

US EPA ARCHIVE DOCUMENT



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

PM/SL/ISE

February 27, 1989

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Maneb, Thiabendazole, and Lindane  
EPA Reg. Nos.:  
8203-38 GRANOX Plus Flowable Cereal Seed Treatment  
Fungicide  
8203-39 GRANOX Plus Cereal Seed Treatment  
Fungicide  
8203-36 GRANOL Plus Flowable Insecticide and  
Fungicide Cereal Seed Treatment  
8203-35 GRANOL Plus Insecticide and Fungicide  
Cereal Seed Treatment  
[MRID No. 408254-01, DEB Nos. 4476, 4477, 4478, 4479]

FROM: Susan V. Hummel, Chemist  
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TO: Susan Lewis, PM#21 and George LaRocca, PM#15  
Herbicide Fungicide Branch  
Registration Division (TS-767C)

Chipman has submitted an application for amended registration for their products GRANOX Plus Flowable Cereal Seed Treatment Fungicide (EPA Reg. No. 8203-39), containing 25% Maneb (2.55 lb/gal) and 1% Thiabendazole (0.10 lb/gal); GRANOX Plus Cereal Seed Treatment Fungicide (EPA Reg. No. 8203-38), containing 50% Maneb and 2% Thiabendazole; GRANOL Plus Flowable Insecticide and Fungicide Cereal Seed Treatment (EPA Reg. No. 8203-36), containing 13.6% Maneb (1.35 lb/gal), 0.54% Thiabendazole (0.053 lb/gal), and 10.30% Lindane (1.02 lb/gal); and GRANOL Plus Insecticide and Fungicide Cereal Seed Treatment, EPA Reg. No. 8203-35), containing 25% Maneb, 1% Thiabendazole, and 18.75% Lindane. All products are registered for use on wheat seed. The registrant proposes to delete the grazing restriction, "Do not graze or cut green forage for livestock feed from fields planted with treated seed." The registrant's letter states that residue data are provided to support the deletion of this restriction; however, the residue data were first forwarded to DEB for review on 2/21/89.

### Tolerances

No tolerance has been established for residues of maneb on wheat resulting from the use of seed treatments. Seed treatment uses of maneb were discussed in the Maneb Registration Standard Residue Chemistry Chapter. A radiotracer study and possibly residue data and tolerance proposals for maneb were required via the Maneb Comprehensive Data Call In Notice of 4/1/87 and the Maneb Registration Standard (October, 1988). The deadline for submission of data and tolerance proposals was October, 1988. No data have been submitted to date. No tolerances have been established for residues of maneb in/on meat or meat products.

Tolerances have been established for residues of thiabendazole [2-(4-thiazolyl) benzimidazole] on wheat grain and straw at 1 ppm and wheat milling fractions except flour at 3 ppm, resulting from seed treatment and foliar uses. (40 CFR 180.242, 40 CFR 185.5550). Tolerances have been established for residues of thiabendazole and its metabolite 5-hydroxythiabendazole in/on meat, fat, and meat byproducts of cattle, goats, hogs, horses, poultry, and sheep at 0.1 ppm; eggs at 0.1 ppm; and milk at 0.4 ppm (40 CFR 180.242 (b)). No Registration Standard has been prepared for thiabendazole, and none is planned. Thiabendazole is on FIFRA 88 List B.

No tolerance has been established for residues from lindane on wheat, resulting from the use of seed treatments. (40 CFR 180.133) Seed treatment uses of lindane were discussed in the Lindane Registration Standard Residue Chemistry Chapter (6/7/85). A radiotracer study and possibly residue data and tolerance proposals were required via the Lindane Registration Standard (9/85). The deadline for submission of data and tolerance proposals is 9/89. No tolerances have been established for residues of lindane in/on meat or meat products.

