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OCT 28 1992

Dr. Rodney C. Akers
Senior Registration Specialist
BASF Corporation, Agricultural Chemicals
P.O. Box 13528
Research Triangle Park, NC 27709-3528

Dear Dr. Akers:

Subject: Curalan DF Fungicide
EPA Reg. No. 7969-85
Application for Pesticide Amendment of 07/01/92
Combination of Turf & Ornamental Uses on One Label

The amendment referred to above, submitted in connection with registration under section 3(c)(7)(A) of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) is acceptable provided you:

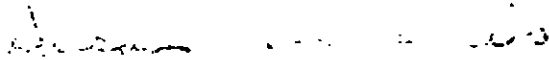
1. Make the following label change before you release the product for shipment bearing the amended labeling:
 - a. Add "Hazards to Humans and Domestic Animals" to the Precautionary Statements.
 - b. In the third column of page 4, under Application instructions, just above Notes to user, the following wording is on the Curalan Fungicide label that was simultaneously submitted, but not on the label referred to above: "Curative, apply 12 oz to 16 oz of Curalan pe. 100 gallons of water for medium to high disease pressure. Repeat every 10 to 14 days." This is brought to your attention because we consider you intend these labels to be similarly worded.
 - c. In the third column of page 4, under Mixing instructions, use "fluid ounces" when referring to liquid materials.
 - d. Under Bulbs and Corms, indicate the diseases to be controlled.

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2. Submit five (5) copies of your final printed labeling before you release the product for shipment.

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

Sincerely yours,



Susan T. Lewis
Product Manager (21)
Fungicide-Herbicide Branch
Registration Division (H7505C)

Enclosure

BASF

Label approval pending in California.

ACCOUNT NO. _____
with _____ as dated: _____
in _____

Under Fungicide
amend.
regist.

7969-85

Curalan™

fungicide



Fungicide

A water dispersible, granule powder containing:

Active Ingredient

Vinclozolin: 3-(3, 5-dichlorophenyl)-5-ethenyl-5-methyl-2, 4-oxazolidinedione

50.0%

Inert ingredients

50.0%

Total

100.0%

EPA Reg. No. 7969-85

EPA Establishment No. 39578-TX-01

KEEP OUT OF REACH OF CHILDREN.

CAUTION

Precautionary statements

Harmful if swallowed, inhaled or absorbed through skin. Causes eye irritation. Do not get on skin, in eyes or on clothing.

When applying this product—wear goggles or face shield, chemical-resistant gloves, coveralls or long-legged pants, socks, long-sleeved shirt and chemical-resistant boots or shoes or shoe coverings. When mixing or loading or when adjusting, repairing or cleaning equipment, wear chemical-resistant gloves extending above the wrist, a chemical-resistant apron, long-legged pants, socks, long-sleeved shirt and chemical-resistant boots or shoes or shoe coverings. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before re-use.

Application with airblast equipment must be from an enclosed tractor cab or applicator must wear a one- or two-piece protective suit of cotton or coveralls that covers all parts of the body except the head, hands and feet that are worn over a long-sleeved shirt and long pants. Wear chemical-resistant gloves, and chemical-resistant shoes, shoe coverings or boots, and a chemical-resistant hat, and a pesticide mask or respirator jointly approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH). Wash thoroughly with soap and water after handling or use of this product, and wash contaminated clothing and protective equipment thoroughly before re-use.

Statement of practical treatment

If on skin: Wash with plenty of soap and water. Get medical attention

If inhaled: Remove victim to fresh air. If not breathing give artificial respiration, preferably mouth to mouth. Get medical attention

If in eyes: Flush with plenty of water. Call a physician if irritation persists

Environmental hazards

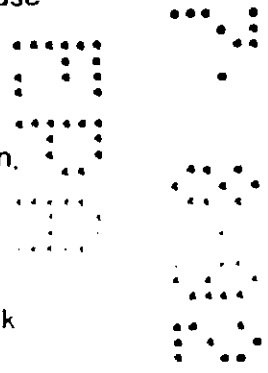
This product is toxic to fish. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters

Net contents 5.5 lbs.

