RF

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

January 6, 1989

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: 89-TX-02, Asana XL (Esfenvalerate) on Kale, Kohlrabi, and Mustard Greens
[No MRID No., DEB No. 4683]

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The State of Texas requests a specific exemption for the use of Asana XL (EPA Reg. No. 352-515), containing 8.5% esfenvalerate (0.66 lb/gal), on kale, kohlrabi, and mustard greens to control the cabbage looper.

Tolerances have been established for fenvalerate [cyano(3-phenoxyphenyl)methyl-4-chloro-alpha-(methylethyl)benzeneacetate] in/on numerous commodities including turnip tops at 20 ppm, cabbage and collards at 10 ppm, broccoli at 2 ppm, and cauliflower at 0.5 ppm. (40 CFR 180.379). A petition for tolerances on mustard greens is currently in reject status, due to the need for additional residue data from AZ/TX and other areas (PP#6E3404, F. Griffith, 6/23/86). A petition for residues of fenvalerate on spinach is also in reject status (PP#5F3172, M. Bradley, 1/30/85).

Esfenvalerate is the S,S- isomer of fenvalerate. Asana XL is enriched in the S,S isomer of fenvalerate, and claims only this isomer as the active ingredient. Impurities of other isomers are present in the formulation. Previous formulations of fenvalerate (Pydrin) contained a racemic mixture of the four isomers of fenvalerate. Current enforcement methodology does not distinguish among the various isomers of fenvalerate. Fenvalerate tolerances are established for residues of all four isomers.

Proposed Use

Ground or aerial application of 0.05 lb ai/A is proposed with a limit of 3 applications per cutting and a 7 day PHI. Do not treat more than two cuttings per year (maximum of six applications per season).

The application rate for Asana is one fourth the application rate for Pydrin, since the Asana label claims only the insecticidally active isomer as the active ingredient, while the Pydrin label claims all four isomers (present in equal proportions) as the active ingredient.

Metabolism

Plant residues consist of fenvalerate and its photodegradate. The photodegradate is not considered toxicologically significant. The residue of concern is fenvalerate, per se (all isomers).

Analytical Methodology

Fenvalerate is recovered by PAM I method protocol 3 (Luke). Additional methodology is available in PAM II. These methods are suitable for enforcement. Fenvalerate standards are available in the EPA Pesticide and Industrial Chemical Repository (N. Sarver, personal communication, 1/5/89).

Residue Data

Residue data from the use of Asana are not available for leafy vegetables. However, residue data are available from the use of Pydrin. As discussed above under "Proposed Use," the application rate for Asana is one fourth the application rate for Pydrin. Since Asana is fenvalerate enriched in the insecticidally active isomer, fenvalerate residues from the use of Asana are likely to be lower than residues of fenvalerate from the use of Pydrin. However, we cannot quantify the reduction in fenvalerate residues without residue data from the use of Asana. Consequently, our residue estimates will be based on fenvalerate residues from the use of Pydrin at four times the application rate for Asana.

Residue data from the use of Pydrin on mustard greens are available in PP#6E3404. Pydrin was applied using ground equipment up to 8 times at the rate of 0.2 lb ai/A (equivalent to 0.05 lb Asana ai/A) with a 7 day PHI. Residues from trials in CA, WI, and GA ranged up to 13 ppm.

Residue data from the use of Pydrin on spinach are available in PP#5F3172. Seven ground applications were made at 0.2 lb

Pydrin ai/A with a 7 day PHI. Residues from trials in six states ranged up to 28 ppm.

Residue data from other brassica crops showed lower residues than those reported above for mustard greens and spinach. Based on the available residue data, we expect that residues of fenvalerate resulting from the proposed emergency use will not exceed 30 ppm, providing use is limited to ground application.

Meat, Milk, Poultry, and Eggs

No animal feed items are involved in this Section 18 request. Therefore, there will be no transfer of residues to meat, milk, poultry, and eggs.

CONCLUSIONS

1. The residue of concern is fenvalerate.

2. Adequate enforcement methodology is available in PAM I and PAM II. Analytical reference standards of fenvalerate are available from the EPA Repository.

3. Residues from the proposed emergency use are not expected to exceed 30 ppm, in kale, kohlrabi, and mustard greens from ground application of Asana XL.

4. No animal feed items are involved in this Section 18 request. Therefore, there will be no transfer of residues to meat, milk, poultry, and eggs.

Recommendation

Provided that use is limited to ground application, and tox considerations permitting, we have no objection to the proposed Section 18. An agreement should be made with FDA regarding the legal status of the commodity in commerce.

cc:R.F., circu, S. Hummel, S.F., Section 18 S.F., TAS, PMSD/ISB
RDI:EZ:01/6/89:RDS:01/6/89
TS-769:RCB:SVH:SVH:RM:810:CM#2:01/6/89