



PM 22 9779-280
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

April 19, 1996

Steve Rogosheske
Riverside/Terra Corporation
600 Fourth Street
P.O. Box 6000
Sioux City, IA 51102-6000

Subject: Labeling Amendment
Terranil 90DF
EPA Reg. No. 9779-280
Your Letter Dated February 9, 1996

Dear Mr. Rogosheske:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, is acceptable provided you make the following changes to your labeling.

1. Per our letter to you dated January 26, 1996, we asked that you include a range for spray intervals or delete "under severe conditions, shorten spray intervals." in the Cucurbits section of the label. However, in your current label submission, you modified this sentence to read "Under severe disease conditions, shorten spray interval." but neither included a spray range nor deleted this sentence. We ask you again to either delete this sentence or provide a range for the spray intervals during the "severe conditions".
2. In addition, we suggest that you correct one typographical error in the table for stone fruits by adding a comma between "Cherry" and "Plum".

If these conditions are not complied with after acceptance, the registration will be subject to cancellation in accordance with Section 6(e) of FIFRA. A stamped copy is enclosed for your records. Please submit one (1) copy of your final printed labeling before you release the product for shipment.

Sincerely,

Theresa A. Stowe

Theresa A. Stowe
Acting Team Leader
Product Manager (22)
Fungicide-Herbicide Branch
Registration Division (7505C)

Enclosure

2016

ACCEPTED
with COMMENTS
In EPA Letter Dated
APR 19 1996

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TERRANIL 90DF
Agricultural Turf & Ornamental Fungicide
(90% water dispersible granules)

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
9779-280

ACTIVE INGREDIENT		
Chlorothalonil (tetrachloroisophthalonitrile)		90.0%
INERT INGREDIENTS		10.0%
	Total	100.0%

KEEP OUT OF REACH OF CHILDREN

DANGER/PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

STATEMENT OF PRACTICAL TREATMENT

- IF SWALLOWED:** Contact your local poison control center, hospital, or physician. If the patient is unconscious, maintain breathing and heartbeat (cardiopulmonary resuscitation).
- IF INHALED:** Remove victim to fresh air and apply respiration if indicated.
- IF ON SKIN:** Wash with soap and water.
- IF IN EYES:** Flush with plenty of water for 15 minutes. Get medical attention if irritation persists.
- FIRST AID:** Note to Physician: Persons having an allergic reaction respond to treatment with antihistamines or steroid creams and/or systemic steroids.

PRECAUTIONARY STATEMENTS

DANGER

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Corrosive, causes severe eye damage. Do not get in eyes. May be a potential skin sensitizer. Avoid contact with skin or clothing. Do not take internally. Avoid breathing dust or spray mist. NOTE TO USER: This product may produce temporary allergic side effects characterized by redness of the eyes, mild bronchial irritation and redness or rash on exposed skin areas. Persons having allergic reactions should contact a physician.

Personal Protective Equipment:

Applicators and other handlers must wear long-sleeved shirt and long pants, waterproof gloves, shoes plus socks and protective eyewear. For exposures in enclosed areas, a respirator with either an organic-vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Read Additional PRECAUTIONARY STATEMENTS.

EPA Reg. No. 9779-280

EPA Est. No. 9779-AR-13

Manufactured For
Riverside/Terra Corporation
P. O. Box 6000, Sioux City, Iowa 51102-6000
Riverside Serves Agriculture. Agriculture Serves Everyone.

NET CONTENTS
LBS.

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ENVIRONMENTAL HAZARDS

This product is toxic to fish, aquatic invertebrates, and marine/estuarine organisms. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. 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 apply when weather conditions favor drift from treated areas. Apply only to areas specified on label. Do not contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers, and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, waterproof gloves, shoes plus socks and protective eyewear.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Keep unprotected persons or pets out of treated areas until sprays have dried.

STORAGE AND DISPOSAL

DO NOT CONTAMINATE WATER, FOOD, OR FEED BY STORAGE OR DISPOSAL

STORAGE

Store in a dry location away from children, animals, foods, feeds, seeds, or other agricultural chemicals. In the event of spillage, scrape up and dispose of in accordance with information given under DISPOSAL. Repackage and relabel useable product in a sound container. In case of fire or other emergency, report at once by toll-free telephone to 800-424-9300.

DISPOSAL

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, pesticide spray, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

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.

GENERAL INFORMATION

Terranil 90DF is an excellent fungicide when used according to label directions for control of a broad spectrum of plant diseases. Terranil 90DF can be used effectively in dilute or concentrate sprays. Thorough, uniform coverage is essential for disease control. Do not combine Terranil 90DF in the spray tank with pesticides, surfactants or fertilizers, unless prior use has shown the combination physically compatible, effective and noninjurious under conditions of use.

Dosage rates on this label indicate pounds of Terranil 90DF per acre unless otherwise stated. Under conditions favoring disease development, the high rate specified and shortest application interval should be used. Applications should be made in sufficient water to obtain adequate coverage of foliage. Gallonage to be used will vary with crop and amount of plant growth. Spray volume usually will range from 20 to 150 gallons per acre for dilute sprays and 5 to 10 gallons per acre for concentrate ground sprays and aircraft applications. Both ground and aircraft methods of application are recommended unless specific directions for ground application only are given for a crop. Application through sprinkler irrigation systems is recommended for some crops which are specified on the label below. Follow application and calibration instructions.

