Department of Agriculture
STATE OF HAWAII

LICENSED

PERIOD 2014-2016 LIC. NO. 8026.74

# Manzate® Pro-Stick™ T&O

FUNGICIDE

RECEIVED
JUL 29 2013

## DISPERSIBLE GRANULES

| ACTIVE INGREDIENTS | | BY WEIGHT |
|---|---|---|
| Mancozeb: A coordination product of zinc ion and manganese ethylenebisdithiocarbamate in which the ingredients are: | | 75.0% |
| Manganese++ | 15.0% | |
| Zinc++ | 1.9% | |
| Ethylenebisdithiocarbamate ion ($C_4H_6N_2S_4$)−− | 58.1% | |
| OTHER INGREDIENTS | | 25.0% |
| TOTAL | | 100.0% |

Contains 0.75 Pound of Mancozeb Per Pound of Product

**EPA Reg. No. 70506-234** **EPA Est. No. 70815-GA-001**

## KEEP OUT OF REACH OF CHILDREN
## CAUTION

| FIRST AID |
|---|
| **IF SWALLOWED:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. |
| **IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice. |
| **IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. |
| **IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. |
| Have the product container or label with you when calling a poison control center or doctor, or going for treatment. **Contact the Rocky Mountain Poison Center at 1-866-673-6671 for emergency medical treatment information.** |

**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC at 1-800-424-9300.**

UPI
**Manufactured by: United Phosphorus, Inc.**
630 Freedom Business Center, Suite 402
King of Prussia, PA 19406 • 1-800-438-6071

**Net Weight: 6 Pounds**

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

MAY IRRITATE EYES, NOSE, THROAT AND SKIN. MAY BE HARMFUL IF ABSORBED THROUGH SKIN, INHALED OR SWALLOWED. Avoid breathing dust or spray mist. Avoid contact with skin, eyes and clothing. Keep away from fire or sparks.

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical resistant to this product are nitrile rubber, natural rubber, or butyl rubber. 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
- Chemical resistant gloves, made of any waterproof material (except pilots, groundboom applicators, and airblast applicators)

See engineering controls for additional requirements.

Follow the 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.

**ENGINEERING CONTROL STATEMENTS:**

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for [40 CFR part 170.240 (d)(4-6)].

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

When handlers use enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 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 PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## ENVIRONMENTAL HAZARDS

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. Cover or incorporate spilled treated seed. Do not contaminate water by disposing of equipment washwater or rinsate. Cover or incorporate spilled treated seed.

## 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) 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
- Shoes plus socks
- Chemical resistant gloves made of any waterproof material

## 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.

Commercial seed treatments and applications to lawn grasses, golf courses, industrial (office park), and municipal lawns are not within the scope of the Worker Protection Standard.

Do not enter or allow others to enter treated areas until sprays have dried.

MANZATE® PRO-STICK™ T&O Fungicide, a dispersible granule containing mancozeb, is labeled for use as a spray for the control of many important plant diseases.

## APPLICATION INSTRUCTIONS

**AS A SPRAY** (Ground or Aerial Equipment) - Apply MANZATE PRO-STICK T&O Fungicide at the rate shown; use sufficient water to provide thorough coverage: use 20 to 100 gallons per acre for ground equipment and no less than 2 gallons per acre for aircraft. Add MANZATE PRO-STICK T&O Fungicide slowly to water in the spray tank with agitation, or premix thoroughly in separate holding tank for concentrate or aircraft sprayers. Continuous agitation is required to keep the product in suspension. A spreader-sticker spray adjuvant may be used with this product if needed; contact your local product distributor or United Phosphorus, Inc. representative for specific recommendations. If tank mixed, follow more restrictive labeling of any tank mix partner. Do not tank mix with any product that contains a prohibition on tank mixing.

## RESTRICTIONS

**Foliar Applications**

**Where EBDC Products Used 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.

**Where EBDC Products Used 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.

## CHEMIGATION

Apply MANZATE PRO-STICK T&O Fungicide only through sprinkler systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set or hand move irrigation systems. Do not apply MANZATE PRO-STICK T&O Fungicide through any other type of irrigation system.

