

17 SEP 1993

Mr. Roy G. Danhaus
Monsanto Company
700 14th Street, N.W., #1100
Washington, D.C. 20005

Dear Mr. Danhaus:

Subject: Dimension® 2 f.g. Turf Herbicide
EPA Registration No. 524-455
Applications Dated September 3, 1993 Requesting
To Amend Registration By Deleting "For Professional
Turf Applicator Use Only" and "Bird Caution"
Section

The proposed amendments to the registration of the subject pesticide product have been reviewed and found to be acceptable for registration under the Federal Insecticide, Fungicide and Rodenticide Act as amended provided that you:

1. Separate the statement "DO NOT apply this product to Colonial centgrass* (Agrostis tanais) varieties" from the other statements in this paragraph because it is unrelated to the asterisk.
2. Submit five (5) printed copies of the final printed label before releasing the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA, section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely yours,

Joanne I. Miller
Product Manager (23)
Fungicide-herbicide Branch
Registration Division (H-7505C)

Enclosure

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BEST AVAILABLE COPY

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**DIMENSION® 2 F.G. Turf Herbicide
by Monsanto**

Dimension® 2 F.G. is a selective herbicide that provides control of listed annual grasses and broadleaf weeds in established lawns and ornamental turfs, including golf course fairways, roughs, and tee boxes.

(4) ✓

ACTIVE INGREDIENTS:

*Dithiopyr, 3,5-pyridinedicarbothioic acid, 2-(difluoromethyl)-4-(2-methylpropyl)-6-(trifluoromethyl)-S,S-dimethyl ester.....2.1%

INERT INGREDIENTS:.....97.9%
100.0%

*This product contains 1 pound of the active ingredient, dithiopyr, per 50 pound bag.

Product protected by U. S. Patent No. 4,692,184. Other patents pending.

EPA Reg. No. 524-455

*Dimension is a registered trademark of Monsanto Company.

ACCEPTED
with COMMENTS
in EPA Letter Dated:

1993-1

17 SEP 1993

Read the entire label before using this product.

Use only according to label instructions.

Read "LIMIT OF WARRANTY AND LIABILITY" before buying or using. If terms are not acceptable, return at once unopened.

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 524-455

LIMIT OF WARRANTY AND LIABILITY

This Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth in the Complete Directions for Use label pamphlet ("Directions") when used in accordance with those Directions under the conditions described herein. **NO OTHER EXPRESS WARRANTY OR IMPLIED WARRANTY OF FITNESS FOR PARTICULAR PURPOSE OR MERCHANTABILITY IS MADE.** This warranty is also subject to the conditions and limitations stated herein.

Buyer and all users shall promptly notify this Company of any claims whether based in contract, negligence, strict liability, other tort or otherwise. Notice of these claims may be made by calling 1-800-323-1421.

Buyer and all users are responsible for all loss or damage from use or handling which results from conditions beyond the control of this Company, including, but not limited to, incompatibility with products other than those set forth in the Directions, application to or contact with desirable vegetation, unusual weather, weather conditions which are outside the range considered normal at the application site and for the time period when the product is applied, application in any manner not explicitly set forth in the Directions, or the presence of products other than those set forth in the Directions in or on the soil, crop or treated vegetation.

THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE LIMIT OF THE LIABILITY OF THIS COMPANY OR ANY OTHER SELLER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT (INCLUDING CLAIMS BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE) SHALL BE THE PURCHASE PRICE PAID BY THE USER OR BUYER FOR THE QUANTITY OF THIS PRODUCT INVOLVED, OR, AT THE ELECTION OF THIS COMPANY OR ANY OTHER SELLER, THE REPLACEMENT OF SUCH QUANTITY, OR, IF NOT ACQUIRED BY PURCHASE, REPLACEMENT OF SUCH QUANTITY. IN NO EVENT SHALL THIS COMPANY OR ANY OTHER SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES.

Buyer and all users are deemed to have accepted the terms of this LIMIT OF WARRANTY AND LIABILITY which may not be varied by any verbal or written agreement.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

Keep out of reach of children.

