PMSD/ISB

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

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

JAN 8 1990

MEMORANDUM

SUBJECT: EPA Reg. No. 34704-207. Amended Registration for Dimethoate on Cherries and Lentils.
DEB No. 5992; No MRID No.

FROM: Arliene M. Aikens, Chemist
Special Registration Section II
Dietary Exposure Branch
Health Effects Division (H7509C)

THROUGH: Francis B. Suhre, Section Head
Special Registration Section II
Dietary Exposure Branch
Health Effects Division (H7509C)

TO: William Miller/Marilyn Mautz, PM 16
Registration Support Branch
Registration Division (H7505C)

The Platte Chemical Company requests an amendment to their Sec. 3 Registration for Clean Crop Dimethoate 400 (EPA Reg. No. 34704-207). This amendment proposes a Section 3 registration for the treatment of cherries in OR, WA, ID and UT; and modifies the current use directions for lentils. Clean Crop Dimethoate 400 contains 43.5% (4.0 lbs. ai/gal) dimethoate (O,O-dimethyl-S-(N-methylcarbamoyl- methyl) phosphorodithioate).

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Dir., Program Management & Support Div.

A Registration Standard (Residue Chemistry Chapter, 7/30/82) and a Final Registration Standard and Tolerance Reassessment (FRSTR, 10/1/87) were completed for dimethoate.

Tolerances are established for total residues of the systemic insecticide dimethoate and its oxygen analog (O,O-dimethyl S-(N=methylcarbamoylmethyl) phosphorothioate or dimethoxon) in or on numerous raw agricultural commodities, including cherries, lentils, meat, fat and meat by-products of cattle, goats, hogs, horses, poultry and sheep, as well as milk and eggs (40CFR 180.204). The tolerance for lentils is 2 ppm. A regional registration is established for dimethoate on cherries in OR at 2 ppm. Section 24(c) registrations are established for use on cherries in WA, ID and UT. Tolerances are established for combined residues of dimethoate and its oxygen analog in or on food animal tissues and products in the 0.002 to 0.02 ppm range.

The registered use of dimethoate on cherries is as follows. The 2.67 lb/gal EC formulation is registered for use in ID and WA, for a single foliar application to cherries at 2 lb ai/400 gal/A as a dilute spray , or 2 lb ai/A as a concentrated spray in at least 40 gal/A in ID, and in at least 50 gal/A in WA. The 2.67-4 lb/gal EC formulations are registered in OR and UT for a single foliar application to cherries at 2 lb ai/400 gal/A as a dilute spray. There is a 28 day PHI for the concentrated spray and a 21 day PHI for the dilute spray. The feeding or grazing of livestock on cover crops in treated orchards is not permitted.

The proposed use on cherries is a single application of either the dilute or concentrated solution of Dimethoate 400. The maximum application rate would be 2 lbs. ai/A with PHI= 21 days in ID, UT and WA, and PHI= 28 days in OR.

The concentrated solution is 4 pts. Dimethoate 400/A (2.0 lbs. ai/A) in a minimum of 50 gals., with PHI= 28 days. In WA state, use of Dimethoate 400 is restricted to ground application only. Feeding and grazing of livestock on treated cover crops is prohibited.

The registered use of dimethoate on lentils is limited to two applications per season of the 2.67 lb/gal EC formulation in foliar applications at 0.25-0.5 lbs. ai/A in 2-10 gals water per acre or by ground equipment. No restrictions on feeding and grazing of livestock and no PHI are specified for dimethoate treated lentil crops. No residue data gaps were identified in the FRSTR for registered uses of Dimethoate on lentils.

The proposed use on lentils involves "unlimited" applications (tel. con. with Marilyn Mautz PM 16, 12/14/89, the registrant wishes to remove the number of applications permitted per growing season) of 1/2 to 1 pt of Dimethoate 400 per acre (0.25-0.5 lbs. ai/A) with

a PHI=14 days. Feeding and grazing of livestock on treated plants is to be prohibited.

Metabolism

The metabolism of dimethoate was adequately delineated for cherries and lentils (Reg. Std. 7/30/82).

Residues

Residue data previously submitted for dimethoate use on cherries in OR (M. Metzger, 11/22/88) indicated the potential for above tolerance residues, when cherry trees were treated with one application of dimethoate (1.043 lbs. ai/A) using a ground sprayer. These data are provided below.

Table 1. Residues of Dimethoate and Dimethoxon in Cherries

PHI (Days)	Dimethoate (ppm)	Dimethoxon (ppm)	Combined (ppm)
0	1.515-9.841	0.029-0.360	1.87-10.32
7	0.209-3.60	0.087-0.489	0.44-4.36
14	0.126-1.731	0.115-0.588	0.31-2.77
21	0.062-1.178	0.128-0.656	0.28-2.17

Extrapolating the 21 day data (single application at 1.043 lbs. ai/A) to the proposed use (single application at 2.0 lbs. ai/A) would result in residues in or on cherries ranging from 0.54 to 4.16 ppm.

Consequently, the expected residue levels in cherries from the use of 2.0 lbs. ai/A could exceed the established tolerance level of 2 ppm in cherries.

No residue data are available to evaluate residues which may result from "unlimited" applications of Dimethoate 400 on lentils.

Adequate analytical methodology is available for the analysis of dimethoate residues in plants (Pesticide Analytical Manual, Vol. II).

Conclusions and Recommendation

The use of the dimethoate at 2.0 lbs. ai/A may result in over tolerance residues in cherries (>2.0 ppm).

DEB recommends against the amended registration of Clean Crop Dimethoate 400 on cherries at the proposed 2.0 lbs. ai/A application rate. The dimethoate tolerance in cherries may be exceeded as a result of the proposed amendment.

DEB recommends against the proposed use (unlimited number of applications) of Clean Crop Dimethoate 400 on lentils. Additional data are needed to evaluate residues which may result from "unlimited" applications of Dimethoate 400 on lentils.

CC: R.F., Amended Use, Dimethoate S.F., Circu, AIKENS, PMSD/ISB
RDI:FS:1/5/90:EZ:1/5/90
H7509C:DEB:AA:aa:CM#2:Rm 810:557-7379:12/06/89: Revised 12/19/89: Revised 1/4/90.