Crop injury, lack of 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 Specialists, 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 systems 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 Instructions for 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 Instructions for 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 backflow.
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 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.
8. Good agitation is required in the injection tank.
9. In moving systems, apply specified dosage of MANZATE PRO-STICK T&O Fungicide as a continuous injection. In non-moving systems inject MANZATE PRO-STICK T&O Fungicide for 15 to 30 minutes at end of cycle. Use the least amount of water possible consistent with uniform coverage.
10. Mix the amount of MANZATE PRO-STICK T&O Fungicide needed for acreage to be treated into the quantity of water determined during prior calibration. For moving systems inject into the system continuously for one complete revolution of the field. For non-moving systems inject into system for the time established during calibration.
11. Stop injection equipment after treatment is completed and continue to operate irrigation equipment until all MANZATE PRO-STICK T&O Fungicide is flushed from system.

## 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:*

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

## FLOWERS, FOLIAGE PLANTS, AND ORNAMENTALS

**NOT INTENDED FOR USE ON FRUIT TREES BY HOMEOWNERS.**

**TREATED PLANTS, FRUITS, NUTS OR SYRUP FROM MAPLE TREES MUST NOT BE USED FOR FOOD OR FEED PURPOSES.**

Apply in the field, nursery or greenhouse as a thorough coverage spray, using 1 to 2 lbs. MANZATE PRO-STICK T&O Fungicide per acre (1 1/2 to 3 tsp. per gal.). Do not use in residential greenhouses.

Plant sensitivities to MANZATE PRO-STICK T&O Fungicide have been found to be acceptable in specific genera and species listed on this label, however, phytotoxicity may occur. Due to the large number of species and varieties of ornamentals and nursery plants, it is impossible to test each one for sensitivity to MANZATE PRO-STICK T&O Fungicide. Neither the manufacturer nor seller has determined whether or not MANZATE PRO-STICK T&O Fungicide can be safely used on ornamental or nursery plants not listed on this label. The user should determine if MANZATE PRO-STICK T&O Fungicide can be used safely prior to commercial use. In a small area, apply the specified rates to the plants in question, i.e. bedding plants, foliage, etc., and observe to for 7 to 10 days for symptoms of phytotoxicity prior to commercial use. Use MANZATE PRO-STICK T&O Fungicide in commercial greenhouses and nurseries for control of fungal diseases of flowers, foliage and ornamentals. Do not make more than 20 applications per year.

Aerial application: For aerial applications made to field-planted ornamentals, apply 1 to 2 lbs. per acre; Use a minimum rate of 5 gals. of spray per acre during aerial applications.

Application of dilute sprays: Apply as a thorough coverage spray using 1 to 2 lbs. per acre or 1 to 2 lbs. per 100 gals. of water. Begin application at first sign of disease and repeat at 7 to 10 day intervals or as needed; use shorter interval during periods of frequent rains or when severe disease conditions persist. MANZATE PRO-STICK T&O Fungicide may be used alone or in combination with other fungicides as maintenance spray. Use higher rate and shorter intervals during periods of excessive wetness and rapid growth.

MANZATE PRO-STICK T&O Fungicide is labeled for use on certain flower, foliage and ornamental plants listed in the table below for control of the following diseases and pathogens:

