E		ppm	@ °C	
Acetonitrile	E		ppm	@ °C	
Benzene	E		ppm	@ °C	
Chloroform	E		ppm	@ °C	
Ethanol	E		ppm	@ °C	
Methanol	E		ppm	@ °C	
Toluene	E		ppm	@ °C	
Xylene	E		ppm	@ °C	
	E		ppm	@ °C	
	E		ppm	@ °C	

Hydrolysis (161-1)
[V] pH 5.0:STABLE
[V] pH 7.0: 8 DAYS
[V] pH 9.0: 3 HOURS
[ ] pH :
[ ] pH :
[ ] pH :

2

Use this form for individual studies & to submit pesticide applications.

United States Environmental Protection Agency
Office of Pesticide Programs
Washington, DC 20460

Data Review Record

Confidential Business Information - Does not contain National Security Information (E.O. 12065)

Pack Nur.	Date Received
50297 EFED	2-27-96

1. Product Name

Chemical Name

2. Identifying Number	3. Record Number	4. Action Code	5. MRID/ Accession Number	6. Study Guideline or Narrative

7. Reference No.	8. Date Rec'd (EPA)	9. Prod/Review Mgr/DCI	10. PM/RM Team No.	11. Date to HED/ EFED/RD/BEAD	12. Proj Return Date	13. Date Returned to RD/SRRD
					6/27/96	

Instructions

IS —

This Section Applies to Review of Studies Only

14. Check Applicable Box

- ☐ Adverse 6(a)(2) Data (405)
- ☐ Special Review Data (870)
- ☑ Generic Data (Reregistration)(660)
- ☐ Product Specific Data (Reregistration)(655)

15. No. of Individual Studies Submitted

16. Have any of the above studies *(in whole or in part)* been previously submitted for review?

- ☐ Yes *(Please identify the study(ies))*
- ☑ No

17. Related Actions

18.	To	Type of Review	19. Reviews Also Sent to	
HED		Science Analysis & Coordination	☐ SAC	☐ PC
		Toxicology/HFA	☐ TOX/HFA	☐ PL
		Toxicology/IR	☐ TOX/IR	
		Dietary Exposure	☐ DEB	☐ EA
		Nondietary Exposure	☐ NDE	☐ AC
EFED		Ecological Effects		☐ BA
	✓	Environmental Fate & Groundwater	☐ EEB	
SRRD		Special Review	☐ EFGWB	
		Reregistration		
		Generic Chemical Support	☐ SR	
RD		Insecticide-Rodenticide	☐ RER	
		Fungicide-Herbicide	☐ GSC	
		Antimicrobial		
		Product Chemistry	☐ IR	
		Precautionary Labeling	☐ FH	
BEAD		Economic Analysis	☐ AM	
		Analytical Chemistry		
		Biological Analysis		

20. Data Review Criteria

A. Policy Note No. 31

- ☐ 1 = data which meet 6(a)(2) or meet 3(c)(2)(B) flagging criteria
- ☐ 2 = data of particular concern from registration standard
- ☑ 3 = data necessary to determine tiered testing requirements

B. Section 18

- ☐ 1 = data in support of section 3 in lieu of section 18

C. Inert Ingredients

- ☐ 1 = data in support of continued use of List 1 inert

- ☐ Confidential Statement of Formula (EPA Form 8570-4) Attached *(Trade Secrets)*
- ☐ Label Attached

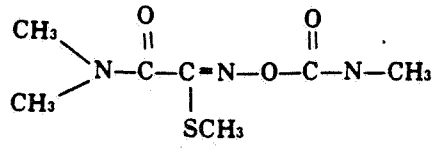
EPA Form 8570-17 (Rev. 11-88) Previous editions are obsolete.

White - Data Coordinator
Yellow - Data Review Section
Pink - PM/RM/DCI
Green - Return with completed review

8

1. CHEMICAL: Oxamyl

Chemical name: methyl N'N'-dimethyl-N-[(methylcarbamoyl)oxy]-1-thiooxamimidate
Common name: Vydate, DPX 1410
Structure:



2. TEST MATERIAL:

Not Applicable.

