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E.I. du Pont de Nemours & Company, Inc.
 Agricultural Products Department
 Walker's Mill Building
 Barley Mill Plaza
 Wilmington, DE 19898

JUL 15 1986

Attention: Ms. Billie Lynn Rash

Gentlemen:

Subject: DuPont Tersan 1991 Turf Fungicide
 EPA Registration No. 352-357
 Your Letter Dated April 16, 1986

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, is acceptable subject to the comment listed below. Five copies of the finished labeling must be submitted.

- Under "Environmental Hazard" delete "Do not apply directly to water or wetlands," and insert "This pesticide is toxic to fish. Do not apply directly to water. Drift and runoff from treated areas may be hazardous to fish in adjacent areas. Do not contaminate water by cleaning of equipment or disposal of wastes."

In regard to your letter of February 2, 1986, you may disregard the labeling changes requested in items 3a, 3b, and 3c of the Agency's letter dated September 10, 1985. Please note, however, that a dust mask requirement for ground mixer/loaders will be reconsidered when the required subchronic inhalation study is submitted and reviewed.

Sincerely yours,

HMJ
 Henry M. Jacoby
 Product Manager (21)
 Fungicide-Herbicide Branch
 Registration Division (TS-767C)

88753:Forrest:J-11:KENCO:7/11/86:7/23/86:de:VO

CONCURRENCES							
SYMBOL ▶							
SURNAME ▶							
DATE ▶							



TERSAN[®]

1991

TURF FUNGICIDE

Dollar Spot
Brown Patch
Fusarium Patch
Fusarium Blight
Stripe Smut

ACTIVE INGREDIENT

Benomyl [Methyl 1-(butylcarbamoyl)-2-benzimidazolecarbamate] 50%

INERT INGREDIENTS

..... 50%

U.S. Pats. 3,541,213
& 3,631,176

EPA Est. 352-WV-1

EPA Reg. No. 352-357

Keep out of reach of children PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS

CAUTION! MAY IRRITATE EYES, NOSE, THROAT, AND SKIN.

Avoid breathing dust or spray mist. Avoid contact with skin, eyes, and clothing.
Wash thoroughly after using.

Do not apply this product in such a manner as to directly or through drift, expose workers or other persons. The area being treated must be vacated by unprotected persons.

First Aid: In case of contact, flush skin or eyes with plenty of water; for eyes, get medical attention.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not apply directly to water or wetlands. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from areas treated.

PHYSICAL OR CHEMICAL HAZARDS

Keep away from fire or sparks.

For Use On
GOLF COURSES • PARKS
• COMMERCIAL TURF

NOTICE OF WARRANTY

Du Pont warrants that this product, as described in the chemical description on the label, is reasonably fit for purposes stated when used in accordance with the normal use conditions. It is not a warranty of all risks inherently associated with the use of this product. Ineffectiveness or crop damage sequences may result because of weather conditions, presence of other plants, or the manner of use or application beyond the control of Du Pont. Du Pont is not liable for consequential damages resulting from the use of this product. All such risks shall be assumed by the Buyer. DU PONT MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY OTHER PURPOSE NOR ANY IMPLIED WARRANTY EXCEPT AS SHOWN ON LABEL.

NOTICE TO BUYER: Purchaser does not confer any rights under patent or copyright of the United States.

STORAGE AND DISPOSAL

STORAGE: Never allow "Tersan" 1991 to become wet during storage. This may cause chemical changes which will reduce effectiveness. "Tersan" 1991 as a fungicide should be kept tightly closed when not in use. Store in original container only, away from fertilizer, food or feed.

DISPOSAL: Do not contaminate water by storage or disposal. Waste disposal of this product may be done by placing an approved waste disposal bag into application area. Dispose of empty bag in a sanitary manner, or, if allowed by state or local authority, burning. If burned, stay out of smoke.

