TURF - PYTHIUM ROOT ROT

General Information

PRODUCT INFORMATION
DISARM 480 SC Fungicide is a broad-spectrum xylem systemic fungicide for the control of certain diseases in turf and ornamentals. DISARM 480 SC works by interfering with respiration in plant-pathogenic fungi, and is a potent inhibitor of spore germination and mycelial growth. The active ingredient, fluoxastrobin, moves rapidly into green tissue via translaminar and xylem movement and is rainfast in as little as fifteen minutes after application. Roots of plants also take up the active ingredient where it is translocated throughout the xylem of plants to provide internal inhibition of fungal growth and protect the plant from new infections. The broad spectrum of activity of DISARM 480 SC makes it an excellent choice as the foundation fungicide for turf and ornamental disease management programs. Other labeled fungicides can be used in tank mixture or alternated with DISARM 480 SC to cover all the major fungal diseases that attack most, if not all, major turfgrass and ornamental species.

UNDER CERTAIN CONDITIONS CONDUCIVE TO EXTENDED INFECTION PE¬RIODS, ADDITIONAL FUNGICIDE APPLICATIONS BEYOND THE NUMBER ALLOWED BY THIS LABEL MAY BE NEEDED. UNDER THESE CONDITIONS, USE ANOTHER FUNGICIDE REGISTERED FOR THE DISEASE.

RESISTANCE MANAGEMENT
The active ingredient in DISARM 480 SC (fluoxastrobin) belongs to the strobilurin class of chemistry which exhibits no known cross-resistance to other chemical classes including sterol inhibitors, dicarboximides, benzimidazoles, anilinopyrimidines, or phenylamides. Fluoxastrobin exhibits cross-resistance to other QoI fungicides, such as: trifloxystrobin, azoxystrobin, and kresoxim-methyl (Group 11 fungicides).Certain fungal pathogens are known to develop resistance to products with the same mode of action when used repeatedly. Because resistance development cannot be predicted, the use of this product should conform to resistance management strategies established for turf and ornamentals. Such strategies may include rotating and/or tank-mixing with products having different modes of action, or limiting the total number of applications per season. Arysta

LifeScience encourages responsible resistance management to ensure effective long-term control of the fungal diseases on this label.

Follow specific recommendations that limit the total number of sprays on turf and ornamentals and the required alternations with fungicides from other resistance management groups. In situations requiring multiple fungicide sprays, develop season-long spray programs for using Group 11 (QoI-containing) fungicides with the following guidelines. Turf pathogens that incite Dollar Spot, Gray Leaf Spot, Anthracnose, and Pythium Blight are known to have the capacity to develop resistant populations with the repeated use of a single fungicide or a single class of fungicide chemistry. Certain fungal pathogens of ornamentals also have the capacity to become resistant to single site inhibitor fungicides. In particular, the pathogens that incite Downy Mildew, Powdery Mildew and Rust diseases of ornamentals are known to have the capacity to develop resistance to single site inhibitors.

1. When using a Group 11 fungicide alone, the number of applications made for control of at risk diseases should be no more than one third of the total number of fungicide applications per season.
2. In programs where tank mixes or pre-mixes of a Group 11 fungicide with a fungicide of another Group are utilized, the number of Group 11 fungicide applications made for control of at risk diseases should be no more than one half of the total number of fungicide applications per season.
3. In programs where applications of Group 11 fungicides are made with both solo products and mixtures, the number of Group 11 fungicide applications made for control of at risk diseases should be no more than one half of the total number of fungicide applications per season.

APPLICATION GUIDELINES

Broadcast Ground Sprayers
Thorough coverage is necessary to provide good disease control. Applications using sufficient water volume to provide thorough and uniform coverage provide the most effective disease control.

Equip sprayers with nozzles that provide accurate and uniform application. Be certain that nozzles are the same size and uniformly spaced across the boom. Calibrate the sprayer before use. Use a pump with the capacity to: (1) maintain a

minimum of 35 psi at nozzles, and (2) provide sufficient agitation in the tank to keep the mixture in suspension (this requires recirculation of 10% of the tank volume per minute). Use jet agitators or a liquid sparge tube for vigorous agitation. Use screens to protect the pump and to prevent nozzles from clogging. Screens placed on the suction side of the pump should be 16-mesh or coarser. Do not place a screen in the recirculation line. Use 50-mesh screens at the nozzles. Check nozzle manufacturer’s recommendations. For information on spray equipment and calibration, consult sprayer manufacturer’s and/or state recommendations. For specific local directions and spray schedules, consult the current state agricultural experiment station recommendations.

