

# Protect™ DF

## TURF AND ORNAMENTAL FUNGICIDE

### ACTIVE INGREDIENTS

Mancozeb.....	75%
A coordination product of Zinc Ion and Manganese Ethylenebisdithiocarbamate	
Manganese++.....	15.0%
Zinc++ .....	1.9%
Ethylenebisdithiocarbamate Ion.....	58.1%

<b>OTHER INGREDIENTS</b> .....	<b>.25%</b>
<b>TOTAL</b> .....	<b>100%</b>

## KEEP OUT OF REACH OF CHILDREN CAUTION

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.)

### FIRST AID

<b>If on skin or clothing</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If in eyes</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If swallowed</b>	<ul style="list-style-type: none"><li>• Call poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>

In case of emergency call your local poison center or doctor.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For 24 hour emergency assistance, call Chemtrec 1-800-424-9300.

EPA REG. NO. 1001-77

Manufactured For  
**CLEARY CHEMICALS, LLC**  
11901 S. Austin Avenue  
Alsip, IL 60803

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**Nufarm**

**Grow a better tomorrow.**

## **PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**Caution:** Harmful if absorbed through skin. Causes moderate eye irritation. Harmful if swallowed. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

### **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Natural rubber is chemical resistant to Protect DF. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

Mixers, loaders, applicators, and other handlers must wear:

- Long-sleeved shirt
- Long pants
- Shoes and socks, and
- Chemical-resistant gloves (except pilots).

See engineering controls for additional requirements.

### **ENGINEERING CONTROLS STATEMENTS**

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.

**Enclosed Cockpits:** Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

**Mechanical Flagging Engineering Control:** Human flagging is prohibited. Flagging to support aerial application is limited to use of the Global Positioning system (GPS) or mechanical flaggers.

#### **USER SAFETY REQUIREMENTS:**

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

#### **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.

#### **ENVIRONMENTAL HAZARD**

This product is toxic to aquatic organisms. Drift and 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 contaminate water when disposing of equipment washwaters.

## CHEMICAL HAZARDS

Do not allow to become wet during storage. This may lead to certain chemical changes, which will reduce the effectiveness of the product as a fungicide and create vapors that may be flammable. Keep container closed when not in use.

## 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 statements and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements on 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 24 hours. Personal Protective Equipment (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 soil or water, is:

- Coveralls,
- Shoes and socks, and
- Chemical resistant gloves made of any waterproof material.

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements on 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. Applications to turf and ornamentals which are not grown for resale are not within the scope of the Worker Protection Standard. Do not enter or allow entry into treated areas until sprays have dried.

## STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store in the original container in a dry area. If allowed to become wet the product will deteriorate and represent a fire hazard. Keep away from sources of ignition (e.g. sparks and open flame). Close bag when not in use. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. If spilled during storage or handling sweep up spillage and dispose of in accordance with the Pesticide Disposal Instructions listed below.

**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:** Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Completely empty container into application equipment. Dispose of container in a sanitary landfill, by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

## SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast, chemigation) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

**WIND SPEED:** Do not apply at wind speeds greater than 15 mph.

**TEMPERATURE INVERSIONS:** If applying at wind speeds less than 3 mph, the applicator must determine if a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

**OTHER STATE AND LOCAL REQUIREMENTS:** Applicators must follow all state and local pesticide drift requirements regarding application of mancozeb. Where states have more stringent regulations, they must be observed.

**EQUIPMENT:** All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

### ADDITIONAL REQUIREMENTS FOR AERIAL APPLICATIONS:

1. The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.
2. Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.
3. When applications are made with a crosswind, the swath must be displaced downwind. The applicator must compensate for this displacement at the up and downwind edge of the application area by adjusting the path of the aircraft upwind.

### ADDITIONAL REQUIREMENTS FOR GROUND BOOM APPLICATION:

Do not apply with a nozzle height greater than 4 feet above the crop canopy.