BASF Corporation
PO Box 13528 Research Triangle Park NC 27709

BEST AVAILABLE COPY

Specimen Label



Re-entry and workers' protection statements

Do not apply this product in such a manner as to directly or through drift expose workers or other persons, except those knowingly involved in the application. Do not enter treated areas without protective clothing until sprays have dried.

Because certain states may require more restrictive re-entry 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. Oral warnings must inform workers of areas or fields that may not be entered without specific protective clothing until sprays have dried, and appropriate actions to take in case of accidental exposure. 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. Written warnings must include the following information:

"CAUTION: Area treated with Curalan DF fungicide on (date of application). Do not enter without appropriate protective clothing until sprays have dried. If contacted, flush eyes immediately with water for 15 minutes and get medical attention.

In case of contact with skin or clothing, remove contaminated clothing, wash skin thoroughly with soap and water. Call physician if irritation occurs. Wash contaminated clothing before re-use."

Directions for use

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

Storage and disposal

Storage: Do not contaminate water, food, or feed by storage or disposal.

Pesticide disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container disposal: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by state and local authorities by burning. If burned, stay out of smoke.

In case of emergency

In case of large-scale spillage regarding this product, call:

CHEMTREC 800-424-9300
BASF Corporation 800-832-HELP

In case of medical emergency regarding this product, call:

1. Your local doctor for immediate treatment.
2. Your local poison control center (hospital).
3. BASF Corporation 800-832-HELP

All applicable directions, restrictions, precautions and Conditions of sale and warranty are to be followed. This labeling must be in the possession of the user at the time of application.

General information

Curalan DF is effective on all turfgrasses for control of Dollar Spot (*Sclerotinia homoeocarpa*; *Lanzia* sp.; *Moellerodiscus* sp.); Helminthosporium Leaf Spots and Melting Out (*Drechslera* spp. and *Bipolaris* sp.), Pink Patch and Red Thread (*Limonomyces roseipellis* and *Laetisaria fuciformis* respectively), Gray Snow Mold (*Typhula incarnata* spp.), Fusarium Patch and Pink Snow Mold (*Fusarium nivale*; *Microdochium* sp.), and Brown Patch (*Rhizoctonia solani*). To maintain the health of your turf, it is recommended that turfgrass be protected against infestation of these diseases. A preventive application of **Curalan DF** should occur before the disease is expected to appear. If this cannot be done, make curative applications according to the **Application Rates and Timing Table** for the disease to be controlled.

Thorough coverage of all foliage is important so enough spray volume and pressure must be used to achieve desired disease control. Apply indicated rates of **Curalan DF** in 1-4 gallons of water per 1,000 sq. ft. (40-160 gals./acre) of turf after mowing and allow foliage to dry before irrigation.

Mixing instructions

Fill spray tank with $\frac{1}{2}$ - $\frac{3}{4}$ of total water volume required and start agitation system. Jet or mechanical agitation must be provided during filling and application to ensure adequate dispersion/suspension of product. Add proper amount of **Curalan DF**.

Complete filling to the desired volume. Keep agitated to ensure even suspension of material. Make fresh daily. Spray uniformly over the area to be treated with a properly calibrated power sprayer equipped with nozzle screens and inline strainers no finer than 50 mesh. Rinse tank, screens and nozzles thoroughly prior to and following application. Do not apply this product with spray equipment not having jet or mechanical agitation.

Tank mixes

For the additional control of brown patch and anthracnose, **Curalan DF** may be tankmixed with Fungo[®] systemic turf fungicide. For additional control of brown patch and snow mold, **Curalan DF** may be tankmixed with Thiram fungicide. When these or other products are to be tankmixed, a tank mix compatibility test should be conducted to ensure compatibility under local spray conditions. See **Tank mix compatibility test** section on page 3.

Due to variability within species, application equipment and the number of possible tank mix combinations, neither the manufacturer nor the seller has determined whether or not **Curalan DF** tank mixes not listed on this labeling can be safely used on all turf sites. It is therefore recommended that the user should determine if **Curalan DF** tank mixes can be used safely prior to broad use. Do not use **Curalan DF** with other pesticides whose labels caution against its use in tank mixes.

