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

DEC 21 1984

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: PP#4E3049. Fenvalerate (Pydrin®) on Radishes. Evaluation of Amendment dated October 25, 1984 (No Accession Number).

FROM: Michael P. Firestone, Ph.D., Chemist M.P. Firestone
Tolerance Petition Section II
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Hazard Evaluation Division (TS-769)

THRU: John H. Onley, Ph.D., Section Head John H. Onley
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Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TO: Hoyt L. Jamerson, Minor Use Officer
Registration Division (TS-767)

and

Toxicology Branch
Hazard Evaluation Division (TS-769)

IR-4 has submitted this amendment, consisting of a revised Section F, in response to several deficiencies outlined in RCB's 3/28/84 review of the subject petition.

The petitioner now requests the establishment of a tolerance for residues of the insecticide cyano (3-phenoxyphenyl)methyl 4-chloro-alpha-(1-methylethyl)benzeneacetate in or on radish tops at 8 ppm and radish roots at 0.3 ppm.

Listed below are the remaining deficiencies, the petitioner's response, and RCB's comments/conclusions.

Deficiencies 1b and 2b

In several reviews of petitions previously submitted, RCB has deferred to TOX the question of whether the photodegradate, SD 54597, should be regulated or should be included in the fenvalerate tolerance expression for plants; RCB reiterates that deference here.

If TOX decides the SD 54597 (photodegradate) presents a toxicological problem and that it should be included in the fenvalerate tolerance expression for plants, an EPA method tryout will be required to confirm the adequacy of the analytical method for the fenvalerate photodegradate.

Petitioner's Response - 1a and 2b

None

RCB's Comments/Conclusions re: Deficiencies 1b and 2b

TOX has recommended (see A. Kocialski memo of 7/19/84) that only the parent compound (fenvalerate) and not the photodegradate (decarboxy-fenvalerate) be considered in the establishment of tolerances for fenvalerate.

Thus, deficiencies 1b and 2b have been resolved.

Deficiencies 3a and 3b

RCB concludes that a 0.3 ppm fenvalerate tolerance on radish roots would be more appropriate than the propose 0.5 ppm tolerance. In addition, this 0.3 ppm tolerance for radish roots should adequately cover the fenvalerate photodegradate residues if they have to be regulated. The petitioner will need to submit a revised Section B in which a 0.3 ppm fenvalerate tolerance is proposed on radish roots.

If the parent compound fenvalerate (only) on radish tops is regulated, then a tolerance of 8 ppm rather that the proposed 6 ppm would be required. If the parent compound plus the fenvalerate photodegradate is regulated, then a tolerance of 10 ppm would be needed to cover the proposed use. After the question concerning the photodegradate deference to TOX has been resolved, the petitioner will need to submit a revised Section B in which the appropriate fenvalerate tolerance on radish tops is proposed.

Petitioner's Response

A revised Section F has been submitted. Tolerances of 0.3 ppm and 8 ppm have been proposed for fenvalerate residues in or on radish roots and radish tops, respectively.

RCB's Comments/Conclusions

Tolerances for other synthetic pyrethroid compounds have been regulated in terms of parent compound or in some cases, parent and metabolites. In an attempt to determine whether there is sufficient information available to draw a conclusion on how these pyrethroids should be regulated, RCB is conducting a comparative study on the metabolism of different pyrethroids. This will enable RCB to provide TOX with information regarding the levels of pyrethroid metabolites on crops so that TOX will be able to make a decision on whether pyrethroids need to be regulated in terms of parent compound only, parent and metabolites or whether additional metabolism data are needed on metabolite levels in various crops.

In conjunction with PP#4F3120/FAP#4H5437 (Fenvalerate on Sugarbeets), it was recommended that depending on the outcome of the above study, a root crop metabolism study may be needed.

Since radishes are also a root crop, a final conclusion concerning the adequacies of the proposed fenvalerate tolerances of 0.3 ppm on radish roots and 8 ppm on radish tops will await completion of the above RCB comparative study (expected within the next few months).

Thus, this deficiency remains unresolved at this time.

Recommendation

Pending outcome of the comparative study of pyrethroid metabolism, RCB will make its recommendation concerning the establishment of the proposed fenvalerate (Pydrin®) tolerances in or on radish roots and tops.

Other Considerations

An International Residue Limit Status sheet is attached. Since Codex, Canada and Mexico have no tolerances established for fenvalerate on radishes, there are no compatibility problems.

cc:R.F., Circu, Reviewer, TOX, EAB, EEB, PP#4E3049 (Fenvalerate)
FDA, Robert Thompson
RDI:J. Onley:12/12/84:R. Schmitt:12/12/84
TS-769:CM#2:RM810:X7484:M. Firestone:wh:12/12/84