## PRODUCT INFORMATION

PROTECT DF TURF AND ORNAMENTAL FUNGICIDE is a dry flowable fungicide product containing a coordination product of zinc ion and manganese ethylenebisdithiocarbamate, and is labeled for use as a spray for the control of many important plant diseases. When used according to directions, it provides very high fungicidal activity and can be safely used on turf grasses and certain ornamentals and vegetable crops. PROTECT DF provides control of most common turfgrass diseases and it is also effective in controlling major fungus diseases of certain ornamentals. Diseases of turf grass and ornamentals can attack suddenly and unexpectedly causing severe damage and may even result in total loss of large areas of valuable turf grass and ornamental plants. The use of a regular protective spray program will minimize the risk of disease damage and can generally be accomplished with lower rates and less frequent fungicide applications. Once diseases have become established, higher rates of fungicide and more frequent applications are required to bring them under control. Follow a regular protective program for maximum product performance.

## INSTRUCTIONS FOR APPLICATION

**TO MIX:** Slowly add PROTECT DF into 1/2 filled spray tank while the agitator is running to form a well mixed suspension. Agitate suspension continuously to keep the material in proper suspension. For best results, use spray mixture the same day it is prepared.

**TO TANK MIX:** PROTECT DF is compatible with most commonly used pesticides. If tank mixing with other materials, add products in the following order: wettable powders, dry flowables, liquid flowables, emulsifiable concentrates, and soluble materials such as fertilizers. No claim of compatibility with other products is implied. Do not combine Protect DF with other pesticides, surfactants, or fertilizers, unless your prior use has shown the combination is physically compatible, effective, and non-injurious under your conditions of use. Consult the intending tank mix partner product label for appropriate application rates and use instructions. This product cannot be mixed with any product containing a label prohibition against such mixing. Read and observe the most restrictive precautionary statements and other

information appearing on product labels used in mixtures.

**FOR AERIAL APPLICATION:** Use at rate indicated in sufficient water for thorough coverage or a minimum of 2 gallons per acre. Use a spreader-sticker, such as Cleary's Clearspray, at label recommended rates for the desired use as needed. Add product slowly to water in the spray tank with agitation or premix thoroughly in separate holding tank for concentrate or aircraft sprayers. Follow similar mixing order instructions as stated above for best results. Continuous agitation is required to keep the product in suspension. Do not use aerial application on golf course turf or ornamental herbaceous plants.

**TURF APPLICATIONS:** For use on all fine turf applications such as industrial and municipal lawns, including office parks, sod farms, cemeteries, parks and golf course greens, tees, and aprons and fairways of cool season and warm season grasses (such as Bent, Bermuda, Bluegrass, Fescues, Ryegrass, St. Augustine grasses, and Zoysia) or their mixtures. PROTECT DF is not phytotoxic to any of the above mentioned grasses when used in accordance with the label. Refer to use instructions except when more specific directions are given for individual crops or diseases.

**USE INSTRUCTIONS:** PROTECT DF is to be used for the prevention and control of the diseases mentioned below. It can provide both curative and protective action. Start preventative applications when conditions for disease occurrence are favorable or when disease first appears and repeat at 10 - 14 day intervals or until disease threat is past. When conditions are especially favorable for disease development, apply maximum fungicide use rate on a 10-day spray schedule. For best results use spray mixture the same day it is prepared. Spray uniformly over the area to be treated with a properly calibrated power sprayer. Apply after mowing or avoid mowing twelve hours after application. Apply specified amounts in sufficient water to obtain thorough coverage, 1-3 gallons per 1,000 square feet suggested for mechanical applications, smaller volumes are acceptable for hand applications and with proper equipment calibration and nozzle selection. When treating golf greens, always treat aprons and approaches. Do not use on pasture or range grasses. Do not graze treated areas. Do not feed clippings to livestock. Do not use if grass is grown for seed. Not intended for use by homeowners.

