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

JAN 27 1986

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: PP# 4E3146. (RCB #201). Permethrin on Avocados and Papayas. Amendment of 10/21/85. (No accession number).

FROM: Linda L. Kutney, Chemist
Tolerance Petition Section III
Hazard Evaluation Division (TS-769)

THRU: Phil Errico, Section Head
Tolerance Petition Section III
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TO: Hoyt Jamerson and Gene Asbury (PM-43)
Registration Division (TS-767C)

and

Toxicology Branch
Hazard Evaluation Division (TS-769)

In our review of June 21, 1985 (L. Kutney), we said that before a favorable recommendation could be made for the proposed tolerance of 1 ppm for residues of the insecticide permethrin [(3-phenoxyphenyl)methyl-3(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate] and its metabolites 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid (DCVA) and (3-phenoxybenzyl)methanol (3-PBA) in or on avocados and papayas, Section B would need to be revised.

The petitioner has submitted the following revised Section B, as of the IR-4 letter of 10/21/85, RCB comments will follow:

AMBUSH® INSECTICIDE
EPA REG. NO. 10182-18
PPNO: 4E3146

CROP	USE	RATE
Avocado Papaya	Control of thrips, Lepidopterous larvae, leaf-hopper, mirid bugs, fruit fly	Dilute 0.05 to 0.10 lb ai/A (3.2 to 6.4 oz of AMBUSH) per 100 gallons of water. Finished spray solution should deliver 0.2 lb ai/100 gallons.

DIRECTIONS FOR USE	LIMITATIONS
Apply by ground equipment. Spray to wet all foliage. Apply when insects appear and repeat at 7- to 10-day intervals as needed to provide control.	Do not make more than 6 applications per season. Do not apply within 7 days of harvest. Based on available residue data, the use of Ambush® on papayas is limited to Florida. Do not graze livestock in treated areas. Do not feed cover crops from treated areas to livestock.

*For 400 gallons/acre use 0.05 lb ai (3.2 oz of AMBUSH)
For 200 gallons/acre use 0.10 lb ai (6.4 oz of AMBUSH)

Revised 10/21/85

Residue Chemistry Branch Comments:

We concluded in our earlier review of June 21, 1985 (L. Kutney) that residues in papayas are not expected to

exceed the proposed 1.0 ppm tolerance under the proposed conditions of use in Florida. We recommended, however, that either additional residue data should be submitted from Hawaii for papayas (because Hawaii is a major producer of papayas) or that a geographical restriction limiting use of permethrin on papayas to Florida should be included in an amended Section B, due to lack of data from Hawaii.

The petitioner has included a geographical restriction limiting use of permethrin on papayas to Florida only in an amended Section B. We consider this matter resolved.

We also recommended in our memo of June 21, 1985 that the proposed label in Section B be revised for avocados and papayas to give the dosage rate on the label both in terms of "lbs active ingredient (a.i.) per acre" and "lbs. a.i. per 100 gal. in a dilute spray to run-off." The additional label "lbs. a.i. per 100 gal. in a dilute spray to run-off" is necessary to to account for variation in tree size; this labeling is specificly intended to ensure that small trees do not receive a higher dosage and therefore higher pesticide residues than average or large sized trees and so the correct amount of pesticide is applied per acre regardless of tree size or the number of trees per acre.

The petitioner has responded to this request with different rate instructions included in the revised Section B. Apparently this is an attempt to comply with the requested label changes, however the proposed label is still not satisfactory. The directions state that the user is to dilute 0.05 to 0.10 lb ai/A (3.2 to 6.4 oz of AMBUSH) per 100 gallons of water. The directions continue with the statement that the finished spray solution should deliver 0.2 lb ai/100 gallons even though the first statement directs the user to apply 0.05 to 0.10 lb ai/A/100 gallons of water. Finally, two more instructions are added with an "*" mark even though the "*" does not appear with any specific statement in the preceding two labeling directions, namely, " *For 400 gallons/acre use 0.05 lb ai (3.2 oz of AMBUSH). For 200 gallons/acre use 0.10 lb ai (6.4 oz of AMBUSH)." This third statement contradicts both of the first two directions. The revised label is not acceptable.