| PLANT | PATHOGEN CONTROLLED: |
|---|---|
| Abutilon | Alternaria, Cercospora, Cladosporium, Colletotrichum, Puccinia |
| African violet | Alternaria, Botrytis |
| Ageratum | Alternaria, Puccinia, Rhizoctonia, Sclerotium |
| Aglaonema | Alternaria |
| Almond, ornamental | Botrytis, Cladosporium, Coryneum, Gloeosporium, Monilinia |
| Alyssum | Microsphaera alni |
| Andromeda | Exobasidium, Rhytisma, Venturia |
| Anthurium | Colletotrichum, Gloeosporium |
| Apple | Alternaria, Cephalosporium, Colletotrichum, Coryneum, Elsinoe, Fusarium, Gloeosporium, Gymnosporangium, Helminthosporium, Leptosphaeria, Monilinia, Monochaetia, Mycosphaerella, Pestalotia, Venturia |
| Arborvitae | Alternaria, Botrytis, Cercospora, Coryneum, Lophodermium, Mycosphaerella, Pestalotia |
| Ash | Cercospora, Cylindrosporium, Gloeosporium, Puccinia, Rhizoctonia, Sphaeropsis |
| Ash, Mountain | Gymnosporangium |
| Aster | Alternaria, Ascochyta, Botrytis, Colletotrichum, Fusarium, Phomopsis, Phyllosticta, Puccinia, Ramularia, Rhizoctonia, Septoria, Uromyces |
| Aucuba japonica | Alternaria, Cercospora, Gloeosporium, Phomopsis, Phyllosticta |
| Azalea | Alternaria, Botrytis, Cladosporium, Colletotrichum, Cylindrocladium, Ovulinia |
| Baby's Breath | Botrytis, Rhizoctonia |
| Basswood | Cercospora, Phyllosticta |
| Begonia | Botrytis, Cercospora, Gloeosporium, Rhizoctonia |
| Birch | Cylindrosporium, Gloeosporium, Glomerella, Melampsoridium, Taphrina |
| Bougainvillea | Colletotrichum |
| Boxwood | Fusarium, Volutella |
| Buckeye | Cercospora, Glomerella, Guignardia, Monochaetia, Phyllosticta, Septoria, Taphrina |
| Buffalo berry | Cylindrosporium, Puccinia, Rhizoctonia, Septoria |
| Catalpa | Alternaria, Cercospora, Gloeosporium, Phomopsis, Rhizoctonia |
| Camellia | Botrytis, Cercospora, Elsinoe, Exobasidium, Glomerella, Pestalotia, Phomopsis, Phyllosticta |
| Carnation | Alternaria, Botrytis, Cladosporium, Colletotrichum, Fusarium, Helminthosporium, Septoria, Stemphylium, Uromyces |
| Cedar | Lophodermium, Gymnosporangium |
| Cherry, ornamental | Alternaria, Cercospora, Cladosporium, Coccomyces, Coryneum, Fusicladium, Monilinia, Phomopsis, Phyllosticta, Taphrina |
| Chinese evergreen | Colletotrichum, Gloeosporium |

*(continued)*

| PLANT | PATHOGEN CONTROLLED: |
|---|---|
| Christmas cactus | Alternaria, Cercospora, Colletotrichum, Fusarium, Phomopsis |
| Chrysanthemum | Alternaria, Ascochyta, Bipolaris, Botrytis, Cercospora, Cylindrosporium, Helminthosporium, Phyllosticta, Septoria, Stemphylium |
| Cockscomb (Celosia) | Alternaria, Cercospora |
| Coleus | Alternaria, Botrytis, Phyllosticta |
| Columbine | Ascochyta, Botrytis, Cercospora, Puccinia, Rhizoctonia, Septoria |
| Coryline | Cercospora |
| Cotoneaster | Cercospora, Phyllosticta, Venturia |
| Crabapple | Gymnosporangium, Marssonina, Phyllosticta, Septoria, Venturia |
| Crape myrtle | Cercospora, Phomopsis, Phyllosticta |