3. STUDY/ACTION TYPE:
Review information submitted for substitution as small-scale retrospective ground-water monitoring study.

4. STUDY IDENTIFICATION:

Title: Compilation of Groundwater Monitoring Results for Oxamyl in the United States

Author(s): Mark H. Russell

Submitted for:
E.I. du Pont de Nemours
Agricultural Products Department
P. O. Box 80038
Wilmington, DE 19880-0038

Identifying No.: 352-532
Identification Code:
Record Number: 261744
Date Sent to EFED: 6/27/91

5. REVIEWED BY:

Estella Waldman
Hydrologist
OPP/HED/EFED/Ground-Water Section

Signature: Estella Waldman
Date: 9/3/91

6. APPROVED BY:

Elizabeth Behl
Acting Section Head
OPP/HED/EFED/Ground-Water Section

Signature: Eliz Behl
Date: 9/10/91

7. CONCLUSIONS:

Monitoring results from the Pesticides in Ground Water Data Base (Williams, 1988) and the report submitted by Du Pont (Russell, 1990) show that oxamyl has been detected in ground water in five states (FL, MA, NJ, NY, RI). Concentrations as high as 395 ppb have been detected in ground water.

It is the contention of du Pont that a ground-water monitoring study is not needed because "there is no indication that oxamyl reaches ground water in concentrations that are toxicologically significant". However, the purpose of a ground-water monitoring study is to evaluate the fate of a pesticide in the environment by sampling ground water. Levels of oxamyl higher than the MCL (up to 395 ppb) were found in ground water in New York, and the possibility still exists that the detections were from normal field use. Another aspect of the New York data concerns the fact that the chemical is extremely persistent. Although use of the chemical was canceled in Suffolk County in 1984, residues of oxamyl were found in ground water in 1988, the last year for which monitoring data were submitted.

Oxamyl has been detected in New Jersey and in Florida in deep ground water (greater than 30 feet). It is clear from these studies that oxamyl is persistent and mobile enough to enter ground water. However, without the data from a ground-water monitoring study, the fate of oxamyl and its degradates in ground water from normal agricultural use will remain unknown.

8. RECOMMENDATIONS:

1) The registrant is required to conduct a small-scale ground-water monitoring study for oxamyl and its degradates. The studies that were submitted by the registrant illustrate that oxamyl does contaminate ground water. However, the submitted studies are not adequate for a small-scale retrospective ground-water monitoring study. Therefore, the true levels of contamination for oxamyl and its degradates are unknown.

2) The Ground Water Section prefers that the registrant conduct a small-scale prospective ground-water monitoring study, rather than a retrospective ground-water monitoring study. A protocol for the small-scale ground-water monitoring study for oxamyl should be submitted to the EPA for approval as soon as possible.

9. BACKGROUND:

Oxamyl (Vydate) is a general purpose systemic insecticide, acaricide, and nematicide that is registered for use on terrestrial food crops (primarily apples, potatoes, and tomatoes), terrestrial nonfood crops, greenhouse plants, and commercial indoor crops. The 24 SC (soluble concentrate) product is classified as a Restricted Use pesticide. Outdoor application of products containing oxamyl is prohibited in Suffolk and Nassau counties, New York because of ground-water contamination.

Application rates on terrestrial food crops range from 0.125 to 1.0 lbs ai/acre for foliar applications, and from 1.0 to 2.0 lbs ai/acre for soil applications. Application rates on ornamentals range from 1.0 to 2.0 lbs ai/acre for foliar applications, and from 6.0 to 20.0 lbs ai/acre for soil applications. Oxamyl may be ground or aerially applied by spray, and on soils (primarily preplant) by

incorporation, broadcast, band treatment, soil mix or liquid drench, and as a root dip.

Oxamyl is highly toxic to birds, bees, and mammals, and has been placed in Toxicity Category I. No oncogenic effects were noted in a valid mouse oncogenicity study. Oxamyl is a Class E carcinogen with an MCL of 200 ppb.