Guidance for a format for the labeling of orchard crops which is acceptable to RCB has been given in a previous memorandum, PP# 4E3029, dated 11/26/85 (L. Kutney). Included in with that review was an appropriate label which would satisfy the requirement for a label which would

specify the correct amount of pesticide to be applied per acre regardless of tree size or the number of trees per acre. The sample label is attached to this memorandum.

The new label does not include the restriction that, "the maximum application rate is X pounds active ingredient/100 gallons in a dilute spray to run-off." The petitioner should express the dosage rate on the proposed label as pounds active ingredient per 100 gallons spray solution to runoff in agreement with the EPA Pesticide Assessment Guidelines, Section 173-3 (a), Subdivision O, Residue Chemistry as quoted below:

"...In the case of full coverage sprays, as for orchards, the dosage should also be expressed as pounds active ingredient per 100 gallons spray solution to runoff, because of the variation in the number of pounds per acre pesticide needed for small trees versus large trees. The quantity of pesticide applied per acre for concentrate orchard sprays should also be related to tree size, usually by specifying the same or less active ingredient as that which would be applied using a full coverage spray. For special modes of application (aircraft, ULC, mist sprays), the directions for use should include both the spray concentration and the spray volume per acre."

Section B still should be revised as stated above. The label should contain a restriction indicating the maximum concentration of aquous spray solution to be applied per acre to avoid the possibility of overtreatment. The label should specifically indicate that smaller trees should be treated with less volume of spray and therefore less active ingredient per acre.

One suggested method of labeling which ensures that the correct amount of pesticide is applied per acre regardless of tree size or the number of trees present per acre is outlined here. The application rate on the label is given in two columns, one for lbs. a.i./100 gallons and another for lbs. a.i./Acre. The column for dosage in terms of lbs./Acre is asterisked to explain that the rate for this column is based on a standard of X gallons of dilute spray per acre to run-off for one's respective orchard (based on tree size and number of trees/acre), or the equivalent amount of product per acre in concentrate sprays. The label must also bear the following instructions for clarification:

"In order to apply the correct amount of product to your orchard, you must know the number of gallons of water needed to spray one acre of your trees to the point of drip. If you do not already know this gallonage, you should conduct a test to determine it. If you do not know how to conduct such a test with your equipment, you should ask for assistance from your equipment dealer."

We are also attaching an example of a label which adequately instructs the reader how to apply the correct amount of pesticide per acre regardless of tree size or number of trees per acre, as appendix 1. We suggest that the Product Manager submit this example (with the product and company names blocked out) to the petitioner for his consideration.

As an alternative to the above-mentioned label changes, the petitioners may choose to provide additional data which would give the maximum expected residues which would occur following treatment of the smallest, mature, fruit-bearing avocado trees in commercial production with the most concentrated spray, at the maximum proposed use. The amount of pesticide applied is then limited in terms of maximum lbs. a.i. per 100 gallons applied to drip. A constant lbs a.i. per acre or an equivalent amount of permethrin in concentrated spray may be used.

Provided the data are adequate, we feel that we could use either of these two alternatives to calculate the maximum expected residue which would result on treated avocados as a result of the proposed use.

The data which were previously submitted did not specify the number of pounds a.i. per 100 gallons which were used in the pesticide trials. Additional data should be supplied by the petitioner to support the use of X pounds of active per 100 gallons.

No change in tolerance has been requested. A Codex sheet is attached to the original submission.

Recommendations:

RCB continues to recommend against the proposed tolerance for residues of permethrin and its DCVA and 3-PBA metabolites

(1.0 ppm) resulting from the use of permethrin on avocados and papayas.

The Product Manager should relay our above suggestions to the petitioner for his consideration, along with a copy of the enclosed label.