APPLICATION AND CALIBRATION TECHNIQUES FOR SPRINKLER IRRIGATION

Apply this product only through the following types of irrigation systems. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Experiment Station specialists, equipment manufacturers, or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide

- A. Center Pivot, Traveler, Big Gun, Motorized Lateral Move, End Tow, and Side (Wheel) Roll Irrigation Equipment: Operate system and injection equipment at normal pressures recommended by the manufacturer of injection equipment used. Fill tank of injection equipment with water. Operate system for one complete circle for center pivot or one complete run for the other recommended equipment, measuring time required, amount of water injected, and acreage contained in circle or run. Mix recommended amount of Terranil 90DF for acreage to be covered into same amount of water used during calibration and inject into system continuously for one revolution or run, but continue to operate irrigation system until Terranil 90DF has been cleared from last sprinkler head. Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur.
- B. Solid Set and Hand Move Irrigation Equipment: Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents over a thirty to forty-five minute period. Mix desired amount of Terranil 90DF for acreage to be covered into quantity of water used during calibration and operate entire system at normal pressures recommended by the manufacturer of injection equipment used for amount of time established during calibration. Provide constant mechanical agitation in the mix tank to insure that Terranil 90DF will remain in suspension during the injection cycle. Terranil 90DF can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until Terranil 90DF is cleared from last sprinkler head.

SAFETY DEVICES

(1) The systems designated above must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. (2) All Pesticide injection pipelines must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. (3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. (4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. (5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. (6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. (7) Do not apply when wind speed favors drift beyond the area intended for treatment.

SYSTEMS CONNECTED TO PUBLIC WATER SOURCES

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of fill pipe. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

For additional instructions on safety precautions, refer to statements (2), (3), (4), (6), and (7) in the section on SAFETY DEVICES.

POSTING INSTRUCTIONS

Posting of areas to be chemigated is required when any part of a treated area is within 300 feet of sensitive areas such as residential areas, labor camps, businesses, day care centers, hospitals, in-patient clinics, nursing homes, or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or when chemigated area is open to the public, such as golf courses or retail greenhouses. This sign is in addition to any sign posted to comply with Worker Protection Standard.

Posting must conform to the following requirements. Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas. The primary side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in English. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of material to prevent deterioration and maintain legibility for the duration of the posting period.

All words shall consist of letters at least 2 1/2 inches tall, and all letters and the symbol shall be a color which sharply contrasts with their immediate background. At the top of the sign shall be the words KEEP OUT, followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word STOP. Below the symbol shall be the words PESTICIDES IN IRRIGATION WATER.

MIXING PROCEDURES

Be sure sprayer is clean and not contaminated with any other materials, or crop injury or sprayer clogging may result. Fill tank 1/4 full with clean water; start agitation. Be certain that the agitation system is working properly and creates a rippling or rolling action on the liquid surface. Pour product directly from container into tank. Let it wet and settle into water. Continue filling tank until 90% full. Increase agitation if necessary to maintain surface action. Finish filling tank. Maintain agitation during operation. Clean sprayer thoroughly immediately after use by flushing system with water containing a detergent. Do not use on greenhouse grown crops except as directed in the Turf and Ornamental section of this label.

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CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Beans (Snap)	Rust	1.125 - 2.5 pounds	Use in sufficient water to obtain adequate coverage. Begin applications during early bloom stage or when disease first threatens and repeat at weekly intervals as necessary to maintain control. Do not apply within 7 days of harvest. Do not graze treated areas or feed treated plant parts to livestock.
	Botrytis blight (gray mold)	2.5 pounds	
Beans (Dry) Navy, Pinto, Kidney, Lima, Blackeye	Rust, Anthracnose, Downy mildew, Cercospora leaf spot (blackeye only)	1.125 - 1.75 pounds	Use in sufficient water to obtain adequate coverage. Begin applications during early bloom stage and repeat at 7 to 10 day intervals. For use only on beans harvested dry with pods removed. Do not apply within 6 weeks before harvest. Do not allow livestock to graze in treated areas or feed treated plant parts to livestock.
Cabbage, Cauliflower, Broccoli, Brussels sprouts Chinese broccoli, Chinese cabbage (tight-headed varieties only)	Alternaria leaf spot, Downy mildew	1.25 pounds	Use in sufficient water to obtain adequate coverage. Begin applications after transplants are set in field, or shortly after emergence of field-seeded crop, or when conditions favor disease development. Repeat at 7 to 10 day intervals or as necessary to maintain control. Do not apply within 7 days of harvest to Chinese cabbage or Chinese broccoli.
	Ring spot (California only)	1.5 pounds	For field seeded brussels sprouts, begin applications at time of early sprout development or when conditions favor disease development. Repeat at 7 to 10 day intervals or as necessary to maintain control.
Carrot	Cercospora (early) blight, Alternaria (late) blight	1.25 - 1.5 pounds	Use in sufficient water to obtain adequate coverage. Start applications when disease threatens and repeat at 7 to 10 day intervals or as necessary to maintain control. Terranil 90DF may be applied through sprinkler irrigation equipment. See calibration directions preceding this section.
Celery	Cercospora (early) blight, Septoria (late) blight	0.875 - 1.25 pounds	Use 0.875-1.25 pounds per acre on a 3 to 5 day spray schedule or 1.75-2.5 pounds per acre on a 7 day schedule. Start applications when transplants are set in the field. Apply in sufficient water to obtain adequate coverage. Do not apply within 7 days of harvest. Terranil 90DF may be applied through sprinkler irrigation equipment as directed above.
	Basal stalk rot (Rhizoctonia solani)	1.75 - 2.5 pounds	
	Early blight, late blight	1.25 - 1.5 pounds per 100 gal.	For celery seedbeds, apply 125 gallons per acre twice weekly or as needed to maintain control. Start applications shortly after crop emergence. Use the higher rate under severe disease conditions.
Corn (Sweet), Corn grown for seed	Helminthosporium leaf blights, rust	0.625 - 1.5 pounds	Use in sufficient water to obtain adequate coverage. Begin applications when conditions favor disease development and repeat at 4 to 7 day intervals or as required to maintain control. Under severe disease conditions, use 1.25 - 1.5 pounds per acre. Do not apply within 14 days of harvest. Do not apply to sweet corn to be processed. Do not allow livestock to graze in treated fields. Do not ensile treated corn or use as livestock forage.
Cranberries	Fruit rots, Lophodermium leaf-twig blight	3.5 - 5.75 pounds	Apply at late bloom and repeat at 10 to 14 day intervals. Under severe conditions, use the 5.75 pounds/acre rate on a 10 day schedule. Do not apply more than 3 times per season, or within 50 days before harvest. Do not apply to bogs when flooded or allow release of irrigation water from bogs for at least 3 days following application. Terranil 90DF may be applied through sprinkler irrigation equipment. Use 300 gallons of water per acre through solid set systems only. See calibration directions preceding this section.

CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Cucurbits: Cucumber, Cantaloupe, Muskmelon, Honeydew melon, Watermelon, Squash, Pumpkin	Target spot, Anthracnose, Downy mildew	1.25 - 1.5 pounds	Use in sufficient water to obtain adequate coverage. Begin applications when plants are in first leaf stage or when conditions are favorable for disease development. Repeat applications at 7 day intervals. Under severe disease conditions, shorten spray interval. Terranil 90DF may be applied through sprinkler irrigation equipment as directed above.
	Cucumber belly rot (Rhizoctonia solani)	7 pounds	Use Terranil 90DF in sufficient water to obtain runoff to soil surface. Make a single application when vines begin to form. Terranil 90DF may be applied through sprinkler irrigation equipment as directed above.
	Cercospora leaf spot, gummy stem blight (black rot), Alternaria leaf blight, Scab, Powdery mildew (Spaerotheca only)	1.5 - 2.5 pounds	Use in sufficient water to obtain adequate coverage. Begin applications when plants are in first true leaf stage or when conditions are favorable for disease development. Repeat applications at 7 day intervals. Under severe disease conditions, shorten spray interval. Terranil 90DF may be applied through sprinkler irrigation equipment. See calibration directions preceding this section. PRECAUTION: Certain varieties of melons may be sensitive to sunburn following applications of chlorothalonil during periods of high solar intensity.
Grasses grown for seed	Stem rust, Leaf rust, Stripe rust, Septoria leaf spot, Glume blotch, Bipolaris and Drechslera leaf spots	0.875 - 1.125 pounds	Use in sufficient water to obtain adequate coverage. Begin applications during stem elongation when conditions favor disease development. Reapply at flag (top) leaf emergence and at head emergence. Under severe disease conditions, use the 1.125 pound per acre rate and repeat applications at 14 day intervals. Do not apply within 14 days of harvest. Do not allow livestock to graze in treated areas or feed treated plant parts to livestock.
	Selenophoma (eyespot)	0.875 - 1.75 pounds	
Mint	Rust, Septoria leaf spot	1.125 pounds	Use in sufficient water to obtain adequate coverage, normally 20 to 150 gallons per acre for dilute sprays and 5 to 10 gallons per acre for concentrate ground and aircraft applications. Begin applications when emerging plants are 4-8 inches high. Repeat applications at 7 to 10 day intervals or as necessary to maintain control. Do not apply more than 3 times per season. Do not apply within 80 days of harvest. Do not feed fresh or extracted mint hay from treated fields to livestock. Based on available residue data, use of Terranil 90DF on mint is restricted to Indiana, Michigan and Wisconsin.
Onion (dry bulb)	Botrytis leaf blight (blast), Purple blotch, Botrytis neck rot (suppression)	0.875 - 1.75 pounds	Apply in sufficient water to obtain adequate coverage. Make the first application at first sign of disease or when dew or rain occurs. Repeat at 7 to 10 day intervals for as long as conditions favor disease. Use the high rate and a 7 day schedule of applications when heavy dew or rain persists. Do not apply within 7 days before harvest of dry bulb onions or garlic. Do not apply more than 3 times per season or within 14 days of harvest on green bunching onions, leeks, or shallots. If additional disease control is needed before harvest, use another registered fungicide.
Onion (green bunching), Garlic, Leek, Shallot, Onion grown for seed	Botrytis leaf blight (blast), Purple blotch, Downy mildew (Suppression)	1.125 - 2.25 pounds	
Papaya	Alternaria fruit spot, Anthracnose, Stem end rot	1.75 - 3.25 pounds	Apply with ground equipment only, in sufficient water to obtain adequate coverage of fruit and leaves. Begin treatments when conditions favor development of disease and continue treatments at 14 day intervals until weather conditions no longer favor disease development. Do not graze livestock in treated area or feed processing by-products to livestock.

CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Parsnip	Alternaria leaf spot, Downy mildew, Anthracnose, Botrytis blight (gray mold), Bottom rot (Rhizoctonia)	1.125 - 1.75 pounds	Apply in sufficient water to obtain adequate coverage. Make the first application at the first sign of disease or when conditions are favorable for infection. Continue applications on a 7 to 10 day schedule. Do not apply more than 4 times per season or within 10 days of harvest. Do not feed treated plant parts to livestock.
Passion Fruit (Hawaii only)	Alternaria fruit and leaf spot (passion fruit brown spot)	1.5 pounds	Apply with ground equipment in sufficient water to obtain adequate coverage of fruit and leaves. Begin treatment when fruit spots appear (April to July) and continue treatments at 14 day intervals until weather conditions no longer favor disease development. Do not graze in treated area or feed vines or processing by-product to livestock used for food.
Peanut	Cercospora (early) leaf spot, Cercosporidium (late) leaf spot	1.0 - 1.25 pounds	Apply in sufficient water for coverage when leaf wetness first occurs or 30 to 40 days after planting. Repeat at 10 to 14 day intervals. When conditions favor late leafspot or when rust or web blotch occur, apply 1.25 pounds per acre at 10 day intervals for the remainder of the season. Do not apply within 14 days of harvest. Do not allow livestock to graze in treated areas. Do not feed hay or threshings from treated fields to livestock. Terranil 90DF may be applied through sprinkler irrigation equipment. See calibration directions preceding this section.
	Rust, Web blotch	1.25 pounds	
	<p>When Sclerotium stem rot (white mold) and Rhizoctonia limb rot are present, use Terranil 90DF in a spray program with Folicur 3.6 F to discourage development of resistant strains of fungi. The first two (2) applications (at 10 to 14 day intervals) should be made with terranil 90DF at 1.25 lbs./acre. Applications 3, 4, 5 and 6 (at 14 day intervals) should be Folicur 3.6 F and the last application with Terranil 90DF again. To further discourage development of resistant strains of fungi--for applications 3, 4, 5 and 6, tank mix 1 lb. per acre of Terranil 90DF with Folicur 3.6 F at the recommended rate. See the Folicur 3.6 F label for specific use directions and rates. Do not apply any tank mixes containing Folicur 3.6 F through any type of irrigation system. Folicur is a trademark of Bayer Co.</p>		
<p>Terranil 90DF Plus Tilt Tank Mix: Terranil 90DF may be used in combination with Tilt for early and late leaf spot control. Apply 0.83 lb. Terranil 90DF as a tank mixture with 2 fl. oz. of Tilt in a minimum of 20 gallons of water per acre with ground equipment, or a minimum of 5 gallons of water per acre by aerial application. Begin applications 35-40 days after planting, or at first appearance of disease, and continue applications on a 10-14 day schedule. Terranil 90DF plus Tilt also may be used in State Agricultural Extension advisory (disease forecasting) programs which recommend application timing based on environmental factors favorable for disease development. Consult the Tilt label for specific use directions and restrictions. Do not apply tank mixtures with Tilt through any type of irrigation system. Tilt is a trademark of Ciba-Geigy Corporation.</p>			
Potato	Early blight, Late blight, Botrytis vine rot	0.625 pounds - then - 0.875 - 1.25	Apply as a banded treatment directed over the foliage, beginning when vines are first exposed and leaf wetness occurs. Repeat applications at 7 to 10 day intervals until vines close between rows, then increase rate and water carrier volume to cover the denser canopy and begin broadcast application. Continue applications at 7 to 10 day intervals. Under severe disease conditions, use 1.25 pounds per acre on a 7 day schedule. Terranil 90DF may be applied through sprinkler irrigation equipment. See calibration directions preceding this section. Do not exceed a 10-day interval between applications when using sprinkler irrigation techniques.
Soybean Determinate (Southern) Varieties	Anthracnose, Diaporthe pod and stem blight, Frog-eye leaf spot (Cercospora sojae), Purple seed stain, Cercospora leaf blight, (Cercospora kikuchii), Septoria brown spot		Apply in sufficient water to obtain complete coverage, using at least five gallons water per acre for aerial application. Use the three application program in areas having a history of moderate to severe disease intensity. Terranil 90DF may be applied through sprinkler irrigation equipment. Follow application and calibration directions preceding the section. NOTE: Do not exceed a total of 3 applications per season. Do not apply within 6 weeks of harvest. Do not feed treated parts to livestock or allow grazing in treated fields.

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CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
		1.125 - 2 pounds	Two application program - Make the first application at early pod set (R3 stage, when majority of pods are 1/8 to 3/8 inch in length) and the second at beginning of seed formation (R5) which occurs about 14 days later.

CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Soybean Determinante (continued)		0.875 - 1.5	Three application program - Make the first application at the beginning of flowering (R1), the second at early pod set (R3) and the third at beginning of seed formation (R5).
	Stem canker (Diaporthe phaseolorum var. caulivora)	0.875 pounds	Apply in 10 to 20 gallons of water per acre, as a band treatment directing spray to provide coverage of entire plant. Make the first application at time of emergence of the second trifoliate leaves (V2) . If conditions favor stem canker disease make a second and a third application. Make all applications at 10 to 14 day intervals.
Soybean Indeterminate (Northern) Varieties	Anthracnose, Diaporthe pod and Stem blight, Frogeye leaf spot (Cercospora sojina), Purple seed stain, Cercospora leaf blight, (Cercospora kikuchii), Septoria brown spot		Apply in sufficient water to obtain complete coverage, using at least five gallons of water per acre for aerial application. Use the three application program in areas having a history of moderate to severe disease intensity. Terranil 90DF may be applied through sprinkler irrigation equipment. Follow application and calibration directions preceding this section. NOTE: do not exceed total of 3 applications per season. Do not apply within 6 weeks of harvest. Do not feed soybean hay or threshings from treated fields to livestock.
		1.125 - 2 pounds	Two application program - Make the first application when the largest pods are 1 to 1 1/2 inches in length and make the second application 14 days later. Terranil 90 DF may be co-applied with Benlate* 50WP as a tank mix for disease control in indeterminate (Northern) soybeans. Use 0.9 lb. of terranil 90DF plus 8 ounces of Benlate 50WP per acre. Make the first application when pods near the top of plants are 1/2 to 1 inch in length and a second application 14 days later. Benlate is a trademark of E. I. DuPont de Nemours and Co., Inc.
		0.875 - 1.5 pounds	Three application program - Make the first application one week after first flowering and continue applications at 14 day intervals.
Tomato	FOLIAGE: (apply every 7 to 10 days): Early blight, late blight, gray leaf spot, gray leaf mold, Septoria leaf spot	1.25 - 1.75 pounds	Apply in sufficient water to obtain adequate coverage. Begin applications when dew or rain occur and disease threatens. Use the highest rate and shortest interval - specified when disease conditions are severe. Terranil 90DF may be combined in the spray tank with EPA registered pesticide products that claim copper as the active ingredient and are labeled for control of bacterial diseases of tomatoes. Check the copper manufacturer's label for specific instructions, precautions and limitations prior to mixing with Terranil 90DF. Do not use with Copper-Count*N in concentrated spray suspensions. Terranil 90DF may be applied through sprinkler irrigation. See calibration directions preceding this section.
	FRUIT: (apply every 7 to 14 days beginning at fruit set): Anthracnose, Alternaria fruit rot (black mold), Rhizoctonia fruit rot, Botrytis gray mold, late blight fruit rot	1.75 - 2.25 pounds	*Copper-Count is a registered trademark of Mineral Research & Development Corporation

TREE FRUITS		SPRAY VOLUME (Gallons per acre)	
<p>Apply Terranil 90DF in sufficient water and with proper calibration to obtain uniform coverage of tree canopy. Application with ground equipment is preferable to aerial application because ground applications generally give better coverage of the tree canopy. If application with ground equipment is not feasible, Terranil 90DF may be applied with aircraft using at least 20 gallons per acre. When concentrate sprays are used or when treating non-bearing or immature trees, the lower rate of Terranil 90DF listed may be used. Do not allow livestock to graze in treated areas. The following spray volumes are recommended as gallons of spray per acre:</p>	CROP		
	Peach, Nectarine, Apricot, Tart Cherry, Plum, Prune	20 (concentrate) to 300 (full dilute)	
	Sweet Cherry	20 (concentrate) to 400 (full dilute)	
Conifers Forest stands Christmas trees	Dilute Not used 100	Concentrate 10 to 20 (aircraft) 10 to 50 (aircraft or ground equipment) 5 to 10 (ground equipment only)	
Nursery beds	100		

TERRANIL 90DF RATE PER				
CROP	DISEASES	ACRE	100 GAL*	APPLICATION DIRECTIONS
Peach, Nectarine, Apricot, Cherry Plum, Prune	Leaf curl, Coryneum blight (shothole)	2.5 - 3.5 pounds	0.875 - 1.125 pounds	For best control of both diseases apply at leaf fall in late autumn, using sufficient water and proper sprayer calibration to obtain uniform coverage. When conditions favor high disease levels, use the high rate of application and apply once or twice more in mid to late winter before budswell. If the leaf fall application is not practical, application of Terranil 90DF for control of leaf curl may be made at any time prior to budswell the following spring. Where Coryneum blight (shothole) occurs, also apply at budbreak to protect newly emerging leaves and at shuck-split to prevent fruit infections.
	Brown rot blossom blight, Lacy (russet) scab (plum/prune)	2.5 - 4.5 pounds	0.875 - 1.125 pounds	Use 3.5-4.5 pounds per acre on trees taller than 20 ft. and 2.5 to 3.5 pounds per acre on smaller trees. Make one application at popcorn (pink, red, or early white bud) and a second application at full bloom. If weather conditions favor disease development, make an additional application at petal fall.
	Cherry leaf spot; Peach, nectarine, Apricot scab	2.5 - 3.5 pounds	0.875 - 1.125 pounds	In addition to the bloom applications listed above, make one application at shuck-split. Do not apply Terranil 90DF after shuck-split and before harvest. If additional disease control is needed before harvest, use another registered fungicide. For control of cherry leafspot after harvest, make one application to foliage within 7 days after fruit is removed. In orchards with a history of high leafspot incidence, make a second application 10-14 days later.

