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

APR 29 1988

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

Memorandum

Subject: 88-PR-01; Section 18 request for use fenvalerate on pineapples; Record No. 219,821; RCB No. 3640.

From: Francis B. Suhre, Chemist
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IR-4 has provided the Agency with a residue field study entitled: Esfenvalerate- Magnitude of Residue on Pineapples, PR-2512. This study, although intended to support a future tolerance petition, was submitted at this time in connection with a Section 18 Emergency Exemption (88-PR-01). RCB previously recommended against 88-PR-01 because no residue data were available to support the proposed use (L. Cheng, memo dated 3-11-88).

Asana 1.9 EC, EPA Registration No. 352-502, is a registered trademark of E.I. Dupont de Nemours Co., Inc.; the insecticide contains 1.9 lbs. Asana per gallon. Technical Asana is 75% (SS Isomer) fenvalerate, cyano (3-phenoxyphenyl)methyl-4-chloro-alpha-(1-methylethyl)benzeneacetate.

Tolerances are established (40 CFR 180.379) for residues of fenvalerate on several raw agricultural commodities; ranging from 0.02 ppm in and on corn grain and potatoes to 50 ppm in or on corn forage and fodder. No fenvalerate tolerances are established for pineapples, furthermore, because of the unique nature of pineapples it is not practical to translate data from other registered uses to support this Section 18 request (see, L. Cheng memo of 3-11-88).

A Registration Standard for fenvalerate has not been issued.

The metabolism of fenvalerate in plants and animals is adequately understood. The residue of concern is the parent compound.

88-PR-01 calls for foliar treatment of pineapples at 0.025 to 0.05 lbs. ai/A, a 60 day PHI is stipulated. The first application is made at the beginning of flowering, with a second application made 10 days later. Two additional applications, each at 10 day intervals, may be necessary if flowering is variable (the maximum application is 0.2 lbs. ai/A/season).

Residue data were generated utilizing a GC/ECD method; JAOAC, 61, 886 (1978). Recovery of fenvalerate from pineapple pulp, bran and crown (fortified at 0.01 to 0.5 ppm) ranged from 80-110%.

IR-4 study PR No. 2512 contains residue data from a single field trial conducted in Puerto Rico during 1986. Pineapples were treated 4 times with Asana 1.9 EC at a rate of 0.05 lbs. ai/A (0.2 lbs. ai/A/season) and harvested 59 days after the last application. Timing of the applications reflect the proposed Section 18 use. At harvest ,four fruits were randomly selected, peeled and frozen (with in 6 hours of harvest). Laboratory analyses for fenvalerate residues were conducted on the pulp, bran, and crown of the pineapple plant. No fenvalerate residues (ND < 0.01 PPM) were found in pineapple pulp; whereas, fenvalerate residues ranged from <0.01 - 0.02 ppm and 0.04 - 0.08 ppm in or on the corresponding bran and crowns, respectively.

A pineapple processing study was not submitted. However, in a previously submitted apple metabolism study (PP#9F2210, M. Bradley memo dated 10-10-79) 98% of the recovered radioactivity was found on the peel. Since pineapples are peeled prior to juice extraction, we do not expect residues to concentrate in pineapple juice.

Meat, Milk, Poultry, and Eggs

Animal feed items applicable to this Section 18 request include pineapple bran and forage; these feed items may constitute up to 40% of the daily diet of dairy cattle and laying hens. Animal feeding studies (dairy cattle fed ca. 80 ppm; poultry fed 9 to 86 ppm) were submitted in connection with the establishment of fenvalerate tolerances on apples and tomatoes (these studies were most recently summarized by M. Metzger in his review of 86-MT-08, memo of 4-23-86). Based on the data from these studies and the expected fenvalerate residues in pineapple crowns (0.04 to 0.08 ppm; or a maximum dietary burden of 0.03 ppm), we do not expect residues in meat, milk, poultry, and eggs to exceed established tolerances as a result of this proposed section 18 use.

Conclusions

1. The metabolic nature of fenvalerate in plants and animals is adequately understood. The residue of concern is the parent compound.

2. The GC/ECD method [JAOAC, 61, 886 (1978)] described in IR-4 data submission PR-2512 (Esfenvalerate - Magnitude of the Residue in Pineapples) appears adequate for enforcement purposes.

3a. Residues of fenvalerate are not expected to exceed 0.01 ppm in pineapple pulp, 0.02 ppm in pineapple bran, and 0.08 ppm in pineapple forage.

3b. Residues of fenvalerate are not expected to concentrate in pineapple juice.

3c. Secondary residues in meat, milk, poultry, and eggs are not expected to exceed established tolerances as a result of this proposed Section 18 use.

4. Analytical reference standards for fenvalerate are available form the Pesticide and Industrial Chemical Repository in RTP (FTS-629-3951).

Recommendations

TOX considerations permitting, we have no objection to the issuance of this Section 18. An agreement with FDA should be reached regarding the legal status of the treated commodity in commerce.

cc:R.F.,S.F.,Circu,Reviewer, Fenvalerate Section 18, PMSD/ISB, TAS (Stanton)
RDI:EZ:4/29/88:RDS:4/29/88
TS-769:RCB:FBS:fbs:557-1883:CM#2:RM814:4/29/88