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

0005

MAY 14 1985

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: PP#4E3091, (RCB #836) (Acc. #073430) Acephate in or on Blueberries.
Comments on the Amendment of 3/28/85.

FROM: W. T. Chin, Ph. D., Chemist *W.T. Chin*
Tolerance Petition Section II
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

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

TO: Hoyt L. Jamerson
Minor Use Section
Registration Division (TS-767)

and

Toxicology Branch
Hazard Evaluation Division (TS-769)

BACKGROUND

In a previous review of PP#4E3091 (memo of 8/14/84, C. Deyrup) RCB recommended against the establishment of a tolerance for residues of the insecticide acephate (O,S-dimethyl acetylphosphoramidothioate) and its cholinesterase-inhibiting metabolite O,S-dimethyl phosphoramidothioate (methamidophos) in or on the raw agricultural commodity blueberries at 6 ppm (of which no more than 0.3 ppm is methamidophos). For a favorable recommendation, RCB identified certain deficiencies as shown in the memo of C. Deyrup (8/14/84). These deficiencies were also identified in EPA's letter to Dr. Mark E. Burt (IR-4 Project Assis. Coordinator, 9/13/84).

PRESENT CONSIDERATION

The present amendment consists of a cover letter written by Dr. Mark E. Burt (3/20/85); a Section D amendment and a Section F revision. The deficiencies identified in RCB's 8/14/84 review of PP#4E3091 will be restated below followed by the petitioner's response and RCB's comments/conclusions.

Deficiency 1

"We will need a revised Section B specifying the number of applications and the interval between applications."

Petitioner's Response to Deficiency 1

In the submitted letter, Dr. Burt writes "Section B coincides with several of the other registered uses for acephate (begin applications when eggs or insects first appear and repeat as necessary to maintain control). It might be more appropriate at this time to revise the proposed tolerance from 6 to 8 ppm. A revised Section F is included in the attached amendment."

RCB's Comments/Conclusions on Deficiency 1

According to the Acephate/Blueberries Residue Tolerance Petition with the formulation of Orthene 75 S Soluble Powder (239-2418) (PP#4E3091, 5/21/84), the original Section B reads as follows:

"Blueberries: Blueberry Maggot, Cherry Fruitworm, Cranberry Fruitworm, Aphids, Leafhoppers - Apply 1 lb per acre (0.75 lb a.i.) in 25 to 125 gals. water per acre by ground or in a minimum of 5 gals. per acre by air. Begin applications when eggs or insects first appear and repeat as necessary to maintain control. Do not apply within 7 days of harvest."

Careful study of the above statement and the residue data generated from the 13 locations reveal the following facts:

1. In all the ground applications, 100 or 200 gallons of water per acre were used.
2. The maximum number of ground or air applications per season is four. With four ground applications and at 0.75 lb a.i. (1X) and 1.0 lb a.i. (1.3X) per acre, the total residues of acephate and methamidophos are compared below:

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<u>Test Number</u>	<u>Gal/Acre</u>	<u>lb a.i./A</u>	<u>PHI</u>	<u>Total Residue (ppm)</u>	
M-118-3982	200	0.75	7	2.7	
		1.0	7	2.1	
R-110-4044	100	0.75	7	5.4	5.4
		1.0	7	9.7	10.0

3. The total residue levels in all other tests with 3 applications per season at the proposed rate and the PHI of 7 days are always less than 6 ppm.
4. The average interval between two applications is approximately 10 days.

RCB concludes that the changing of the proposed tolerance from 6 to 8 ppm is appropriate, However, the petitioner should submit a revised Section B to indicate a maximum of 4 applications per season. Deficiency 1 is, therefore, still outstanding.

Deficiency 2

"Only residue data collected at 12 of the 13 locations were submitted; please submit the missing data or explain this discrepancy."

Petitioner's Response to Deficiency 2

The petitioner adequately submits the missing residue data of Tests R110-4045A and R110-4045B.

RCB's Comments/Conclusions on Deficiency 2

Deficiency 2 has been resolved.

Deficiency 3

"Only chromatograms of acephate and methamidophos standards were submitted. We will also need representative chromatograms of unfortified and fortified samples to validate the analytical methodology for residues on blueberries."