| Croton | Gloeosporium |
| Cuphea (Mexican heather) | Gloeosporium, Rhizoctonia |
| Cyclamen | Botrytis, Cladosporium, Fusarium, Glomerella, Phyllosticta, Ramularia |
| Cypress | Coryneum, Fusarium, Gymnosporangium, Lophodermium, Monochaetia, Pestalotia, Phomopsis |
| Dahlia | Alternaria, Botrytis, Fusarium, Rhizoctonia |
| Daisy | Botrytis, Cercospora, Whetzelinia |
| Daisy, Shasta | Cylindrosporium, Septoria, Fusarium |
| Daisy, Transvall | Alternaria, Botrytis, Gloeosporium |
| Daylily | Alternaria, Botrytis, Cercospora, Colletotrichum, Phomopsis, Phyllosticta, Puccinia |
| Delphinium | Ascochyta, Botrytis, Cercospora, Diaporthe, Fusarium, Phyllosticta, Puccinia, Ramularia, Septoria, Volutella |
| Dieffenbachia | Cephalosporium, Colletotrichum, Gloeosporium, Glomerella, Leptosphaeria |
| Dogwood | Ascochyta, Botrytis, Cercospora, Colletotrichum, Elsinoe, Phyllosticta, Septoria |
| Dracaena | Alternaria, Cercospora, Colletotrichum, Fusarium, Phyllosticta |
| Dusty Miller | Fusarium, Puccinia |
| Elm | Botryosphaeria, Cephalosporium, Cercospora, Coryneum, Cylindrosporium, Fusarium, Gloeosporium, Monochaetia, Mycosphaerella, Phomopsis, Phyllosticta, Rhizoctonia, Sphaeropsis, Taphrina |
| Euonymus | Cercospora, Colletotrichum, Gloeosporium, Marssonina, Ramularia, Septoria, Whetzelinia |
| Fatsia | Alternaria, Cercospora, Colletotrichum, Phyllosticta |
| Fern | Botrytis, Cercospora, Curvularia, Cylindrosporium, Glomerella, Phyllosticta, Taphrina |
| Ficus | Alternaria, Ascochyta, Cephalosporium, Cercospora, Cladosporium, Colletotrichum, Fusarium, Gloeosporium, Glomerella, Mycosphaerella, Phomopsis, Stemphylium |
| Fir (Abies) | Cephalosporium, Lophodermium, Melampsora, Phomopsis, Sphaeropsis |
| Fir, Douglas | Phaeocryptopus |
| Fir, Frasier | Phaeocryptopus |
| Firethorn | Fusarium, Fusicladium, Rhizoctonia |
| Fittonia | Rhizoctonia |
| Four-o'clock | Cercospora, Rhizoctonia |
| Fuchsia | Botrytis, Phomopsis, Septoria |
| Garden Balsam | Alternaria, Botrytis, Cercospora |
| Gardenia | Alternaria, Botrytis, Diaporthe, Mycosphaerella, Pestalotia, Phomopsis, Phyllosticta, Rhizoctonia |
| Geranium | Alternaria, Ascochyta, Bipolaris, Botrytis, Cercospora, Cylindrosporium, Helminthosporium, Puccinia, Ramularia, Rhizoctonia, Septoria, Uromyces, Venturia |
| Gladiolus* | Alternaria, Botrytis, Cladosporium, Curvularia, Rhizoctonia, Septoria, Stemphylium |
| Gloxinia | Botrytis, Colletotrichum |
| Gold Dust Tree | Gloeosporium, Glomerella, Pestalotia, Phyllosticta |
| Gomphrena | Cercospora |
| Gypsophila | Botrytis, Rhizoctonia |
| Hawthorn | Cercospora, Cylindrosporium, Gloeosporium, Gymnosporangium, Monilinia, Mycosphaerella, Phyllosticta, Septoria, Venturia |
| Hemlock, Eastern (Tsuga) | Botrytis, Cylindrosporium, Melampsora, Rhizoctonia |
| Hibiscus | Alternaria, Cercospora, Colletotrichum, Fusarium, Phyllosticta |



