MEMORANDUM

DATE: November 10, 1980

SUBJECT: EPA Reg. No. 538-71
Turf Builder Plus 2 for Grass (W/S);
Super Turf Builder Plus 2 for Iron
Deficient Soils

FROM: Sherell A. Sterling
FHB/TSS

TO: Richard Mountfort
Product Manager (23)

Applicant: O. M. Scott and Sons
Marysville, OH
Attention: Gerald L. Born

Active Ingredients:
2,4-D............................0.6%
MCPA............................0.6%
Inert Ingredients.................98.8%

Background:
These data were submitted to substantiate a change in signal word from
CAUTION to WARNING. The method of support is "alternate." Included in the
data submitted were Acute Oral, Acute Dermal, and Eye and Skin Irritation
studies conducted by Warf Institute of Madison, Wisconsin. An additional
Eye Irritation study was conducted by Raltech Scientific Services of
Madison, Wisconsin. These data are under Accession Number 243006. F-7645
was identified as EPA Reg. No. 538-71.

Comments:
A letter was submitted by Scotts (July 31, 1980) which attempts to justify
the signal word "WARNING" rather than "DANGER." This letter included the
information that no accidents related to Eye Irritation had been reported.
Also, due to method of application, possibility of eye contact is remote.
Recommendations:

1. The Acute Oral study is adequate for conditional registration purposes. However, please note the following for future studies:
   a. Equal numbers of males and females must be tested at each dosage level.
   b. Necropsies must be performed on all test animals.

2. The Acute Dermal study is considered acceptable for conditional registration purposes. Please note the following:
   a. Equal numbers of males and females must be tested at each dosage level.
   b. Necropsies must be performed on all test animals.
   c. Solid material must be moistened.

3. Both Eye Irritation studies are considered adequate and acceptable for conditional registration purposes. Please note that an "eyewash" group (minimum of 3 animals) must be included in all Eye Irritation studies.

4. The Primary Skin Irritation study is adequate and acceptable for conditional registration purposes. Please note that for this study, solid material must be moistened with physiological saline.

5. An Acute Inhalation Study was not submitted. This study must be submitted or submit a statement which explains why this study is not necessary. Please see §163.81-3 of the "Proposed Guidelines for Human Hazard Evaluation" for an outline of when this study is required.

6. Dr. Kelty's letter of July 31, 1980, provided valuable information in the evaluation of the Eye Irritation studies. This letter stated that the method of application generally precluded eye contact, that no reports of injury had been filed and that the test results were inconclusive.

7. FHB/TSS has no objection to the conditional registration of this product provided that an acceptable Acute Inhalation study is submitted and the following labeling revisions are made.
8. The appropriate signal word (based on the Eye Irritation study) is WARNING, as proposed by the applicant.

Labeling Recommendations:

1. The statement "Do not contaminate feed or foodstuffs" must be removed from the "Hazards to Humans and Domestic Animals" section. The appropriate place for this statement is as a general restriction under the "Directions for Use."

2. The "Environmental Hazards" section must be revised to the following (or similar) statement:
   
   Do not apply directly to lakes, ponds or streams. Do not contaminate water by cleaning of equipment or disposal of wastes.

3. No further labeling revisions are necessary at this time. Please note that additional revisions may be necessary when the data requested above are submitted.

Review:


   Procedure: Groups of six male Sprague-Dawley rats (150-250g) received an oral dosage of "F-7645." The dosage levels were 5 g/kg, 10 g/kg or 20 g/kg. Animals were observed for 14 days post-treatment.

   Results: No mortalities were reported. LD₅₀ for males is greater than 20 g/kg.

   Study Classification: Core Minimum Data. Only M subjects tested; however, LD₅₀ was so high that the LD₅₀ for F in spite of variations would remain in the same toxicity category. No necropsies.

   Toxicity Category: IV - CAUTION


   Procedure: Four male rabbits received an 8 g/kg exposure to "F-7645" under occlusive wrap. Exposure was for 24 hours. Animals were observed for 2 weeks post exposure.
Results: Apparently no animals died during study. All body weights increased.

Study Classification: Core Minimum Data. Only M subjects tested; however, LD$_{50}$ was high enough so that a likely variation due to sex would place M and F in same toxicity category. Solid material must be moistened. No necropsies performed.

Toxicity Category: III - CAUTION


Procedure: 6 New Zealand white rabbits received 0.1g of "F-7645" in one eye of each rabbit. Animals were observed for 72 hours post-exposure.

