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

MAY 31 1988

MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: 88-IL-04. Section 18 Specific Exemption. Mancozeb on Alfalfa. No MRID #. RCB # 3872.

FROM: Leung Cheng, Chemist *L. Cheng*
Special Registration Section II
Residue Chemistry Branch
Hazard Evaluation Division (TS-769C)

THRU: Edward Zager, Section Head *E. Zager*
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TO: D. Stubbs/R. Forrest, PM Team 41
Registration Support and Emergency Response Branch
Registration Division (TS-767C)

The Illinois Department of Agriculture has requested a Section 18 use of Dithane M-45* fungicide for the control of leafspots on alfalfa. The active ingredient is a coordination complex of zinc and manganese ethylene bisdithiocarbamate (maneb).

Mancozeb is currently under the Special Review process.

No permanent tolerances have been established for mancozeb, maneb, ferbam, ziram, zineb, metiram, or nabam in or on alfalfa.

Tolerances for residues of mancozeb calculated as zinc ethylene bisdithiocarbamate are established on various raw agricultural commodities ranging from 0.1 ppm in corn grain, 0.5 ppm in kidney and liver, to 65 ppm in peanut vine hay [40 CFR 180.176]. No tolerances are established in milk, poultry and eggs.

The proposed Section 18 use would allow a total of 2 applications of the 80% WP formulation at 0.8 lb ai/A/application per season. Treatment should be made no later than 10-14 days following second and third harvest by ground equipment only. No PHI is specified.

The Product/Residue Chemistry chapters of Mancozeb Registration Standard were issued 8/15/88, with the first addendum issued 1/27/87.

According to the Registration Standard, the metabolism of mancozeb on plants is not adequately understood. Additional data required include the uptake, distribution, and metabolism of mancozeb in pome fruit and fruiting vegetable crops following foliar applications; chromatographic or spectral analysis or both for residue identity confirmation; and additional analysis of metabolites by enforcement methods.

The Registration Standard addendum 1 also noted that the procedure used in the carbon-14 residue analysis of plant materials had the potential of hydrolyzing ethylene thiourea (ETU), a cancer suspect agent, to ethylene diamine (EDA).

The metabolism of mancozeb in poultry and ruminants is also not adequately understood. Additional metabolism studies utilizing ruminants and poultry are required and that the distribution and characterization of residues must be determined in milk, eggs, liver, kidney, muscle, and fat. These samples should also be analyzed using current enforcement methods to ascertain the validity of these methods (Registration Standard).

No mancozeb residue data on alfalfa are available in RCB files, and no residue data (including ETU) were submitted with this Section 18 request. RCB thus is unable to determine the levels of mancozeb residue in or on alfalfa seed, forage, hay, and meal resulting from the proposed use.

Alfalfa seed, forage, hay, and meal are major feed items in the cattle diet (30% maximum for seed, and 80% maximum for each of the other three). In the absence of residue data for alfalfa seed, forage, hay, and meal, RCB is unable to estimate the dietary exposure through the cattle diet. Accordingly, RCB is unable to either estimate the levels of mancozeb residue in milk, poultry and eggs, or conclude whether the established meat tolerance will be adequate to cover the residues resulting from the proposed use.

CONCLUSIONS AND RECOMMENDATION

1. Mancozeb is currently under Special Review.
2. The metabolism of mancozeb in plants is not adequately understood. Additional studies are required (see Registration Standard).

3. The metabolism of mancozeb in ruminants and poultry is not adequately understood. Additional studies are necessary (see Registration Standard).

4. In the absence of alfalfa residue data depicting mancozeb, ETU, and any other metabolites of concern, RCB is unable to determine the levels of mancozeb residue in or on alfalfa seed, forage, hay, or meal resulting from the proposed Section 18 use.

5. RCB is unable to estimate the levels of mancozeb residue in milk, poultry and eggs, and also unable to conclude whether the established meat tolerance will be adequate to cover the residues resulting from the proposed use.

In view of all the above, RCB recommends against this Section 18 request.

cc:Circ, RF, Section 18 F, Cheng, PMSD/ISB
RDI:EZager:5/27/88:RDSchmitt:5/27/88
TS-769:RCB:CM#2:Rm810:Cheng:5/27/88:1:5/31/88