ENIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Date: May 10, 1972

Reply to

Atn of:

Subject: Daconil; Chlorothalonil - Proposal to establish tolerances of the fungicidal chemical 2,4,5,6-tetrachloroisophthalonitrile and its metabolite, 4-hydroxy 2,5,6-trichloroisophthalonitrile applied as a pre-harvest treatment:

- Bean vines (lima and snap) 50 ppm Daconil
- Peanut vine hay 20 ppm Daconil
- Sugar beet tops 20 ppm Daconil
- Sweet corn forage 20 ppm Daconil
- Lima beans (in pods) 15 ppm Daconil
- Sugar beets 0.2 ppm Daconil
- Meat, fat and meat by-products of cattle, goats, hogs, horses and sheep and in milk 0.2 ppm Daconil

To: Mr. Drew M. Baker, Jr., Chief
Petitions Control Branch
Pesticides Tolerances Division

Pesticide Petition No. 2F1230 - Diamond Shamrock Chemical Co.
300 Union Commerce Building
Cleveland, Ohio 44115

Related Petitions: 7G0516, 9F0743, 7F0599, 1F1024
TOXICOLOGICAL EVALUATION

A. Formulations

BRAVO W-75™

Technical Product 75.0%

B. Toxicity Data

1. Previous reviews

C. H. Williams, memo of 4/15/71, PP No. 1F1024.

a. Rat 3 generation reproduction study (submitted in PP No. 7F0599):

Reproductive performance - no-effect level - 15,000 ppm

Lactation Index - no-effect level - 1500 ppm

Toxic effects: Exchange nursing demonstrated that growth effects were not due to daconil in the milk. Renal and liver effects were present at all levels fed.

E. C. Hagan, memo of 2/16/71, PP No. 1F1024

a. Acute toxicity

Dog Oral LD₅₀>5000 mg/kg

Rat Oral LD₅₀>10,000 mg/kg

Rabbit Dermal LD₅₀>10,000 mg/kg

Rabbit Eye irritation: 3 mg gave transient conjunctivitis

Rabbit Inhalation LC₅₀>4.7 mg/L

b. Chronic Toxicity

2 year dog feeding no-effect level: 60 ppm based on histopathological considerations (see memo of H. Blumenthal, 3/1/71).
2 year rat feeding no-effect level: 60 ppm-highest level fed.

c. Rabbit teratology study - negative for teratological effect of Daconil.

E. Long, memo of 1/31/69, PP No. 7F0743

a. Subacute dog feeding study for 16 weeks - no-effect level not determined based on findings of increased PBI with dose.

b. 13 week rat stomach tube study no-effect level presumably 2 Gm/kg.

2. New Toxicity data

None submitted.

C. Conclusions

Daconil has demonstrated a low degree of toxicity. A safe level of total dietary intake in man has been calculated to be 1.8 mg/day (memo of H. Blumenthal, 3/1/71). Previously granted tolerances (40 CFR 180.275) and pending proposed tolerances would add about 1.0 mg/day of Daconil to the dietary (memo of E. Hagan, 2/16/71, PP No. 1F1024). The amounts added by those RAC's in the present proposal represent some 0.5 mg/day.

D. Recommendations

1. TB defers to CB the question of possible transfer of combined residues from sugar beets into refined sugar or into molasses made from such beets.

2. Forage crops and hay are not human food items; they require no comment by TB.

3. Lima beans (with pods) are a minor human food item, and the requested residue tolerance of 15 ppm Daconil and its hydroxy-metabolite is considered to be safe.

4. Chemistry Branch has raised questions concerning the amount of hydroxy-metabolite which could appear in milk from feeding Daconil (4/16/71 memo of conference, PP No. 1024). Until CB comments upon the percent of the hydroxy-metabolite present in the requested tolerance for 0.2 ppm combined residues of Daconil in milk, TB cannot make a judgment of safety. The requested level is not negligible, and we will have to consider whether adequate toxicity data has been furnished for the hydroxy-metabolite to enable a tolerance to be established in milk.
5. TB has no objection to establishing the requested tolerance of 0.2 ppm combined residues of Daconil in meat, fat and meat by-products of cattle, goats, hogs, horses and sheep. The maximum dietary ingestion of residues from these sources would amount to only 0.03 mg/day based on 150 gram (10% of dietary) daily intake.

David L. Ritter
Pharmacologist
Toxicology Branch
Pesticides Tolerances Division

cc: JGCummings
    PRD/EPA
    Atlanta Branch (Lewis)
    Perrine Branch
    Division Reading File
    Branch Reading File
    PP No. 2F1230
    DLRitter

RD/init:CHWilliams:5/2/72
DLRitter:ss:5/10/72
init:CHWilliams