To: Henry Jacoby, Ph.D.
Registration No(s): 618-75 (Mertect 340-F)
Pesticide Petition No(s): 563258
Chemical(s): Thiabendazole, 2-(4-thiazolyl) benzimidazole

Requested Action(s): Merck, Sharp and Dohme, request a temporary tolerance for the use of Thiabendazole fungicide to treat Aspergillus spp. and Penicillium spp. on stored corn grain at 20 ppm.

Recommendation: Toxicology Branch has sufficient toxicity data in support for the safety to this residue level on corn grain, but defer to RCB regarding carryover.

Inert(s) cleared 180.1001: Yes, resulting from this use.

% of ADI occupied: Existing: 46.92, Resulting: 51.92

Resulting % increase in TMRC: 10.7%

Data considered in setting the ADI: Please see attached summary of toxicity data considered in setting this action. Refer to the world ADI printout.

Attached (?): ADI printout: YES/NO; TOX "one-liner": YES/NO; DER: YES/NO

Existing regulatory actions against registration: None

"PAR status: None

New Data: None

Data gaps: Sensitization study

Comments: The established 0.4ppm milk tolerance will be adequate to cover FBZ residues from proposed use. (RBC, Chung Cheng, 9/10/85)

Reviewer: Carlos A. Carreño
Date: 10/4/85

Section Head: John C. Harr
Branch Chief:
Toxicity Data Considered in Setting This Action:

- Acute oral LD50 (male rat) = 3.07 g/kg
  (95% Conf. = 2.92 - 3.40 g/kg)

- Acute oral LD50 (female rat) = 3.54 g/kg
  (95% Conf. = 2.14 - 5.85 g/kg)

- Acute oral LD50 (mouse) = 3.8 g/kg

- 2-Year rat feeding: Systemic NOEL = 10 mg/kg/day.
  Systemic LEL = 40 mg/kg (growth depression)
  Oncogenic potential - negative at 160
  mg/kg/day (highest dose tested)
  Dose levels tested: 10, 40 and 160 mg/kg/day.

- 2-Year dog feeding: Systemic NOEL = 50 mg/kg/day;
  Systemic LEL = 125 mg/kg/day (decreased
  body weight).
  Dose levels tested: 20, 50 and 125 mg/kg/day.

- Lifetime oncogenic (mouse feeding) - Oncogenic NOEL >
  5,330 ppm or 800 mg/kg/day (highest
  level tested)
  Systemic NOEL = 600 ppm or 100 mg/kg/day
  Systemic no LEL = 2000 ppm or 300 mg/kg/day
  - lower weight gain.
  Dose levels tested 660 ppm (100 mg/kg/day),
  2000 ppm (300 mg/kg/day), 5,330 ppm
  (800 mg/kg/day).

- Rat Teratology: Teratogenic NOEL > 80 mg/kg/day (given
  by gavage, single dose tested)
  Maternal NOEL < 80 mg/kg (only dose tested)
  - lower mean implantation sites.

- Rabbit teratology: Teratogenic NOEL > 800 mg/kg/day.
  (highest dose tested).
  Dose levels tested: 100, 200, 400 and
  800 mg/kg/day.
  Maternal NOEL: 100 mg/kg
  LOEL: 200 mg/kg - weight loss.

- 3-Generation reproduction (rat) - Reproductive NOEL =
  20 mg/kg, reproductive LOEL = 40 mg/kg
  - decreased viability index of F1a.
  Dose levels tested: 20, 40 and 80 mg/kg.

- Mutagenicity Studies:
  1. Microbial (S. typhimurium) negative for induced
     revertants.
  2. Microbial (E. coli) negative for induced revertants.
  3. Host-mediated - negative
  4. In vivo Bone marrow - negative for chromosomal
     damage.
  5. Primary Bacterial DNA damage/repair - negative.
6. **In vitro cytogenetics** - negative - no increase in chromosome breakage in human embryonic fibroblast cultures.

- Metabolism, absorption, distribution and excretion in man, dog, rat, sheep, goat, cattle and swine:

Rapidly metabolized in man. Radioactive agent in animal species in many respects were similar to those found in man. Tissues from laboratory animals were virtually free of radioactivity.
Published Tolerances

<table>
<thead>
<tr>
<th>CROP</th>
<th>Tolerance</th>
<th>Food Factor</th>
<th>mg/day (1.5kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apples (2)</td>
<td>10.000</td>
<td>2.53</td>
<td>0.37950</td>
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<tr>
<td>Citrus Fruits (33)</td>
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<td>3.81</td>
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<tr>
<td>Pears (116)</td>
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<tr>
<td>Bananas (7)</td>
<td>0.400</td>
<td>1.42</td>
<td>0.00852</td>
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<tr>
<td>Squash (191)</td>
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<td>0.11</td>
<td>0.00165</td>
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<tr>
<td>Sugar, cane, beet (154)</td>
<td>0.250</td>
<td>3.64</td>
<td>0.01364</td>
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<tr>
<td>Milk &amp; Dairy Products (93)</td>
<td>0.100</td>
<td>28.62</td>
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<tr>
<td>Sweet Potatoes (157)</td>
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<tr>
<td>Soybeans (oil) (148)</td>
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<td>Cattle (26)</td>
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<tr>
<td>Goats (62)</td>
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<tr>
<td>Hogs (69)</td>
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<td>0.00515</td>
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<tr>
<td>Horses (208)</td>
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<tr>
<td>Sheep (145)</td>
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<tr>
<td>Rice (137)</td>
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<tr>
<td>Carrots (24)</td>
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<td>Eggs (54)</td>
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<td>Poultry (128)</td>
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<tr>
<td>Papayas (109)</td>
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<td>Avocados (6)</td>
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<td>0.00450</td>
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<tr>
<td>Mangoes (80)</td>
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<td>0.00450</td>
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<td>Potatoes (127)</td>
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<td>0.024420</td>
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<tr>
<td>Wheat (170)</td>
<td>0.200</td>
<td>10.36</td>
<td>0.03109</td>
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</tbody>
</table>

MPI

TUC

% ADI

6.0000 mg/day (60kg) 1.9562 mg/day (1.5kg) 24.44

Unpublished, Tox Approved 1E2542, 2F2603, 2L2736, 3F2882, 3F2883, 4F2975

Current Action 563256
<table>
<thead>
<tr>
<th>CROP</th>
<th>Tolerance Food Factor</th>
<th>mg/day (1.5kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn, grain (90)</td>
<td>20,000</td>
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<tr>
<td>DPI</td>
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<td>51.92</td>
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<tr>
<td>60,000 mg/day (60kg)</td>
<td>3.1151 mg/day (1.5kg)</td>
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