Disease(s) Controlled	Rate Oz./1000 Sq. Ft.
Copper Spot, Red Thread, Fusarium Blight ( <i>F. roseum</i> ) Slime Mold	4-8
Leaf Spot, Melting Out ( <i>Helminthosporium</i> , <i>Dreschlera</i> , <i>Bipolaris</i> ) Rhizoctonia Brown Patch, Rust	4
Pythium Blight, Damping Off Note: Apply at 7-day intervals or more frequently if conditions are especially favorable for disease development.	8
Dollar Spot	6-8
Algae	6
Pink Snow Mold ( <i>Microdochium nivale</i> ) Note: Apply at 2-week intervals during winter snow free periods.	6-8
Downy Mildew	6-8

**TURF TANK MIXTURES**

For the effective control of summer Stress complex caused by a complex of Rhizoctonia and Pythium diseases, tank mix Protect DF with Alude and apply to turfgrass as directed.

Disease(s) Controlled	Rate Oz./1000 Sq. Ft.
Summer Stress Complex on Bentgrass and Poa annua ( <i>Rhizoctonia</i> and <i>Pythium</i> species) Do not irrigate or mow treated areas until spray has completely dried	Protect DF 4-8 Alude 5-10

### **Sod Farm Turf – Application Restrictions**

Harvesting of treated turf is prohibited until 120 hours (5 days) following application.

Do not apply more than 4 times per year.

Do not apply more than 23.2 lbs Protect DF (17.4 lbs AI) per Acre per application (8 oz/1,000 sqft).

Do not re-apply using less than a 10 day interval between applications.

### **Golf Course – Application Restrictions**

Do not apply more than 23.2 lbs Protect DF (17.4 lbs AI) per Acre per application (8 oz/1,000 sqft).

Do not re-apply using less than a 10 day interval between applications.

For Cool season grass greens, tees, and aprons: Do not apply more than 5 times per year.

For Cool season grass fairways: Do not apply more than 4 times per year.

For Warm season grass greens, tees, and aprons: Do not apply more than 4 times per year.

For Warm season fairways: Do not apply more than 3 times per year.

### **All Other Turf – Application Restrictions**

Do not apply more than 4 times per year.

Do not apply more than 23.2 lbs Protect DF (17.4 lbs AI) per Acre per application (8 oz/1,000 sq ft).

Do not re-apply using less than a 10 day interval between applications.

### **HORTICULTURAL APPLICATIONS**

FIELD, NURSERY, GREENHOUSE (including LATH, SHADE and HOOP houses) and LANDSCAPE

Not for use in home greenhouse.

Do not use on sugar maples intended for sap production.

Do not use fruit or nuts or any portion of the plant for food or feed purposes after treatment with Protect DF.

For use on the listed annual and perennial flowers, ground covers, plus deciduous and evergreen trees and shrubs. Refer to General Use Instructions except when more specific directions are given for individual crops or diseases.

**GENERAL USE:** Protect DF provides excellent protective activity and is most effective when applied prior to infection periods. Apply 1.0 to 2.0 lb. PROTECT DF per 100 gallons of water in full coverage sprays. To improve performance, add 2-4 oz. of an effective spreader-sticker, such as Cleary's Clearspray, per 100 gallons of spray. Depending upon the life cycle of the listed pathogens, begin spraying either preventatively at bud swell or at bud break, and continue throughout the growing season, or curatively at first sign of disease. Apply at 7-21 day intervals throughout the season as disease development conditions persist, or follow State Extension Service recommendation for specific disease control practices provided the 7-day retreatment intervals and the application rates and post-harvest intervals stated below are followed. Do not use edible portions of any listed plant for food or feed purposes.

### **Cut Flowers and Greenhouse Grown Ornamentals – Application Restrictions**

- Maximum single application rate is 1.6 lb Protect DF/acre with 20 applications per season
- Maximum seasonal application rate of 32 lbs Protect DF/acre
- Minimum retreatment interval of 7 days.

### **Christmas Trees and Douglas Fir – Application Restrictions**

- Maximum single application rate is 4 lb Protect DF/acre
- Minimum PHI of 14 days.

### **Ornamental and Shade Trees – Application Restrictions**

- Maximum single application rate is 2 lb Protect DF/acre with 3 applications per season
- Maximum seasonal application rate of 6 lbs Protect DF/acre
- Minimum retreatment interval of 7 days.