Results: At 24 hours, no corneal opacity; no iris irritation; redness in 6/6 = 2; chemosis 6/6 = 2; discharge 6/6 = 2. By 72 hours only irritation noted was redness in 2/6 = 1.

Study Classification: Core Minimum Data. No "eyewash" group tested.

Toxicity Category: III - CAUTION


Procedure: Nine New Zealand white rabbits each received in one eye 0.1g of "F-8598." Thirty seconds post-treatment, three of the eyes were washed with lukewarm water for 1 minute; remaining six were unwashed. Scoring at 24, 48, 72, 96 hours; 7, 14, 21 days.

Results: All animals increased in body weight. At 24 hours the unwashed, corneal opacity observed in 3/6 = 5, 1/6 = 7.5, 1/6 = 10, 1/6 = 11.25; 6/6 had corneal epithelial peeling; iris irritated and injected in 6/6 = 1; redness in 3/6 = 2, 1/6 = 2.5, 2/6 = 3; chemosis in 4/6 = 2, 2/6 = 3; purulent discharge in 3/6 = 1, 1/6 = 1.5, 1/6 = 2.0, 1/6 = 2.5. Corneal opacity had cleared in all but 1/6 by 96 hours; 1/6 persisted through day 21. Only other effect at 7 days was redness in 1/6 = 1 which had cleared by 14 days. The rinsed group at 24 hours showed corneal opacity in 2/3 = 2.5, 1/3 = 7.5; corneal epithelial peeling in 2/3; iris irritated and injected in 1/3 = 1; redness in 1/3 = 1, 1/3 = 1.5, 1/3 = 2; chemosis in 2/3 = 1.5; purulent discharge in 2/3 = 0.5. At 72 hours, rinsed eyes showed redness in 3/3 = 1; all scores were zero at 7 days.
Study Classification: Core Guideline Data.

Toxicity Category: II - WARNING. Only 1/9 showed corneal opacity at day 7.


Procedure: Six albino rabbits received exposure of 0.5g of "F-7645" at each of 2 sites per animal. Exposure was for 24 hours under occlusive wrap. Scoring at 24, 72 hours.

Results: All scores were zero.

Study Classification: Core Minimum Data. Solid material must be moistened.

Toxicity Category: IV - CAUTION
Formulated for Western and Southern Lawns

(Scotts (R))

Turf Builder plus 2 (R) BRAND FOR GRASS

weed control plus lawn fertilizer
for use on bahia, bermuda, centipede, zoysia, fescue, ryegrass or bluegrass lawns

Clears out weeds (see list on other side)

Gives complete feeding of Scotts long-lasting fertilizer for developing beautiful, green lawns.

DO NOT USE ON ST. AUGUSTINE, CARPETGRASS, CREEPING BENTGRASS, DICHONDRA, OR LIPPIA

NET WEIGHT 11 3/8 LBS (5.16 kg) 22-3-3

KEEP OUT OF REACH OF CHILDREN

WARNING

PRECAUTIONARY STATEMENTS

Hazard to Humans and Domestic Animals: Causes eye irritation. Do not get in eyes, on skin, or on clothing. In case of contact immediately wash eyes or skin with plenty of water. Get medical attention if irritation persists. Harmful if swallowed. Do not contaminate feed or foodstuffs.

Environmental Hazards: Do not contaminate water used for irrigational or domestic purposes. Avoid application on shrubs, flowers, fruit or vegetable plants.

Storage and Disposal: Do not reuse empty container. Wrap container and put in trash container.

ACTIVE INGREDIENTS:

2,4-Dichlorophenoxyacetic acid ............
2-(2'-ethyl-4'-chlorophenoxy) propionic acid ..

INERT INGREDIENTS: ......................

Total 100.00%
Guaranteed Analysis

Total nitrogen (N) ................ 22%
  0.7% ammoniacal nitrogen
  14.4% urea nitrogen
  6.9% water insoluble nitrogen
Available phosphoric acid (P₂O₅) ... 3%
Soluble potash (K₂O) ............ 3%
Derived from: monoammonium phosphate, urea, methylene ureas, muriate of potash.

Iron (Fe) .................. 1.10%
Derived from ferrous sulfate.

