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

OCT 16 1985

MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: EPA No. 352-384: Methomyl: Amended Registration for ULV Application to Soybeans. Accession. No. 258293. RCB No. 1349

FROM: J. Garbus, Chemist
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

THRU: Andrew Rathman, Section Head
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TO: J. Ellenberger/ D. Edwards, PM-12
Registration Division (TS-767)

The Agricultural Chemicals Department of E. I. du Pont de Nemours and Co., Wilmington, DE, has applied for an amended registration for its insecticide Lannate® LV to permit the use of vegetable oils in ultra low volume aerial (ULV) sprays on soybean plants. The supplemental labeling allows for applications as low as 2 liters per acre, using vegetable oils as diluents.

S-Methyl-N-((methylcarbamoyl)oxy-)-thioacetimidate (common name: methomyl) is the active ingredient in Lannate® LV. A tolerance of 0.2 ppm (negligible residue) is established for methomyl in or on soybeans (40 CFR 180.253). The tolerance on soybean plant forage is 10 ppm.

MANUFACTURING PROCESS INFORMATION IS NOT INCLUDED

Lannate® LV is formulated as a water and oil soluble liquid containing 29% methomyl (0.3 lbs per pint). [redacted] solubility of methomyl in both oil and water.

Methomyl is currently approved as an aqueous ULV aerial spray for use on soybeans to control Green Cloverworm, Velvetbean Caterpillar, Mexican Bean Beetle, Corn Earworm, Beet Armyworm, Saltmarsh Caterpillar, Fall Armyworm, Bean Leaf Beetle, Thrips, Silver Spotted Skipper, and Soybean Looper. The rates are from 0.4 to 3.0 pints per acre (0.12 to 0.9 lbs) depending upon the nature and severity of the pest infestation. The highest rates are restricted to AK, AL, LA, MS, TN, and TX for severe infestations of Soybean Looper.

The minimum application volume is 2 liters (0.53 gallons) per acre. Repeated applications can be made at 5-7 day intervals or as

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needed to control infestations. There is a 14 day PHI for soybeans. The restricted interval for the use of soybean vines as forage or hay depends upon the amount of the last application. For applications of less than 1.5 pints per acre the interval for foraging is 3 days and for hay 7 days. With higher rates the intervals are 10 days for forage and 12 days for hay.

The requested amended registration allows for the use of once-refined vegetable oils as the diluent instead of water. All other instructions, restrictions, and warnings for low volume aerial application remain the same.

Metabolism and Analytical Methods

The metabolism of methomyl in or on soybeans is adequately understood and is described in RCB's reviews of PP#1F1021 establishing the tolerances for soybeans. The residue of concern is the parent material, determined as its oxime. A satisfactory analytical method is available [Pease and Kirkland: J. Ag. Food Chem:, 16, 554 (1968)] and has had a satisfactory method tryout.

Residue Studies:

In support of this amended registration du Pont has submitted the results of residue trials conducted with the vegetable oil ULV aerial application to soybeans. Six trials were conducted at sites in GA and NC. Three trials were conducted at 1.0 lbs ai/A, and three were at 2.0 lbs ai/A. These rates are greater than the recommended rate of 0.9 lbs ai/A. Two application were made, with a week between sprayings.

Samples of seed, pod, and forage (foliage) were obtained at 0, 1, 3, 7, and 14 days after the last application. Samples were frozen, stored at -20°C, and analyzed by the original method of Pease and Kirkland. Average recoveries from spiked samples were 89% for forage, 90% for seed, and 95% for pod. Control values for all samples samples ranged from <0.02 ppm to 0.03 ppm.

The greatest residues of methomyl on soybean seed, pods and forage following the application of 1 lb ai/A (1.1 x maximum recommended rate) were:

	7 Days	14 Days
Seed	<0.02 ppm	<0.02 ppm
Pod	0.78 ppm	0.22 ppm
Forage	7.9 ppm	0.11 ppm

Residues levels at the 1.1 exaggerated rate at 7 and 10 days post-application are all below the established tolerances of 0.2 ppm for soybeen seed and 10 ppm for forage and hay.

We conclude that the ULV aerial application of 2 liters per acre of methomyl, formulated as Lannate® LV, with oil as the diluent

will not result in residues on soybean seed or forage in excess of the established tolerances.

Comments and Conclusions:

We note that the current label allowing for the ULV application of methomyl as an aerial aqueous spray to soybeans contains a local restriction for California limiting the mimimum aerial application volume to 1 gallon. This local restriction is not included in the proposed supplemental labeling for the application with oil. We believe that this restriction needs to be included in the proposed supplemental label.

The RCB requirements for ULV oil application residue studies are either side-by-side trials comparing the oil and aqueous sprays at conventional rates or studies done with only low volume oil application. The criteria for acceptablity of the oil-based low volume application are whether the residues levels are comparable and do not exceed the tolerances established for the conventional aqueous sprays. For the present request, the registrant has chosen to submit residue data only for the oil-based ULV spray. The data indicate that the residues will not exceed the established tolerances if used at the recommended rates and patterns. We conclude that the results of this submission meets the RCB requirements for ULV oil applications of pesticides.

Recommendation:

We recommend for the proposed amended registration allowing for the aerial ULV application of methomyl to soybeans using vegetable oils as diluents, provided that all of the restrictions and limitations of the current label allowing for ULV aqueous application are retained.

cc: R.F., S. F. (ULV), Amend. U.F., Circ., Reviewer, PMSD/ISB
RDI:ARR:10/10/85:RDS:10/15/85
TS-769:JG:jg:RM:810:CM#2:10/15/85