



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

MAY 8 1990

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: 90-MD-05 Section 18 Specific exemption for the use of Acephate (Orthene® 75 S) on Infested Feral Honey Bees with Varroa mites, to Avoid Infesting the Domestic Bee Colonies. EPA Reg. No. 59639-26. (No MRID #, DEB # 6574).

From: Freshteh Toghrol Ph.D., Chemist *F. Toghrol*
Special Registration Section II
Dietary Exposure Branch
Health Effects Division (H7509C)

THRU: Francis B. Suhre, Section Head *Francis B. Suhre*
Special Registration Section II
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To: William Miller, PM-16
Insecticide-Rodenticide Branch
Registration Division (H7505C)

The Maryland, Department of Agriculture requests a Section 18 exemption for the use of Acephate (trade name: Orthene® 75 S) on feral honey bees (Apis mellifera), to control Varroa mites (Varroa jacobsoni). This treatment will control varroa mite in feral honey bee colonies and kill feral honey bees (since there is no practical way to find feral honey bee colonies), so that the domestic bee colonies will not be reinfested.

Orthene® 75 S (EPA Reg. No. 59639-26) is a registered pesticide of Valent U.S.A. Corporation; the formulation contains 75% acephate (O,S-Dimethyl acetylphosphoramidothioate) as its active ingredient.

Tolerances are established (40 CFR 180.108) for combined residues of acephate (O,S-dimethyl acetyl phosphoramidothioate) and its cholinesterase inhibiting metabolite methamidophos (O,S-dimethyl phosphoramidothioate) at 0.1 to 15.0 ppm in or on numerous commodities, including (but not limited to): cottonseed at 2 ppm, of which no more than 0.1 ppm is methamidophos; eggs, milk, meat,

and meat by-product of cattle, goats, hogs, horses, poultry and sheep at 0.1 ppm. No tolerance is established for acephate/methamidophos in or on honey.

Tolerances are established (40 CFR 186.100) for combined residues of acephate (O,S-dimethyl acetyl phosphoramidothioate) and its cholinesterase inhibiting metabolite methamidophos (O,S-dimethyl phosphoramidothioate) at 8.0 ppm on cottonseed meal and 4 ppm in cottonseed hulls.

Tolerances are established (40 CFR 185.100) for combined residues of acephate (O,S-dimethyl acetyl phosphoramidothioate) and its cholinesterase inhibiting metabolite methamidophos (O,S-dimethyl phosphoramidothioate) at 0.02 ppm in or on all food items, resulting from use in food handling establishments.

A Registration Standard has been issued for acephate. The Residue Chemistry Chapter is dated 1/22/82. The Guidance Document to the Acephate Registration Standard is dated 9/87.

The Metabolism of acephate in plant and animals is adequately understood. The residues of concern are acephate and its metabolite methamidophos.

Proposed use:

The domestic honey bee colonies are enclosed with a screen to contain the bees the night before treatment. The day of treatment, the colonies are checked to verify that the bees are contained within the colonies. One application at the rate of 0.00055 lb of Orthene 75 S (0.00041 lb ai) in the syrup/honey bait/site (1 site/square mile) is used, some site may be treated twice. Targeted colonies are trained with sucrose/honey bait consists of 50% per volume sucrose and water and 10% honey by volume. At suitable foraging level (100⁺ bees/feeder) the feeder are replaced with a feeder containing Orthene 75 S for 30 minutes and then removed. No honey will be harvested from feral colonies.

90-MD-05 calls for a maximum use of 0.365 lb Orthene 75 S or 0.274 lb ai (350 site X 2 application X 0.00041 lb ai/Application) in 350 site (1 site/square mile) of domestic bee colonies in Maryland state during the April 6 through May 4, 1990 season.

Residue data were not provided with this Section 18 request, however USDA research results on acephate used to bait and kill feral bee colonies (during 1989 to 1990, in LA and TX) were submitted. These results indicate that the baiting treatment of wild honey bee colonies is effective and will kill the Apis species within 2 to 3 days, and residues level in combs collected from colonies treated with 500 ppm at 500 meter peaked at 1.2 ppm parent

and ca 0.1 ppm methamidophos; and dropped to 50% of these level in 10 weeks.

Since the domestic honey bees are contained in their colonies at the time of treatment they are not directly exposed to acephate. DEB considers this Section 18 use to reflect a non-food use. Residues of acephate and methamidophos are not expected in honey and wax.

Conclusions

1. The metabolism of acephate in plant and animal is adequately understood. The residues of concern consist of acephate and its metabolite methamidophos.

2. Analytical methods are available for enforcement (PAM I, Methods I and II for plant and animal commodities (not for honey or honey wax)).

3a. The Maryland Department of agriculture indicates that acephate is not used for baiting domestic honey bees.

3b. Since the domestic honey bees are contained in their colonies at the time of treatment, DEB considers this Section 18 use to reflect a non-food use. Residues of acephate and methamidophos are not expected in honey and wax.

4. Analytical reference standards are available from the Pesticides and Industrial Chemicals Repository.

Recommendation:

Tox consideration permitting, DEB has no objection to this Section 18 request.

cc: Acephate S.F., R.F., Section 18, Circ., R. Schmitt, Branch Chief, F. Toghrol, PIB/FOD (C. Furlow), DRES (J. Kariya).
RDI: F. B. Suhre: Section Head (5/3/90): E. Zager: Deputy Chief (5/6/90):
H7509C:DEB:F.Toghrol:F.T.:RM:802:CM#2:557-7887:5/8/90.