Oxamyl is very mobile in sandy loam and silt loam soils with K_d's ranging from 0.05-0.52. It is stable to hydrolysis under acidic conditions, but hydrolysis is the major degrative pathway at pH 7 and 9. Degradation is more rapid in wet soils than in dry soils. Validated laboratory half-life studies indicate that the hydrolysis half-life for oxamyl is 8 days (pH of 7), 3 hours (pH of 9), and stable at pH 5. The laboratory anaerobic soil metabolism half-life is less than 7 days in silt loam. The most common degradates of concern for oxamyl are oxime, oxamohydroxamic acid, and oxamic acid. Oxamyl, oxamohydroxamic acid, and oxamic acid readily leach in various types of soils.

As a result of normal agricultural use, oxamyl has been found in ground water in three states including Massachusetts, New York, and Rhode Island. Oxamyl has also been detected in ground water in Florida and New Jersey. Concentrations in ground water range from 1.0 to 395.0 ppb (Williams et al., 1988). Detections of 84 - 94 ppb were reported in two nondrinking-water wells in New York state (Russell, 1990).

Based on results of studies submitted for the Ground-Water Data Call-In (GWDCI), the EPA determined that the registrant should conduct a small-scale retrospective ground-water monitoring study to determine if oxamyl and its principle degradate, oximino compound, affect ground-water quality (EAB #70331 and #70500, 10/29/87). Du Pont requested a waiver of the study (letter from Smith to Werdig, 10/26/88). On May 25, 1989, a telephone conversation between EFGWB and the registrant took place to discuss the request. At this time, a request was made by EFGWB for more information on individual well construction, aquifer composition, depth to water table, and other information which would make the results of the state-wide monitoring for oxamyl more understandable.

The report reviewed in this document was submitted by Du Pont in order to satisfy the questions that prompted the recommendation of a small-scale retrospective ground-water monitoring study. The report summarizes the ground-water monitoring programs from ten states which have monitoring data for oxamyl. These states include California, Florida, Texas, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Wisconsin, and New Mexico. Du Pont stated that over 50 percent of oxamyl sales occurred in these ten states, and that 45 percent of the sales were in California, Florida, and Texas. Also included are several monitoring studies which are reviewed below.

10. DISCUSSION:

Five states (CA, NH, NM, TX, WI) have sampled for oxamyl in ground water and no residues were detected. However, no information is provided about critical factors such as:

- the exact locations of the wells,
- the dates on which the wells were sampled,
- whether the wells were sampled once or periodically,
- soils in which the wells were located,

- oxamyl application rates and application timing relative to sampling,
- depths of the wells,
- well construction (especially screened intervals),
- description of the aquifers in which the wells were located (provided for Florida only),
- depths to the water tables in the sampling areas (provided for Florida only),
- detection limits in CA, NH, NJ, NM, TX, and WI,
- cropping patterns,
- well locations relative to ground-water flow,
- rainfall, and
- irrigation practices.

The highest detections of oxamyl to date have been found in the ground water of Long Island, NY. One irrigation supply well had residues of 314 ppb in 1982 and 395 ppb in 1983. Soil samples around the site did not show any evidence of oxamyl residues using a detection limit of 30 ppb. These detections are very high in comparison to other oxamyl detections, and for this reason, point source contamination is suspected. However, no definite conclusions can be drawn from this evidence. An examination of Figure 1 (page 22) in the report shows that oxamyl residues in Suffolk County ground water actually increased after the chemical was canceled in the county. Residues were measured at 38 ppb in 1984, the year that oxamyl was canceled. In 1985, residues increased to 64 ppb and then declined to 29 and 28 ppb in 1987 and 1988, respectively. This pattern indicates that oxamyl is a persistent pesticide in this environment, possibly due to climatic factors (i.e., temperature and rainfall) and the acidic nature of the soils.

In Rhode Island, detections were found in the ground water extracted from a "sand and gravel" aquifer of unreported depth. Wells were only sampled in 1983 and the date of sampling was not given. A maximum of 2 ppb of oxamyl was detected.

