9-19-84

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

SEP 19 1984

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: 84-CA-37. Proposed Section 18 specific exemption to use chlorpyrifos, trade name: Lorsban 4E, on avocado orchard floors to control Argentine ants.

FROM: Michele L. Loftus, Ph.D., Chemist
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Michele L. Loftus

THRU: Charles L. Trichilo, Ph.D., Chief
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TO: Donald Stubbs, Product Manager
Emergency Response Section
Registration Division (TS-767)

and

Toxicology Branch
Hazard Evaluation Division (TS-769)

The California Department of Food and Agriculture requests a Section 18 specific exemption for the use of chlorpyrifos (O,O-diethyl O-(3,5,6-trichloro-2-pyridyl)phosphorothioate), trade name: Lorsban 4E, for the control of Argentine ants on avocado orchard floors.

The proposed use calls for 1-2 applications per season at the application rate of 3.75 oz - 10 oz act./A using 2.5 gal water diluent which contains 1 oz spreader/sticker. A 21 day PHI would be observed.

Avocado growing areas statewide (5100 A) are to be treated with, according to the petitioner, a maximum of 12,750 lbs Lorsban 4E (40.7% ai).

Established tolerances for combined residues of chlorpyrifos and its metabolite 3,5,6-trichloro-2-pyridinol range from 0.05 ppm for almonds, banana pulp, beans (lima and snap), nectarines, peaches and plums to 15 ppm for alfalfa hay and soybean straw. (40 CFR §180.342).

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No residue data for chlorpyrifos in/on avocados is available. However, residue data from FL (Acc#252500) and CA (Acc#252499) studies reflecting citrus orchard floor applications of chlorpyrifos have been submitted in connection with an amended registration request for Lorsban 15G (5/11/84 memorandum of L.M. Bradley).

In both the FL and CA studies, Method VII in PAM II was used to determine combined residues of chlorpyrifos and its metabolite 3,5,6-trichloro-2-pyridinol (TCP) as total pyridinol. In the CA study, residues of chlorpyrifos per se were also determined. The pyridinol method (Method VII in PAM II) would be appropriate for enforcement of a Section 18 exemption of chlorpyrifos in/on avocados. The method sensitivity is 0.05 ppm.

In the FL studies, grapefruit, orange and tangelo orchard floors were treated twice with either Lorsban 15G or Lorsban 4E at the application rate of 10 lbs ai/A (up to 16X). Combined residues of parent plus TCP metabolite in/on grapefruit, oranges and tangelos sampled 28 days after the last treatment ranged from non-detectable (<0.01 ppm) to <0.05 ppm.

In the CA studies, lemon and orange orchard floors were treated once with 11 lbs ai/A Lorsban 15G. In lemons and oranges sampled 4, 17 and 28 days after treatment, chlorpyrifos residues ranged from <0.01 ppm to 0.04 ppm, and residues of the TCP metabolite ranged from non-detectable (<0.01 ppm) to 0.05 ppm.

On the basis of the above field studies, we estimate that combined residues of chlorpyrifos and its metabolite 3,5,6-trichloro-2-pyridinol will not exceed 0.1 ppm in/on avocados.

Meat, Milk, Poultry and Eggs

The avocado is not a feed item for livestock. However, a restriction should be imposed on the Section 18 label against the grazing of livestock in treated orchards so that there will be no problems with secondary residues of chlorpyrifos and its 3,5,6-trichloro-2-pyridinol metabolite in meat, milk, poultry and eggs as a result of the proposed use.

Conclusions

1. The residues of concern are the parent chlorpyrifos and its metabolite 3,5,6-trichloro-2-pyridinol.

2a. The analytical methodology for determination of combined residues of the parent chlorpyrifos and its metabolite 3,5,6-trichloro-2-pyridinol is Method VII in PAM II. Method sensitivity is 0.05 ppm.

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2b. Reference standards of chlorpyrifos are available in the USEPA Pesticides and Industrial Chemicals Repository.

3. Combined residues of chlorpyrifos and its metabolite 3,5,6-trichloro-2-pyridinol will not exceed 0.1 ppm in/on avocados as a result of the proposed use.

4. Avocados are not a feed item for livestock. However, a restriction should be imposed on the Section 18 label against the grazing of livestock in treated orchards.

5. Provided that the restriction specified in conclusion 4 is imposed, there will be no problem with secondary residues in meat, milk, poultry and eggs as a result of the proposed use.

Recommendation

Provided the restriction specified in conclusion 4 is imposed and TOX considerations permitting, we have no objections to the issuance of this Section 18 specific exemption. An agreement should be made with FDA regarding the legal status of the treated avocados in commerce.

cc: Section 18 S.F.
Chlorpyrifos S.F.
R.F.
Circu
Reviewer

RDI:Section Head:E.Zager:Date:9/11/84:RDSchmitt:Date:9/11/84
TS-769:RCB:Reviewer:M.L. Loftus:557-7484:LDT:CM#2:RM:810:9/12/84