*(continued)*

| PLANT | PATHOGEN CONTROLLED: |
|---|---|
| Hickory | Cercospora, Cladosporium, Elsinoe, Fusarium, Gnomonia, Mycosphaerella, Pestalotia, Phyllosticta, Septoria |
| Holly | Phyllosticta |
| Hollyhock | Alternaria, Ascochyta, Cercospora, Colletotrichum, Puccinia, Septoria |
| Honeysuckle | Alternaria, Cercospora, Gloeosporium, Herpobasidium, Phyllosticta |
| Horse Chestnut | See Buckeye |
| Hydrangea | Ascochyta, Botrytis, Cercospora, Colletotrichum, Phyllosticta, Rhizoctonia, Septoria |
| Impatiens | Cercospora, Phyllosticta, Rhizoctonia, Septoria |
| Indian Hawthorn | Entomosporium |
| Iris | Ascochyta, Botrytis, Cladosporium, Fusarium, Kabatiella, Phyllosticta, Puccinia, Rhizoctonia |
| Ivy | Cladosporium, Colletotrichum, Glomerella, Phyllosticta, Ramularia, Rhizoctonia, Sphaeropsis |
| Jade plant | Gloeosporium, Phomopsis |
| Juniper | Cercospora, Coryneum, Gymnosporangium, Lophodermium, Pestalotia, Phomopsis, Stigmina |
| Kalanchoe | Cercospora, Stemphylium |
| Larkspur | See Delphinium |
| Laurel, Cherry | Alternaria, Cercospora, Coccomyces, Monilinia, Phyllosticta, Septoria |
| Laurel, Mountain | Cercospora, Mycosphaerella, Pestalotia, Phomopsis, Rhytisma, Septoria |
| Lavender, Cotton | Septoria |
| Lilac | Botrytis, Cercospora, Cladosporium, Cylindrocladium, Gloeosporium |
| Lily | Botrytis, Cercospora, Cladosporium, Colletotrichum, Fusarium, Puccinia, Ramularia, Rhizoctonia |
| Lirope | Alternaria, Cercospora, Colletotrichum, Leptothyrium |
| Lobelia | Botrytis, Cercospora, Puccinia, Rhizoctonia, Septoria |
| Loquat | Colletotrichum, Fusicladium, Pestalotia, Phyllosticta, Septoria |
| Magnolia | Alternaria, Cercospora, Cladosporium, Colletotrichum, Glomerella, Rhizoctonia |
| Mahonia | Cercospora, Cylindrocladium, Gloeosporium, Leptosphaeria, Phomopsis, Phyllosticta, Puccinia |
| Maple | Alternaria, Cercospora, Ciborinia, Fusarium, Marssonina, Monochaetia, Phomopsis, Phyllosticta, Rhizoctonia, Rhytisma, Septoria, Sphaeropsis, Taphrina, Venturia |
| Myrtle | Cercospora, Glomerella, Pestalotia |
| Narcissus | Botrytis, Sclerotinia |
| Nasturtium | Botrytis, Cercospora, Puccinia |
| Nannyberry | Botrytis, Cercospora, Cladosporium, Helminthosporium, Monochaetia, Phomopsis, Phyllosticta, Ramularia |
| Nephathytis | Cephalosporium |
| Nicotiana | Alternaria |
| Nierembergia | Botrytis |
| Oak | Cephalosporium, Cercospora, Cladosporium, Cronartium, Elsinoe, Fusarium, Gloeosporium, Gnomonia, Marssonina, Phyllosticta, Septoria, Taphrina, Venturia |
| Orchid | Cercospora, Fusicladium, Mycosphaerella, Phyllosticta, Puccinia, Septoria |
| Osmanthus | Alternaria, Cercospora, Colletotrichum, Phyllosticta |
| Palm, Areca | Alternaria, Cercospora, Colletotrichum, Phomopsis, Phyllosticta, Septoria |
| Palm, Arenga | Cercospora, Colletotrichum, Cylindrocladium, Pestalotia, Phoma, Stigmina |
| Palm, Cabbage | Fusarium, Gloeosporium, Pestalotia, Stigmina |
| Palm, Coconut | Pestalotia |
| Palm, Date | Alternaria, Fusarium, Helminthosporium, Pestalotia |
| Palm, King | Alternaria, Fusarium, Helminthosporium, Pestalotia, Phomopsis |
| Palm, Phoenix | Alternaria, Cercospora, Fusarium, Gloeosporium, Pestalotia, Phomopsis, Stigmina |
| Palm, Queen | Glomerella, Septoria |
| Palm, Royal | Alternaria, Cercospora, Colletotrichum, Helminthosporium |
| Palm, Washington | Cercospora, Colletotrichum, Cylindrocladium, Pestalotia, Phoma, Stigmina |
| Pansy | Alternaria, Botrytis, Cercospora, Colletotrichum, Peronospora, Phyllosticta, Ramularia, Rhizoctonia |
| Peach | Cercospora, Cladosporium, Coryneum, Fusarium, Glomerella, Monilinia, Mycosphaerella, Phomopsis, Phyllosticta, Taphrina |

