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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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MAY 1 1987

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Addendum to the Oxamyl Registration Standard
New Ground Water Data Reviewed

FROM: Therese Dougherty, Chemist *Therese Dougherty*
Exposure Assessment Branch, HED (TS-769-C)

TO: Dennis Edwards, Acting PM #12
Phillip Hutton
Insecticide-Rodenticide Branch, RD (TS-767C)

Amy Rispin, Chief
Science Integration Staff
Hazard Evaluation Division (TS-769-C)

THRU: Robert W. Holst, Acting Chief *Robert W. Holst*
Exposure Assessment Branch, HED (TS-769-C)

The Guidance Document for the Oxamyl Registration Standard states that information required by the Groundwater Data Call-In (GWDC) was not reviewed. However, at present, all information received under the GWDC have been reviewed. This memorandum contains an assessment of recently received data as it relates to the Registration Standard.

In response to a February 6, 1987 letter from RD (TS-767C) regarding deficiencies identified in data submitted under the Ground Water Data Call-In, duPont submitted additional supporting data to EPA in March and April 1987, (Reg #103801, EAB#s 70331 and 70500). As noted below, the information submitted does not alter the data requirements listed in the original EAB Oxamyl Science Chapter for the Registration Standard, dated February 11, 1987.

The attached letter dated March 4, 1987 from Ronald E. Smith, Registration Specialist, duPont concerns the Aged Leaching Study.

Aged Leaching (MRID 00141395)

- Adequate response was provided for the amount of water passed through the column.

- The response given concerning the lack of identification of residues in the leachate from the aged column leaching study is inadequate. Contrary to what the registrant claims, it is not possible to discern whether oxamyl or the oximino compound is more mobile based on leaching profiles by application of data obtained in the aerobic soil metabolism study. An acceptable Aged Column Leaching Study with identification of residues is required.

The submission dated April 1, 1987 contains soil and irrigation information requested at the time of the groundwater screen. The data concerns the following study: McIntosh, C. Jenkins, J. and Burgoyne, D. (1984). A Two-year Field Study to Determine the Fate of Oxamyl in Soil During Flood Irrigation. E. I. duPont. (00149231).

- Although the information provided is useful for the groundwater screen, the study does not fulfill registration data requirements because the maximum recommended application rate was not used and no samples were taken immediately post treatment to confirm the application rate. An acceptable Terrestrial Field Dissipation Study is required.

Attachment



E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WALKER'S MILL. BARLEY MILL PLAZA
WILMINGTON, DELAWARE 19898

AGRICULTURAL CHEMICALS DEPARTMENT

March 4, 1987

Ms. Geraldine Werdig, Chief
Data Call-In Program
Registration Division (TS-767)
U. S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20420

Subject: Oxamyl Groundwater Data Call-In Notice

Dear Ms. Werdig:

In response to your recent letter (copy attached) citing certain deficiencies in our original submission, we offer the following comments and proposals.

1) Aged Leaching (163-1)

Answers to specific questions regarding the "Soil Column Adsorption Studies with Vydate® Oxamyl Insecticide/Nematicide" report by Robert L. Chrzanowski are as follows:

Question 1: The amount of water used was not specified.

Response: As indicated in the report, 20 inches of water was passed through the 2" i.d. glass columns packed with soil. The corresponding volume of water (V) is calculated from the equation:

$$V = \pi r^2 l$$

where $\pi = 3.14159$

r = the radius of the glass column = 1 inch

l = the height of the column of water = 20 inches

$$V = (3.14159) (1 \text{ inch})^2 (20 \text{ inches})$$

$$= (62.83 \text{ inch}^3) \left(\frac{1 \text{ liter}}{61.025 \text{ in}^3} \right)$$

= 1.03 liters of water

Question 2: The leachate from the 30-day aged soil was not analyzed for oxamyl and oximino compounds. A new study is recommended because the leachate was not analyzed for these specific compounds.

Response: When this study was performed in 1978, there was not specific requirement to analyze the chemical composition of the aged column leachate. The composition of leachable residues from aged oxamyl soil was, however, addressed in the report "Microbial Decomposition of 1-¹⁴C-Oxamyl in Soil" by J. J. Dulka and A. J. Julis. (Tab 2 of original submission dated August 3, 1984.)

On Delaware Keyport silt loam soil, Dulka and Julis found that between 4 kg a.i./ha and 22 kg a.i./ha application rate, after 28 days aging at 25°C and 70% normal soil moisture holding capacity, the half-life of oxamyl was 2 weeks. The extractable radioactivity contained 87 to 90 percent oxamyl, 6-7 percent methyhydroxy-N',N'-dimethyl-1-thioxamimidate ("oximino compound") and 4 to 6 percent N,N-dimethyloxamic acid.

The 30-day aged soil leaching test was performed at an intermediate application rate of 9.0 kg a.i./ha on a very similar Delaware soil type (Fallsington sandy loam). Because of the close similarity of soil types and aging conditions in these cited studies, no significant difference in leachable residues would be expected. The leachate from the aged soil columns should consist of about 90% oxamyl with the remaining radioactivity (10%) about equally divided between the oximino compound and N,N-dimethyloxamic acid. The leaching profiles from the aged soils (see Figures 1 and 2 of report) clearly indicate that these polar soil metabolites are somewhat more mobile than oxamyl.

We believe that these additional comments when considered together clearly demonstrate that the leachate from the aged soil column contains primarily oxamyl with small amounts (less than 10%) of the "oximino" compound and N,N-dimethyloxamic acid. We trust this information satisfies requirement 163-1.

2) Field Dissipation Study (164-1)

According to your comments we are preparing a response which will include additional soil data on type, percentage sand, silt and clay, percentage organic matter, pH, percentage field capacity, water holding and wilting point. Also, we are obtaining data on amount of water added as irrigation versus rainfall and frequency and increments.

These data will be available within 60 days and our response will be sent to you by April 6, 1987.

All future correspondence should be addressed as follows:

E. I. du Pont de Nemours & Co. (Inc.)
Attention: Mrs. Billie Lynn Rash
Agricultural Products Department
Walker's Mill Building
Barley Mill Plaza
Wilmington, DE 19898

Sincerely,



Ronald E. Smith
Registration Specialist

RES:dmf
0817

Attachments

cc: J. W. Akerman, EPA