

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

August 15, 2019

Ricky Kyaw Regulatory Product Manager Syngenta Crop Protection, LLC P.O. Box 18300 Greensboro, NC, 27419

Subject: Registration Review Label Mitigation for Fludioxonil

Product Name: Medallion II

EPA Registration Number: 100-1357

Application Date: 1 Feb 2019 Decision Number: 552175

#### Dear Ricky Kyaw:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all of the information submitted with your application to support the Registration Review of the above referenced product in connection with the Fludioxonil Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

A copy of your label stamped "Accepted" is enclosed. Products shipped after 12 months from the date of this amendment must bear the new revised label. Your release for shipment of the product bearing the amended label constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6.

If you have any questions about this letter, please contact Miguel Zavala by phone at 973-873-5298, or via email at zavala.miguel@epa.gov

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Sincerely,

Linda Arrington, Branch Chief Risk Management and Implementation Branch 4 Pesticide Re-Evaluation Division Office of Pesticide Programs

Enclosure

# **Fungicide**

For control of certain foliar, stem, crown and root diseases in turfgrass including golf courses, institutional, commercial and residential lawns, sod farms, sports fields, parks, municipal grounds and cemeteries, and of ornamentals grown in interiorscapes, field nursery plantings, container nurseries, forest nurseries, residential and commercial landscapes, greenhouses, lath and shade houses, or other enclosed structures. For control of diseases in bulb and corm crops by dip application.

Active Ingredient:

Fludioxonil*	50.0%
Other Ingredients:	50.0%
Total:	100.0%

\*CAS No. 131341-86-1

Medallion II is a 50% wettable powder.

Water-soluble packaging.

This outer protective container contains Medallion II in [total number] inner water-soluble packets. These inner packets dissolve in water, allowing contents to wet. After opening outer container, immediately dump the required number of unopened inner packets into the partially filled sprayer or mix tank. Do not handle the soluble packets or expose them to moisture, since this may cause rupturing.

Do not offer individual packets for sale

#### KEEP OUT OF REACH OF CHILDREN.

# **CAUTION**

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-1357 EPA Est.
ounce Water-Soluble Packets
ounces
Net Weight

ACCEPTED

Aug 15, 2019

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 100-1357

FIRST AID		
If in eyes	Hold eye open and rinse slowly and gently with water for 15-20 minutes.	
	<ul> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> </ul>	
	Call a poison control center or doctor for treatment advice.	
If on skin	Take off contaminated clothing.	
or clothing	Rinse skin immediately with plenty of water for 15-20 minutes.	
	Call a poison control center or doctor for treatment advice.	
Have the pro	duct container or label with you when calling a poison control center or	
doctor, or goi	ng for treatment.	
	HOT LINE NUMBER	
F	or 24 Hour Medical Emergency Assistance (Human or Animal)	
or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), Call		
1-800-888-8372		

#### PRECAUTIONARY STATEMENTS

#### **Hazards to Humans and Domestic Animals**

#### CAUTION

Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes, skin, 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)**

# **Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants.
- Waterproof gloves
- Shoes plus socks.

# **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.

# **User Safety Recommendations**

#### **Users should:**

- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove clothing/PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean 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.

# **Engineering Controls**

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

Water-soluble packets when used correctly qualify as a closed loading system under the WPS. Handlers handling this product while it is enclosed in intact water-soluble packets may elect to wear reduced PPE of long-sleeved shirt, long pants, shoes, and socks.

#### **Environmental Hazards**

This pesticide is toxic to fish, aquatic invertebrates, oysters and shrimp. For terrestrial uses: Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsates.

# **Ground Water Advisory**

This chemical has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

## **Surface Water Advisory**

This chemical may contaminate water through drift of spray in wind. This chemical has a high potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this chemical. A level, well maintained vegetative buffer strip between areas to which

this chemical is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall runoff. Runoff of this chemical will be reduced by avoiding applications when conditions favor runoff (such as when soils are saturated and/or significant rainfall is forecast in the next 48 hours). Sound erosion control practices will reduce this chemical's contribution to surface water contamination.

# **Physical or Chemical Hazards**

Do not use or store near heat or open flame.

#### 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 must be followed carefully. It is impossible to eliminate all risks inherently 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 SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA 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, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and, (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## **DIRECTIONS FOR USE**

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

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

#### AGRICULTURAL USE REQUIREMENTS

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

Exception: If the product is applied by drenching, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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.

Do not enter treated areas without protective clothing until sprays have dried.

Do not formulate this product into other end-use products.

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR DISEASE CONTROL [OR PLANT INJURY].

#### **USE RESTRICTIONS AND PRECAUTIONS**

Hawaii: Use is limited to ornamentals grown in interiorscapes, greenhouses, lath and shade houses, containers, or other enclosed structures.

Nassau and Suffolk Counties, New York: Use is limited to ornamentals grown in interiorscapes, greenhouses, lath and shade houses, containers, or other enclosed structures.