*(continued)*

| PLANT | PATHOGEN CONTROLLED: |
|---|---|
| Pear | Alternaria, Botrytis, Cercospora, Cladosporium, Coryneum, Elsinoe, Fusarium, Glomerella, Gymnosporangium, Helminthosporium, Monilinia, Mycosphaerella, Phomopsis, Phyllosticta, Venturia |
| Peony | Alternaria, Botrytis, Cercospora, Cladosporium, Gloeosporium, Phyllosticta, Septoria |
| Peperomia | Colletotrichum, Gloeosporium, Rhizoctonia |
| Periwinkle | Alternaria, Botrytis, Cladosporium, Colletotrichum, Phomopsis, Phyllosticta, Puccinia, Rhizoctonia, Septoria |
| Petunia | Cercospora, Puccinia, Rhizoctonia, Stemphylium |
| Philodendron | Gloeosporium, Colletotrichum |
| Phlox | Ascochyta, Botrytis, Cercospora, Colletotrichum, Phyllosticta, Puccinia, Ramularia, Septoria, Stemphylium, Volutella |
| Photinia | Cercospora, Gloeosporium, Gymnosporangium, Lophodermium, Pestalotia, Phyllosticta, Septoria |
| Pieris | Alternaria, Pestalotia, Phyllosticta, Rhytisma |
| Pilea | Alternaria, Botrytis, Cercospora, Colletotrichum, Helminthosporium, Phyllosticta |
| Pine, Norfolk Island | Botrytis, Colletotrichum, Cronartium, Cylindrocladium, Fusarium, Lophodermium, Pestalotia, Rhizoctonia, Septoria, Sirococcus |
| Pine | Alternaria, Botrytis, Cronartium, Fusarium, Lophodermium, Monochaetia, Rhizoctonia, Septoria, Sirococcus |
| Pittosporium | Alternaria, Cercospora, Gnomonia, Mycosphaerella, Phyllosticta, Rhizoctonia, Septoria |
| Plane tree | Cercospora, Gnomonia, Phyllosticta, Septoria |
| Plum, ornamental | Botrytis, Cercospora, Cladosporium, Coccomyces, Coryneum, Monilinia, Phyllosticta, Taphrina |
| Poinsettia** | Botrytis, Cercospora, Fusarium, Uromyces |
| Poplar | Cercospora, Ciborinia, Colletotrichum, Cylindrocladium, Fusarium, Marssonina, Melampsora, Mycosphaerella, Phyllosticta, Septoria, Stigmina, Taphrina, Venturia |
| Portulaca | Rhizoctonia |
| Pothos | Rhizoctonia |
| Prayer plant | Alternaria, Drechslera, Glomerella, Puccinia |
| Primrose | Alternaria, Botrytis, Colletotrichum, Mycosphaerella, Puccinia, Ramularia, Uromyces |
| Privet | Cercospora, Glomerella, Phomopsis, Phyllosticta, Ramularia |
| Protea | Botrytis |
| Pyracantha | Botrytis, Cercospora, Diplodia, Phomopsis, Phyllosticta, Sphaeropsis |
| Quince, flowering | Cercospora, Fabraea, Gymnosporangium, Septobasidium |
| Red cedar, western (Thuja) | Keithia (or Didymascella) |
| Red tip | See Photinia |
| Redwood, Sequoia | Botrytis, Cercospora, Mycosphaerella, Pestalotia, Phomopsis |
| Rhododendron | Alternaria, Cercospora, Coryneum, Gloeosporium, Glomerella, Guignardia, Lophodermium, Mycosphaerella, Pestalotia, Phomopsis, Rhizoctonia, Septoria, Venturia |
| Rose | Alternaria, Bipolaris, Botryosphaeria, Botrytis, Cercospora, Cladosporium, Cylindrocladium, Diplocarpon, Elsinoe, Gloeosporium, Helminthosporium, Leptosphaeria, Monochaetia, Mycosphaerella, Peronospora, Phyllosticta, Septoria |
| Rosemary | Rhizoctonia |
| Russian olive | Cercospora, Colletotrichum |
| Sage | Cercospora, Peronospora, Puccinia, Ramularia, Rhizoctonia |
| Salvia | Cercospora, Puccinia |
| Santolina | Botrytis |
| Senecio | Cercospora, Gloeosporium, Phyllosticta, Puccinia, Ramularia, Septoria |
| Schefflera | Alternaria |
| Snakeplant | Fusarium, Gloeosporium |
| Snapdragon | Alternaria, Bipolaris, Botrytis, Cercospora, Colletotrichum, Drechslera, Fusarium, Helminthosporium, Peronospora, Phyllosticta, Puccinia, Rhizoctonia |
| Spathiphyllum | Alternaria |
| Spindletree | See Euonymus |
| Spirea | Cylindrosporium |
| Spruce | Ascochyta, Botrytis, Cladosporium, Lophodermium, Rhizoctonia |
| Spurge | Cercospora, Melampsora, Puccinia |
| Statice | Alternaria, Ascochyta, Botrytis, Cercospora, Colletotrichum, Rhizoctonia, Uromyces |