CAUTION!

CAUSES EYE IRRITATION.

HARMFUL IF INHALED.

Avoid contact with eyes or clothing.

Avoid breathing dust.

Wash thoroughly with soap and water after handling.

Remove contaminated clothing and wash before reuse.

Prolonged or frequently repeated skin contact while handling this material may cause allergic reaction in some individuals

FIRST AID: IF IN EYES, immediately flush with plenty of water. Get medical attention if irritation persists.

IF INHALED, remove individual to fresh air. Seek medical attention if breathing difficulty develops.

In case of an emergency involving this product, Call Collect, day or night, (314) 694-4000.

Environmental Hazards

This product is toxic to fish and highly toxic to other aquatic organisms including oysters and shrimp. Use with care when applying to turf areas adjacent to any body of water. Drift and runoff from treated turf may adversely affect aquatic organisms in adjacent aquatic sites. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

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

For information on use of this product call 1-800-323-1421.

Storage and Disposal

STORAGE:

- **Store this product only in its original container in a dry, cool, secured storage area. Do not contaminate water, foodstuffs, feed or seed by storage or disposal.**

PRODUCT DISPOSAL:

- **Wastes resulting from the use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state or local procedures.**

EMPTY CONTAINER DISPOSAL:

- **Do not reuse bag. Completely empty bag into application equipment. Dispose of emptied bag(s) in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.**

SPILL:

- In case of spill, sweep up material and dispose of material according to "product disposal" directions listed above.

GENERAL INFORMATION

This product is a selective herbicide that provides control of crabgrass and other annual grasses and broadleaf weeds in established lawns and ornamental turfs, including golf course fairways, roughs, and tee boxes. This product will not harm nearby established ornamentals when used according to label directions.

USE PRECAUTIONS

Turfgrass Safety

This product may be used on seeded, sodded, or sprigged lawns and ornamental turfs that are well-established. The grass must have developed a good root system and a uniform stand, and have received at least two mowings following its seeding, sodding, or sprigging before it can receive its first application of this product. Use of this product on lawns and ornamental turfs that are not well-established, or on those that have been weakened by weather-, pest-, disease-, chemical-, or mechanical-related stress, may increase the chances for turf injury.

This product should only be applied to lawns and ornamental turfs that are composed of the following turfgrass species that have been determined to be tolerant to applications of this product. When applied as directed under the conditions described, the following established turfgrasses are tolerant to this product:

Cool-Season Grasses

- ✓ Bentgrass, creeping*
 Agrostis palustris
- ✓ Bluegrass, Kentucky
 (*Poa pratensis*)
- ✓ Fescue, fine**
 (*Festuca rubra*)
- ✓ Fescue, tall
 (*Festuca arundinacea*)
- ✓ Ryegrass, perennial
 Lolium perenne

Warm-Season Grasses

- ✓ Bahiagrass
 (*Paspalum notatum*)
- ✓ Bermudagrass
 (*Cynodon dactylon*)
- ✓ Buffalograss***
 (*Buchloe dactyloides*)
- ✓ Carpetgrass
 Axonopus affinis
- ✓ Centipedegrass
 Eremochloa ophiuroides
- ✓ Kikuyugrass
 (*Pennisetum clandestinum*)
- ✓ St. Augustinegrass
 (*Stenotaphrum secundatum*)
- ✓ Zoysiagrass
 (*Zoysia japonica*)

***DO NOT apply this product to Colonial bentgrass (Agrostis tenuis) varieties.** Use of this product on certain varieties of creeping bentgrass, such as 'Cohansey', 'Carmen', 'Seaside', and 'Washington' may result in undesirable turfgrass injury. Not all varieties of creeping bentgrass have been tested.

****Use of this product on certain varieties of fine fescue may result in undesirable turf injury.** The following fine fescue varieties have been found to be sensitive to this product:

'Atlanta', 'Banner', 'Beauty', 'Bilgart', 'CF-2', 'Enjoy', 'HF-93', 'Highlight', 'Ivalo', 'Jamestown', 'Koket', 'Majenta', 'Mary', 'Pennlawn', 'Tamara', 'Tatjana', 'Waldorf', and 'Waldina'. Not all varieties of fine fescue have been tested.