Attachment 1: Sample Label

cc with Attachment 1: R.F.; Kutney; Hoyt Jamerson, RD; TOX; PP# 4E3029; E. Eldridge, PMSD/ISB; Circu;
TS-769:RCB:L. Kutney:llk:CM#2:RM710:557-1317:1/3/86
RDI: Errico, 1/9/86 ; Schmitt, 1/10/86

ATTACHMENT 1

SAMPLE LABEL

[redacted]

RECOMMENDED [redacted]

op	Disease	Rate of [redacted] oz/100 gal	oz/A	California Only oz/100 gal	oz/A	Remarks
ricots ctarines aches	Brown Rot Blossom Blight Scab	2 to 4	6 to 12 1/	6	24 2/	Make applications at pink a full bloom. Additional applications can be made as need but not within 7 days of harvest. Do not apply more than 120 ozs. of [redacted] per acre per crop season
erries tart)	Brown Rot Blossom Blight	2 to 4	6 to 12 1/			Make applications at early white bud and full bloom. Additional applications can be made as needed but not within 7 days of harvest. Do not apply more than 120 ozs. [redacted] per acre per crop season.
	Leaf Spot	4	12 1/			
erries sweet)	Brown Rot Blossom Blight	2 to 4	8 to 16 2/			
	Leaf Spot	4	16 2/			
ums unes	Brown Rot Blossom Blight	4	12 1/	6	24 2/	

[redacted] rates are based on a standard of 300 gallons of dilute spray per acre, or the equivalent amount of product per acre in concentrate sprays.

[redacted] rates are based on a standard of 400 gallons of dilute spray per acre, or the equivalent amount of product per acre in concentrate sprays.

TE: In order to apply the correct amount of [redacted] to your orchard you must ow the number of gallons of water needed to spray one acre of your trees to the point drip. If you do not already know this gallonage, you should conduct a test to determine it. If you do not know how to conduct such a test with your equipment, you ould ask assistance from your equipment dealer.

STORAGE AND DISPOSAL

PROHIBITIONS: Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. 2. PESTICIDE DISPOSAL: Pesticide, spray mixture, or rinsate that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticides or buried in a safe place away from water supplies. CONTAINER DISPOSAL: Dispose of in an incinerator or landfill approved for pesticide containers, or bury in a safe place. 4. GENERAL: Consult federal, state or local disposal authorities for approved alternative procedures such as limited open burning.

is labeling must be in the possession of the user at the time of pesticide application.

[redacted]

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ATTACHMENT 1

SAMPLE LABEL

[redacted] PRECAUTION

HAZARDS TO HUMANS

[redacted] WARNING

Causes eye irritation. Do not get in eyes. Avoid contact with skin, or clothing. May be harmful if swallowed or inhaled. Avoid breathing dust or spray mist. Wash thoroughl with soap and warm water after handling. Wash contaminated clothing with soap and hot water before reuse. Do not contaminate feed or food. Keep out of reach of children.

ENVIRONMENTAL HAZARDS

Do not use on other crops grown for food or forage. Keep out of lakes, streams, and ponds. Do not contaminate water by cleaning of equipment or disposal of wastes. Apply this product only as specified on this label.

Do not make applications when weather conditions favor drift from target area.

Observe all cautions and limitations on labeling of all products used in mixtures.

IMPORTANT: Read these entire Directions and "Conditions of Sale or of Delivery for Use" before using [redacted]:

CONDITIONS OF SALE OR OF DELIVERY FOR USE: THIS PRODUCT IS SOLD OR OTHERWISE MADE AVAILABLE FOR EXPERIMENTAL USE WITH THE UNDERSTANDING THAT EXPERIMENTATION MAY DEVELOP NEW INFORMATION WHICH COULD CHANGE OR INCREASE ANY HAZARDS ASSOCIATED WITH ITS USE OR ADD HAZARDS ASSOCIATED WITH ITS USE. THE BUYER OR USER ACCEPTS THIS PRODUCT WITH THIS UNDERSTANDING.

DIRECTIONS FOR USE

DILUTE SPRAY: Apply specified dosage per 100 gallons of water in a uniform spray applie to the point of drip with conventional ground spray equipment.

CONCENTRATE SPRAY: The amount of [redacted] applied per acre in concentrated sprays is the same as that which would be applied per acre in a full coverage spray based on 300 or 400 gallons of water/acre. (SEE NOTE BELOW) Do not use less than 30 gallons of water per acre for ground application or less than 5 gallons of water by air.