Net 2 lb

ACCEPTED
with COMPLIANCE
by EPA Letter

JUL 1981

E-67328

or in separate published Du Pont recommendations available through local dealers. Du Pont will not be responsible for losses or damages resulting from use of this product in any manner not specifically recommended by Du Pont. User assumes all risks associated with such non-recommended use.

Do not enter treated areas without protective clothing until sprays have dried. Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Warnings must include the following information: "CAUTION. Area treated with 'Tersan' 1991 on (date of application). Do not enter without appropriate protective clothing until sprays have dried. In case of contact, flush skin or eyes with plenty of water; for eyes, get medical attention."

"Tersan" 1991 Turf Fungicide is recommended for use as a spray for the control of dollar spot, large brown patch, Fusarium patch (pink snow mold), Fusarium blight and stripe smut on golf courses, parks, athletic fields, and commercial turf areas. It is also recommended for the control of certain diseases of roses, flowers, ornamentals, shade trees, and bulbs.

If treatment is not effective following use of "Tersan" 1991 as recommended, a resistant strain of the fungus may be present. If treatment is ineffective due to the presence of a benomyl resistant strain, then neither "Tersan" 1991 nor any other benzimidazole or thiophanate type fungicide will effectively control that disease; consideration should be given to prompt use of other types of suitable fungicides.

The repeated exclusive use of "Tersan" 1991 may lead to buildup of resistant strains of fungi and loss of disease control. A spray program using other fungicides may delay resistant strain buildup. Consult your state extension specialist or official state recommendations for guidance on your particular crop and disease control situation.

NOTE: Do not tank mix or alternate "Tersan" 1991 with benzimidazole or thiophanate products such as "Mertect", "Topsin", "Fungo" or "3336".

TURF—NOTE: The repeated and exclusive use of "Tersan" 1991 has led to the development of resistant strains of dollar spot in some locations and may lead to the development of resistance in other strains of fungi. The use of "Tersan" 1991 as a tank mixture with "Daconil" 2787 Fungicide, "Daconil" 2787 Flowable Fungicide, or Du Pont TER SAN® LSR Turf Fungicide may delay the development of resistant strains of fungi. Apply recommended amounts of "Tersan" 1991 plus either "Daconil" 2787, or "Tersan" LSR in sufficient water to obtain thorough coverage, usually 3 to 5 gals. per 1,000 sq. ft. When treating golf greens, always treat aprons and approaches.

"Tersan" 1991 plus "Daconil" 2787: Dollar Spot and Brown Patch—Apply 1 oz. "Tersan" 1991 plus 3 fl. oz. "Daconil" 2787 Flowable (or 2 oz. "Daconil" 2787—75% wettable powder) per 1,000 sq. ft. Make the initial application when conditions favor disease development and repeat the treatment on 10- to 14-day intervals as needed.

"Tersan" 1991 plus "Daconil" 2787: Helminthosporium leafspot and Brown Patch (and Dollar Spot, if present)—Apply 1 oz. "Tersan" 1991 plus 3 to 6 fl. oz. "Daconil" 2787 Flowable (or 2 to 4 oz. "Daconil" 2787—75% wettable powder) per 1,000 sq. ft. Make the initial application when conditions favor disease development and repeat the treatment on 7- to 10-day intervals as needed. Use the higher rate of "Daconil" 2787 in the combination if disease conditions are particularly severe.

"Tersan" 1991 plus "Tersan" LSR: Helminthosporium leafspot and dollar spot and/or brown patch; dollar spot and brown patch; brown patch—Apply 1 oz. "Tersan" 1991 plus 3-4 ozs. "Tersan" LSR for each 1,000 sq. ft. of turfgrass area to be treated. Make initial application when disease first appears and continue applications on 7- to 14-day intervals for as long as needed. Use the shorter intervals and higher use rate when conditions are unusually favorable for disease development.

"Tersan" 1991 in other spray programs—Apply recommended amounts of "Tersan" 1991 in sufficient water to obtain thorough coverage, usually 2 to 5 gals. per 1000 sq. ft. When treating golf greens, always treat aprons and approaches.

