



# ROPER<sup>®</sup> DF

GROUP M 3 FUNGICIDE

**ACTIVE INGREDIENTS:**

Mancozeb: A coordination product of zinc ion and manganese ethylene bisdithiocarbamate .....	75.0%
In which the ingredients are:	
Manganese++ .....	15.00%
Zinc++ .....	1.9%
Ethylene bisdithiocarbamate ion (C <sub>4</sub> H <sub>6</sub> N <sub>2</sub> S <sub>4</sub> ) .....	58.1%
OTHER INGREDIENTS: .....	25.0%
<b>TOTAL</b>	<b>100.0%</b>

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

<b>FIRST AID</b>	
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call a 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 a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further 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 to 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 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 to 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.  <b>FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT, CALL: 1-866-944-8565.</b></p>	

EPA REG. NO. 34704-1063

EPA EST. NO. 70506-COL-001

NET CONTENTS 30.0 LB (13.6 KG)

120514 V1D 03G15

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

- Harmful if absorbed through skin
- Causes moderate eye irritation
- Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals

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)**

Some materials that are chemical-resistant to this product are nitrile rubber, natural rubber, or butyl rubber.

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

- Long-sleeved shirt,
- Long pants,
- Shoes and socks,
- Chemical-resistant gloves made of any waterproof material.

**For Broccoli, Cabbage, Lettuce (leaf and head), and Peppers**

Aerial application of Roper DF on broccoli, cabbage, lettuce (leaf and head), and peppers requires that occupational handlers performing mixing/loading operations observe the additional mitigation measures of wearing a particulate respirator with an N, R or P filter, NIOSH approval prefix TC 84-A.

**For Potato Seedpiece Treatment**

When opening this bag or loading/pouring the treated seed/seed pieces, wear long-sleeved shirt, long pants, shoes, socks, chemical-resistant gloves, and a particulate respirator with an N,R, or P filter, NIOSH approval prefix TC 84-A.

**For Walnuts**

Mixers/loaders supporting applications to walnuts must wear a particulate respirator with an N, R, or P filter, NIOSH-approved prefix TC84-A.

See engineering controls for additional requirements.

**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 and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

**Engineering Controls**

**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)(4-6)].

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

**USER SAFETY RECOMMENDATIONS**

**Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE 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 HAZARDS**

This pesticide 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, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

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) 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 24 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,
- Chemical-resistant gloves made of any waterproof material,
- Shoes plus socks.

### 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.

Professional applications to golf courses, industrial (office park), and municipal lawns are not within the scope of the Worker Protection Standard.

**Keep unprotected persons out of treated area until sprays have dried.**

### PRODUCT USE INFORMATION

Roper® DF is a broad-spectrum protectant fungicide labeled for use on outdoor or greenhouse grown crops. Optimum disease control is achieved when the fungicide is applied in a regularly scheduled preventative spray program. The addition of a surfactant will improve fungicide performance by providing a more uniform spray deposit, increased foliar redistribution, and improved fungicide retention during periods of wet weather.

#### Use Rate Determination

- Carefully read, understand, and follow label use rates and restrictions.
- When two pesticides are tank mixed, the more restrictive label conditions apply.
- Do not tank mix with any product which contains a prohibition on tank mixing.
- Under low disease conditions, minimum label rates per application can be used while maximum label rates and the minimum interval may be used for severe or threatening disease conditions.
- **For proper application, determine the number of acres to be treated, the required label use rate and the volume to be applied per acre. Prepare only the amount of spray solution required to treat the measured acreage. Careful calibration of spray equipment is recommended prior to use.**
- **When applied by hand sprayers, 1.0 pound of this product per 100 gallons per acre is equivalent to 1 level tablespoon per gallon spray solution.**

#### Mixing Procedures

Slowly place into spray tank as it is being filled or thoroughly premix in a nurse tank for concentrate or aircraft sprayers. Add other co-applied fungicides, insecticides, growth regulators, micronutrients after this product has been placed into suspension.

When preparing spray solutions for use in a hand sprayer, premix as a slurry in a small container, and then add to sprayer containing 1/3 to 1/2 the desired final water volume.

#### Compatibility

This product is compatible with most commonly used agricultural fungicides, insecticides and growth regulators. When preparing tank mixes, user should consult spray compatibility charts or State Cooperative Extension Service Specialists prior to actual use.

### 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:*

- The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.
- 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.
- 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.

### Application

**Ground:** Thorough coverage foliar sprays generally result in optimum disease control. To achieve good coverage use proper spray pressure, volume of spray mixture per acre, nozzles (generally hollow cone), disc (generally D-5 to D-7), nozzle spacing, and tractor speed. Consult spray nozzle and accessory catalogues for specific information on proper equipment calibration.

