E. Eldridge

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

NOV 29 1985

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: PP# 4E3029. Acephate on Avocados. Amendment of 7/16/85. RCB# 1435. (No Accession Number).

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

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

TO: Hoyt Jamerson, PM-43
Registration Division (TS-767)

and

Robert Coberly
Toxicology Branch
Hazard Evaluation Division (TS-769)

In our review of 1/31/85, (L. Kutney), we said that before a favorable recommendation could be made for this petition, the petitioner should revise the proposed label so the correct amount of pesticide is applied per acre regardless of tree size or the number of trees per acre. Included in that review was an appropriate label which would satisfy this requirement.

The petitioner has submitted the following revised Section B, as of the IR-4 letter of 7/16/85:

ORTHENE 75S/AVOCADOS

AVOCADO: For Control of Avocado Leafroller, Omnivorous Looper

"Apply 1 1/3 lbs. (1.0 lb. active) per acre in sufficient water to give thorough coverage. Use 20-25 gals/acre by air or 100-800 gal/acre by ground depending upon tree size. Begin applications at approximately 3 weeks following peak adult flight activity and repeat as needed to maintain control.

Applications should be made when caterpillar larvae are young and before they begin nest formation. Do not make more than 3 applications per crop season. Do not apply within 21 days of harvest. Do not feed cover crop from treated areas to livestock or allow animals to graze on treated areas."

The most recent change incorporated in this label is the inclusion of the sentence, "use 20-25 gallons/acre by air or 100-800 gallons/acre by ground depending upon tree size."

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 should still 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 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

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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 acephate in concentrated spray may be used. For example, if 1 lb. a.i./100 gal. is applied to drip, and 200 gallons per acre were shown to be needed to treat the orchard in question, then the following is true:

$$\frac{\text{1 lb. a.i.}}{\text{100 gallons}} \times \frac{\text{200 gallons used}}{\text{Acre Orchard Crop}} = \frac{\text{2 lb. a.i. Were Applied}}{\text{Acre Orchard Crop}}$$

Using this option, the petitioner would specify on the label, a fixed spray solution concentration (e.g., the 1 lb. a.i./100 gallons in the example above) and the lb. a.i. applied per acre would then be fixed no matter what determined the volume of spray needed to treat the orchard.

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 are briefly summarized in Table I, arranged in terms of increasing lb. a.i. per 100 gallons. We believe that the data support the use of 0.25 lbs active per 100 gallons.

The revised Acephate Registration Standard (see the 10/5/84 memo by C. L. Trichilo) recommends that all acephate tolerances be expressed in terms of only acephate, per se, under 40 CFR 180.108 and 21 CFR 561.20. Residues of the active insecticide, methamidophos, resulting from the metabolism of acephate are to be listed separately under the methamidophos regulations, 40 CFR 180.315 and 21 CFR 561.277.

A tolerance of 2.0 ppm total acephate and methamidophos residue, of which no more than 1.0 ppm is methamidophos, has been proposed for avocados. The petitioner should submit a revised tolerance proposal in a new Section F for a tolerance of 1.0 ppm acephate and a separate tolerance of 1.0 ppm methamidophos for avocados.

TABLE 1: Summary of Residue Data PP4E3029

State	Number of Applications	Gal Spray Per Acre	lbs ai/ 100 Gal	lbs ai/ Acre	days PHI	ppm Acephate	ppm Methamidophos	ppm Total
CA	2	400	0.125	0.5	7-14	0.14-0.25	0.20-0.37	0.35-0.60
					21	0.17-0.18	0.18-0.18	0.35-0.36
CA	1	400	0.25	1.0	0-14	0.08-0.7	0.17-1.1	0.25-1.8
CA	2	400	0.25	1.0	7-14	0.24-0.51	0.38-0.79	0.62-1.3
					21	0.17-0.23	0.32-0.43	0.49-0.66
CA	3	630	0.25	1.6	12	0.50-1.55	0.50-0.67	1.0-1.8
					21	0.22-0.63	0.21-0.47	0.43-1.1
					28	0.17-0.60	0.16-0.43	0.33-1.0
CA	1	400	0.5	2.0	0-14	0.14-0.38	0.23-0.62	0.37-1.0
FL	4	100	0.5	0.5	15	0.00	0.05	0.05
	1-2	100	0.5	0.5	139-203	0.00	0.00	0.00
FL	2	100	1.0	1.0	82	0.00	0.00	0.00
FL	4	100	1.0	1.0	15	0.00	0.04	0.04
	1-2				139-203	0.00	0.00	0.00
FL	2	100	2.0	2.0	82	0.00-0.07	0.00-0.02	0.00-0.09
CA	2	25*	2.0	0.5	21	0.00	0.00	0.00
					28	0.00	0.00	0.00
CA	3	25*	4.0	1.0	21	0.01	0.00-0.01	0.01-0.02
					28	0.01	0.00	0.00-0.01
CA	2	25*	4.0	1.0	21	0.01-0.02	0.01	0.02-0.03
					28	0.01	0.00	0.01

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*Aerial Application

Recommendation:

We still withold our recommendation for the proposed tolerance. 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:X3044/5:10/24/85,11/14/85
RDI: Errico (Arne) 11/21/85; Schmitt, 11/26/85

[redacted]

ATTACHMENT 1

SAMPLE LABEL

PRECAUTION

HAZARDS TO HUMANS

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 thoroughly 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 applied 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.

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ATTACHMENT 1

SAMPLE LABEL

[redacted] mixed

[redacted] compatible.

RECOMMENDED [redacted]

Crop	Disease	Rate of [redacted] oz/100 gal	oz/A	California Only oz/100 gal	oz/A	Remarks
Apricots Nectarines Peaches	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
Cherries (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/			
Cherries (sweet)	Brown Rot Blossom Blight	2 to 4	8 to 16 2/			
	Leaf Spot	4	16 2/			
Plums Prunes	Brown Rot Blossom Blight	4	12 1/	6	24 2/	

1/ [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.

2/ [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.

NOTE: In order to apply the correct amount of [redacted] 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 assistance from your equipment dealer.

STORAGE AND DISPOSAL

1. 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.
3. 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.

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

[redacted]

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