Do not apply Medallion II with any type of aircraft.

#### RESISTANCE MANAGEMENT

FLUDIOXONIL GROUP 12 FUNGICIDE

For resistance management, Medallion II contains a Group 12 fungicide. Any fungal population may contain individuals naturally resistant to Medallion II and other Group 12 fungicides. A gradual or total loss of pest control may occur over time if these fungicides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed. Medallion II is a protective fungicide used to aid in the control of foliar, stem, crown and soil borne diseases. Medallion II contains fludioxonil which is in the phenylpyrrole class of chemistry and has a unique mode of action, which prevents fungal respiration (Fungicide Action Group 12). A disease management program that includes alternation or tank mixes between Medallion II and other labeled fungicides that have a different mode of action may prevent pathogen populations from developing resistance. Sanitation and other cultural practices to minimize disease are also recommended to aid in control as well as to assist in preventing/delaying resistance development.

To delay fungicide resistance, take one or more of the following steps:

- Rotate the use of fludioxonil or other Group 12 fungicides within a growing season sequence with different groups that control the same pathogens.
- Use tank mixtures with fungicide from a different group that are equally effective on the target pest when such use is permitted. Use at least the minimum application rate as labeled by the manufacturer.
- Adopt an integrated disease management program for fungicide use that includes scouting, uses historical information related to pesticide use, and which considers host plant resistance, impact of environmental conditions on disease development, disease thresholds, as well as cultural, biological and other chemical control practices.
- Where possible, make use of predictive disease models to effectively time fungicide applications. Note that using predictive models alone is not sufficient to manage resistance.
- Monitor treated fungal populations for resistance development.
- Contact your local Syngenta representative, retailer, or extension specialist for any additional pesticide resistance-management and/or IPM recommendations for specific plants and pathogens.
- For further information or to report suspected resistance contact Syngenta at 1-866-Syngent(a) (866-796-4368). You can also contact your pesticide distributor or university extension specialist to report resistance.

#### MIXING PROCEDURES

Prepare no more spray mixture than is needed for the immediate operation. Thoroughly clean spray equipment before using this product. Vigorous agitation is necessary to maintain uniformity of the spray mixture. Maintain maximum agitation throughout the spraying operation. Do not let the spray mixture stand overnight in the spray tank. Flush the spray equipment thoroughly following each use [and apply the rinsate to a previously treated area].

To determine the physical compatibility of Medallion II with other products, use a jar test as described below.

Jar Compatibility Test: Using a quart jar, add the proportionate amounts of the products to 1 qt. of water. Add wettable powders and water-dispersible granular products first, then liquid flowables, and emulsifiable concentrates last. After thoroughly mixing, let stand for at least 5 minutes. If the combination remains mixed or can be remixed readily, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank.

If using Medallion II in a tank mixture, observe all directions for use, crops/sites, use rates, dilution ratios, precautions, and limitations which appear on the tank mix product label. Do not exceed the dosage rates on any label. Follow the most restrictive label precaution. Do not mix this product with any other product whose label prohibits such mixing. Tank mixtures are permitted only in those states where the tank mix partner is registered.

Note: Use with oils or adjuvants may cause plant damage.

Plant tolerance has been found acceptable for turfgrass and all ornamentals listed in the ORNAMENTALS section of this label. However, not all possible tank-mix combinations have been tested under all conditions. When possible, it is recommended to test the combinations on a small portion of target plants to ensure a phytotoxic response will not occur as a result of application.

**Medallion II Alone:** Add  $\frac{1}{3}$  of the required amount of water to the spray or mixing tank. With the agitator running, drop the required number of **unopened** soluble packets of Medallion II into the spray tank all at once. Continue agitation while adding the remainder of the water. Begin application of the spray solution after the packets have dissolved, and the material has completely dispersed into the mix water. Maintain agitation until all of the mixture has been applied.

**Medallion II + Tank Mixtures:** Medallion II is usually compatible with Banner MAXX®, Subdue MAXX®, Daconil Ultrex®, Daconil WeatherStik® and other commonly used fungicides, insecticides, and foliar nutrient products. However, the physical and biological compatibility of Medallion II with tank mix partners should be tested before

use. If in doubt, run a "jar compatibility test" or consult with Syngenta company representatives, other users, or university or extension personnel before proceeding.

Add 1/3 of the required amount of water to the spray or mixing tank. With the agitator running, drop the required number of **unopened** soluble packets of Medallion II into the tank all at once. Continue agitation while adding the remainder of the water. Allow the packets of Medallion II to dissolve and the product to completely disperse into the mix water. Then add the desired amount of other products recommended for tank mixture and allow them to become completely dispersed. Continue agitation to maintain a uniform suspension until all of the spray solution has been applied.