Oxamyl was also detected in one well in Salem County, New Jersey (Louis, 1989). The well was an irrigation well with a depth of "24-84 feet. The pumping water level was 50 feet." Oxamyl was detected in ground water that was sampled on 7/29/87 at a level of 1.4 ppb (detection limit of 0.5 ppb). This detection from a relatively deep water table indicates that oxamyl does reach ground water, indicating the need for a controlled monitoring study to accurately assess the data.

In addition to the summary data, Du Pont provided three studies in which ground-water monitoring studies for oxamyl were done. A discussion of these studies follows.

Florida - Immokalee and Volusia Counties

Du Pont provided two 1984 studies done in Florida which sampled for oxamyl residues in ground water in typical use areas. However, neither of the studies were done according to the draft EPA guidelines for ground-water monitoring studies. The attached studies are:

1. Immokalee Site, Johnny Johnson Farms, Collier County, FL

This study was done on a 300-acre farm on which watermelons, peppers, and tomatoes were grown. Seep irrigation (a common agricultural practice in this area) was used on the field. An application history for Vydate from fall 1981 to fall 1984 was provided as was general information regarding rainfall patterns and hydrogeology. The Vydate application date on the site was 4/3/84.

Six ground-water samples (A - F) were taken from a depth of 80 - 90 feet on 11/13/84. The ground-water samples were taken from the deeper, confined aquifer on the site (approximately 80 ft) and not from the unconfined, shallow aquifer. According to the report, ground-water flow was toward the southwest at <0.01 ft/day but no data was provided to support this information. Soil characterization for the site was not given.

Ground-water sampling was done using both pre-existing operational wells where flow was continuous and others which were not in operation except for sampling. It was noted that for one of the wells (sample A) on the site, several problems were found including: the well was open at the top; previous uses of pump, hoses, and inlet line were unknown; soil could enter the "external inlet line"; and surface water was needed to prime the pump. No information was given regarding the condition of the other wells used for sampling. Sample containers were filled to between 2/3 and 3/4 full and sent to the lab for analysis.

A comparison of Figures 2 and 4 from the Du Pont Report O/RC-2 shows that samples B, C, D, E, and F were taken from off-site wells (in fact, samples E and F were located almost one mile from the site). In other words, only sample A was actually taken from a well located on the study site and this well had the problems mentioned in the above paragraph.

2. Seville Site, Fernco-Seville,Inc., Volusia County, FL
This 30-acre site, used for fern production, had received Vydate applications for "over eight years". A general description of the rainfall, agricultural practices for ferns, hydrogeology, and irrigation practices (sprinkler irrigation provided approximately 1" of water per week) is given. Depth to the water table "varies with location but appears to range from 5 to 30 ft. in the area". However, according to the driller's log for well #5 (Sample H), the water table was between 150 and 210 feet (Figure 11).

Six ground-water samples were collected for this study (G-L). Samples J, K, and L were on eastern edge of the study site; samples G and I were over 0.5 miles from the study site; and sample H was taken on the eastern edge of a different field approximately one mile from the other site. Samples J and L were taken from surface tile drains. A Vydate application was made on 9/4/84. Sample G was taken from a well that was >105 feet deep in an area where Vydate was applied on 9/7/84. Samples G, H, I, and K were taken from wells of depths from over 80 feet to over 105 feet. Ground-water samples were taken on 11/15/84 which was 68 days after application for Samples G and I, and 71 days after application for Sample K. Sample L was taken 71 days after application; no application was made near Sample J. No application was made near Sample H, a well over 80 feet in depth.

Results

Samples from both of the above studies were analyzed for oxamyl and the oximino metabolite. Detection limits were 1 ppb for oxamyl and 5 ppb for the oximino compound. No detections of oxamyl or oxamino compound were detected in the above samples. However, the studies did not follow the EPA guidelines for ground-water monitoring studies. Unacceptable portions of the reports are as follows:

1) For a small-scale retrospective ground-water monitoring study, a minimum of one year of ground-water sampling is required. Ground-water samples for both of these studies were taken on one day only.

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2) Depth to ground water for a monitoring study should be no more than 30 feet, and sampling should be from unconfined water tables. On both of these sites, ground water was sampled from over 80 to over 105 feet in confined aquifers.