DIRECTIONS FOR USE THROUGH SPRINKLER IRRIGATION SYSTEMS
Apply this product only through overhead sprinkler irrigation systems including center pivot, microjet, wheel lines, lateral move, side roll, or overhead solid set irrigation systems. Do not apply this product through any other type of irrigation system. Reduced effectiveness in turf, can result from non-uniform distribution of the treated irrigation water.

If you have questions about calibration, contact State Extension Service Specialists, equipment manufacturers or other irrigation experts.

SPRAY PREPARATION
Remove scale, pesticide residues, and other foreign matter from the chemi¬cal tank and entire injector system. Flush with clean water.

APPLICATION INSTRUCTIONS
First prepare a suspension of DISARM 480 SC in a mix tank. Fill tank with 1⁄2 to 3⁄4 the desired amount of water. Start mechanical or hydraulic agitation. Add the required amount of DISARM 480 SC and then the remaining volume of water. Then set sprinkler to deliver no more than 0.4 inch of water per acre. Start sprinkler and uniformly inject the suspension of DISARM 480 SC into the irrigation water line to deliver the desired rate per acre. The suspension of DISARM 480 SC should be injected with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing. If you have any other questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

NOTE: Avoid further field irrigation over the treated area for 24 hours after treating

with DISARM 480 SC to prevent washing the chemical off the turf.

CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

1. 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. 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, back flow 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 flow 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.
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.

SPECIAL PRECAUTIONS FOR CHEMIGATION THROUGH SPRINKLER IRRIGATION SYSTEMS

1. Maintain continuous agitation in mix tank during mixing and application to assure a uniform suspension.
2. Greater accuracy in calibration and distribution will be achieved by injecting a larger volume of a more dilute solution per unit time.
3. 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.
4. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
5. 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 shutdown.
6. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
7. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pres¬sure decreases to the point where pesticide distribution is adversely affected.
8. 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.
9. Do not apply when wind speed favors drift beyond the area intended for treatment. If you are unsure of wind conditions, contact your local extension agent.
10. Do not apply when system connections or fittings leak, when nozzles do not provide uniform distribution or when lines containing the product must be dismantled and drained. Reduced effectiveness may result from non-uniform distribution of treated water.
11. Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water. A person knowledgeable of the chemigation system and responsible for its operation, or under supervision of the responsible person, shall shut the system down and make necessary adjustments as needed.
12. Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

PLANT SAFETY: DISARM 480 SC has been shown to be safe when applied to the

ornamental plants listed in the table in the label. However, due to the large number of genera, species and varieties of ornamental and nursery plants, it is impossible to test every variety or cultivar for tolerance to DISARM 480 SC. Neither the manufacturer nor the seller has determined whether or not DISARM 480 SC can be used safely on genera, species, or varieties of ornamental and nursery plants not specified on this label. The professional user should conduct small scale testing to insure plant safety prior to broad scale commercial use on plant genera and species not listed in this label.

Limitations, Restrictions, and Exceptions

USE DIRECTIONS FOR TURF

DISARM 480 SC provides control of many important diseases in turf. Use DISARM 480 SC in conjunction with cultural practices that promote healthy, vigorous turf. These practices include nutrient management, thatch management, water management and judicious use of other fungicides and cultural practices.

For use in the establishment of turfgrass from seed or in overseeding of dormant turfgrass:
DISARM 480 SC may be used for control of certain turfgrass diseases associated with turfgrass establishment from seed. DISARM 480 SC may also be used during overseeding of dormant turfgrass.

DISARM 480 SC may be safely applied before or after seeding or at seedling germination and emergence to ryegrass, bentgrass, bluegrass, fescue, and other turfgrasses. Optimum application timing for control of seedling diseases is just prior to, during or just after seeding.

Rate Ranges: Use the shorter specified application interval and/or the higher specified rate when prolonged favorable disease conditions exist.

Restrictions and Other Information
- Do not apply more than 68.4 fl oz (2.13 lb ai) of DISARM 480 SC per acre per year, or more than 16 fl oz per acre per application.
- There is a maximum number of 4 applications per season, and a minimum interval of 7 days between applications.
- Not for homeowner use. May only be applied to residential turf by a certified pest control operator.

- Under conditions of high disease pressure, use the higher rates, the shortest application interval or both.
- For soil-borne diseases, use sufficient water to move the active ingredient into the crown and upper root zone.

Refer in the label for "Rate Conversion Chart for Turf".

Pythium Root Rot

Application Instructions
- Apply when conditions are favorable for disease development.

Application Interval: 7–10 days

Method
Broadcast/Foliar Ground
Rates
field_rates 0
field_rates 1

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Restricted Entry Interval

12 hours

Timings
When conditions are favorable for disease infection, prior to disease symptom development.