### **Ornamental Groundcovers and Herbaceous Plants – Application Restrictions**

- Maximum single application rate is 2 lb Protect DF/acre
- Minimum retreatment interval of 7 days.

**PROTECT DF is labeled for the control of the following diseases and pathogens:**

**Alternaria** - leaf spots and flower blights

**Anthracnose Blights** - *Colletotrichum*, *Discula*, *Elsinoe*, *Gloeodes*, *Gloeosporium*, *Glomerella*, *Gnomonia*, *Guignardia*

**Aschochyta Blights**

**Blackspot of Rose** - *Diplocarpon*

**Black Leafspot of Elm**

**Botryosphaeria Dieback**

**Botrytis Blights, Gray Mold**

**Brown Rot Blight** - *Monolinia*, *Sclerotinia*, *Whetzelinia*

**Cephalosporium Leaf Spot**

**Cylindrocladium Leaf Blight**

**Downy Mildews** - *Plasmopara*, *Peronospora*

**Exobasidium Blights**

**Flower Blights** - *Aschochyta*, *Botrytis*, *Monolinia*, *Sclerotinia*, *Whetzelinia*

**Fusarium Leaf Spot and Blight**

**Gray Mold** - *Botrytis*

**Ink Spot** - *Ciborinia*, *Sclerotinia*, *Whetzelinia*

**Kabatina Dieback**

**Leafspots** - *Alternaria*, *Bipolaris*, *Cephalosporium*, *Cercospora*, *Cylindrosporium*, *Dactylaria*, *Didymellina*, *Diplocarpon*, *Dreschleria*, *Exerohilum*, *Helminthosporium*, *Entomosporium*, *Fabraea*, *Leptosphaeria*, *Marssonina*, *Mycosphaerella*, *Pestalotia*, *Phyllosticta*, *Rhytisma*, *Septoria*, *Stigmina*

**Needlecasts of Conifers** - *Cyclaneusma*, *Ismiella*, *Lophodermium*, *Naemacyclus*, *Pestalotia*, *Rhabdocline*, *Rhizosphaera*, *Scirrhia*, *Sphaeropsis*

**Ovulinia Blight**

**Phytophthora Blight and Dieback**

**Ramularia Blight**

**Rhizoctonia Aerial or Web Blight**

**Rusts** - *Cronartium*, *Endocronartium*, *Gymnosporangium*, *Melampsora*, *Melampsoridium*, *Phragmidium*, *Puccinia*, *Uromyces*