3) Precipitation and evaporation records were not given for either of the sites. Irrigation records were also not reported (only approximate rates of irrigation were noted in text and on chain-of-custody forms) and in the case of the Immokalee site, no records were kept. Without this information, no accurate determination of applied water can be made (150% of the average long-term monthly precipitation is recommended).

4) The condition of the wells that were sampled is unknown.

5) Ground-water samples were collected seven (7) months after application on the Immokalee site, and two months after application on the Seville site.

6) One complete set of soil cores is required at the onset of a small-scale retrospective study. The cores should be analyzed in 6-inch increments for the first five feet and then in foot-long increments to the water table. This information was not provided for either of the sites.

7) A minimum of three well clusters are required on each site selected for sampling. The submitted studies used pre-existing wells, many of which were not on the study sites.

8) No data was provided to determine the direction of ground-water flow relative to the sampling locations on either site.

9) Ground-water sample containers were not full when they were sent to the laboratory for analysis. This may have led to volatilization problems before analysis.

Florida - Floral Greens International, Volusia County

Another study was submitted by Du Pont which investigated various pesticide detections in ground water from a fernery in Volusia County, Florida called Floral Greens International. The investigation was published by the Florida Department of Environmental Regulation in October 1985 to determine the levels of pesticides and fertilizer in ground water near the fernery.

Five shallow monitoring wells that surrounded the Floral Greens facility were installed by the DER . According to Table 4.1, oxamyl residues were found in all of these wells in concentrations ranging from 5 - 13 ppb. The on-site monitoring wells were not sampled for oxamyl. Other monitoring wells were also sampled near the facility but it is not clear whether the samples were analyzed for pesticide content or nitrates alone. Also, the locations of these other wells are not clearly specified.

Four pre-existing wells on the site were also sampled and analyzed for oxamyl. Two of these wells contained oxamyl residues ranging from 12 - 16 ppb.

It is clear from this study that oxamyl residues can leach to ground water. Again, no definite conclusions can be drawn concerning the actual levels of the compound or its degradates in ground water since the draft guidelines for small-scale retrospective ground-water monitoring studies were not followed.

9

REFERENCES

Budell, Richard A. 1988. Letter to Ronald E. Smith about oxamyl ground water monitoring in Florida. Florida Department of Agriculture & Consumer Services. Tallahassee, FL. October 25, 1988.

Hicks, Richard W. 1985. Groundwater Investigation Report No. 85-12/ Floral Greens International (Volusia County). Florida Department of Environmental Regulation. Tallahassee, FL. October 1985.

Kiser, G.L. 1985. Trip Report - Oxamyl Groundwater Studies. E.I. du Pont de Nemours. Wilmington, DE. January 9, 1985.

Louis, Judith B. 1989. Letter to Mark Russell regarding New Jersey ground-water monitoring for oxamyl. State of New Jersey. Department of Environmental Protection. Trenton, N.J. November 30, 1989.

Smith, Ronald E. 1988. Letter to Geraldine Wertig regarding the Data Call-In notice requiring small-scale retrospective ground-water monitoring. E.I. du Pont de Nemours. Wilmington, DE. October 26, 1988.

Williams, W.M., Holden, P.W., Parsons, D.W., and Lorber, M.N. 1988. Pesticides in Ground Water Data Base - 1988 Interim Report. U.S. EPA, Office of Pesticides Programs. December 1988.

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Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
OXAMYL
Last Update on September 3, 1991
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Photolysis (161-2, -3, -4)
[S] Water:7 DAYS, pH 5
[ ] :
[ ] :
[ ] :

[V] Soil :SiLm, 5 DAYS
[ ] Air :

Aerobic Soil Metabolism (162-1)
[V] 14-28 DA SILT LOAM
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Anaerobic Soil Metabolism (162-2)
[S] <7 DAYS IN SiLm. AFTER 42
[ ] DAYS, OXAMYL ACCOUNTED FOR 8%
[ ] AND THE OXIME WAS 41%.
[ ]
[ ]
[ ]
[ ]