*****DO NOT use this product on seedling buffalograss in the spring of the first year of establishment until the turfgrass is fully green and has established new roots.**

Reseeding, Overseeding, or Sprigging

Reseeding, overseeding, or sprigging of treated areas within 4 months after application of this product may inhibit the establishment of desirable turfgrasses. When reseeding or overseeding, proper cultural practices such as soil cultivation, irrigation and fertilization should be followed. For best results, use mechanical or power seeding equipment (slit seeders) designed to give good seed to soil contact.

Golf Course Putting Greens

DO NOT use this product on golf course putting greens.

Other Use Precautions

The early postemergence crabgrass control described below is limited. Postemergence applications are only effective on crabgrass if applied before crabgrass has displayed its fifth leaf or first tiller.

For best results, cultural practices that disturb the soil, such as core-, spike-, or hydro-aerification, and verticutting, should be done before application of this product. DO NOT apply this product until the grass has recovered from these cultural practices.

Apply this product directly to established lawns or ornamental turfs only. DO NOT apply to flowers, vegetables, shrubs, or trees.

DO NOT use clippings from treated turf for mulching around vegetables or fruit trees.

DO NOT apply this product to pastures.

Keep people and pets off treated areas until dust has settled.

APPLICATION DIRECTIONS

Control of Crabgrass

Preemergence and Early Postemergence Control.

- This product provides "preemergence" control of crabgrass (including the large, smooth, and southern species) when applied prior to the emergence of crabgrass from the ground in established lawns and ornamental turfs. ✓
- It can also provide "early postemergence" control of crabgrass during the early stages of crabgrass growth after the crabgrass has emerged from the ground. However, it is often difficult to see the very small, early stages of crabgrass in well-established lawns and ornamental turfs. Postemergence crabgrass control will be obtained only when this product is applied prior to the tillering of crabgrass, which generally corresponds to the time when you can first easily see the crabgrass plants in the lawn or turf. So the practical benefit of this product's additional, early postemergence activity is that (compared to strictly preemergence crabgrass products) it can give the user a 2-4 week longer period of time to make applications and still control crabgrass. ✓

Application Frequency and Timing.

- This product may be applied as a single application, as a split application, or as a sequential application for crabgrass control in the spring, summer, or fall. ✓
- DO NOT apply more than 8.8 oz. of this product/1000 sq. ft. per application, and no more than 26.4 oz. of this product/1000 sq. ft. per year.

$43.5 \times 26.4 = 71,775 \text{ lbs}$
1.50

Spring Applications.

- For single applications made in the spring or early summer, this product should be applied at the appropriate rate corresponding to one of the three control programs listed in Table 1 below, depending on the user's location, the turfgrass mowing height, and whether the use is considered to be preemergence or early postemergence at the time of the application. The duration of residual weed control provided by this product is directly related to the total rate applied, but will vary somewhat depending on weather, weed pressure, turfgrass competitiveness, and the user's location within a region.
- Use Program 1 for preemergence control at sites where the turfgrass is cut high (e.g., homeowner lawns). This program provides 3-5 months of preemergence crabgrass control. This program should not be used for early postemergence crabgrass control.

- Use Program 2 for preemergence control at sites where (a) turfgrass is cut low (e.g., golf fairways), and (b) turfgrass maintenance or weed control has not been conducted during the previous year. This program provides 4-6 months of preemergence crabgrass control. This program may also be used for early postemergence control at sites where turfgrass is cut high (e.g., homeowner lawns).
- Use Program 3 for preemergence control at sites where (a) turfgrass is cut low (e.g., golf fairways) and (b) turf maintenance or weed control has not been conducted during the previous year. This program provides 4-6 months of preemergence crabgrass control. This program may also be used for early postemergence control at sites where turfgrass is cut low (e.g., golf fairways).
- Subsequent, sequential pre- and/or postemergence applications should be made where longer periods of control are desired.
- Where split fertilizer applications are recommended, the rates in Table 1 may be split across two applications made 6-10 weeks apart and prior to crabgrass emergence.

