MEMORANDUM

Date: May 7, 1982

Subject: EPA Registration Number: 43410-1
Fungicide 2

EPA Registration Number: 43410-7
Fungicide 4

From: Deloris F. Graham
FHB/TSS

To: Henry Jacoby
Product Manager (21)

Applicant: Agri-Chem, Inc.
P.O. Box 17477
Orlando, FL 32860

Active Ingredients:
2-(4-thiazolyl)benezimidazole...........................................98.5%
Inert Ingredients.............................................................1.5%

Background: Submitted Acute Inhalation Study as requested by the Agency.
Study conducted by Tox Monitor Laboratories, Inc. Data under accession number
247276. Method of support not applicable.

Recommendation:
1. FHB/TSS finds this study acceptable to support conditional registration of
   this product.

Review:
1. Acute Inhalation Toxicity Study: Tox Monitor, Inc.; Report #TM 80-534A
   1281; March 30, 1982.

Procedure: 5M and 5F Sprague-Dawley rats were exposed for four hours to 5
mg/l of the test material, but due to the physical properties of the test
material only 4-1 mg/l were attainable. Since a mortality rate of 50% of the
test animals was observed in the initial exposure, an additional test level
was targeted at 2 mg/l for a four hour period. The gravimetric concentration
of the second study was 2.03 mg/l. Observations were made twice daily for 14
days. Necropsy performed on all animals. In the second test, particle size
ranged from 0.6 to 12.0 microns.
Results: At 5 mg/l, 3/5 F and 2/5 M died. At 2 mg/kg, 2/5 F and 2/5 M died. Some animals appeared sluggish and nasal discharge was observed. Necropsy revealed whitish material similar to the test substance in stomach and gastrointestinal tract; lungs mottled. Histopathology revealed congestion of lungs with focal areas of alveolar and perivascular edema; desquamation of the respiratory epithelium in the large bronchicles; diffuse thickening of the alveolar walls; drooping degeneration of the tubular epithelium; diffuse swelling of the remaining tubules. LC50 for males greater than 2.03 mg/l and for females 0.02 mg/l.

Study Classification: Core Guideline Data.

Toxicity Category: III - CAUTION
Fungicide T

A Fungicide for the Postharvest Treatment of Citrus, Apples, Pears, Bananas.

ACTIVE INGREDIENT: 2,4-(diacetyl) benzimidazole ....... 98.5%
INERT INGREDIENTS: ..................... 1.5%

KEEP OUT OF REACH OF CHILDREN

CAUTION

See Side Panel For Additional Precautionary Statements

Agri-Chem, Inc.
Orlando, FL 32860

Net Contents: lbs. _________ units: ________

EPA Reg No. 04101Z
EPA En. No.
Fungicide 4T

A fungicide for the postharvest treatment of Citrus, Apples, Pears, Bananas, Potato Seed Tubers and Sweet Potato Seed Pieces.

ACTIVE INGREDIENT: 2 (4-chlorophenyl) benzenimidazole... 98.5%
INERT INGREDIENTS: ........... 1.5%

KEEP OUT OF REACH OF CHILDREN

CAUTION

See Side Panel For Additional Precautionary Statements

CROP DIRECTIONS

Citrus: Fruit Decay (Blue Mold, Green Mold, Stem-end Rot) Postharvest - Dispense one unit in 250 gallons of water for a 1000 ppm treating dispersion. (Use of a wetting agent such as Agri-Chem's WETTING AGENT T at 2 oz per 100 gallons is recommended.) Apply this dispersion as a fixed or spray, at the rate of one unit per 2,000 to 7,000 lbs of fruit, to previously washed and water-chilled fruit. Do not treat fruit following treatment. If fruit is incorrectly treated, save two to five units per 100 gallons. See N119 below. Fungicide 4T may be used on citrus wax. Dispense one unit in 250 gallons of water (1000 ppm) and apply to previously washed and dried fruit at the rate of one unit per gallon 8,000 to 10,000 lbs of fruit. For control of spot blight (Penicillium sp.) apply this fungicide in water using one unit fungicide 4T per 50 gallons. Agitate wax and water suspension gently during application.

Apples and Pears: Postharvest Rot (Botrytis spp., Penicillium spp.) Apply as a spray or drench one unit dispersed in 250 gallons of water (Use of a wetting agent such as Agri-Chem's WETTING AGENT T at 2 oz per 100 gallons is recommended.) Do not treat for more than 3 minutes. Treat only once, either before or after storage. Drain fruit thoroughly and do not allow after treatment. Agitate suspension gently during use. Worn apple wax is used. Fungicide 4T may be incorporated into the wax. Use one unit per 50 gallons of wax. Agitate suspension gently during application.

Bananas: Postharvest (Crown Rot) Prepare a suspension of one unit Fungicide 4T in 1000 gallons of water, use of a wetting agent such as Agri-Chem's WETTING AGENT T at the rate of one unit per gallon 1100 ppm is recommended. Keep suspension gently stirred while using. Treat unblemished fruit after it has passed through the deloading operation by spraying or dunking. When spraying do not immerse for more than 5 minutes.

Potatoes (Seed tubers only): (Fusarium Tuber Rot) Mix one unit on a conveyor belt with sanding in a tumbling drum, running average with one gallon of suspension (one unit fungicide 4T per 100 gallons) to 2500 lbs of tubers if an additional treatment is necessary before shipping and packing the seed tubers, dip the tubers for 90 seconds to one minute in the same container (Use of a wetting agent such as Agri-Chem's WETTING AGENT T at the rate of 2 oz per 100 gallons is recommended.) Agitate suspension while using. Do not treat seed for food or feed purposes.

Sweet Potato - Seed roots only: (Black Rot, Root Rot, Scurf) Dip seed roots in a suspension of one unit per 10 gallons (Use of a wetting agent such as Agri-Chem's WETTING AGENT T at 2 oz per 10 gallons is recommended.) Plant immediately. Do not use treated seed for food or feed. Treat the seed roots for one minute in two minutes, and discard suspension when volume becomes too low to suspend becomes dry.

NOTE: Fungi may develop resistance to benzenimidazole. If such tolerance is suspected, switching to a non-benzenimidazole fungicide is advised. Check with your supplier if symptoms are desired.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. For complete instructions, see a label.

Storage: Store at temperatures between 50° and 90°F (10° and 32°C) in original containers in a cool, dry place. Do not store in知识性温度. Dispose: Fungicide used in treatment must be disposed of in accordance with local or national standards. Do not dispose of fungicide in water or sewers, nor into the Municipal Wastewater System. Do not apply to land or water. Do not contaminate water, food or feed by storage or disposal.

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CLEANING: If the product comes in contact with clothing, wash the clothing in soapy water and launder as usual. Do not dry clean or bleach. If the product comes in contact with skin, eyes or clothing, wash the affected area with soap and water and seek medical attention. If the product comes in contact with skin, eyes or clothing. This is a precautionary statement and does not represent a hazard to humans or animals. This product is not harmful if swallowed.