

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 Fungicide
EPA Reg. No. 7969-62
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:

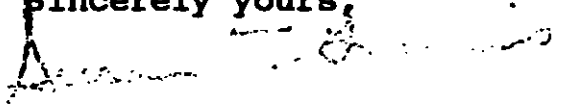
1. Make the following label change before you release the product for shipment bearing the amended labeling:
 - a. Add "Hazards to Humans and Domestic Animals" to the Precautionary Statements.
 - b. In the third column of page 4, under Application instructions, the following wording is on the Curalan DF Fungicide label that was simultaneously submitted, but not on the label referred to above: "according to the spray solution table" between the words tank and fill in the first paragraph, "Refer to spray solution table for mixing information." after the sentence ending with the word needed in the second paragraph and "the volume of fogging solution specified" after the word to near the bottom of the page instead of "fogging solution". This is brought to your attention because we consider you intend these labels to be similarly worded.
 - c. In the first column of page 5, under Application rates and timing change "per gallon" to "per 100 gallons" and add the sentence, "Maintain suspension by agitation." as on the Curalan DF label.

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- d. Under Bulbs and Corms, indicate the diseases to be controlled.
- 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

PH 21 7969-62
Label approval pending in California. 3048

DCT 28 1992

7969-62

Curalin

A liquid flowable fungicide containing:

Active ingredient

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

41.3%

Inert ingredients

58.7%

Total

100.0%

*Equivalent to 4.17 pounds vinclozolin per gallon.

EPA Reg. No. 7969-62

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 tightly woven 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 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, chemical-resistant hat, chemical-resistant boots or shoes or shoe coverings, 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

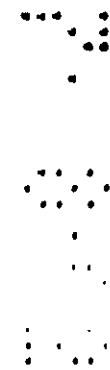
This product is toxic to fish. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters

Net contents 1 quart (946 ml.), 1 gallon

BASF Corporation

PO Box 13528 Research Triangle Park, NC 27709

Hazards to Humans and Domestic Animals



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 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: Triple rinse container (or equivalent). Then offer for recycling or reconditioning or puncture and dispose of 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 for turf disease control

Curalan is effective on all turf-grasses 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** should occur before the disease is expected to appear. If this cannot be done,

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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** 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 1/2-3/4 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**.

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** may be tankmixed with Fungo® systemic turf fungicide. For the additional control of brown patch and snow mold, **Curalan** 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** 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** tank mixes can be used safely prior to broad use.

Do not use **Curalan** with other pesticides whose labels caution against its use in tank mixes.

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 premixing the product in water before adding to the tank.
2. Add flowables (**Curalan**) 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** 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** to the water for each 1 fl. 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 Application Rates and Timing for Control of Diseases of Turfgrasses

Disease	Application Intervals	Application Rate of Curalan**			
		Preventive		Curative	
	Days*	Pts./A	Fl. Oz. per 1000 sq. ft.	Pts./A	Fl. Oz. per 1000 sq. ft.
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 and 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** and the respective tank mix product label. The most restrictive labeling applies to tank mixes. Do not apply **Curalan** through any type of irrigation system. Do not apply more than 11.5 pts. of **Curalan** 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

for ornamental disease control
Curalan is effective for disease control on many ornamental plants. **Curalan** will control *Botrytis* spp. on all herbaceous and woody ornamentals listed on page 4. **Curalan** will also control *Ciborinia*, *Monilinia*, *Ovulinia*, *Sclerotinia* and *Stromatinia* on certain herbaceous and woody ornamentals listed on page 4. Other uses of **Curalan** 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 fungicide offers control of *Botrytis* spp. on all plant types listed here. For other diseases controlled, refer to **Key to notes and diseases controlled** below.

Herbaceous ornamentals

African Violet
 Ajuga
 Alyssum
 Anthurium
 Artemisia
 Aster
 Begonia
 Bleeding Heart
 Calceolaria
 Carnation
 Chrysanthemum
 Cineraria
 Coleus
 Columbine
 Coral Bells
 Crossandra
 Croton
 Cyclamen
 Daffodil
 Delphinium
 Dianthus
 Dieffenbachia
 Dracaena
 Easter Lily
 Episcia
 Euphorbia
 Fuchsia
 Gazania
 Geranium
 Gerbera
 Gladiolus
 Gynura
 Gypsophila
 Hoya

Hyacinth
 Impatiens
 Iris
 Ivy
 Kalanchoe
 Liatris
 Lily
 Lupine
 Marigold
 Mathiola
 Monarda
 Narcissus
 Orchid (*Dendrobium*)
 Pelargonium
 Peperomia
 Petunia
 Philodendron
 Phlox
 Poppy, Oriental
 Pilea
 Primrose
 Primula
 Saintpaulia
 Salvia
 Saxifraga
 Scindapsus
 Senecio
 Shasta Daisy
 Sinningia
 Snapdragon
 Statice
 Tulip
 Violet
 Zinnia