**Hand Sprayers:** Thoroughly spray plant foliage until runoff.

**Aerial:** A uniform initial spray deposit generally results in optimum disease control. Each aircraft should be prechecked for droplet size, uniformity of spray pattern, swath width, and spray volume. During aerial application, human flaggers are prohibited.

**Nozzle selection:** Hollow cone brass nozzles with a D-series orifice disc and core (whirlplate) are recommended. Nozzles should point straight down or slightly backward.

**Swath width:** For most field and vegetable crops, swaths just beyond the wingspan of 36 to 40 feet for light aircraft and up to 45 feet for heavier aircraft are suggested. Optimum swath for helicopters is usually 5 to 10 feet beyond normal boom length.

**Spray volume:** Aerial applications are to be made in a minimum of two (2.0) gallons of water per acre. On vegetable and field crops, 2.0 to 3.0 gallons of spray per acre are generally optimum; orchards and vineyards can be handled with spray volumes of 5.0 gallons per acre. Some tall or dense foliage crops requiring greater penetration to the lower leaf surface will require higher spray volumes.

**Do not use less than 5.0 gallons per acre in California.**

**Altitude:** For most crops, the spray boom should be positioned in 5 to 10 feet above the crop canopy.

**Flagging:** Swaths should be marked at the end of the field with permanent flags. Swaths should be measured accurately with a chain or other device except when rows can be accurately counted.

### Chemigation Use Directions

Sprinkler Irrigation: This product must be applied on a regular protectant fungicide schedule, **not an irrigation schedule**. If irrigation cycles are less frequent than recommended application intervals for this product, ground or aerial applications must supplement chemigation applications to achieve adequate disease control.

### Product Requirements

- Apply this product only through sprinkler irrigation systems including center-pivot, lateral move, end tow, side (wheel) roll, traveler, solid set, or hand move irrigation systems. Do not apply product through any other type of irrigation system.
- Lack of fungicidal effectiveness or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- If you have questions about calibration, you should contact State Extension Service specialist, equipment manufacturers or other experts.
- 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 system are in place.
- 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 Chemigation Equipment Requirements

Before applying this product through sprinkler irrigation equipment, the chemigation system must meet the following specifications:

- 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.

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- Chemigation systems connected to public water systems must contain a functional reduced-pressure zone (RPZ), backflow preventer 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.
- Systems not connected to a public water supply must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located in the irrigation pipeline to prevent water source contamination from back flow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 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.
- 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.
- 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.
- 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.
- Do not apply when wind speed favors drift beyond the area intended for treatment.

**Center-Pivot, Lateral Move, End Tow, and Traveler Irrigation Equipment** (use only with electric or oil hydraulic drive systems that provide a uniform water distribution):

- Determine size of area to be treated.
- Determine the time required to apply no more than 0.25 inch water (6,750 gallons water per acre) over the area to be treated when the system and injection equipment are operated at normal pressures recommended by the equipment manufacturer. Run system at 80% to 95% of manufacturer's rated capacity.
- Using only water, determine the injection pump output when operated at normal line pressure.
- Determine the amount of this product required for treatment area.
- Add the required amount of this product and sufficient water to meet the injection time requirements of the solution tank.
- Maintain constant solution tank agitation during the injection period.
- Stop injection equipment after treatment is completed. Continue to operate the system until the solution of this product has cleared the sprinkler head.

**Solid-Set, Side (Wheel) Roll, and Hand Move Irrigation Equipment:**

- Determine acreage covered by sprinkler.
- Fill injector solution tank with water and adjust flow rate to use contents over a 10- to 30-minute interval.
- Determine the amount of this product required for treatment area.
- Add the required amount of this product into the same quantity of water used to calibrate the injection equipment.
- Maintain constant solution tank agitation during the injection period.
- Operate system at normal pressures recommended by the manufacturer of the injection equipment and used for the time interval established during calibration.
- Inject this product at the end of the irrigation cycle or as a separate application to maximize foliar fungicide retention.
- Stop injection equipment after treatment is completed. Continue to operate the system until the solution of this product has cleared the last sprinkler head.

### **Disease Monitoring**

This product is a broad-spectrum, protectant fungicide. If not applied on a routine protectant spray schedule, crops should be scouted on a weekly basis. Apply fungicide at the required label use rate and spray schedule, at the first sign of disease, report of disease in the area, or during environmental conditions favorable for disease development.

### **Restrictions**

Users must carefully read, understand, and follow all use restrictions prior to using this product.

### **Foliar Applications**

**Where EBDC Products Are Used That Allow the Same Maximum Poundage of Active Ingredient Per Acre Per Season:** If more than one product containing an 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.

