PMSD/ISB
1219D

EXPEDITE

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

NOV 19 1986

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

Subject: Special Review Action Code 870
Reassessment of Dietary Exposure of Mancozeb and Ethylene thiourea.
Storage stability, addendum to memo of August 25, 1986.
Accession Nos. 264949, 265728
[RCB No. 1442, 1554]

From: Martha J. Bradley, Chemist MJBradley
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

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

To: Ester Saito, SIS
Hazard Evaluation Division (TS-769)

H. Jacoby, PM 21
Registration Division (TS-767C)

Toxicology Branch
Hazard Evaluation Division (TS-769)

In response to Data Call In notices, Rohm and Haas has submitted storage stability data for four crops and animal tissues. In addition, storage intervals for crop residue trials are submitted.

Accession No. 265728, Technical Report No. 310-86-43. Control apples, tomatoes and wheat grain were fortified with 1 ppm mancozeb or 0.1 ppm ETU and stored at -20°C. Portions of the samples were analyzed at 0 days, one month, six months and one year later. Mancozeb was determined by the standard sulfur disulfide evolution method and ETU was determined by a modified HPLC procedure of Onley et. al., JAOAC 60, 1105-1110, 1977.

Residues of mancozeb were not significantly different up to six months and after one year were 71-81% of the 0 day samples. Residues of ETU in tomato and wheat were 82-88% of the 0 day sample after six months of storage and 70-75% after one year. ETU residues in apples, however, were 64% and 46% of the 0 day levels at six months and one year of storage, respectively.

Accession No. 265728, Technical Report No. 310-86-53. Grapes were field treated with mancozeb and frozen at -20°C for 18 months. Samples were analyzed after 0 day, three months, six months, one year and eighteen months. Mancozeb was determined by the carbon disulfide evolution method and ETU was determined by gas chromatography. Residues were about 5 ppm mancozeb and about 0.03 ppm ETU and were essentially stable for the eighteen month storage period.

Accession No. 264949. Storage stability data for cow and poultry feeding studies were submitted. Mancozeb in cow liver, kidney, muscle and feed ranged from 64 to 92% recovery of initial fortification at two or two and one half months after storage. ETU residues in cow muscle were 70-78% of initial fortification at five months after storage. Mancozeb in chicken fat and feed ranged from 73-104% of initial fortification at three and five months, respectively. Mancozeb in chicken kidney was only 28-59% of fortification after three and one half months of storage. ETU residues in chicken kidney were 62-97% and in feed were 48% at 0.3 ppm and 80% at 0.1 ppm after six months of storage.

No Accession Number, No RCB Number. By letter of November 11, 1986, Rohm and Haas submitted storage intervals from harvest to analysis for twenty crops covering about 200 harvests during the years 1971 to 1985. Twenty-five percent of the samples were analyzed within three months of harvest, fifty percent in four months, 75% in six months and 95% within one year. One sample of corn and three samples of apples were held in storage for over a year prior to analysis.

The three apple samples, held for 515 to 602 days before analysis were used for processing into juice and pomace. These data were used only for concentration and conversion during processing, not for the actual residue levels present. Other apple samples were stored from one to ninty-eight days before analysis.

Conclusions

- Mancozeb and ETU crop residues are stable over long periods of frozen storage with about 10% loss of ETU after 6 months and about 20 to 25% loss of mancozeb and ETU, respectively, after a year of storage.

For the purpose of dietary exposure assessment, mancozeb and ETU residues are sufficiently stable under frozen storage conditions to adequately validate the submitted crop residue data.

cc: Reviewer, Mancozeb SF, R F, circu, PM 21, PMSD/ISB
RDI:Section Head:Date:R.Quick:11/19/86:E.Zager:11/18/86:RDS:11/18/86
TS-769:RCB:Reviewer:MJBradley:MJB:CM#2:RM:810:557-1521:11/18/86

2