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Tank mix product should be added in the following sequence after the tank has been 1/2-3/4 filled and agitation has been started:

1. Add wettable powders to the tank first, allowing them to completely suspend in the tank before proceeding. This process can be hastened by pre-mixing the product in water before adding to the tank.
2. Add flowables (**Curalan DF**) or suspensions next.
3. Add emulsifiable concentrates last.
4. Add the remaining amount of water. Do not leave tank mix combinations in the spray tank for prolonged periods without agitation. Mix and apply the same day.

Tank mix compatibility test

Any other product that is to be used with **Curalan DF** should be checked for compatibility. Using a quart jar, check the compatibility of the product using the following procedure:

1. Use only water from intended source and at the source temperature. Fill the jar 1/2-3/4 full.
2. Add 1/4 oz. (1 1/2 teaspoons) of **Curalan DF** to the water for each 1 oz./1000 sq. ft., or, if a liquid, 1 teaspoon for each pint of recommended rate.
3. Add the remaining water in the jar, cap, invert for 10 cycles and let stand for 15 minutes. An ideal tank mix combination will be uniform. The compatibility is questionable if there are any oil film or globules on the surface, fine particle flocculation in the liquid or at the bottom, or clabbering—thickening of the liquid resembling yogurt or a curd-like texture as with cottage cheese.

Curalan DF Application Rates and Timing for Control of Diseases of Turfgrasses

Disease	Application Intervals	Application Rate of Curalan DF**			
		Preventive		Curative	
		Days*	lbs./A	Dry Oz. per 1000 sq. ft.	lbs./A
Dollar Spot	21-28	2.7	1	5.4	2
Leaf Spots and Melting Out	14-28	2.7	1	5.4	2
Red Thread & Pink Patch	14-28	2.7	1	5.4	2
Brown Patch**	14-28	2.7	1	5.4	2
Gray Snow Mold	10-21	5.4	2	11.0	4
Fusarium Patch & Pink Snow Mold	10-21	5.4	2	11.0	4

* Re-treat at shorter intervals or use higher rates if conditions which are favorable to disease development exist.
 ** To control existing infections, apply at curative rate. Apply subsequent treatments at the preventive rate once control has been achieved.

Restrictions and limitations

In tank mixes, read and follow restrictions on the **Curalan DF** and the respective tank mix product label. The most restrictive labeling applies to tank mixes.

Do not apply **Curalan DF** through any type of irrigation system.

Do not apply more than 12 lbs. of **Curalan DF** per acre in one year.

Do not apply to areas likely to be grazed by livestock and do not feed clippings to livestock or poultry.

General Information

Curalan DF is effective for disease control on many ornamental plants. **Curalan DF** will control *Botrytis* spp. on all herbaceous and woody ornamentals listed on page 4. **Curalan DF** will also control *Ciborinia*, *Monilinia*, *Ovulinia*, *Sclerotinia* and *Stromatinia* on certain herbaceous and woody ornamentals listed on page 4.

Other uses of **Curalan DF** include:

Fogging operations.

Dips of cut flowers, rose budwood, bareroot nursery stock, bulbs, and corms.

Sprays to field grown flowers.

See specific recommendations on page 4.

Plant types and application instructions

Curalan DF fungicide will control *Botrytis* spp. on the following plant types. For other diseases controlled, see below.

Herbaceous ornamentals

African Violet	Hyacinth
Ajuga	Impatiens
Alyssum	Iris
Anthurium	Ivy
Aphelandra	Kalanchoe
Artemisia	Liatris
Aster	Lily
Begonia	Lupine
Bleeding Heart	Marigold
Calceolaria	Mathiola
Carnation	Monarda
Chrysanthemum	Narcissus
Cineraria	Orchid (<i>Dendrobium</i>)
Coleus	Pelargonium
Columbine	Peperomia
Coral Bells	Petunia
Crossandra	Philodendron
Croton	Phlox
Cyclamen	Poppy, Oriental
Daffodil	Pilea
Delphinium	Primrose
Dianthus	Primula
Dieffenbachia	Saintpaulia
Dracaena	Salvia
Easter Lily	Saxifraga
Episcia	Scindapsus
Euphorbia	Senecio
Fuchsia	Shasta Daisy
Gazania	Sinningia
Geranium	Snapdragon
Gerbera	Statice
Gladiolus	Tulip
Gynura	Violet
Gypsophila	Zinnia
Hoya	

Woody ornamentals

Almond, Flowering ¹	Oregon Grape
Azalea	Pachysandra
Camellia	Palm, Areca
Cedar	Pine
Cherry, Ornamental ¹	Plum ¹
Chokecherry ¹	Poinsettia ²
Crape Myrtle	Polyscias
Elm	<i>Protea</i> spp.
Euonymus	Redwood
Ficus ¹	Rhododendron
Fir	Schefflera
Hydrangea	Spruce
Ivy	Vinca
Juriper	

Key to notes and diseases controlled

¹Use only on non-bearing plants. Do not apply within 12 months of harvest.