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**Where EBDC Products Are Used That Allow Different Maximum Poundage 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 used must not exceed the lowest specified individual EBDC product maximum seasonal poundage of active ingredient allowed per acre.

**Seed Treatment**

In addition to the maximum number of foliar applications permitted by the formula stated above, a single application for seed treatment may be made on crops, which have registered seed treatment uses.

**Pome Fruits**

Use either the Pre-Bloom/Bloom Use or Extended Application schedule. **Do not combine or integrate the two treatment schedules.** It is recommended that this product be used in an Integrated Pest Management Program (IPM).

<b>Crop</b>	<b>Diseases Controlled</b>	<b>Product Rate per Application (Pounds per Acre)</b>	<b>Application Directions</b>	<b>Restrictions</b>
Apples Crabapples Pears Quince	Fabraea leaf spot Rusts Scab	6.0†	<b>Pre-Bloom/Bloom Use:</b> Begin applications at 0.25- to 0.50-inch green tip and continue on a 7- to 10-day schedule through bloom. Do not combine or integrate the prebloom application schedule with the post-bloom “extended application” schedule.	Do not apply more than 6.0 lb (4.5 lb AI)/A/application. Do not apply after bloom. Do not apply more than 24.0 lb (18.0 lb AI)/A/yr. Do not graze livestock in treated areas.
		3.0†	<b>Extended Application Schedule for Use in Tank Mixtures with Systemic Fungicides:</b> For implementation of IPM programs, applications based on tree-row volume, or for use as a resistance management tool, begin applications at 0.25- to 0.50-inch green tip and continue applications on a 7- to 10-day schedule through the second cover spray or to within 77 days of harvest. Do not combine or integrate the prebloom application schedule with the post-bloom “extended application” schedule.	PHI: Do not apply within 77 days of harvest. Do not apply more than 3.0 lb (2.25 lb AI)/A/application. Do not apply more than 21.0 lb (15.75 lb AI)/A/yr. Do not graze livestock in treated areas.

† Maximum per acre use rate based on thorough coverage dilute sprays.

**Fruits**

<b>Crop</b>	<b>Diseases Controlled</b>	<b>Product Rate per Application (Pounds per Acre)</b>	<b>Application Directions</b>	<b>Restrictions</b>
Atemoya Cherimoya Custard apple Sugar apple Sweetsop	Anthracnose	2.0 to 2.5	Begin applications at flowering and continue at a 7-day re-treatment interval. Applications made with aerial equipment must be made in a minimum spray volume of 10.0 gal/A.	PHI: Applications may be made up to the day of harvest. Do not apply more than 35.0 lb (26.25 lb AI)/A/yr. Do not make more than 14 applications/yr.

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Bananas (including plantain)	Sigatoka	2.0 to 3.0	Apply when leaves first appear and repeat every 14- to 21-days or as required. Use sufficient water to provide adequate coverage. The addition of a surfactant to spray solutions will improve performance.	PHI: Applications may be made up to the day of harvest. Do not apply more than 30.0 lb (22.5 lb AI)/A/growing cycle.
Cranberries	Fruit rot	3.0 to 6.0	Start applications at early-bloom and repeat at 7- to 10-day intervals as required.	PHI: Do not apply within 30 days of harvest. Do not apply more than 18.0 lb (13.5 lb AI)/A/ season.
Canistel Mamey sapote Mango Sapodilla Star apple (caimito) White sapote	Anthraco­nose Black spot (cercospora) Phytophthora fruit rot	2.0 to 2.5	Begin applications at flowering and continue at 14- to 21-day intervals. Direct spray to crown and blossom area. Use 20.0 to 100 gal water/A.	PHI: Applications may be made up to the day of harvest. Do not apply more than 37.3 lb (28.0 lb AI)/A/yr. Do not make more than 14 applications/yr.
Grapes	Black rot Bunch rot Downy mildew Phomopsis	1.5 to 2.5 West of the Rocky Mountains  1.5 to 4.0 East of the Rocky Mountains	Apply in sufficient water to provide thorough coverage starting when new shoots are 0.5 to 1.5 inches long. Repeat when shoots are 3 to 5 inches long, when shoots are 8 to 10 inches long, and then at 7- to 10-day intervals until fruit is set. For late season control of Black rot, Phomopsis and Downy mildew, the use of other approved and recommended fungicides is suggested.	PHI: In California, do not apply after bloom. In other areas, do not apply within 66 days of harvest. West of the Rocky Mountains: Do not apply more than 7.5 lb (5.6 lb AI)/A/season. East of the Rocky Mountains: Do not apply more than 24.0 lb (18.0 lb AI)/A/season.
Papayas	Anthraco­nose Phytophthora fruit rot	2.0 to 2.5	Use minimum 50.0 gal water/A. Start applications at flowering and continue at 14- to 21-day intervals. Direct spray to crown and blossom area.	PHI: Applications may be made up to the day of harvest. Do not apply more than 37.0 lb (28.0 lb AI)/A/yr. Do not make more than 14 applications/yr.