**Scab** - *Fusicladium*, *Venturia*, *Sphaceloma*, *Cladosporium*

**Shothole Leafspot** - *Blumeriella*, *Coccomyces*

**Stemphyllium Blight**

**Tip Blights** - *Phomopsis*, *Diaporthe*

**Tip Blight of Pine** - *Diplodia*, *Sphaeropsis*

**Volutella Blight**

**Ornamental plants on which Cleary's PROTECT DF has been used effectively:**

African violet - *Saintpaulia*

Ageratum - *Ageratum*

Almond (ornamental) - *Prunus*

Alyssum - *Lobularia*

Andromeda - *Pieris*

Anthurium - *Anthurium*

Apple (ornamental) - *Malus*

Arborvitae - *Thuja*

Ash - *Fraxinus*

Ash, Mountain - *Sorbus*

Aspen - *Populus*

Aster, China - *Callistephus*

Lavender Cotton - *Santolina*

Lily - *Lilium*

Liriope - *Liriope*

Lobelia - *Lobelia*

Loquat - *Eriobotrya*

Magnolia - *Magnolia*

Mahonia - *Mahonia*

Maple - 4

Myrtle - *Myrtus*

Nasturtium - *Tropaeolum*

Nephthytis - *Nephthytis*

## Ornamental plants on which Cleary's PROTECT DF has been used effectively: (cont.)

Azalea\* - *Rhododendron*  
Baby's Breath - *Gypsophyla*  
Begonia - *Begonia*  
Birch - *Betula*  
Boxwood - *Buxus*  
Buckeye - *Aesculus*  
Camellia\* - *Camellia*  
Cardinal Flower - *Lobelia*  
Carnation - *Dianthus*  
Catharanthus - *Catharanthus*  
Cedar, Red - *Juniperus*  
Celosia - *Celosia*  
Cherry (ornamental) - *Prunus*  
Chinese evergreen - *Aglaonema*  
Christmas Cactus - *Schlumbergera*  
Christmas Trees  
Chrysanthemum\* - *Chrysanthemum, Dendranthema*  
Coleus - *Coleus*  
Columbine - *Aquilegia*  
Common Dracaena - *Cordyline*  
Conifers  
Cotoneaster - *Cotoneaster*  
Crabapple (ornamental) - *Malus*  
Crape Myrtle - *Lagerstroemia*  
Croton - *Codiaeum*  
Cyclamen - *Cyclamen*  
Cypress, Leyland - *Cupressocyparis*  
Dahlia - *Dahlia*  
Daisy, Shasta - *Chrysanthemum*  
Daisy, Transvaal - *Gerbera*  
Delphinium - *Delphinium*  
Dieffenbachia - *Dieffenbachia*  
Dogwood\* - *Cornus*  
Dracaena - *Dracaena*  
Dusty Miller - *Centaurea*  
Elm - *Ulmus*  
Euonymus - *Euonymus*  
Fatsia - *Fatsia*  
Ferns - *Nephrolepis, Polypodium, Polystichum, Pteris*  
Ficus - *Ficus*  
Fig (ornamental) - *Ficus*  
Firethorn - *Pyracantha*  
Firs - *Abies, Pseudotsuga*  
Fittonia - *Fittonia*  
Fuchsia - *Fuchsia*  
Garden Balsam - *Impatiens*  
Geranium - *Geranium, Pelargonium*  
Gerbera - *Gerbera*  
Gladiolus - *Gladiolus*  
Nicotiana - *Nicotiana*  
Nierembergia - *Nierembergia*  
Oak - *Quercus*  
Orchids - *Cattleya, Cymbidium, Dendrobium, Epidendrum, Odontoglossum, Phalaenopsis*  
Osmanthus - *Osmanthus*  
Palm, Areca - *Chrysalidocarpus*  
Palm, Chamaedorea - *Chamaedorea*  
Palm, King - *Archotophoenix*  
Palm, Madagascar - *Chrysalidocarpus*  
Palm, Washingtonia  
Pansy - *Viola*  
Peach (ornamental) - *Prunus*  
Pear (ornamental) - *Pyrus*  
Peony\* - *Paeonia*  
Peperomia - *Peperomia*  
Periwinkle - *Vinca*  
Petunia - *Petunia*  
Philodendron - *Philodendron*  
Phlox - *Phlox*  
Photinia, Red Tip - *Photinia*  
Pieris - *Pieris*  
Pilea - *Pilea*  
Pine - *Pinus*  
Pine, Norfolk Island - *Araucaria*  
Pittosporum - *Pittosporum*  
Plane Tree - *Platanus*  
Plum (ornamental) - *Prunus*  
Poinsettia - *Euphorbia*  
Poplar - *Populus*  
Portulaca - *Portulaca*  
Pothos - *Syngonium*  
Prayer Plant - *Primula*  
Privet - *Ligustrum*  
Protea - *Protea*  
Pyracantha - *Pyracantha*  
Red Tip - *Photinia*  
Redwood - *Sequoia*  
Rhododendron\* - *Rhododendron*  
Rose - *Rosa*  
Sage - *Salvia*  
Sand Cherry - *Prunus*  
Santolina - *Santolina*  
Schefflera - *Schefflera*  
Senecio - *Senecio*  
Sequoia - *Sequoia*  
Snake Plant - *Sansevieria*



