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

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM:

SUBJECT: PP#3F2773. Thiodicarb on sweet corn.
Amendment of 5/23/83.

FROM: R. S. Quick, Chemist *G. J. Guischi*
Residue Chemistry Branch
Hazard Evaluation Division

THRU: Charles L. Trichilo, Chief
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TO: Jay Ellenberger (PM #12)
Registration Division (TS-767)

and

Toxicology Branch
Hazard Evaluation Division (TS-769)

In our 4/11/83 review of this petition (A. Smith), we recommended against the proposed tolerances for the following reasons:

- 1b. Animal tissues also contain the metabolite acetamide which is suspected of being a carcinogen. We defer to the Toxicology Branch on the toxicological significance of this component and if it needs to be regulated.
- 2b. If TOX concludes that acetamide needs to be regulated, then a validated analytical method will be needed.
- 3a. Residues in field corn forage and fodder are expected to exceed the proposed tolerance. Under the proposed conditions of use, a tolerance level of at least 150 ppm would be needed for field corn forage and fodder.
- 3b. Grazing and feeding restrictions are not considered practical for sweet corn forage and fodder. A tolerance should be proposed. Under the proposed conditions of use, a tolerance level of 300 ppm would be needed for sweet corn forage and fodder.

Rather than propose corn forage and fodder at the levels indicated above, the petitioner may wish to revise the corn use patterns to lower the tolerance level needed (see also conclusion 4 below).

- 3c. Residues in field corn grain and sweet corn kernels plus cobs with husk removed (K+CWHR) could exceed the proposed tolerances. Levels of 0.1 ppm for corn grain and 2.0 ppm for sweet corn (K+CWHR) are more appropriate and should be proposed.
- 3d. A corn processing study using corn grain bearing residues at or near the proposed tolerance level is needed to show whether residues concentrate in oil or meal and if food additive tolerances are needed.
- 4a. A cattle feeding study conducted at levels up to 100 ppm and a poultry feeding study at 15 ppm have been submitted. We are withholding our conclusions with respect to residues in meat, milk, poultry and eggs until the questions raised in conclusion 3 above are resolved. The petitioner should be advised that the residue levels deemed necessary for corn forage and fodder would require a higher level cattle feeding study with analysis for carbamate residues, acetonitrile and acetamide. The poultry feeding study does appear to have been conducted at a sufficiently high feeding level.
- 4b. The metabolites of thiodicarb (acetamide and acetonitrile) will occur in eggs, milk, and meat of livestock [§180.6 (a)(1)]. We defer to TOX on the toxicological significance of the metabolites acetamide and acetonitrile and if such components need to be regulated. The estimated acetamide levels are as follows for residues resulting from the petitioner's proposed tolerance levels for corn. Any increase in these proposals will require our reevaluation.

Meat of cattle, goats, horses, and sheep	0.166	ppm
Meat of hogs	0.266	ppm
Milk	<0.01	ppm
Eggs	0.00000	ppm
Meat of poultry	0.00002	ppm

(Corresponding acetonitrile levels are included in the tabulation in the Feeding Studies section of our review.

With this amendment, the petitioner has revised Sections B and F.

Section F proposes a tolerance on sweet corn, kernels plus cobs with husk removed at 2 ppm for residues of thiodicarb and its metabolite methomyl. All other previous tolerance proposals have been deleted.

Section B limits use to sweet corn grown in Florida for the fresh market only. There are label restrictions against permitting livestock to graze treated fields or feeding treated corn silage (green plant) or fodder to livestock.

The application rate and PHI remain the same as previously.

The sweet corn grown in Florida for the fresh market restriction has been considered practical by RCB.

Field corn usage has been deleted from the label.

With these revisions in Sections B and F, the above deficiencies have either become moot or have been resolved (Item 3 (c) was resolved through the proposal of a 2 ppm tolerance for sweet corn).

There are no Codex, Mexican or Canadian tolerances for thiodicarb on corn.

Recommendations

TOX and EAB considerations permitting, we recommend for the proposed tolerance of 2 ppm for residues of thiodicarb and its metabolite methomyl on sweet corn (K+CWHR).

Notes to P.M.

1. Thiodicarb should be added to the list of cholinesterase inhibitors in 40 CFR 180.3 (e)(5).
2. The chemicals thiodicarb and methomyl should be added in a section to 40 CFR 180.3 (d): "Tolerances for related pesticide chemicals" (see e.g. Sec. 180.3 (d)(8)).
3. We assume that field corn as well as corn forage and fodder tolerance proposals have been formally withdrawn from this petition.