* Volumetric rates to be used only with full dilute spray volume specified on this label for tree fruits.

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CONIFERS: Apply Terranil 90DF at a rate of 1.25 pounds per 100 gallons of water unless other directions are given in the tables below. Begin applications as directed for each species and disease condition cited and repeat on a 7 to 14 day schedule until conditions are no longer favorable for disease development. During periods when conditions favor severe disease incidence, generally cloudy or wet weather, use the higher rate specified and the shortest indicated interval between applications.

Aerial application to conifers is permitted although ground applications generally give better coverage. If application with ground equipment is not feasible, Terranil 90DF may be applied aerially to forest stands in 10-20 gallons of water and to Christmas trees in 10-50 gallons of water.

CONIFERS:			
DISEASES CONTROLLED	TERRANIL 90DF RATE/ACRE	TERRANIL 90DF RATE/100 GAL	APPLICATION DIRECTIONS
Rhabdocline needlecast (Douglas fir)	1.125 to 2.25 lbs.	1.125 - 2.25 lbs.	Apply at bud break and repeat at 3 to 4 week intervals until needles are fully elongated and conditions no longer favor disease development. In plantations of mixed provenance, or when irregular bud break occurs, apply weekly until all trees have broken bud, then every 3 to 4 weeks as specified above. In nursery beds, use the high rate on a 3 week schedule.
Swiss needlecast	2.25 to 4.5 lbs.	2.25 - 4.5 lbs.	Single application technique: In Christmas tree plantations or forest stands, make one application in the spring when new shoot growth is 1/2 to 2 inches in length.
Scleroderris Canker (pines), Swiss Needlecast (Douglas fir)	1.125 to 2.25 lbs.	1.125 - 2.25 lbs.	Make first application in spring when new shoot growth is 1/2 to 2 inches in length. Make additional applications at 3 to 4 week intervals until conditions no longer favor disease development. In nursery beds, apply the highest rate specified on a 3 week schedule.
Sirococcus Tip Blight	1.75 to 3 lbs.	1.75 - 3 lbs.	
Rhizosphaera Needlecast (spruces), Scirrhia brown spot (pines)	4.5 lbs.	4.5 lbs.	
Cyclaneusma and Lophodermium needlecasts (pines)	2.25 to 4.5 lbs.	2.25 - 4.5 lbs.	Apply in early spring prior to bud break. Repeat applications at approximately 6 to 8 week intervals until spore release ceases in late fall. Apply monthly during periods of frequent rainfall, and where Lophodermium infections occur during dormancy (Pacific Northwest). During drought periods, applications may be suspended, then resumed upon next occurrence of needle wetness.
Botrytis seedling blight, Phoma twig blight	1.125 to 2.25 lbs.	1.125 - 2.25 lbs.	Begin applications in nursery beds when seedlings are 4 inches tall and when cool, moist conditions favor disease development. Make additional applications at 7 to 14 day intervals as long as favorable disease conditions persist.

NOTICE: Seller warrants that the product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with directions under normal conditions of use, but neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to Seller, and Buyer assumes the risk of any such use.

USE DIRECTIONS
TURF AND ORNAMENTALS

Terranil 90DF is formulated for use on golf course tees, greens and fairways, ornamental turfgrass and ornamental herbs, shrubs and trees. It is highly effective for the control of a broad spectrum of turf and ornamental plant diseases when it is used according to the directions on this product label. Thorough, uniform coverage of plant surfaces is essential for good disease control.

TURF: Do not mow or water after treatment until spray deposit on turfgrass is thoroughly dry; Terranil 90DF should always be used in conjunction with good turf management practices.

Golf Course Fairways: Apply in 30 to 40 gallons of water per acre. Begin applications when conditions favor disease development and repeat applications as long as these conditions persist. Under severe disease conditions, use the highest rate and shortest interval corresponding with the application schedule selected from the table below.

DISEASE	APPLICATION INTERVAL	APPLICATION RATES PER ACRE
Sclerotinia, Dollar Spot	7-10 days	2.25 to 4.5 lbs.
	14-21 days	4.5 to 8 lbs.
Helminthosporium, Leafspot	7-10 days	4.5 lbs.
	14-21 days	4.5 to 8 lbs.
Rhizoctonia brown patch	7-14 days	4.5 to 8 lbs.
Anthracnose	7-14 days	7 to 14 lbs.

Golf Course Tees and Greens and Ornamental Turfgrass: Apply in an adequate amount of water to provide complete coverage. This amount may vary from 2 to 10 gallons per 1,000 square feet. See below for suggested rates and timing. Under severe disease conditions, use the curative rates and spray on a 7 day schedule.

Do not use Terranil 90DF through sprinkler irrigation equipment on golf courses.