*(continued)*

| PLANT | PATHOGEN CONTROLLED: |
|---|---|
| Strawflower | Fusarium |
| Sumac | Cercospora, Cladosporium, Fusarium, Phyllosticta, Septoria, Taphrina |
| Sunflower, ornamental | Alternaria, Puccinia |
| Syngonium | Cephalosporium, Erwinia, Fusarium |
| Tulip | Botrytis |
| Venus flytrap | Colletotrichum |
| Verbena | Alternaria, Ascochyta, Botrytis, Cercospora, Phyllosticta, Puccinia, Rhizoctonia, Septoria, Stemphylium |
| Viburnum | Botrytis, Cercospora, Cladosporium, Helminthosporium, Monochaetia, Phomopsis, Ramularia |
| Walnut | Cercospora, Cladosporium, Cylindrocladium, Cylindrosporium, Gnomonia |
| Willow | Ascochyta, Cercospora, Ciborinia, Cylindrosporium, Fusicladium, Gloeosporium, Marssonina, Melampsora, Phomopsis, Phyllosticta, Ramularia, Rhytisma, Septoria, Taphrina, Venturia |
| Wisteria | Alternaria, Cercospora, Colletotrichum, Gloeosporium, Pestalotia |
| Yucca | Cercospora, Cylindrosporium, Gloeosporium, Puccinia |
| Zebra plant | Alternaria, Cercospora, Colletotrichum |
| Zinnia | Alternaria, Botrytis, Cercospora, Rhizoctonia |

*Do not exceed 0.75 lb. per 100 gallons on flower spikes.

**Do not exceed 1.5 lbs. per 100 gallons.

This product is not recommended for the treatment of marigolds due to highly variable plant responses.

## GRASSES: SODFARMS (AGRICULTURAL CROP USE)

For sodfarm applications, follow provisions within the Agricultural Use Requirements box.

Harvesting of treated turf is prohibited until 120 hours following application.

- Do not apply more than 4 applications per year at a maximum application rate of 17.4 lbs. a.i./A per application.
- Do not allow less than a 10 day interval between applications.

| CROP | DISEASE/PEST | RATE | TIMING/INTERVAL | COMMENTS |
|---|---|---|---|---|
| Sod Farm | Algae | 6 oz. in 3 to 5 gals./1,000 sq. ft: 16 lbs. in 130 to 220 gals./A | Begin when algae begins to appear. Repeat at 10 day intervals as long as condition persists. | Do not use on grasses grown for seed.<br>Do not use on grasses intended for grazing, such as range or pasture grasses.<br>Do not graze treated areas or feed clippings to livestock.<br>When conditions are unusually favorable for disease, use 6 to 8 oz./1,000 sq. ft. (16 to 22 lbs./A) and reduce intervals to 3 to 5 days. |
| | Copper Spot, Fusarium Blight (F. roseum), Red Thread, Slime Molds | 4 to 8. oz. in 3 to 5 gals./1,000 sq. ft.: 11 to 22 lbs. in 130 to 220 gals./A | Begin when disease appears. Repeat at 10 day intervals as long as condition persists. | |
| | Gray Leaf Spot *(Pyricularia grisea)* | 8 oz. in 3 to 5 gals./1,000 sq. ft.: 22 lbs. in 130 to 220 gals./A | Begin at first sign of disease; apply at 10 day intervals or more often during favorable disease conditions. | |
| | Dollar Spot *(Sclerotina)* | 6 to 8 oz. in 3 to 5 gals./1,000 sq. ft.: 16 to 22 lbs. in 130 to 220 gals./A | Begin when grass greens up in spring/10 to 14 days. | |
| | Pink (Fusarium) Snow Mold | 6 to 8 oz. in 3 to 5 gals./1,000 sq. ft.: 16 to 22 lbs. in 130 to 220 gals./A | Apply at 2 to 6 week intervals during winter. | |
| | Leaf Spot *(Helminthosporium* spp.*)*, Rhizoctonia solani, Brown Patch | 4 oz. in 3 to 5 gals./1,000 sq. ft.: 11 lbs. in 130 to 220 gals./A | Begin when disease appears. Repeat at 10 day intervals as long as condition persists. | |
| | Pythium Blight | 8 oz. in 3 to 5 gals./1,000 sq. ft.: 22 lbs. in 130 to 220 gals./A | Repeat at 5 day intervals, or more frequently if conditions are favorable for disease development. | |
| | Leaf Rust, Stem Rust, Stripe Rust | 4 oz. in 3 to 5 gals./1,000 sq. ft.: 11 lbs. in 130 to 220 gals./A | Begin when disease threatens. Repeat at 10 day intervals as long as disease persists. | |

## GRASSES: TURF USES (NON-AGRICULTURAL USES)

For use on golf courses, industrial and commercial lawns, and other nonresidential lawns. Not for use on residential lawns. Follow provisions within the Non-Agricultural Use Requirements Box.

Do not apply by chemigation.

Golf Courses: for cool season grasses; greens, tees and aprons – Do not apply more than 5 applications per year at a maximum application rate of 17.4 lbs. a.i./A per application.