**Vegetables**

<b>Crop</b>	<b>Diseases Controlled</b>	<b>Product Rate per Application (Pounds per Acre)</b>	<b>Application Directions</b>	<b>Restrictions</b>
Asparagus	Cercospora leaf spot Rust	2.0	Start applications when Rust first appears and repeat at 10-day intervals. Four applications are usually sufficient.	PHI: Do not apply within 120 days of harvest in California and Arizona, or within 180 days in all other states. Apply only on Asparagus ferns after spears have been harvested. Do not apply more than 8.0 lb (6.0 lb AI)/A/season.

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Broccoli and Cabbage*	Alternaria leaf spot	2.0	In plant beds or direct-seeded fields, apply 7 to 10 days after planting or earlier if disease is present. If field application, apply as soon as disease is present and reapply as needed on a 7- to 10-day schedule.	Do not apply more than 12.8 lb of product (9.6 lb AI/A/year). Preharvest Interval: Do not apply within 7 days of harvest. Do not apply this product with a U-boom device. Minimum Retreatment Interval: 7 days.
*Aerial application of Roper DF on broccoli and cabbage requires that occupational handlers performing mixing/loading operations observe the additional mitigation measures of wearing a particulate respirator with an N, R or P filter, NIOSH approval prefix TC 84-A.				
Corn (sweet corn for fresh use or processing; popcorn; and sweet corn for seed production, including hybrid seed)	Common rust Helminthosporium leaf blight	1.5	Use sufficient water for thorough coverage. Start applications when disease first appears and repeat at 4- to 7-day intervals.	PHI: Do not apply within 7 days of harvest. Do not feed treated forage to livestock. East of the Mississippi River, Arkansas and Louisiana: Do not apply more than 22.5 lb (17.0 lb AI)/A/crop. West of the Mississippi River (except Arkansas and Louisiana): Do not apply more than 7.5 lb (5.6 lb AI)/A/crop. Field and Field corn for Hybrid Seed Production: PHI: Do not apply within 40 days of harvest. Do not apply more than 15.0 lb (11.25 lb AI)/A/crop.
Cucurbit crop group: Cantaloupes Casaba Chayote Chinese waxgourd Citron melon Crenshaw melon Cucumber Gherkin Gourd, edible <i>Momordica</i> spp. Muskmelon Pumpkin Squash, summer Squash, winter Watermelon	Alternaria leaf spot Anthracnose Cercospora leaf spot Downy mildew Gummy stem blight Scab Microdochium blight*  *Not approved for use on this pest species in California.	2.0 to 3.0	Begin applications when plants are in the two-leaf stage and repeat at 7- to 10-day intervals. Use sufficient water and direct spray to provide thorough coverage of both upper and lower leaf surfaces. Some Cantaloupe varieties (i.e. harvest queen, gold star, super star, sweet and early, and saticoy) are sensitive to this product. Applications made with aerial equipment must be made in a minimum spray volume of 2.0 gal/A. Consult State Cooperative Extension Service Specialist prior to use.	PHI: Do not apply within 5 days of harvest. Do not apply more than 25.6 lb (19.2 lb AI)/A/yr. Do not make more than 8 applications/yr.
Ginseng	Alternaria blight	2.0	Begin applications when disease first threatens and repeat every 7 to 10 days as needed. In Wisconsin, apply with ground equipment and a minimum of 80.0 gal/A of water.	PHI: Do not apply within 30 days of harvest. Do not apply more than 24.0 lb (18.0 lb AI)/A/yr. Do not make more than 12 applications/yr.