Table 1: Recommended Single Application Use Rates*
(oz. of this product/1000 sq. ft.)

PROGRAM	1	2	3
USE (turfgrass cut)	Preemergence (high)	Preemergence (low) Postemergence (high)	Preemergence (low) Postemergence (low)
REGION			
North	2.2	3.2	4.4
Transition	3.2	4.4	6.4
South	4.4	6.4	8.8
Coastal South	6.4	8.8	8.8**

*DO NOT apply more than 8.8 oz. of this product/1000 sq. ft. per application, and no more than 26.4 oz. of this product/1000 sq. ft. per year. Postemergence control is limited; see "Crabgrass Control" and "Precautions" sections above. Regions include areas listed below.

North: all other areas.
 Transition: DE, KS, KY, MD, MO, NJ, VA, southeastern PA, southern areas of IL, IN, OH, & coastal areas of CT, NY, & RI.
 South: AL, AR, AZ, CA, GA, LA, MS, NC, NM, NV, OK, SC, TN, & TX.
 Coastal South: HI, FL, & southern coastal areas of AL, GA, LA, MS, NC, SC, & TX.

**May require split or sequential applications for full control.

Fall Applications.

- This product can also be applied in the late summer or early fall (late August through November) at the "Program 3" use rate; listed in Table 1 to provide control of crabgrass through the early part of the next spring.
- The fall application should be followed by an appropriate spring application to provide season-long control.

Tips for Improved Control.

- For best results, apply this product within a few days after mowing and delay mowing again for a few days after the application. ✓
- When treated lawn or ornamental turf areas are watered or receive significant rainfall within a few days after application of this product, improved weed control may result. ✓
- Use of split (half-rate) applications spaced 6-8 weeks apart may provide improved weed control. ✓

Control of Other Grass and Broadleaf Weeds

Spring Applications. Used as directed for crabgrass control in the spring, this product will also control (at the "Program 3" rates) or suppress (at the "Program 2" rates) the following weeds when applied prior to their emergence:

- | | |
|---------------------------------|--|
| barnyardgrass ✓ | lespedeza (common) ✓ |
| bluegrass (annual) ✓ | oxalis (buttercup, creeping & yellow woodsorrel) ✓ |
| crowfootgrass ✓ | pineappleweed ✓ |
| foxtail (yellow & green)* ✓ | purslane (common) ✓ |
| goosegrass ✓ | speedwell (corn) ✓ |
| kikuyugrass ✓ | spurge (prostrate & spotted) ✓ |
| ryegrass (annual & perennial) ✓ | |
| smutgrass ✓ | |

*Also controlled at the Program 2 rates.

Fall Applications. Used as directed for late summer or early fall use, for crabgrass control through the early part of the next spring, this product will also control (at the "Program 3" rates) or suppress (at the "Program 2" rates) the following weeds when applied prior to their emergence:

- | | |
|----------------------|-----------------------|
| bluegrass (annual) ✓ | henbit ✓ |
| bittercress ✓ | geranium (Carolina) ✓ |
| chickweed ✓ | parsley-piert ✓ |

APPLICATION EQUIPMENT AND INSTRUCTIONS

Apply this product with drop or rotary-type spreaders designed to apply granular herbicides. Avoid the use of spreaders that would apply this product in narrow rows or concentrated bands. Before each application, calibrate the spreader according to the equipment manufacturer's directions for adjusting the spreader settings such that the spreader delivers the appropriate application rate recommended above. Apply this product uniformly over the lawn or ornamental turf area. A more uniform application can be made by spreading half of the required amount over the area and then applying the remaining half at a right angle to the previous direction. Avoid streaking, skips, or overlaps during application. Check equipment frequently to ensure equipment is functioning properly and applying uniform distribution of granules.

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In case of an emergency involving this product, Call Collect, day or night, (314)694-4000.

MONSANTO COMPANY
AGRICULTURAL PRODUCTS
ST. LOUIS, MISSOURI 63167 U. S. A.