Anaerobic Aquatic Metabolism (162-3)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Aerobic Aquatic Metabolism (162-4)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
OXAMYL
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[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Soil Partition Coefficient (Kd) (163-1)
[S] 0.08 LOAMY SAND 2.0%OM
[S] 0.05 SILT LOAM 1.9%OM
[S] 0.52 SILT LOAM 6.0%OM
[S] 0.05 SANDY LOAM 1.0%OM
[S] 0.41 LOAM 5.1%OM
[ ]

Soil Rf Factors (163-1)
[ ] SEE COMMENTS FOR TABLE

	SOIL	pH	%OM	Rf
[V]	MUCK	6.7	83.5	.53
[ ]	SiLm	6.0	6.0	.69
[ ]	SiLm	5.4	2.1	.79
[ ]	LmSd	5.8	0.7	1.00

Laboratory Volatility (163-2)
[ ]
[ ]

Field Volatility (163-3)
[ ]
[ ]

Terrestrial Field Dissipation (164-1)

	DEPTH	SOIL	LBS AIA	PPM OXAMYL: 14 DAYS	35 DAYS
[V]	0-4"	LS-SL	10	.062	.031
[ ]	4-8"	"	"	.027	.030
[ ]	8-12"	"	"	.025	.060
[ ]	12-24"	"	"	.022	.070
[ ]	24-36"	"	"	ND	.027

[ ]
[ ]
[ ]
[ ]

Aquatic Dissipation (164-2)
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Forestry Dissipation (164-3)
[ ]
[ ]

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Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
OXAMYL
Last Update on September 3, 1991
[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

Long-Term Soil Dissipation (164-5)
[ ]
[ ]

Accumulation in Rotational Crops, Confined (165-1)
[ ]
[ ]

Accumulation in Rotational Crops, Field (165-2)
[S] WHEN SOIL WAS TREATED AND AGED 120 DAYS BEFORE
[ ] PLANTING,MATURE CROPS HAD <.02 PPM OXAMYL OR OXIM.

Accumulation in Irrigated Crops (165-3)
[ ]
[ ]

Bioaccumulation in Fish (165-4)
[ ] BLUEGILL EDIBLE 2X;
[ ] CATFISH EDIBLE 0.25X;

Bioaccumulation in Non-Target Organisms (165-5)
[ ]
[ ]

Ground Water Monitoring, Prospective (166-1)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Small Scale Retrospective (166-2)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Large Scale Retrospective (166-3)
[ ]
[ ]
[ ]
[ ]

Ground Water Monitoring, Miscellaneous Data (158.75)
[S] IN 3 SHALLOW WELLS IN N.Y., NEAR POTATO FIELDS TREATED WITH
[ ] OXAMYL, CONC. WERE 5 PPB; SEVERAL MONTHS LATER NO OXAMYL WAS
[ ] FOUND (< 5 PPB).RESIDUES IN GROUND WATER FROM 1-395 PPB.

B

Field Runoff (167-1)
[ ]
[ ]
[ ]
[ ]

Surface Water Monitoring (167-2)
[ ]
[ ]
[ ]
[ ]

Spray Drift, Droplet Spectrum (201-1)
[ ]
[ ]
[ ]
[ ]

Spray Drift, Field Evaluation (202-1)
[ ]
[ ]
[ ]
[ ]

Degradation Products

Oxamyl oxime (hydrol, aerobic met.) = major degradate
N,N-diemthyloxamic acid (aerob. met.)
Oxamohydroxamic acid (aged leach.)
Oxamic acid (aged leach.)

Comments

Highly mobile; oxime more mobile than parent. Hydrolyzes at neutral and higher pH's.

% OF APPLIED RADIOACTIVITY IN SOIL COL. ELUATES IDENTIFIED AS:

SOIL	OXAMYL	OX.HYDROX.AC.	OXAMIC ACID	TOTALS
Silt Loam	81.1	ND	14.1	94.8
Loamy Sand	50.3	27.4	17.2	94.9
Sandy Loam	18.8	54.1	16.3	89.2
SiltLoam aged 7 da	49.5	ND	17.4	66.9
" " " 18 da	21.1	1.5	14.1	36.7

Soil Koc = 6.

References:

Writer : PJH, EW