DISEASE	APPLICATION INTERVAL	RATE Ounces Per 1,000 Sq. Ft.	
		Preventive*	Curative**
Anthracnose	7-14 days	2.5 to 5	—
Copper spot	7-10 days	3.5 to 5	5 to 6.5
Curvularia leafspot	7-10 days	1.75 to 3.5	3.5 to 6.5
Dollar spot	7-14 days	1.75 to 3.5	3.5 to 6.5
Gray leafspot	7-10 days	1.75 to 3.5	3.5 to 6.5
Helminthosporium leafspot and melting out	7-10 days	1.75 to 3.5	3.5 to 6.5
Large brown patch	7-10 days	1.75 to 3.5	3.5 to 6.5
Red thread	7-10 days	1.75 to 5	5 to 6.5
Stem rust of bluegrass	7-14 days	3.5 to 5	5 to 6.5
Dichondra: Alternaria leafspot (California only)	7-14 days	3.5 to 5	5 to 6.5

* Recommended rates for preventing disease establishment; use lower rate when disease conditions are light to moderate, higher indicated rates when conditions are severe.

** Rates for use on a 7 day schedule when disease is present. Higher indicated rate should be applied under severe conditions.

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Turfgrasses - Gray snow mold caused by *Typhula* spp.: Apply in sufficient water to obtain adequate coverage (2 to 10 gallons per 1,000 square feet). Apply 4.5 to 9 ounces of Terranil 90DF per 1,000 square feet of turf area. Application must be made before snow cover in autumn. Use the higher rate if turf layer remains frozen prior to snow cover. If snow cover is intermittent or lacking during the winter, re-apply at 4.5 ounces per 1,000 square feet at monthly intervals until gray snow mold conditions no longer prevail. In areas where pink snow mold (*Gerlachia* or *Fusarium* patch) is likely to occur, apply at 4.5 ounces per 1,000 square feet in combination with either Tersan* 1991 50WP at 2 ounces per 1,000 square feet or Chipco** 26019 50WP at 4 ounces per 1,000 square feet of turf area.

*Tersan is a registered trademark of E. I. DuPont de Nemours & Company, Inc.
 **Chipco is a registered trademark of Rhone-Poulenc, Inc.

Fusarium (*Gerlachia*) Patch: For control of *Fusarium* patch only in areas where snow cover is intermittent or lacking during the winter, apply 4.5 to 8 ounces per 1,000 square feet of turf area. Begin applications in late autumn and re-apply at 21 to 28 day intervals until conditions favorable for *Fusarium* patch no longer prevail.

ALGAL SCUM: For prevention of algal scum on turfgrasses caused by cyanobacteria of the genus *Lyngbia*, apply Terranil 90DF at the rate of 3.5 to 6.5 ounces per 1,000 square feet on a 14 to 28 day schedule. Under severe scum conditions, use the high rate and apply on a 14 day schedule. When algal scum is well established, every attempt should be made to dry out the afflicted area. Once dry, spiking or verticutting should be done to enhance turfgrass recovery in conjunction with Terranil 90DF applications at the rate of 3.5 to 6.5 ounces per 1,000 square feet on a 14 to 28 day schedule. Several applications of Terranil 90DF at the high rate may be necessary for turfgrass recovery. Only a preventive spray program with Terranil 90DF will prevent recurrence of the algae when environmental conditions are favorable for algal growth.

ORNAMENTALS AND CONIFERS: Apply Terranil 90DF at a rate of 1.25 pounds per 100 gallons of water unless other directions are given in the tables below. Begin applications as directed for each species and disease condition cited and repeat on a 7 to 14 day schedule until conditions are no longer favorable for disease development. During periods when conditions favor severe disease incidence, generally cloudy or wet weather, use the higher rate specified and the shortest indicated interval between applications.

Aerial application to conifers is permitted although ground applications generally give better coverage. If application with ground equipment is not feasible, Terranil 90DF may be applied aerially to forest stands in 10-20 gallons of water and to Christmas trees in 10-50 gallons of water.

Terranil 90DF may be used on ornamentals in greenhouses. Do not use mistblowers or high pressure spray equipment when making applications in greenhouses.

Applicators and attending personnel should wear protective clothing.

ORNAMENTALS

SPECIES	DISEASES CONTROLLED	SUGGESTED FIRST APPLICATION
BROADLEAF SHRUBS AND TREES:		
Ash (<i>Fraxinus</i>)	<i>Cercospora</i> , <i>Cercosporidium</i> , <i>Cylindrosporium</i> leafspots	Spring bud break
Azalea* Rhododendron*	<i>Phytophthora</i> die-back, <i>Ovulinia</i> flower blight	New leaf emergence; Early bloom
Buckeye, Horsechestnut	Leaf blotch, Anthracnose	Spring bud break
Cherry-Laurel	<i>Cercospora</i> leafspot	Petal fall
Crabapple	Scab, Cedar-apple rust, <i>Sphaeropsis</i> leafspot	Spring bud break
Dogwood	<i>Septoria</i> leafspot Anthracnose	Early bloom Spring bud swell
Euonymus	Anthracnose	Spring bud break
Firethorn	Scab	Spring bud break
Flowering almond, Quince, Sand Cherry	<i>Monilinia</i> blossom/branch blight	Early bloom
Hawthorn	Rust, <i>Fabraea</i> leafspot	Prebloom
Holly	<i>Rhizoctonia</i> web blight	Warm, moist conditions
Mountain Laurel	<i>Cercospora</i> leafspot	Spring bud break
Oak (red group only)	<i>Taphrina</i> blister, <i>Actinopelte</i> leafspot, Anthracnose	Dormant budswell
Oregon-Grape (<i>Mahonia</i>)	Rust	Spring bud break
Photinia	<i>Fabraea</i> (<i>Entomosporium</i>) leafspot	Spring bud break
Pieris (<i>Andromeda</i>)	<i>Phytophthora</i> die-back	New leaf emergence
Poplar	<i>Miarssonina</i> leafspot	Spring bud break
Privet	<i>Cercospora</i> leafspot	Prolonged wet conditions
Sycamore, Planetree	Anthracnose	Spring bud break
Viburnum	Powdery mildew	Mid-summer