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Petitioner's Response to Deficiency 3

The petitioner adequately submits the representative chromatograms of unfortified and fortified samples for the validation of the analytical methodology for residues on blueberries.

RCB's Comments/Conclusions on Deficiency 3

Deficiency 3 has been resolved.

Deficiency 4

"No chromatograms from the field trials were submitted. We will need representative sample chromatograms of treated and untreated samples."

Petitioner's Response to Deficiency 4

The petitioner adequately submits the representative sample chromatograms of treated and untreated samples for evaluation.

RCB's Comments/Conclusions on Deficiency 4

Deficiency 4 has been resolved.

Deficiency 5

"Residues in blueberries may exceed the proposed tolerance under the proposed conditions of use; specifically residues 10 ppm were achieved as a result of a 1.33X application."

Petitioner's response to Deficiency 5

In the submitted letter, Dr. Burt writes "Test R-110-4044 is the only trial in which residues exceeded 5 ppm. This is the trial in which 10 ppm was found at the 1.3X rate. Since this shows that there is a risk that a 7 ppm tolerance might be exceeded, Section F has been revised to propose a 8 ppm tolerance."

A revised Section F reads "The petitioner, IR-4, on behalf of the IR-4 National Director, Dr. R. H. Kupelian and the Agricultural Experiment Stations of Arkansas,

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Massachusetts, Michigan, New Jersey, Oregon and Washington requests the establishment of a tolerance for the combined residues of acephate (O,S-dimethyl-acetylphosphoramidothioate) and its cholinesterase-inhibiting metabolite (O,S-dimethyl phosphoramidothioate) in or on the raw agricultural commodity blueberries at 8 ppm (of which no more than 0.5 ppm is O,S-dimethyl phosphoramidothioate)."

RCB's Comments/Conclusions on Deficiency 5

RCB concludes that deficiency will be resolved if the above deficiency 1 is resolved.

Deficiency 6

"Depending on the resolution of all deficiencies cited above, in particular the number of applications and the effect on residue levels, additional residue data may be required."

The Petitioner's Response to Deficiency 6

The submitted cover letter reads "Refer to item 1 through 5, above."

RCB's Comments/Conclusions on Deficiency 6

Deficiency 6 will be resolved if the above deficiency 1 is resolved.

RECOMMENDATIONS

RCB recommends against the establishment of the proposed tolerance of 8 ppm for the combined residues of acephate and methamidophos in or on blueberries (of which no more than 0.5 ppm is methamidophos) because of deficiency 1 above. The petitioner will need to submit a revised Section B to indicate a maximum of four applications per season.

Note To PM: The recently completed RCB registration standard input includes a recommendation to set methamidophos tolerances in 40 CFR 180.315 when methamidophos residues result from the application of acephate. If the acephate tolerances have been recodified at the time of publication of this tolerance, then the blueberry tolerance should be published in the same format.

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OTHER CONSIDERATIONS

There are no Canadian, Mexican or Codex International residue limits established for residues of acephate in or on blueberries. Therefore, there are no compatibilities.

cc: R.F., Circu., W.T.Chin, TOX, EAB, EEB, PP#4E3091, Thompson-RTP, PMSD-ISB
RDI: J.H.Onley(5/8/85), R.D.Schmitt(5/8/85)
TS-769: RCB: CM#2, RM810, 557-7484, W.T.Chin,wc(5/9/85)

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INTERNATIONAL RESIDUE LIMIT STATUS

5/14/85
Z.S.

CHEMICAL Accephate

PETITION NO. PP#4E3091

CCPR NO. 95

Reviewer: W. T. Chen

Codex Status

Proposed U.S. Tolerances

No Codex Proposal
Step 6 or above

Residue (if Step 9): _____

Residue: Accephate and its
metabolite, methamidophos (of which
methamidophos should not more than 0.5 ppm

Crop(s) Limit (mg/kg)
None (on blueberries)

Crop(s) Tol. (ppm)
Blueberries 8 (of which methamidophos
< 0.5 ppm

CANADIAN LIMIT

MEXICAN TOLERANCIA

Residue: _____

Residue: _____

Crop Limit (ppm)
None

Crop Tolerancia (ppm)
None (on blueberries)

NOTES:

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