## Ornamental plants on which Cleary's PROTECT DF has been used effectively: (cont.)

Gold Dust Tree - *Aucuba*  
Gomphrena - *Gomphrena*  
Gypsophila - *Gypsophila*  
Hawthorn - *Crataegus*  
Hibiscus - *Hibiscus*  
Hickory - *Carya*  
Holly - *Ilex*  
Hollyhock - *Alcea*  
Horsechestnut - *Aesculus*  
Hydrangea - *Hydrangea*  
Impatiens - *Impatiens*  
Iris - *Iris*  
Ivy, Boston - *Parthenocissus*  
Ivy, English - *Hedera*  
Jadeplant - *Crassula*  
Juniper - *Juniperus*  
Kalanchoe - *Kalanchoe*  
Larkspur - *Delphinium*  
Laurel, Cherry - *Prunus*  
Laurel, Mountain - *Kalmia*  
Lavender Cotton - *Santolina*  
Lily - *Lilium*  
Liriope - *Liriope*  
Lobelia - *Lobelia*

Loquat - *Eriobotrya*  
Magnolia - *Magnolia*  
Mahonia - *Mahonia*  
Maple - *Acer*  
Myrtle - *Myrtus*  
Nasturtium - *Tropaeolum*  
Nephthytis - *Nephthytis* Snapdragons - *Antirrhinum*  
Spathiphyllum - *Spathiphyllum*  
Spruce - *Picea*  
Spurge, Japanese\* - *Pachysandra*  
Statice - *Limonium*  
Strawflower - *Helichrysum*  
Sycamore - *Platanus*  
Syngonium - *Syngonium*  
Umbrella Tree - *Schefflera*  
Vanda - *Vanda*  
Velvetleaf - *Abutilon*  
Verbena - *Verbena*  
Viburnum - *Viburnum*  
Walnut - *Juglans*  
Willow - *Salix*  
Yucca - *Yucca*  
Zebra Plant - *Aphelandra*  
Zinnia - *Zinnia*

\*See "Special Instructions" for additional information on use with selected plant material. This product is not recommended for the treatment of Marigold due to highly variable plant responses.

Note: The Directions for Use of this product and the list of ornamental plants given on this label reflect cumulative inputs from both field use experience and product testing programs. However, it is impossible to test this product on all ornamental plant species and cultivars. Before treating any ornamental plant for prevention of infection from a listed pathogen, a preliminary trial is suggested on a small scale before a full treatment is applied. Wait 5-7 days after treatment to evaluate trial results.

### Special Instructions

Follow the Directions listed below for the specified plant and pathogen.

- **Azaleas, Camellias, Rhododendron - Petal Blight:** Spray 2-3 times a week while flowers are opening. Direct spray into flowers and spray ground under plants thoroughly.
- **Chrysanthemum - Botrytis Petal Spot:** Apply in full coverage spray twice weekly during the blooming season.
- **Dogwood, Flowering** - Anthracnose: Apply when buds begin to open, when bracts have fallen, 4 weeks later, and again in late summer after flower buds for next season are formed.
- **Fern** - Anthracnose: Apply 2-3 times weekly as needed through chemigation or air blast spray to thoroughly wet the entire plant canopy. Protect DF may be tank mixed with 3336 WP/WSP or other systemic products as recommended by local extension services for enhanced control.
- **Peony** - Phytophthora Blight, Botrytis Blight: Apply in early spring and early fall, drenching soil around plants as well as foliage. Promptly destroy all infected plant parts.

## VEGETABLE SEEDLINGS AND TRANSPLANTS

**PROTECT DF is labeled for the control of the listed diseases and pathogens in the following vegetable seedlings and transplants:**