### Registered Uses

GRANOX Plus Flowable Cereal Seed Treatment Fungicide (EPA Reg. No. 8203-39), containing Maneb and Thiabendazole;

1.6 fl. oz product/bushel (0.5 oz maneb, 0.02 oz thiabendazole/ bushel)

GRANOX Plus Cereal Treatment Fungicide (EPA Reg. No. 8203-38), containing Maneb and Thiabendazole;

2 oz product/bushel (1 oz maneb ai, 0.02 oz thiabendazole/ bushel)

GRANOL Plus Flowable Insecticide and Fungicide Cereal Seed Treatment (EPA Reg. No. 8203-36), containing Maneb, Thiabendazole, and Lindane;

3 fl. oz. product/bushel (0.5 oz maneb ai, 0.02 oz thiabendazole, 0.38 oz lindane/bushel)

GRANOL Plus Insecticide and Fungicide Cereal Seed Treatment, EPA Reg. No. 8203-35), containing Maneb, Thiabendazole, and Lindane. 2 oz product/bushel (1 oz maneb ai, 0.02 oz thiabendazole, 0.375 oz lindane/bushel)

All products contain the following restrictions: "Treated seed must not be used for or mixed with food or animal food, or processed for oil." Two products (8203-36 and 8203-38) contain the restrictions, "Treat only those seeds needed for immediate use, minimizing the interval between treatment and planting. Do not store excess treated seed beyond planting time." One product (8203-39) contains the restriction, "Seed commercially treated with GRANOX Plus Flowable must be labeled in accordance with all applicable requirements of the Federal Seed Act."

#### Residue Data

Residue data were included in the submission, "2-4-Thiazolyl benzimidazole - Magnitude of the Residue in Green Wheat Forage." (MRID No. 408254-01). The study was conducted by MSD-AGVET (Merck), project No. RR-187. The report included a summary table of results of thiabendazole analyses of wheat forage grown from treated seed. The samples were not analyzed for maneb, ETU, or lindane. Data sheets from the field cooperators were included. Seeds were treated immediately before planting at a 1x, 2x, or 3x rate. Wheat plants were grown in Wisconsin, Nebraska, and Mississippi, but results were reported only for samples from WI and NE. Green forage was harvested by hand 45 to 55 days after treatment. Samples were washed and roots were trimmed at the time of collection. Samples were frozen within one day of collection.

#### Results

##### Residues of Thiabendazole in Wheat Forage Following Seed Treatment

<u>Treatment Rate</u>	<u>Thiabendazole Residue (ppm)</u>
Check	0.004-0.008
1x, Granox DB	0.006-0.014
1x, Granox Plus FL	0.003-0.010
2x, Granol Plus FL	0.012-0.013
3x, Granox Plus FL	0.006-0.016

The formulations used were Granox DB, containing 50% maneb, 2% thiabendazole; Granox Plus FL, containing 25% maneb, 1% thiabendazole; and Granol Plus FL, containing 13.6% maneb, 0.54% thiabendazole, and 10.3% lindane.

DEB Comments

Regarding thiabendazole residues, the residue data submitted cannot be used to predict residue levels in green forage because the samples were washed prior to analysis. However, tolerances have been established to cover thiabendazole residues in/on wheat and wheat commodities as a result of foliar uses of thiabendazole. We would expect lower residues from the seed treatment uses than from foliar uses. Thus, the feeding restriction for wheat forage is not needed because of the presence of thiabendazole in the formulation.

Without the radiotracer studies required by the Registration Standards for maneb and lindane, we cannot determine whether residues of maneb and lindane (and any metabolites or degradates) will be uptaken in the crop grown from treated seed. For maneb, these data are overdue. For lindane, the required data are due 9/89.

CONCLUSIONS AND RECOMMENDATIONS

1. We cannot determine whether it is appropriate to delete the feeding restriction for wheat forage because radiotracer studies showing no uptake of maneb and lindane (and their metabolites and/or degradates) in wheat plants grown from treated seed are not available. Radiotracer studies (and possibly residue data and tolerance proposals) for maneb are overdue; and for lindane are due 9/89.
2. Although the residue data included in this submission cannot be used, we can conclude that thiabendazole residues in wheat grain and wheat commodities resulting from the use of seed treated with the subject products would be adequately covered by existing tolerances.

RECOMMENDATIONS

We recommend against the proposed amendment removing the feeding restriction against the feeding of wheat forage from seed treated with the subject products for the reasons discussed in Conclusion 1.

For further consideration, the registrant should submit the radiotracer studies (and possibly residue data and tolerance proposals) as required by the Maneb and Lindane Registration Standards.

cc: R.F., circu, S. Hummel, Maneb S.F., Maneb R.S.F. (Hazel), Thiabendazole S.F., Lindane R.S.F., PMSD/ISB  
 RDI:FBS:02/24/89:EZ:02/27/89  
 TS-769:DEB:RM810:CM#2:SVH:svh:02/27/89  
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