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Lettuce*	Downy mildew	2.0	Begin application when disease appears and reapply on a 7- to 10-day treatment schedule.	In California, do not apply more than 8.5 lb of product (6.4 lb AI)/A/year and do not apply within 14 days of harvest. In states other than California, do not apply more than 12.8 lb of product (9.6 lb AI)/A/year and do not apply within 10 days of harvest. Do not apply this product with a U-boom device. Minimum Retreatment Interval: 7 days.
*Aerial application of Roper DF on lettuce (leaf and head) requires that occupational handlers performing mixing/loading operations observe the additional mitigation measures of wearing a particulate respirator with an N, R or P filter, NIOSH approval prefix TC 84-A.				
Onions (dry bulb) Garlic Shallots	Botrytis leaf blight Downy mildew Neck rot Purple blotch Rust	3.0	Follow a protective spray schedule starting when diseases are first reported in the area and repeat at 7-day intervals throughout the season. Do not allow spray or drift to contact bulbs after lifting from soil.	PHI: Do not apply within 7 days of harvest. Do not apply more than 30.0 lb (22.5 lb AI)/A/crop. Do not apply to exposed bulb.
Onions (furrow drench)	Damping-off Seed rots Seedling blights Smut	3.0	Apply 3.0 lb per acre as a furrow drench at time of planting onion seeds. Use 75.0 to 125 gal water/A.	Do not use more than 3.0 lb (2.25 lb AI)/A (29,000 linear ft of furrow) with an 18-inch row spacing. Do not use in California.
Peppers*	Anthracnose Early blight Phomopsis blight or fruit rot	2.0 (west of the Mississippi River) 3.0 (east of the Mississippi River)	Begin application when disease appears and reapply on a 7- to 10-day spray schedule.	West of the Mississippi River, do not apply more than 12.8 lb of product (9.6 lb AI)/A/year and do not apply within 7 days of harvest. East of the Mississippi River, do not apply more than 19.2 lb of product (14.4 lb AI)/A/year and do not apply within 7 days of harvest. Do not apply this product with a U-boom device. Minimum Retreatment Interval: 7 days.
*Aerial application of Roper DF on peppers requires that occupational handlers performing mixing/loading operations observe the additional mitigation measures of wearing a particulate respirator with an N, R or P filter, NIOSH approval prefix TC 84-A.				
Potatoes	Early blight Late blight	1.0 to 2.0	Begin applications when plants are 4 to 6 inches high by applying 0.5 to 1.0 lb/A. As the vines increase in size, apply 1.5 to 2.0 lb/A at 5- to 10-day intervals or apply 0.75 to 1.0 lb/A at 3- to 5-day intervals. It is recommended that this product be used within an Integrated Pest Management Program. Also, vine kill should occur 14 days before harvest.	PHI: Do not apply within 3 days of harvest in Connecticut, Florida, Maine, Massachusetts, New Hampshire, New York, Ohio, Pennsylvania, Vermont, and Wisconsin and at least 14 days elsewhere. Do not apply more than 15.0 lb (11.2 lb AI)/A/crop.

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<b>Crop</b>	<b>Diseases Controlled</b>	<b>Product Rate per Application (Pounds per Acre)</b>	<b>Application Directions</b>	<b>Restrictions</b>
Potato (seed piece treatment)	Fusarium decay Late blight Seedborne common scab Rhizoctonia shoot blight Silver scurf	See <b>Application Directions</b>	Dip whole or cut Potato tubers in 1.25 lb of product per 50.0 gal of water. Place treated tubers in a clean container following treatment and plant as soon as possible. Spread treated seed pieces in a cool place if held before planting.	Do not use treated seed Potatoes for food or feed purposes. Seed pieces that have been treated with this product that are then packaged or bagged for future use must be colored with an EPA-approved dye to impart an unnatural color and must contain the following labeling on the outside of the seed piece package or bag: "Treated Seed Pieces: Seed pieces have been treated with the fungicide mancozeb. When opening this bag or loading/pouring the treated seed pieces, wear long-sleeved shirt, long pants, shoes, socks, chemical resistant gloves, and a particulate respirator with an N, R or P filter, NIOSH approval prefix TC 84-A. Do Not Use for Food, Feed, or Oil Purposes. After the seed pieces have been planted, do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours. Exception: "Once the seed pieces are planted in soil or other planting media, the Worker Protection Standard allows workers to enter the treated area without restriction if there will be no worker contact with the soil/media subsurface."
Tomatoes	Anthracnose Early blight Gray leaf spot Late blight Leaf mold Septoria leaf spot	0.75 to 1.0 West of the Mississippi River  0.75 to 1.5 East of the Mississippi River	Start application when seedlings emerge or transplants are set. Repeat at 3- to 7-day intervals throughout the season.	PHI: Do not apply within 5 days of harvest. West of the Mississippi River, do not apply more than 8.5 lb (6.4 lb AI)/A/crop. East of the Mississippi River, do not apply more than 22.4 lb (16.8 lb AI)/A/crop.
	Bacterial speck and spot	1.5 to 2.0 West of the Mississippi River  1.5 to 3.0 East of the Mississippi River	Start application when seedlings emerge or transplants are set. Repeat at 7- to 10-day intervals throughout the season.	East of the Mississippi River, do not apply more than 22.4 lb (16.8 lb AI)/A/crop. West of the Mississippi River, do not apply more than 8.5 lb (6.4 lb AI)/A/crop.