Crops*	Diseases	Rate Lbs/Acre	Directions
Cucumbers	Alternaria (Macrosporium) Leaf Spot Anthracnose Cercospora Leaf Spot Downy Mildew Gummy Stem Blight Pythium Fruit Rot Scab	1.5 – 3.0 <sup>1</sup>	Begin when disease threatens or plants begin to run. Spray on a 7- to 10-day intervals under severe disease pressure. Do not apply more than 19.2 lbs. active ingredient (25.6 lbs. product) per acre per season. Do not apply within 5 days of harvest.
Fennel	Early Blight Late Blight	1.5 – 2.0 <sup>2</sup>	Apply when disease threatens. Make applications as needed on a 7- to 10-day interval. Do not use more than 12.8 lbs. active ingredient per season (17 lbs. product). Do not apply within 14 days of harvest.
Melons Including: cantaloupes, casabas, crenshaws, honeydews, muskmelons, watermelons	Alternaria Leaf Spot Anthracnose Cercospora Leaf Spot Downy Mildew Gummy Stem Blight	2.0 – 3.0 <sup>3</sup>	Apply as soon as plants begin to run or when disease threatens. Spray on a 7- to 10-day interval as necessary using higher rate and/or shorter intervals under severe disease pressure. Do not apply more than 19.2 lbs. active ingredient (25.6 lbs. product) per acre per season. Do not apply within 5 days of harvest. Some cantaloupe varieties (i.e. Harvest Queen, Gold Star, Super Star, Sweet and Early, and Saticoy) are sensitive to Protect DF fungicide. Consult State and Cooperative Extension Service Specialist prior to use.
Squash (Summer) including edible gourds	Anthracnose Downy Mildew	2.0 – 3.0 <sup>3</sup>	Start applications when plants are in the two-leaf stage. Spray on a 7- to 10-day interval as need using higher rate and/or shorter intervals under severe disease pressure. Do not apply more than 19.2 lbs. active ingredient (25.6 lbs. Product) per acre per season. Do not apply within 5 days of harvest.
Tomatoes	Anthracnose Early Blight Gray Leaf Mold Gray Leaf Spot Late Blight Septoria Leaf Spot	0.75 – 3.0 <sup>4</sup>	<b>East of the Mississippi</b> Begin applications when seedlings emerge or transplants are set. Repeat applications of 0.6 – 1.2 lbs. active ingredient per acre (0.75 – 1.5 lbs. product) at 3- to 7-day intervals, or 1.2 - 2.4 lbs. active ingredient per acre (1.5 - 3.0 lbs. product) at 7- to 10-day intervals throughout the season. Do not apply within 5 days of harvest. Do not apply more than 16.8 lbs. active ingredient (22.4 lbs. product) per acre per crop.

*(Continued)*

Crops*	Diseases	Rate Lbs/Acre	Directions
		0.75-2.0 <sup>5</sup>	<b>West of the Mississippi</b> Begin applications when seedlings emerge or transplants are set. Repeat applications of 0.6 – 0.8 lbs. active ingredient per acre (0.75 – 1.0 lbs. product) at 3- to 7-day intervals, or 1.2 - 1.6 lbs. active ingredient per acre (1.5 - 2.0 lbs. product) at 7- to 10-day intervals throughout the season. Do not apply within 5 days of harvest. Do not apply more than 6.4 lbs. active ingredient (8.5 lbs. product) per acre per season. Do not apply within 5 days of harvest.
	Bacterial Speck and Spot		Use a full rate of a fixed copper fungicide in a tank mix with a half to full rate of Protect DF. Follow application intervals specified on the copper fungicide label.

