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

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

APR 13 1983

MEMORANDUM

SUBJECT: EPA Registration No. 464-448. Amended registration for chlorpyrifos on citrus.

FROM: A.R. Rathman, Chemist
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

THRU: Charles L. Trichilo, Chief
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TO: J. Ellenberger, Product Manager #12
Insecticide-Rodenticide Branch
Registration Division (TS-767)

Dow Chemical Company, is requesting to amend the label for Lorsban 4E to permit the addition of a petroleum spray oil to improve control of certain pests on citrus.

A tolerance for residues of Chlorpyrifos and its metabolite 3,5,6-trichloro-2-pyridinol has been established on citrus at 1 ppm (Sec. 180.342).

The present use allows for 0.5 lb. ai/100 gal of spray with a maximum of 3.5 lb ai/A except in California where up to 6 lb ai/A may be applied. There is a limit of 2 applications/year and a maximum of 7.5 lbs. of product/year. If 3.5 lbs. or less/year is applied there is a 21 day PHI, for more than 3.5 lbs/year a 35 day PHI must be observed.

No change in the rate, timing or PHIs is requested. The following statement will be added.

"A petroleum spray oil recommend for use on citrus may be added to the spray mixture to improve control of aphids, mealy bugs, scale insects, and thrips. Observe local use directions for tank mix combinations especially in regard to

applications of Lorsban 4E plus spray oil. Soil moisture, temperature and humidity are critical to avoid possible drop of mature leaves and fruit. Consult with your Country Farm Advisor or Agricultural Commissioner for such information regarding a given locality. Lorsan 4E should not be used in combination with spray oil when temperatures are expected to exceed 95°F the day of application or for several days thereafter."

We do not consider these directions sufficient. The amount of oil to be added should be specified. If the amount varies greatly with the area etc., we would accept labeling that would state a maximum amount of oil that could be added to spray solutions.

The data submitted to support this label change are in what appears to be a pre-publication article; the title of which is "Chlorpyrifos Applied to California Citrus: Residue Levels on Foliage and on and in Fruit" by [illegible] et al.

In this study grapefruit and orange trees were treated with a combination of Lorsban 4EC and NR-440 spray oil. Application rates were 5 and 10 lbs. ai and 28 gal of oil/2000 gal/A and 5 and 10 lbs. ai and 14 gal of oil/100 gal./A.

Samples were taken at various intervals up to 60 days after application. The fruit were separated into seed and pulp. Analyses were for both parent compound only and total parent plus 3,5,6-trichloro-2-pyridnol. Validation data presented indicate that acceptable recoveries were obtained with these methods.

The data indicate that essentially all of the residue was in the peel with at most trace levels (0.03 ppm) in the pulp.

All the peel data were presented in plot form and as a result we have had to estimate residue levels and in some cases sampling dates. The earliest sampling time (ca 5 days) show total residues in peel (orange and grapefruit) ranging from 1.5-7.5 ppm from the 5 lb rate and from 3.5-10.5 ppm from the 10 lbs. rate. Residues in the grapefruit were generally lower. Additionally, the low volume application resulted in the higher residues. Residues in the peel were in the order of 1 ppm from the 5 lb rate at 21-30 days after application and in the order of 2 ppm from the 10 lbs rate after the same 20-30 day interval.

While these data do not indicate that the established 1 ppm tolerance on citrus would be exceeded with the addition of oil, we do not consider these limited data acceptable since no comparison test (without oil) was conducted.

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Conclusions

1. We do not consider the proposed label changes acceptable as written. The amount of oil to be added should be specified. If this amount varies greatly with the area etc., we would accept labeling that would state a maximum amount of oil that could be added to spray solutions.

2. The methods used are acceptable for obtaining data.

3. The submitted data are not sufficient for us to conclude that the established tolerance is adequate to cover residues from this amended use. We will need additional data from side-by-side tests with and without oil added to spray solutions. The raw data and actual residue values should also be submitted (not simply plots of the data).

Recommendation

We recommend against the requested label changes for the reasons cited in Conclusions 1 and 3.

cc: Amend use F.,
Circu
Reviewer: R.F. Rathman
Subject file
Amended use file

RDI:SectionHJead:RSH:Date-4/8/83:RDS:Date-4/8/83:DCR-17235
TS-769:RCB-17:Reviewer:Rathman:efs:Rm810:CM2X77324:4/11/83:
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