According to the spray solution table

Refer to spray solution table for mixing information

Woody ornamentals

Almond, Flowering¹
 Azalea
 Camellia
 Cedar
 Cherry, Ornamental¹
 Chokecherry¹
 Crape Myrtle
 Elm
 Euonymous
 Ficus¹
 Fir
 Hydrangea
 Ivy
 Juniper

Oregon Grape
 Pachysandra
 Palm, Areca
 Pine
 Plum¹
 Poinsettia²
 Polyscias
 Protea spp.
 Redwood
 Rhododendron
 Schefflera
 Spruce
 Vinca

the volume of fogging solution specified

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 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

Foliar spray hydraulic application

Mixing instructions: Partially fill the spray tank with clean water and begin agitation. Add the required amount of **Curalan** to the tank 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 make-up 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 8 fl. oz. to 12 fl. oz. **Curalan** per 100 gallons of water when conditions for disease prevail. Repeat every 10 to 14 days or as needed.

Curative: Apply 12 fl. oz. to 16 fl. oz. **Curalan** per 100 gallons of water for medium to high disease pressure. Repeat every 10 to 14 days as needed.

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.

Foliar spray—thermal fogger application

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

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

Application rates and timing for disease control

Preventive: Add 3.2 fl. oz. **Curalan** to fogging solution. Repeat every 10 to 14 days as long as disease conditions prevail.

Curative: Add 6.4 fl. oz. **Curalan** to fogging solution. 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 hat, chemical-resistant boots or shoes or shoe coverings, 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. Fogging should not be done on poinsettias 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 16 fl. oz. to 48 fl. oz. **Curalan** per gallon of water after grading and prior to cold storage. Addition of wetting agent will enhance spreadability.

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 to runoff, or dip plants in 24 fl. oz. **Curalan** per 100 gallons of water.

Maintain suspension by agitation. Use after harvest and prior to storage.

Bulb and corm

Plant types:

- Gladiolus Narcissus
- Hyacinth Scillia
- Iris Tulip
- Lily

Usage: Prevents Gray Mold (*Botrytis* spp.) and *Sclerotinia*.

Application rates and timing: As a dip, use 16 fl. oz. to 32 fl. oz.

Curalan 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 24 fl. oz. **Curalan** 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 pints **Curalan** 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 or the Seller has determined whether or not **Curalan** can safely be used on all varieties and species of nonbearing food crops.

trees shrubs ornamentals bearing plants ground covers nursery and other non-food crops under all conditions. It is therefore recommended that the professional user determine if **Curalan** 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** 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 11.5 pints 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** to use with different amounts of desired spray solution.

Gallons of Water	Rate of Curalan					
	8 fl. oz.	12 fl. oz.	16 fl. oz.	24 fl. oz.	32 fl. oz.	48 fl. oz.
100	8 fl. oz.*	6 fl. oz.	4 fl. oz.	2 fl. oz.	1 fl. oz.	0.5 fl. oz.
50	4 fl. oz.*	3 fl. oz.	2 fl. oz.	1 fl. oz.	0.5 fl. oz.	0.25 fl. oz.
25	2 fl. oz.	1.5 fl. oz.	1 fl. oz.	0.5 fl. oz.	0.25 fl. oz.	0.125 fl. oz.
20	1.6 fl. oz.	1.2 fl. oz.	0.8 fl. oz.	0.4 fl. oz.	0.2 fl. oz.	0.1 fl. oz.
10	0.8 fl. oz.	0.6 fl. oz.	0.4 fl. oz.	0.2 fl. oz.	0.1 fl. oz.	0.05 fl. oz.
5	2.4 tsp.	3.6 tsp.	1.6 Tbs.	2.4 Tbs.	1.6 fl. oz.	2.4 fl. oz.
1	0.5 tsp.	0.75 tsp.	1 tsp.	1.5 tsp.	2 tsp.	3 tsp.

*One tablespoon (Tbs) = 3 teaspoons (tsp.) = 0.5 fluid ounce (fl. oz.)

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

Diseases	
Common Name	Scientific Name
Anthracnose	<i>Colletotrichum graminicola</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>Limothyces roseipellis</i>
Red Thread	<i>Laeisaria luciformis</i>

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Conditions of sale and warranty

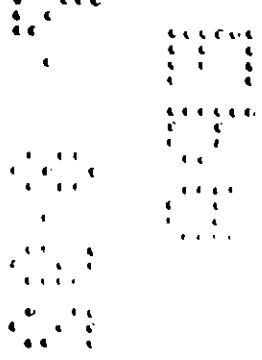
The Directions for use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness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