**\* Not intended for field vegetable production.**

- <sup>1</sup> Apply, for example, in 50 – 200 gallons of water per acre. In volumes of water below 50 gallons, use a minimum of 1.5 pounds per acre. If more than 200 gallons of water per acre are required for good plant coverage, apply a maximum rate of 3.0 pounds per acre. For example, if 200 gallons of water are required, use 1.5 pounds per 100 gallons.
- <sup>2</sup> Apply, for example, in 50 – 200 gallons of water per acre. In volumes of water below 50 gallons, use a minimum of 1.5 pounds per acre. If more than 200 gallons of water per acre are required for good plant coverage, apply a maximum rate of 2.0 pounds per acre. For example, if 200 gallons of water are required, use 1.0 pounds per 100 gallons.
- <sup>3</sup> Apply, for example, in 50 – 200 gallons of water per acre. In volumes of water below 50 gallons, use a minimum of 2.0 pounds per acre. If more than 200 gallons of water per acre are required for good plant coverage, apply a maximum rate of 3.0 pounds per acre. For example, if 200 gallons of water are required, use 1.5 pounds per 100 gallons.
- <sup>4</sup> Apply, for example, in 50 – 200 gallons of water per acre. In volumes of water below 50 gallons, use a minimum of 0.75 pounds per acre. If more than 200 gallons of water per acre are required for good plant coverage, apply a maximum rate of 3.0 pounds per acre. For example, if 200 gallons of water are required, use 1.5 pounds per 100 gallons.
- <sup>5</sup> Apply, for example, in 50 – 200 gallons of water per acre. In volumes of water below 50 gallons, use a minimum of 0.75 pounds per acre. If more than 200 gallons of water per acre are required for good plant coverage, apply a maximum rate of 2.0 pounds per acre. For example, if 300 gallons of water are required, use 0.67 pounds per 100 gallons.

**MAXIMUM SEASONAL POUNDAGE WHEN USED IN CONJUNCTION WITH ONE OR MORE OTHER EBDC PRODUCTS**

**Where EBDC Products Used Allow the Same Maximum Pounding of Active Ingredient Per Acre Per Season:** If more than one product containing EBDC active ingredient (maneb, mancozeb, or metiram) is used on a crop during the same growing season and the EBDC products used allow the same maximum poundage of active ingredient per acre per season, then the total poundage of all such EBDC products used must not exceed any one of the specified individual EBDC product maximum seasonal poundage of active ingredient allowed per acre.

**Where EBDC Products Used Allow Different Maximum Pounding of Active Ingredient per Acre per Season:** If more than one product containing an EBDC active ingredient is used on a crop during the same growing season and the EBDC products used allow different maximum poundage of active ingredient per acre per season, then the total poundage of all such EBDC products must not exceed the lowest specified individual EBDC product maximum seasonal poundage of active ingredient allowed per acre.

## **CHEMIGATION**

### **APPLICATION THROUGH IRRIGATION SYSTEMS – NOT FOR THIS USE IN CALIFORNIA**

#### **General Information**

1. Apply this product only through solid set or hand move, hand held, or drip (trickle) irrigation systems. Do not apply this product through any other type of irrigation system.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.
3. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
5. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

#### **SPECIFIC INFORMATION FOR IRRIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS**

1. 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.
2. 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 the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must 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.
5. 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.
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.

#### **SPECIFIC INFORMATION FOR SOLID SET, HAND MOVE OR HAND HELD SPRINKLER IRRIGATION SYSTEMS**

1. The system 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 back flow.
2. The pesticide injection pipeline 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 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.

#### **SPECIFIC INFORMATION FOR DRIP (TRICKLE) CHEMIGATION**

1. The system 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 back flow.
2. The pesticide injection pipeline 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 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.

#### **SPRAY PREPARATION**

1. Remove scale, pesticide residues, and other foreign matter from the chemical stock tank and the entire injector system. Flush with clean water.
2. Follow the Directions for Use to determine the amount of PROTECT DF that must be added to the stock tank. This amount should correspond with the site, host, and pathogen for which the product is used, and the intended amount of area to be treated.
3. Fill the stock tank with approximately 1/2 the desired amount of water. Slowly add the required amount of PROTECT DF to the stock tank, then add the remaining volume of water.
4. Maintain a gentle continuous agitation in the stock tank during the mixing and application process to ensure a uniform suspension of material.
5. PROTECT DF may be applied in conjunction with chemically neutral liquid fertilizers and pesticides. Applications in conjunction with highly alkaline fertilizers or pesticides may cause a degradation of the pesticide resulting in reduced performance and should be avoided.
6. Set sprinkler system to deliver 0.1-1.25 inches of water per acre. Volumes of water higher than this may reduce efficacy.
7. Start sprinkler and then uniformly inject the suspension of PROTECT DF into the water line with a positive displacement pump ahead of a right angle turn to insure adequate mixing and the desired rate of product.

## WARRANTY DISCLAIMER

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