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**Field Crops**

<b>Crop</b>	<b>Diseases Controlled</b>	<b>Product Rate per Application (Pounds per Acre)</b>	<b>Application Directions</b>	<b>Restrictions</b>
Barley	Helminthosporium leaf spot Leaf rust Septoria glume blotch Septoria leaf spot Tan spot	2.0	Start applications at onset of disease or when plants are in the tillering to jointing stage and repeat at 7- to 10-day intervals.	PHI: Do not apply after Feekes Growth Stage 10.5 (typically 35 to 45 days), but no less than 26 days before harvest. Do not make more than 3 applications during the season. Do not graze livestock in treated areas prior to harvest. Do not apply more than 6.0 lb (4.5 lb AI)/A/crop.
Hybrid seed corn	Common corn rust Helminthosporium leaf blight	1.5	Start applications when disease symptoms first appear and, depending on severity of infection, continue on a 4- to 7-day interval.	PHI: Do not apply within 40 days of harvest. Do not apply more than 15.0 lb (11.25 lb AI)/A/crop. Do not feed treated forage to livestock.
Oats	Helminthosporium leaf spot Leaf rust Septoria glume blotch Septoria leaf spot Tan spot	2.0	Start applications at onset of disease or when plants are in the tillering to jointing stage and repeat at 7- to 10-day intervals.	PHI: Do not apply after Feekes Growth Stage 10.5 (typically 35 to 45 days), but no less than 26 days before harvest. Do not make more than 3 applications during the season. Do not graze livestock in treated areas prior to harvest. Do not apply more than 6.0 lb (4.5 lb AI)/A/crop.
Peanuts	Cercospora leaf spot Rust	1.0 to 2.0	Start applications when disease first appears or is reported in area. Repeat sprays at 7- to 14-day intervals. Reduce sprays to a 7-day interval during humid weather.	PHI: Do not apply within 14 days of harvest. Do not use more than 16.0 lb (12.0 lb AI)/A/crop. Do not feed treated vines to livestock.
Rye	Helminthosporium leaf spot Leaf rust Septoria glume blotch Septoria leaf spot Tan spot	2.0	Start applications at onset of disease or when plants are in the tillering to jointing stage and repeat at 7- to 10-day intervals.	PHI: Do not apply after Feekes Growth Stage 10.5 (typically 35 to 45 days), but no less than 26 days before harvest. Do not make more than 3 applications during the season. Do not graze livestock in treated areas prior to harvest. Do not apply more than 6.0 lb (4.5 lb AI)/A/crop.
Sugar beets	Cercospora leaf spot	1.5 to 2.0	Start applications when disease first threatens and repeat every 7 to 10 days as needed. The addition of a surfactant to spray solutions will improve performance.	PHI: Do not apply within 14 days of harvest. Do not apply more than 14.0 lbs (10.5 lb AI)/A/season. Do not feed treated Sugar beet tops to livestock.

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<b>Crop</b>	<b>Diseases Controlled</b>	<b>Product Rate per Application (Pounds per Acre)</b>	<b>Application Directions</b>	<b>Restrictions</b>
Walnuts	Walnut blight ( <i>Xanthomas campestris</i> <i>pv Juglandis</i> )	2.4 (1.8 lb AI/A)	Begin applications at early pre-bloom prior to or when catkins are partially expanded. Make additional applications during bloom and early nutlet stage or as needed if frequent rainfall occurs. Apply in a minimum of 100 gal of water/A by ground and in a minimum of 10.0 gal of water/A by air. In CA, this product must be tank mixed with a fixed copper product registered for use on walnuts.	Do not exceed 10 applications/season. Do not apply more than 24.0 lb product (18.0 lb AI)/A/use season. The minimum retreatment interval is 10 days. <b>Preharvest Interval:</b> Do not apply within 75 days of harvest. Do not feed the crop or crop byproducts to livestock. Do not graze livestock in treated orchards. Mixers/loaders supporting applications to walnuts must wear a particulate respirator with a N, R, or P filter, NIOSH-approved prefix TC 84-A. <b>Chemigation:</b> Do not apply this product through any type of irrigation system.
Wheat	Helminthosporium leaf spot Leaf rust Septoria glume blotch Septoria leaf spot Tan spot	2.0	Start applications at onset of disease or when plants are in the tillering to jointing stage and repeat at 7- to 10-day intervals.	PHI: Do not apply after Feekes Growth Stage 10.5 (typically 35 to 45 days) but no less than 26 days before harvest. Do not make more than 3 applications during the season. Do not graze livestock in treated areas prior to harvest. Do not apply more than 6.0 lb (4.5 lb AI)/A/crop.
Triticale	Helminthosporium leaf spot Leaf rust Septoria glume blotch Septoria leaf spot Tan spot	2.0	Start applications at onset of disease or when plants are in the tillering to jointing stage and repeat at 7- to 10-day intervals.	PHI: Do not apply after Feekes Growth Stage 10.5 (typically 35 to 45 days) but no less than 26 days before harvest. Do not make more than 3 applications during the season. Do not graze livestock in treated areas prior to harvest. Do not apply more than 6.0 lb (4.5 lb AI)/A/crop.

