#75A UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Mr. Cobe 2

SUBJECT: Registration No. 538-RGE DATE: MAY 13 1975

000719 004678

FROM: TB

0 04678

TO: PM

Registration No: 538-RGE

Product Name: Pro Turf DSB Fungicide

Registrant: O.M. Scott & Sons Co.

Action Requested: Registration

Recommendation: No adverse comment

Formulation: Active Ingredient
1.10% Benomyl

[redacted]

Use: Herbicide on Turfgrasses only

Application Rate: 60 lbs of formulation per 11,000 to 22,000 sq.ft.

Related Background Information

Toxicity Data

Acute Oral-Rat (50% WP)	LD_{50} >10,000 mg/kg
Acute Oral-Rat (Tech)	LD_{50} >10,000 mg/kg
Acute Oral-Pat	LD_{50} >9590 mg/kg
Acute Oral-Rabbit (50% WP)	ALD >3,400 mg/kg
Acute Dermal-Rabbit (50% WP)	LD_{50} >10,000 mg/kg
Acute Inhalation-Rat (50% WP)	LC_{50} >2.0 mg/L
Acute Inhalation-Rat	LC_{50} >1.37 mg/L
Acute Inhalation-Rat (50% AI)	LC_{50} >4.01 mg/L Testicular alterations noted at all levels tested (0.27, 1.39, and 4.01 mg/L)

Primary Skin Irritation-Guinea Pig (50% WP) mild irritation.

INFORMATION WHICH MAY REVEAL THE IDENTITY OF AN INERT INGREDIENT IS NOT INCLUDED

BEST AVAILABLE COPY

2

INFORMATION WHICH MAY REVEAL THE IDENTITY OF AN INERT INGREDIENT IS NOT INCLUDED

000719
004678

Sensitization-Guinea Pig (50% WP) mild sensitization noted.

Eye Irritation-Rabbit (53%) Mild Irritation-not an eye irritant as per FHSA.

14 Day Intubation-Rat (Unformulated)-NEL 200 mg/kg/day.

21 Day Inhalation-Rat (53.5% [redacted]-NEL >0.2 mg/L.

*90-day feeding study-Rat	Systemic NEL 500 ppm
**90-day feeding study-Dog	Systemic NEL 500 ppm
***2-year feeding study-Rat	Systemic NEL 2500 ppm
***2-year feeding study-Dog	Systemic NEL 500 ppm
***3-generation reproduction-Rat	Systemic NEL 100 ppm
Teratology-Rat	Negative at 5000 ppm
Teratology-Rabbit	Negative at 500 ppm
****Acute oral-Rat (metabolite)	LD_{50} >17 g/kg
****90-day feeding study-Rat (metabolite)	Systemic NEL 2500
****3-generation reproduction-Rat (metabolite)	Systemic NEL 2500

[redacted]

***both sample (* and **) were used
Since only adverse effect in rat reproduction is borderline, consisting of somewhat lower weanling weights in "500" and "2500 ppm" puns of the last 4 (of 7) litters, we can assign "no-effect level" for the dog, 12.5 mg/kg/day as that for the most sensitive species. This also applies to the metabolite.

**** Major plant metabolite, methyl 2-benzimidazolecarbamate.

BEST AVAILABLE COPY

3

000719
004678

Related Petitions: 0F0996, 0G0936, 0F1000, 0F1010, 1G1033, 1F1145, 2F1192, 2G1197, 2F1212, 2F1218, 2H5004, 2H5009, 2F1234, 2E1239, 2F1240, 2F1289, 2F1290, 2F1291, 3F1410, 3H5033, 4F1421, 4F1427, 5H5062, 4F1452, 4F1466, 4F1479

Existing Tolerances:

§ 180.294 Benomyl; tolerances for residues.

Tolerances are established for combined residues of the fungicide benomyl (methyl 1-(butylcarbamoyl) -2-benzimidazolecarbamate) and its metabolites containing the benzimidazole moiety (calculated as benomyl) in or on raw agricultural commodities as follows:

50 parts per million in or on bean vine forage.