Chlorine, not more than .......... 2.68%

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2216 (Scotts (R)) TURF BUILDER weed control
   plus 2 plus lawn
   (R) fertilizer
BRAND FOR GRASS

W/S
(Scotts (R)) TURF BUILDER plus 2 (R) BRAND weed control plus lawn fertilizer
TURF BUILDER

(Scotts (R) plus 2 FOR GRASS R BRAND)

weed control plus lawn fertilizer

for use on bahia, bermuda, centipede, zoysia, fescue, ryegrass, or bluegrass lawns

WEEDS CONTROLLED

<table>
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<tr>
<th>aster</th>
<th>chicory</th>
<th>filaree</th>
<th>lippia</th>
<th>prickly</th>
<th>shepherds-</th>
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<tbody>
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<td>cinquefoil</td>
<td>fleabane</td>
<td>mallow</td>
<td>puncturevine</td>
<td>purs purs</td>
</tr>
<tr>
<td>black medic</td>
<td>clover (white)</td>
<td>ground ivy</td>
<td>moneywort</td>
<td>penciveine</td>
<td>smartweed</td>
</tr>
<tr>
<td>bristly ox tongue</td>
<td>cudweed</td>
<td>healall</td>
<td>morning glory</td>
<td>purslane</td>
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<td>curly dock</td>
<td>henbit</td>
<td>mustard</td>
<td>pusley,</td>
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<tr>
<td>bullthistle</td>
<td>dandelion</td>
<td>horseweed</td>
<td>pennywort</td>
<td>silver,</td>
<td>thyme leaf</td>
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<td>dichondra</td>
<td>knotweed</td>
<td>pepperweed</td>
<td>sand weed</td>
<td>sandwort</td>
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<tr>
<td>buttonweed</td>
<td>dollarweed</td>
<td>(seedling)</td>
<td>pigweed</td>
<td>scarlet</td>
<td>vetch</td>
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<td>lambsquarters</td>
<td>plantain</td>
<td>pimpernel</td>
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<td>eveningprimrose</td>
<td></td>
<td>shadflower</td>
<td>rocket</td>
<td></td>
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</tbody>
</table>

**Directions for Use**

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

**DO**

- use when weeds are up and growing actively. On bahia and centipede lawns only, wait until after the second mowing of the year but not before mid-March. In the fall do not treat centipede after the first of October; do not treat bahia after the first of November.
- apply only when lawn is wet from dew, rain or thorough watering (very important so that the Turf Builder Plus 2 particles will stick to the weed leaves instead of falling to the soil).
- withhold watering lawn for at least 24 hours after application (to avoid washing particles off the weed leaves).
- sweep or hose material off walks, driveways, and shoes to avoid discoloration.
- apply on a calm day.
- apply at Scotts Spreader (Standard, Automatic or Precision Flow Control Model) setting . . . . . . [74] (treats 2,000 sq ft).
- slightly overlap spreader's wheel tracks

**DON'T**

- use when rain is expected within 24 hours.
- use in a period of extreme heat and humidity.
- use when grass is so tall it touches bottom of spreader (mow lawn first in such situations).
- use on a newly seeded, sodded or sprigged lawn until the new grass has been mowed at least four times. If seeding in late spring, delay weed control application until early fall. If seeding in the late fall, delay weed control application until spring.
- plant right after using Turf Builder Plus 2. Wait at least one month.
- use on St Augustine, carpetgrass, lippia, dichondra, creeping bentgrass nor on flowers, shrubs, fruit, vegetable plants.
- apply with a rotary-type spreader.
CONTINUED:

What to expect

This product does not work overnight. It is designed to provide slow, steady controlled action. Stems and leaves of weeds may begin to twist and curl in a few days, but a month or more may be required for complete control, especially when weather is dry or cool.

It is not necessary to rake out dead weeds. They will eventually disintegrate and disappear.

Only weeds growing at time of application will be eliminated. This product does not prevent weed seeds from producing new plants, whether such seeds are on the surface or buried in the soil. Nor does it control existing oxalis or crabgrass.

If particles become washed off weed foliage within 24 hours after application, control may be less effective. If there is no indication that it is working after 3 or 4 weeks of good growing weather another treatment may be needed.

A few weeds may be resistant to control. If this happens, please forward specimens so we can identify them and advise you further.

After weed control is achieved, you are urged to follow through on the basic needs of every lawn—fertilizer, water and regular mowing.

Free bulletin service

As a Scotts user, you are entitled to a free subscription to Lawn Care, which has been helping lawn owners for over 50 years.

LLUS.) Unless you already receive Lawn Care, send us this coupon and we'll mail you the seasonal issues prepared especially for your region.

Cut out and mail to SCOTTS, the lawn people, Marysville, Ohio 43041

Scotts Policy
No-Quibble Guarantee

If for any reason you are not satisfied with results after using this product, you are entitled to get your money back. Simply send us evidence of purchase and we will mail you a refund check promptly.

SCOTTS...the lawn people
MARYSVILLE, OHIO 43041

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