5-31-90 R2

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

MAY 31 1990

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Amended Registration for Orthene® 90 S (Acephate) on Cotton In-Furrow Application.
EPA Reg. No. 59639-33.
(No MRID #, DEB # 6350).

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
Special Registration Section II
Dietary Exposure Branch
Health Effects Division (H7509C)

To: William Miller, PM-16
Insecticide-Rodenticide Branch
Registration Division (H7505C)

Valent U.S.A. Corporation requests an amendment to the registration of Orthene® 90 S, by addition of a cotton in-furrow application to the use directions on the label.

Orthene® 90 S (EPA Reg. No. 59639-33) is a registered pesticide of Valent U.S.A. Corporation; the formulation contains 90% 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, eggs, milk, meat, and meat by-product of cattle, goats, hogs, horses, poultry and sheep at 0.1 ppm.

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.

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.

Registered Use:

Orthene 90 S is currently registered for multiple foliar application (No. of applications per season not stipulated) at 0.5 to 1.0 lb ai/A using aerial or ground equipment, with a 21-day PHI. The label prohibits: a) The feeding of gin trash to livestock, and b) The grazing of livestock on treated area.

Orthene 90 S plus Pydrin 2.4 EC are currently registered for cotton tank mix (Except CA and AZ). Orthene 90 S plus Lorsban 4E are currently registered for cotton tank mix in California and Arizona.

Additionally, Orthene®-80 seed protectant (EPA Reg. 239-2434-AA) is registered for use on cottonseed. The seed is treated with 8 oz (6.4 oz ai)/100 lbs seed with the following restriction: a) treated seed must not be used for or mixed with food or animal feed, or processed for oil. b) Seeds commercially treated with Orthene®-80 SP should be labelled; Treated seed. Do not use for food, feed, or oil.

Proposed use:

The label for this amended Registration calls for application of 0.5 to 1.0 lbs ai/A, in 3 to 5 gallons of water per furrow acre (13,068 linear feet of row). The proposed label stipulates the use of flat-fan nozzles to insure good spray deposition in the cottonseed used in in-furrow applications.

Residue data were not provided with this request, however, acephate residue data in or on cottonseed were previously provided to the Agency and reviewed by DEB in connection with the establishment of permanent acephate tolerance for cottonseed at 2.0 ppm, cottonseed hulls at 4.0 ppm, and cottonseed meal at 8.0 ppm (PP#3F1375, R. D. Schmitt, 8/5/74). These tolerances were based on multiple foliar application (5 to 8) at 1.0 lb ai/A, with 21 day PHI imposed (see table below).

Table 1. Data from multiple foliar applications of acephate on cotton (PP#3F1375).

Crop part	Rate lb ai/A	# of application	PHI day	Comb. ppm	Meth. ppm
Fuzzy seed	1.0	4-8	21	ND-1.41	ND-0.26
Fuzzy seed	2.0	5-8	21	ND-1.06	ND-0.23
Fuzzy seed	1.0	4-8	50	ND-0.16	ND-0.02
Fuzzy seed	2.0	5-8	50	<0.03-0.08	ND-0.02

Comb. = Combined residues of acephate and methamidophos. Meth. = methamidophos

Combined residue of acephate/methamidophos levels ranged from ND to 1.41 ppm and ND to 1.06 ppm at 1.0 and 2.0 lb ai/A respectively. The level of methamidophos alone ranged from ND to 0.26 ppm and ND to 0.23 ppm at 1.0 and 2.0 lb ai/A respectively. Based on these data and since the cotton growing season is 110-120 days and the application rate is 1.0 lb ai/A/season, we conclude that it is unlikely that detectable residues will be found in cottonseeds and cottonseed products as a result of this proposed in-furrow application.

Seed treatment data for acephate at 0.4 lbs ai/100 lbs of seeds were submitted to the Agency previously. Data supporting the seed treatment registration, indicate that the residues of acephate/metabolite in seeds or gin trash are not detectable (<0.02 ppm). Residues in whole plants at a 61-day PHI ranged from <0.02 to 0.22 ppm (<0.01 - 0.01 ppm methamidophos). Cottonseed is planted at rates of 8 to 25 lbs/A, assuming the minimum seedling rate of 8 lbs seed/A, the maximum proposed application rate of 0.4 lbs ai/A corresponds to (0.4 ai divided by 8 lb seeds/A X 100) 5 lbs of ai/100 lbs seeds. This is approximately a 12 fold increase in the quantity in terms of ai/100 lbs of seed while the quantity in term of ai/A is 2.5X higher than the previously recommended use. Since the cotton growing season is approximately 110-120 days, it is unlikely that detectable residues will be found in cottonseed products as a result of this in-furrow application.

We conclude that combined residues of acephate and methamidophos will not exceed the established tolerances of 2.0 ppm cottonseed, 4.0 ppm for hulls and 8.0 ppm for cottonseed meal as a result of this proposed amended use.

Conclusions

1. Tolerances are established for residues of acephate/methamidophos in or on cottonseed at 2.0 ppm, cottonseed

hulls at 4.0 ppm, and cottonseed meal at 8.0 ppm.

2. Based on previously submitted residue data supporting foliar application and seed treatment, we conclude that residues of acephate/methamidophos will not exceed established tolerances (see conclusion 1) as a result of the "in-furrow" use directions proposed for this amended registration.

Recommendation:

DEB has no objection to this proposed amended registration for acephate (Orthene® 90 S) on cotton In-Furrow application..

cc: Acephate S.F., R.F., Amended Use File, Circ., R. Schmitt, Branch Chief, F. Toghrol, FOD/PIB (C. Furlow), DRES (J. Kariya).
RDI: F. B. Suhre: Section Head (5/30/90): E. Zager: Deputy Chief (5/31/90):
H7509C:DEB:F.Toghrol:F.T.:RM:802:CM#2:557-7887:5/31/90.