**Miscellaneous**

<b>Crop</b>	<b>Diseases Controlled</b>	<b>Product Rate per Application (Pounds per Acre)</b>	<b>Application Directions</b>
Almonds	Blossom blight ( <i>Monilinia</i> spp) Shothole ( <i>Stigmia</i> spp)	6.4	Begin application at dormant to popcorn stage, full bloom or petal fall. Reapply every 7 to 10 days if bloom is staggered and weather is rainy. Do not use less than 10.0 gal of spray volume/A if aerially applied. <b>RESTRICTIONS:</b> Do not apply more than 19.2 lb of product (14.4 lb AI)/A/year. Do not make last application later than 5 weeks after petal fall. Do not graze livestock in treated area. Do not apply this product with a U-boom device. Minimum Retreatment Interval: 7 days.

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<b>Crop</b>	<b>Diseases Controlled</b>	<b>Product Rate per Application (Pounds per Acre)</b>	<b>Application Directions</b>
Asparagus crowns	Crown rot	1.0 lb/100 gal	Place loosely packed crowns into a burlap bag and soak, with gentle agitation, in the fungicide solution for 5 minutes. Remove bag, drain well, and plant crowns as soon as possible. A tank large enough to hold a single burlap bag will treat 2 bags of crowns. Clean dipping suspension should then be prepared in a clean tank. Dirty crowns should be pre-washed to remove excess soil.
Caprifig	Assorted molds Endosepsis (fusarium)	4.0 lb/100 gal	Prepare Mamme figs by making a shallow cut through the eye and then hand dividing to avoid wasp injury. Submerge Mamme figs in the fungicide suspension for a minimum of 15 minutes. The fungicide suspension should be stirred frequently to prevent settling out. Fresh dipping solution should be used after treating 4 or 5 batches of figs. After treatment, Figs should be drained prior to placement in trees.
Christmas trees (conifer)	Lophodermium needle cast Pine gall rust Scirrhia brown spot	1.0 to 2.0 lb/A or 1.0 to 2.0 lb/100 gal	Begin application in spring or early summer before infection occurs. Repeat after heavy rains. Make applications at 7- to 10-day intervals.
Douglas fir	Swiss needle cast		

**Turf**

For use on sod farms, golf courses, industrial and commercial lawns and other similar nonresidential areas. Not for use on residential or athletic turf.

**Restrictions:**

**Sod Farm Turf:**

- Harvesting of treated turf is prohibited until 5 days following application.
- Limit to a maximum of 4 applications per year and a maximum rate of 23.2 pounds of product per acre (17.4 pounds active ingredient per acre) per application.
- Minimum interval between applications is 10 days.

**Golf Courses:**

- For cool season grasses; greens, tees and aprons - limit to a maximum of 5 applications per year at a maximum application rate of 23.2 pounds of product per acre (17.4 pounds active ingredient per acre) per application.
- For cool season grasses; fairways - limit to a maximum of 4 applications per year at a maximum application rate of 23.2 pounds of product per acre (17.4 pounds active ingredient per acre) per application.
- For warm season grasses; greens, tees and aprons - limit to a maximum of 4 applications per year at a maximum application rate of 23.2 pounds of product per acre (17.4 pounds active ingredient per acre) per application.
- For warm season grasses; fairways - limit to a maximum of 3 applications per year at a maximum application rate of 23.2 pounds of product per acre (17.4 pounds active ingredient per acre) per application.
- Minimum interval between applications is 10 days.

**All Other Turf:**

- Limit to a maximum of 4 applications per year and a maximum application rate of 23.2 pounds of product per acre (17.4 pounds active ingredient per acre) per application.
- Minimum interval between applications is 10 days.

Start application when grass greens up in spring or when disease first appears and repeat at 10- to 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. Apply in sufficient water to provide adequate coverage.

**Turf Tolerance**

Treated turfgrass should be maintained in a vigorous growing condition. Turfgrass that is under stress will not respond to fungicide treatments as turfgrass that is well-maintained. Turfgrass tolerance to this product has been found to be acceptable, however, this product and tank mixtures with other products have not been tested on all varieties of every turfgrass species or under all possible growing conditions. If user is unfamiliar with the performance of this product or tank mixtures, under user growing conditions, a limited area of turfgrass should be treated prior to initiating large-scale applications. The user should always exercise reasonable judgment and caution when using this product.