Dollar Spot (*Sclerotinia homoeocarpa*)—Apply at rate of 1 oz. per 1000 sq. ft. at earliest appearance of disease and continue at 10- to 14-day intervals as long as needed.

¹Registered trademark of Merck & Co.

²Registered trademark of Mallinckrodt Inc.

³Registered trademark of Nippon Soda Co., Japan

⁴Registered trademark of Diamond Shamrock Co.

When conditions are unusually favorable for development of disease, reduce interval to 5 to 7 days.

Fusarium Patch (*Fusarium nivale*)—A cool season disease—Apply at rate of 2 oz. per 1000 sq. ft. at earliest appearance of disease and continue at 10- to 14-day intervals as long as needed.

Fusarium Blight (*Fusarium roseum* and *F. tricinctum*)—A warm season disease—Apply at rate of 5 to 8 oz. per 1000 sq. ft. at earliest appearance of disease and repeat 10 to 14 days later. Immediately after application, water sufficiently to thoroughly wet soil to a depth of 1 inch below any mat or thatch present.

Stripe Smut (*Ustilago striiformis*)—Make a single application at rate of 6 oz. per 1000 sq. ft. in October or in early spring before grass begins growth. After application, water turf sufficiently to carry product to base of plants.

Note: Where *Helminthosporium* diseases are a problem, apply "Tersan" LSR Turf Fungicide two or three times in the early spring at rate of 3 to 4 oz. per 1000 sq. ft. at 7- to 10-day intervals.

Do not graze or feed clippings from treated areas to livestock.

ROSES, FLOWERS, ORNAMENTALS, SHADE TREES

—Field and Greenhouse: Foliar Spray—Begin applications when disease first appears and repeat at 10- to 14-day intervals throughout the growing season; shorten interval during humid, rainy weather. Use at the following rates: ½ lb. per 100 gals. (1 tablespoonful per 2 gals.)—for Powdery Mildew, Botrytis Gray Mold, 1 lb. per 100 gals.—for Anthracnose (for shade trees and woody ornamentals, begin at bud break and make 2 or 3 additional applications at 10- to 14-day intervals); Black Spot of roses; Cercospora, Entomosporium, Ramularia, and Septoria Leafspots; Ascochyta and Phomopsis blights; Didymellina Leafspot of iris; Corynespora Leafspot of Ligustrum; Ovulinia Blight of azalea and rhododendron (begin as flowers open); Scab of pyracantha and flowering crab. Addition of a surfactant to the spray mixture improves distribution of the spray on hard-to-wet plants such as roses. For aerial application, use ½ to 1 lb. per acre.

Drench Treatment—Botrytis, Fusarium, Rhizoctonia and Sclerotinia stem, crown and root rots on herbaceous annuals, perennials and bedding plants; Cylindrocladium and Thielaviopsis rots on woody ornamentals such as azaleas, rhododendrons, conifers, and poinsettias—Use 1 lb. per 100 gals.; apply as a drench or heavy spray (1 to 2 pts. per sq. ft.) after transplanting into propagation beds or containers. Repeat at 2- to 4-week intervals during periods favorable for disease. "Tersan" 1991 does not control *Pythium* spp. or *Phytophthora* spp.

Preplant Dip Treatment—For diseases listed under Drench Treatment, use 1 lb. per 100 gals. of water; immerse plants or cuttings for 10 to 15 min.; remove and allow to drain.

BULBS (Easter Lily, Tulp, Gladiolus, Daffodil, Iris): Fusarium and Penicillium Rots—Use 1½ lbs. per 100 gals. of water (2 tablespoonfuls per gal.). Soak cleaned bulbs for 15 to 30 minutes in warm dip (80 to 85° F), preferably within 48 hours after digging. Dry bulbs after treatment. If bulbs are for forcing, treat after bulbs have been heated.

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