SPECIES	DISEASES CONTROLLED	SUGGESTED FIRST APPLICATION
BULBS AND FLOWERING PLANTS:		
Camation	Alternaria leafspot/branch rot	Transplant of cuttings
Chrysanthemum/Daisy	Botrytis flower-blight Mycosphaerella ray blight, Septoria leafspot	Cool, moist conditions Transplant of cuttings
Geranium	Botrytis flower blight (gray mold)	Prebloom
Gladiolus	Botrytis blight, rust Curvularia leaf/flower spot, Botrytis leaf/flower spot	Cool, moist conditions Early propagation
Hollyhock	Rust	Early seedling stage
Hydrangea* (foliage only)	Cercospora and Septoria leafspots, Rust	Early propagation
Iris	Botrytis blossom blight, Didymellina leafspot, Ink spot	Cool, moist conditions
Lily, Crocus, Daffodil, Narcissus, Tulip	Botrytis blight (gray mold, fire, measles), Stagonspora leaf scorch	Prebloom
Petunia*	Phytophthora blight (foliar phase), Botrytis blight	Prebloom
Rose (Use 0.875 lb. per 100 gallons)	Black spot, Botrytis blight	Spring bud break
Statice	Anthrachnose, Cercospora, Alternaria, Botrytis leaf blights	Spring bud break
Zinnia	Powdery mildew	First sign of disease

*Discoloration of blooms has been noted on certain varieties when applications are made during flowering.

FOLIAGE PLANTS:

Dracaena Pachysandra (Use 2.25 lbs. per 100 gallons) Leatherleaf fern	Fusarium leafspot Volutella leaf blight	Pre-transplant Spring bud break
Parlor palm (Chamaedorea) Prayer plant (Maranta) Oyster plant (Rhoeo) Syngonium Philodendron	Ascochyta blight, Cercospora leafspot, Cylindrocladium leafspot, Rhizoctonia blight Bipolaris (Helminthosporium) leafspot Helminthosporium leafspot Tan leafspot Cephalosporium leafspot Phytophthora blight, Dactylaria leafspot	Spring bud break Cool, moist conditions Early propagation Early propagation Warm, moist conditions Moist conditions

CONIFERS:

DISEASES CONTROLLED	Terranil 90DF RATE/ACRE	APPLICATION DIRECTIONS
Rhabdocline needlecast (Douglas fir)	1 1/3 to 2 1/4 lbs.	Apply at bud break and repeat at 3 to 4 week intervals until needles are fully elongated and conditions no longer favor disease development. In plantations of mixed provenance, or when irregular bud break occurs, apply weekly until all trees have broken bud, then every 3 to 4 weeks as specified above. In nursery beds, use the high rate on a 3 week schedule.
Swiss needlecast	2 1/4 to 4 1/2 lbs.	Single application technique: In Christmas tree plantations or forest stands, make one application in the spring when new shoot growth is 1/2 to 2 inches in length.

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CONIFERS:		
DISEASES CONTROLLED	Terranil 90DF RATE/ACRE	APPLICATION DIRECTIONS
Scleroderma Canker (pines), Swiss Needlecast (Douglas fir)	1 $\frac{1}{8}$ to 2 $\frac{1}{4}$ lbs.	Make first application in spring when new shoot growth is $\frac{1}{2}$ to 2 inches in length. Make additional applications at 3 to 4 week intervals until conditions no longer favor disease development. In nursery beds, apply the highest rate specified on a 3 week schedule.
Sirococcus Tip Blight	1 $\frac{1}{4}$ to 3 lbs.	
Rhizosphaera Needlecast (spruces), Scirrhia brown spot (pines)	4 $\frac{1}{2}$ lbs.	
Cyclaneusma and Lophodermium needlecasts (pines)	2 $\frac{1}{4}$ to 4 $\frac{1}{2}$ lbs.	Apply in early spring prior to bud break. Repeat applications at approximately 6 to 8 week intervals until spore release ceases in late fall. Apply monthly during periods of frequent rainfall, and where Lophodermium infections occur during dormancy (Pacific Northwest). During drought periods, applications may be suspended, then resumed upon next occurrence of needle wetness.
Botrytis seedling blight, Phoma twig blight	1 $\frac{1}{8}$ to 2 $\frac{1}{4}$ lbs.	Begin applications in nursery beds when seedlings are 4 inches tall and when cool, moist conditions favor disease development. Make additional applications at 7 to 14 day intervals as long as favorable disease conditions persist.

NOTICE: Seller warrants that the product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with directions under normal conditions of use, but neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to Seller, and Buyer assumes the risk of any such use.