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<b>Crop</b>	<b>Diseases Controlled</b>	<b>Rate Per Application (Ozs/1000 Sq Ft)</b>	<b>Application Directions</b>	<b>Restrictions</b>
Assorted grasses	Helminthosporium melting-out Rust (leaf, stem, stripe)	4.0	Apply when disease appears. Repeat at 10-day intervals as long as condition persists.	Do not graze treated areas. Do not use on grasses intended for grazing, such as range or pasture grasses. Do not feed clippings to livestock.
	Copper spot Fusarium blight Red thread Slime mold	4.0 to 8.0	Apply when disease appears. Repeat at 10-day intervals as long as condition persists.	
	Algae	6.0	Apply when algae appears. Repeat at 10-day intervals as long as condition persists.	
	Dollar spot	6.0 to 8.0	Apply when disease appears. Repeat at 10-day intervals as long as condition persists.	
	Rhizoctonia brown patch	4.0	Apply when disease appears. Repeat at 10-day intervals as long as condition persists.	Do not graze treated areas. Do not use on grasses intended for grazing, such as range or pasture grasses. Do not feed clippings to livestock.  Do not use on grasses grown for seed.
	Pythium blight	8.0	Apply when disease appears. Repeat at 10-day intervals as long as condition persists.	
	Fusarium snow mold	6.0 to 8.0	Apply at 2- to 6-week intervals during winter.	
	Gray leaf spot	8.0	Apply when disease appears. Repeat at 10-day intervals as long as condition persists.	

**ATTENTION:** This product contains mancozeb and ETU, chemicals known to the State of California to cause cancer. ETU is also known to the State of California to cause birth defects or other reproductive harm.

### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Keep away from fire and sparks. Store in a cool, dry, well-ventilated area. Do not allow stored product to become wet or overheated in storage; decomposition, impaired activity, or fire may result. Keep container closed when not in use. Decomposition produces a foul odor; if observed, check for not container and immediately remove to open areas for disposal.

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

#### CONTAINER HANDLING:

**Nonrefillable non-rigid containers:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available, or 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.

**Nonrefillable rigid containers:** Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 49 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Offer for recycling if available or dispose of in a sanitary landfill or by incineration, or, if allowed, by state and local authorities, by burning. If burned, stay out of smoke.

**For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC – 1-800-424-9300.**

### CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

BEFORE BUYING OR USING THIS PRODUCT, read the entire Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability. By buying or using this product, the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability, which no employee or agent of LOVELAND PRODUCTS, INC. or the seller is authorized to vary in any way.

Follow the Directions for Use of this product carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop or other plant injury, ineffectiveness, or other unintended consequences may result from such risks as weather or crop conditions, mixture with other chemicals not specifically identified in this product's label, or use of this product contrary to the label instructions, all of which are beyond the control of LOVELAND PRODUCTS, INC. and the seller. The buyer or user of this product assumes all such inherent risks.

Subject to the foregoing inherent risks, LOVELAND PRODUCTS, INC. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use when the product is used in strict accordance with such Directions for Use under normal conditions of use. EXCEPT AS WARRANTED IN THIS LABEL AND TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THIS PRODUCT IS SOLD "AS IS," AND LOVELAND PRODUCTS, INC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ELIGIBILITY OF THIS PRODUCT FOR ANY PARTICULAR TRADE USAGE.

IN THE UNLIKELY EVENT THAT BUYER OR USER BELIEVES THAT LOVELAND PRODUCTS, INC. HAS BREACHED A WARRANTY CONTAINED IN THIS LABEL AND TO THE EXTENT REQUIRED BY APPLICABLE LAW, BUYER OR USER MUST SEND WRITTEN NOTICE OF ITS CLAIM TO THE FOLLOWING ADDRESS: LOVELAND PRODUCTS, INC., ATTENTION: LAW DEPARTMENT, P.O. BOX 1286, GREELEY, CO 80632-1286.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE BUYER'S OR USER'S EXCLUSIVE REMEDY FOR ANY INJURY, LOSS, OR DAMAGE RESULTING FROM THE HANDLING OR USE OF THIS PRODUCT, INCLUDING BUT NOT LIMITED TO CLAIMS OF BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHER TORTS, SHALL BE LIMITED TO ONE OF THE FOLLOWING, AT THE ELECTION OF LOVELAND PRODUCTS, INC. OR THE SELLER: DIRECT DAMAGES NOT EXCEEDING THE PURCHASE PRICE OF THE PRODUCT OR REPLACEMENT OF THE PRODUCT. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, LOVELAND PRODUCTS, INC. AND THE SELLER SHALL NOT BE LIABLE TO THE BUYER OR USER OF THIS PRODUCT FOR ANY CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES, OR DAMAGES IN THE NATURE OF A PENALTY.

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