35 parts per million in or on pineapples (from postharvest application).

15 parts per million in or on peanut forage, peanut hay, and sugar beet tops.

15 parts per million (from preharvest and/or postharvest application) in or on apricots, cherries, nectarines, peaches, and plums (including fresh prunes)

10 parts per million in or on citrus fruits (from preharvest and/or postharvest application), grapes, and mushrooms.

*7 parts per million in or on blackberries blueberries, boysenberries, dewberries, loganberries and raspberries.

000719
004678

7 parts per million (from preharvest and/or postharvest application) in or on apples and pears.

5 parts per million in or on strawberries and tomatoes.

3 parts per million in or on celery and mangoes.

2 parts per million in or on beans and peanut hulls.

1 part per million (from preharvest application) in or on bananas, of which not more than 0.2 part per million (negligible residue) shall be present in the pulp after the peel is removed and discarded.

1 part per million in or on almond hulls, avocados, cucumbers, melons, summer squash, and winter squash.

0.2 part per million in or on peanuts, soybeans, and sugar beet roots.

0.2 part per million (negligible residue) in or on nuts.

0.2 part per million in poultry liver.

0.1 part per million in eggs; milk; and the meat, fish and meat by products of cattle, goats, hogs, horses, poultry (except liver), and sheep.

§ 121.343

125 ppm in dried grape pomace and raisin waste when present therein as a result of application of the fungicide to growing grapes.

70 ppm in dried apple pomace when present therein as a result of application (preharvest and/or postharvest of the fungicide to the raw agricultural commodity apples.

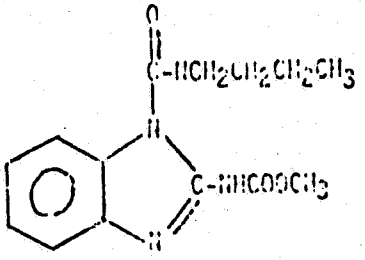
5

50 ppm in dried citrus pulp when present therein as a result of application (preharvest and/or postharvest) of the fungicide to the raw agricultural commodity citrus fruits.

§ 121.1264

A tolerance of 50 ppm in raisins when present therein as a result of the fungicide to growing grapes.

Structural Formula:



Molecular Weight: 290

Color and Form: White Crystalline

Vapor Pressure: Negligible

Melting Range: Decomposes without melting

Present Action

The following toxicity data were submitted to support registration.

Acute Rat Feeding LD_{50} (1.13% formulation) WARF 12/31/74

The test material was identified as Batch No. 4-352-IB DY containing 1.13% 1-(butylcarbamoyl)-2-benzimidazole carbamic acid methyl ester.

Six male Sprague-Dawley rats were tested at the level of 20 gms/kg.

Results-No mortality occurred. LD_{50}=greater than 20 gms/kg

Primary Skin Irritation (1.13% formulation) WARF-12/31/74

The test material was identified as Bath No 4-352-IB DY containing 1.13% 1-(butylcarbamyl)-2-benzimidazole carbamic acid methyl ester.

Approximately 0.5 gm of the undiluted test material was applied to two test sites on each of six rabbits. Half these test sites were abraded. Length of exposure was 24 hrs.

Results: no irritation was reported.

Acute Rabbit Dermal LD_{50}-(1.13% formulation) WARF-12/31/74

The test material was identified as Bath No 4-352-IB DY containing 1.13% 1-(butylcarbamoyl)-2-benzimidazole carbamic acid methyl ester.

Two rabbits were tested at 8 gm/kg. Length of exposure to the test material was 24 hours. Observetion time was 14 days.

Results: LD_{50}=greater than 8 gms/kg

Conclusion: The information obtained from the toxicity data submitted with the registration and also from the related toxicity data are judged sufficient to support the request for registration.

Robert D. Coberly, Biologist
Toxicology Branch
Registration Division

cc: Branch Reading File
RCoberly:ir: 5/6/75
Initial G.E. Whitmore
GEW 5/19/75