For cool season grasses; fairways – Do not apply more than 4 applications per year at a maximum application rate of 17.4 lbs. a.i./A per application.

For warm season grasses; greens, tees and aprons – Do not apply more than 4 applications per year at a maximum application rate of 17.4 lbs. a.i./A per application.

All Other Turf:

- Do not apply more than 4 applications per year at a maximum application rate of 17.4 lbs. a.i./A per application.
- Do not allow less than a 10 day interval between applications.

| CROP | DISEASE/PEST | RATE | TIMING/INTERVAL | COMMENTS |
|---|---|---|---|---|
| Golf courses, industrial (office park), and municipal lawns | Algae | 6 oz. in 3 to 5 gals./1,000 sq. ft: 16 lbs. in 130 to 220 gals./A | Begin when algae begins to appear. Repeat at 10 day intervals as long as condition persists. | Do not use on grasses grown for seed. Do not use on grasses intended for grazing, such as range or pasture grasses. Do not graze treated areas or feed clippings to livestock. When conditions are unusually favorable for disease, use 6 to 8 oz./1,000 sq. ft. (16 to 22 lbs./A). |
| | Copper Spot, Fusarium Blight (F. roseum), Red Thread, Slime Molds *(Mucilago, Physarum, Fuligo)* | 4 to 8. oz. in 3 to 5 gals./1,000 sq. ft.: 11 to 22 lbs. in 130 to 220 gals./A | Begin application when disease appears. Repeat at 10 day intervals as long as condition persists. | |
| | Gray Leaf Spot *(Pyricularia grisea)*, Pythium Blight *(Pythium* sp.*)* | 8 oz. in 3 to 5 gals./1,000 sq. ft.: 22 lbs. in 130 to 220 gals./A | | |
| | Dollar Spot *(Sclerotina)* | 6 to 8 oz. in 3 to 5 gals./1,000 sq. ft.: 16 to 22 lbs. in 130 to 220 gals./A | | |
| | Fusarium Snow Mold | 6 to 8 oz. in 3 to 5 gals./1,000 sq. ft.: 16 to 22 lbs. in 130 to 220 gals./A | Apply at 2 to 6 week intervals during winter. | |
| | Leaf Spot *(Helminthosporium* spp.*)*, Rhizoctonia solani, Brown Patch | 4 oz. in 3 to 5 gals./1,000 sq. ft.: 11 lbs. in 130 to 220 gals./A | Begin when disease appears. Repeat at 10 day intervals as long as condition persists. | |
| | Leaf Rust, Stem Rust, Stripe Rust | 4 oz. in 3 to 5 gals./1,000 sq. ft.: 11 lbs. in 130 to 220 gals./A. | Begin when disease threatens. Repeat at 10 day intervals as long as disease persists. | |

**CHRISTMAS TREES: Plantations and Nurseries**

Aerial application: Apply 1 to 2 lbs. per acre using a minimum rate of 10 gallons of spray per acre during aerial applications.

Application of dilute sprays: Apply as thorough coverage spray using 1 to 2 lbs. per acre of 1 to 2 lbs. per 100 gallons of water. Begin application at first sign of disease and repeat every 7 to 10 days. Use the shortest spray interval during periods of frequent rain, when severe disease conditions persist or during periods of rapid plant growth. This product may be used alone or in combination with other fungicides.

| Use Site | Diseases Controlled | Application Rate (lbs./A or lbs./100 gals.) |
|---|---|---|
| Christmas trees, including fir, spruce, pine | Ascochyta, Alternaria, Botrytis, Cephalosporium, Cladosporium, Cronartium, Fusarium, Lophodermium, Melampsora, Monochaetia, Phomopsis, Rhizoctonia, Septoria, Sirococcus, Sphaeropsis | 1 to 2 lbs./A or 1 to 2 lbs. per 100 gallons, make applications at 7 to 10 day intervals. |

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE: Important-**Never allow MANZATE PRO-STICK T&O Fungicide to become wet during storage. This may lead to certain chemical changes which will reduce the effectiveness of MANZATE PRO-STICK T&O Fungicide as a fungicide and create vapors which may be flammable. Keep container closed when not in use. Store product in original container only, away from other pesticides, fertilizer, food or feed in a secure dry area.

**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:** Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then 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.

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

**IMPORTANT INFORMATION**
**READ BEFORE USING PRODUCT**

## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

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