²Do not spray poinsettias in color, or after November 1. Some cultivars may be sensitive to leaf spotting. Do not use on poinsettia cultivar V-14 Glory.

Curalan DF will also control other diseases on some ornamental plant types, as indicated below:

Ciborinia-Camellia

Monilinia-Almond, Flowering Cherry, Ornamental Chokecherry, Plum

Ovulinia-Azalea

Sclerotinia-Snapdragon, Hyacinth, Narcissus, Scilla, Zinnia

Stromatinia-Gladiolus

Application instructions

I. Foliar spray application

Mixing instructions: Partially fill the spray tank with clean water and begin agitation. Add the required amount of **Curalan DF** to the tank according to the **Spray Solution Table** and fill tank to total volume required. Maintain agitation to keep the material in suspension and apply with properly calibrated spray equipment. Normally, 2 to 6 gallons of spray solution will cover 1,000 square feet of foliage. Apply until leaves glisten, but not to point of runoff.

Application rates and timing for disease control

Preventive: Apply 1/2 lb. to 3/4 lb. **Curalan DF** per 100 gallons of water when conditions for disease prevail. Normally, 2 to 6 gallons of spray solution will cover 1,000 square feet of foliage. Repeat every 10 to 14 days or as needed. Refer to **Spray Solution Table** for mixing information.

Notes to user: Ensure that plants dry off quickly after treatment. Do not spray stressed plants. Do not drench growth media. Do not spray seedling until formation of three true leaves.

II. Foliar spray—thermal fogger application

Thermal foggers with a built-in agitator may be used to apply **Curalan DF**.

Mixing instructions: Ensure that fogging device is in working order before preparing solution. In a separate container, prepare fogging solution of 19 ounces of VK-II carrier solution and 51 ounces of water. Then add appropriate amount of **Curalan DF** (below). Solution will cover 10,000 square feet of greenhouse area.

Application rates and timing for disease control

Preventive: Add 0.2 lb. **Curalan DF** to the volume of fogging solution specified. Repeat every 10 to 14 days as long as disease conditions prevail.

Curative: Add 0.4 lb. **Curalan DF** to the volume of fogging solution above. Repeat every 10 to 14 days as needed.

Notes to user: Operator must wear a one- or two-piece protective suit of cotton or coveralls that covers all parts of the body except the head, hands and feet that is worn over a long-sleeved shirt and long pants. Operator must wear chemical-resistant gloves, and chemical-resistant shoes, shoe coverings, or boots, and a chemical-resistant hat, and a pesticide mask or respirator jointly approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH). Wash thoroughly with soap and water after handling or use of this product, and wash contaminated clothing and protective equipment thoroughly before re-use. Best results are obtained with treatments made late in the day. Treated area should be ventilated early the next morning. Avoid inhaling vapors. Never fog plants with wet foliage or plants under water stress. Poinsettias should not be fogged once bracts begin to show color.

Cut flowers—gladiolus and rose

Usage: Prevents Gray Mold (*Botrytis gladiorum*) on gladiolus spikes and *Botrytis cinerea* on roses in cold storage or transit.

Application rates and timing: As a postharvest dip, dip flower buds 3 to 4 seconds in solution of 1.5 to 3.0 lbs. **Curalan DF** per 100 gallons of water after grading and prior to cold storage. Addition of wetting agent will enhance spreadability. Maintain suspension by agitation.

Rose budwood and bareroot nursery stock

Usage: Prevents Gray Mold (*Botrytis cinerea*) on budwood and nursery stock in storage.

