UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

000549

SUBJECT: Request for tolerances of residues of Guthion in or on pasture grass hay at 5 ppm and pasture grass at 2 ppm (PP 5F1546; old PP 1F1166); corn forage and fodder at 5 ppm and field corn grain at 0.1 ppm (PP 5F1547; old PP 2F1292); and sorghum grain at 7.0 ppm and in the meat, fat and meat byproducts of poultry at 0.1 ppm (PP 5F1548; old PP 0E0984).

DATE: December 4, 1974

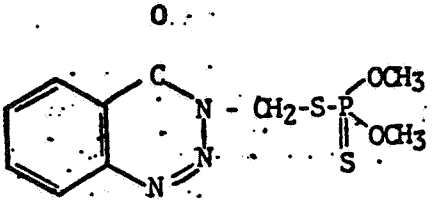
TO: Mr. Jesse Mayes, Acting Chief
Coordination Branch
Registration Division (WH-567)

Pesticide Petition No's: 5F1546, 5F1547, 5F1548

Related Petitions: 0F0869, 1F1166, 2F1292, 0F0984, 7F0539

Chemical Name: O,O-dimethyl S-[4-OXO-1,2,3-benzotriazin-3(4H)-ylmethyl] phosphorodithioate

Chemical Structure:



Toxicity Data

Acute Oral:

Technical, Rat (M&F) - LD_{50} 5.6 & 6.4 mg/kg
Technical, Cow (6 days) - 5/14 died at 3.6 mg/kg/day
25% WP, Rat (F) - LD_{50} 40 mg/kg
25% WP, Chicken (F) LD_{50} 1100 mg/kg
50% WP, Rat (F) - LD_{50} 25 mg/kg
62.5% WP, Rat (F) - LD_{50} 14.8 mg/kg
62.5% WP, Rat (M) - LD_{50} 23.6 mg/kg
25% EC, Chicken (F) - LD_{50} 1050 mg/kg

Acute Dermal:

Technical, Rat (M&F) - LD_{50} 220 mg/kg
25% WP, Rat (F) - LD_{50} 1000 mg/kg
20% ULV, Rat (M) - LD_{50} 475 mg/kg
2 lb/gal S.C., Rat (F) - LD_{50} 350-375 mg/kg
1 lb/gal E.C., Rat (M) - LD_{50} 816-845 mg/kg

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Acute Inhalation:

Technical, Rat (M) - 1 hr. LC_{50} 385 µg/l
Technical, Rat (M) - 4 hr LC_{50} 152 µg/l
Technical, Rat (F) LC_{50} 107 µg/l
Technical, Mouse (F) - LC_{50} 38.5 µg/l
22%, Mouse (F) - 30 min LC_{50} 190 µg/l
22%, Rat (F) - 30 min LC_{50} 475 µg/l
50% WP, Rat (F) - LC_{50} >218 µg/l
62.5% WP, Rat - 1 hr 2000 µg/l - no deaths
5000 µg/l - 3/4 females died (males showed no toxic symptoms)
1 lb/gal E.C. Rat - LC_{50} 3000 µg/l

Chronic Oral:

2 yr. Rat - NEL 5 ppm based on lack of ChE inhibition in plasma or RBC's (Systemic NEL 50 ppm)
2 yr Dog NEL 5 ppm (based on inhibition in RBC-ChE at 20 ppm) (Systemic NEL 150 ppm)

Subacute Oral:

19 wk. dog - NEL not shown with respect to ChE in blood (Systemic NEL 20 ppm)
120 day, rat - NEL 5 ppm
12 wk. Dog - NEL 5 ppm

Reproduction Study - Mouse:

M&F mice fed 5, 10, 25 and 50 ppm for 79 days. There were no symptoms at 5, 10 or 25 ppm. At 50 ppm 35% of the females and some of the males died prior to breeding

Teratogenic Study - Rabbit:

Female rabbits received 0, 5, or 25 ppm Guthion from 8th to 16th day of gestation. No effect up to 25 ppm on fertility of rabbits or viability of fetuses, both at birth and at 30 days. No effect on litter size. Conservative NEL placed at 5 ppm (probably 25 ppm is without effect).

Demyelination Stud - Chicken:

Female chicken fed 10, 50 and 100 ppm for 30 days showed no evidence of demyelination.

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Findings/Recommendations

1) PP 5F1546 (formerly PP 1F1166)

5 ppm Guthion residue in or on pasture grass hay
2 ppm Guthion residue in or on pasture grass

TB defers to CB as to the amount of residue transfered to meat or milk from ingesting pasture grass hay and pasture grass.

2) PP 5F1547 (formerly PP 2F1292)

5 ppm Guthion residue in or on corn forage and corn fodder
0.1 ppm Guthion residue in or on field corn grain

TB finds the tolerances on corn grain, corn forage and corn fodder to be safe if CB finds the residue data adequate with respect to Section 180.6(a) as pertain to feeding these commodities to livestock/ poultry. (See Dr. Wm. Parkin's review of PP 2F1292. August 17, 1972 and Mr. J. Wolff's review, Chemistry Branch, PP 2F1292, December 11, 1972).

3) PP 5F1548 (formerly PP 0F0984)

7 ppm Guthion residue in or on sorghum grain
0.1 ppm Guthion residue in the meat, fat and meat by products of poultry

TB defers to CB for an evaluation of the newly submitted residue data for sorghum grain and for the transfer of residues to the meat, fat and meat by products of poultry. If CB finds no objections to this data, TB would recommend for establishing tolerances of 7 ppm in or on sorghum grain and 0.1 ppm in the meat, fat, and meat by products of poultry.

Robert B. Jaeger

Robert B. Jaeger, Physiologist
Toxicology Branch
Registration Division (WH-567)

cc: CB, EEB, Division File, Branch File, PP No's 5F1546, 47, & 48

Init: CHWilliams
GEWhitmore G.E.W.

RBJaeger/km 12-09-74

CHW 12/11/74

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