Application rates and timing: Use as a spray or dip. Spray on runoff, or dip plants in 1.5 lbs. **Curalan DF** per 100 gallons of water. Maintain suspension by agitation. Use after harvest and prior to storage.

Bulb and corm

Plant types: Gladiolus, Hyacinth, Iris, Lily, Narcissus, Scilla, Tulip.

Application rates and timing: As a dip, use a solution containing 1.0 to 2.0 lbs. **Curalan DF** per 100 gallons of water. Maintain suspension by agitation. Use after harvest and prior to storage.

Field grown flowers

Usage: Controls Gray Mold (*Botrytis* spp.) during production

Application rates and timing: For aerial application, use 1.5 lbs.

Curalan DF in 20 to 25 gallons of water per acre. Apply when conditions for disease prevail. Repeat every 10 to 14 days as needed.

For ground application use a solution containing 1.5 to 2.0 lbs.

Curalan DF per 100 gallons of water. Repeat every 10 to 14 days as needed.

Notes to user: Due to variability within species and in application techniques neither the manufacturer nor the Seller has determined whether or not **Curalan DF** can safely be used on all varieties and species of nonbearing food crops,

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trees, shrubs, ornamentals, bedding plants, ground covers, nursery and other nonfood crops under all conditions. It is therefore recommended that the professional user determine if **Curalan DF** can be used safely prior to broad use.

This determination can be made in the following manner: On a small test area apply recommended use rate of **Curalan DF** on a non-labeled species or variety under the conditions expected to be encountered. Any adverse effects should be visible within 14 days.

Restrictions and limitations

Do not apply more than a total of 12 pounds of product per acre in one year.

Do not apply this product through any type of irrigation system.

Spray Solution Table for Ornamental Uses

Rates of **Curalan DF** to use with different amounts of desired spray solution.

Gallons of Water	Rate of Curalan DF					
	1/2 lb.	3/4 lb.	1 lb.	1 1/2 lbs.	2 lbs.	3 lbs.
100	4 oz.*	6 oz.	8 oz.	3/4 lb.	1 lb.	1 1/2 lbs.
50	2 oz.	3 oz.	4 oz.	6 oz.	8 oz.	3/4 lb.
25	1.6 oz.	2.4 oz.	3.2 oz.	4.8 oz.	6.4 oz.	9.8 oz.
10	0.8 oz.	1.2 oz.	1.6 oz.	2.4 oz.	3.2 oz.	4.8 oz.
5	1 1/4 Tbs.	1 1/2 Tbs.	2 1/4 Tbs.	3 1/3 Tbs.	4 1/2 Tbs.	6 2/3 Tbs.
1	2/3 tsp.	2/3 tsp.	1 1/3 tsp.	2 tsp.	2 2/3 tsp.	4 tsp.

*Dry ounce

The following is a list of diseases discussed in this labeling:

Diseases	
Common Name	Scientific Name
Anthraxnose	<i>Colletotrichum gramimicola</i>
Brown Patch	<i>Rhizoctonia solani</i>
Dollar Spot	<i>Sclerotinia homoeocarpa</i> ; <i>Lanzia</i> sp.; <i>Moellerodiscus</i> sp.
Fusarium Patch; Pink Snow Mold	<i>Fusarium nivale</i> ; <i>Microdochium</i> sp.
Gray Mold	<i>Botrytis cinerea</i>
Gray Snow Mold	<i>Typhula incarnata</i>
Helminthosporium Leaf Spots Melting Out	<i>Drechslera</i> spp. <i>Bipolaris</i> sp.
Pink Patch	<i>Limonomyces roseipellis</i>
Red Thread	<i>Laelisatia fuciformis</i> . . .

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JUR218 A0370292

Conditions of sale and warranty

The Directions for use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product.

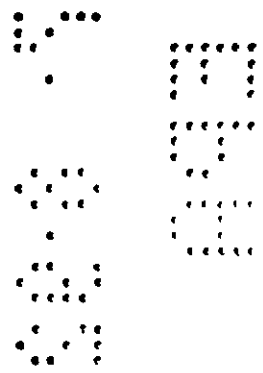
Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. All such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for use, subject to the inherent risks referred to above. BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. IN NO CASE SHALL BASF OR THE SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing Conditions of sale and warranty which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

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Specialty Products

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