Water-soluble packets of Medallion II and any other products packaged in water-soluble film must be completely dissolved and dispersed in water before any other tank mix partner, including micronutrients or other liquid or dry fertilizers, are added to the spray solution. Other wettable powders or water dispersible granules should be added to the water in the tank next, followed by flowable products, and emulsifiable concentrates added last. Provide sufficient mechanical or bypass agitation during mixing and application.

#### **APPLICATION INSTRUCTIONS**

Apply Medallion II at rates and timings as described in this label.

OBSERVE THE FOLLOWING PRECAUTIONS WHEN SPRAYING IN THE VICINITY OF AQUATIC AREAS SUCH AS LAKES, RESERVOIRS, RIVERS, PERMANENT STREAMS, MARSHES OR NATURAL PONDS, ESTUARIES, AND COMMERCIAL FISH FARM PONDS.

- Do not apply within 75 ft. of bodies of water such as lakes, reservoirs, rivers, permanent streams, natural ponds, marshes or estuaries.
- For all plantings within 150 ft. of bodies of water as described above, spray crops from outside the planting away from the bodies of water.
- Shut off the sprayer when at row ends.
- Spray the last three rows windward of aquatic areas using nozzles on one side only, with spray directed away from aquatic areas.
- Do not cultivate within 10 ft. of aquatic areas as to allow a vegetative filter strip.
- Do not apply when weather conditions favor drift to aquatic areas. Do not apply when gusts or sustained winds exceed 10 mph.
- Do not apply during a temperature inversion. Mist or fog may indicate the presence of an inversion in humid areas.

#### SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

#### IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

# **Controlling Droplet Size – Ground Boom**

- Volume Increasing the spray volume so that larger droplets are produced will
  reduce spray drift. Use the highest practical spray volume for the application. If a
  greater spray volume is needed, consider using a nozzle with a higher flow rate."
- **Pressure** Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- **Spray Nozzle** Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

#### **BOOM HEIGHT - Ground Boom**

For ground equipment, the boom should remain level with the crop and have minimal bounce.

# **Boom-less Ground Applications:**

Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

# **Handheld Technology Applications:**

Take precautions to minimize spray drift.

#### SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

#### **TEMPERATURE AND HUMIDITY**

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

# **TEMPERATURE INVERSIONS**

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

#### **WIND**

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

# **Application Through Irrigation Systems (Chemigation)**

- Use only on crops for which chemigation is specified on this label.
- Apply this product only through drip, microjet, lateral move, end-tow, side (wheel) roll, traveler, big gun, solid set systems, spray booms on rails, and hand moveable irrigation systems. Do not apply product 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.
- Apply in 0.125-0.25 inches/A of water. Excessive water may reduce efficacy.
- 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.

**Note:** Do not inject Medallion II at full strength or deterioration of valves and seals may occur. Use a dilution ratio of at least 10 parts water to 1 part Medallion II. Medallion II is corrosive to many seal materials. Leather seals are best. EPDM or silicone rubber seals can be used, but should be replaced once a year. Do not use Viton®, Buna-N, Neoprene, or PVC seals.

# **Operating Instructions**

- 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, quickclosing 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. 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 the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
- 8. Do not apply when wind speed favors drift beyond the area intended for treatment.

**Spray Preparation:** Chemical tank and injector system should be thoroughly cleaned. Flush system with clean water.

Prepare a mixture of Medallion II with clean water in the mix (supply) tank. The mix (supply) tank should be set up to provide vigorous agitation. Make a slurry of Medallion II and water. Use a minimum of 1 gal. of water to one packet of Medallion II.

Fill the mix (supply) tank with the required amount of water. Start agitation in the tank. Add all of the required water-soluble packets of Medallion II at the same time. Agitate the solution until all of the water-soluble packets have dissolved and the Medallion II has completely dispersed into the solution. Then add desired amount of tank mix partners. Maintain agitation in the tank and inject this mixture into the irrigation system. Injecting a larger volume of a more dilute mixture per hour will usually provide more accurate calibration of metering equipment. Maintain sufficient agitation to keep the fungicide in suspension.

Meter into irrigation water during the beginning of the irrigation cycle.

Overhead Irrigation Equipment (Lateral Move, End Tow, Side (Wheel) Roll, Traveler, Big Gun, Solid Set Systems, Spray Booms on Rails and Hand Moveable Irrigation Systems.

Determine the acreage covered by the sprinklers.

- Fill injector solution tank with water and adjust flow rate to use the contents over a 20 to 30-minute interval. When applying Medallion II through irrigation equipment use the lowest obtainable water volume while maintaining uniform distribution.
- Determine the amount of Medallion II required to treat the area covered by the irrigation system.
- Add the required amount of Medallion II into the same quantity of water used to calibrate the injection period.
- Operate the system at the same pressure and time interval established during the calibration.
- Stop injection equipment after treatment is completed. Continue to operate the system until the Medallion II solution has cleared the last sprinkler head.
- Thorough coverage is necessary to provide good disease control. Where
  distribution patterns do not overlap sufficiently, unacceptable control may result.
   Where distribution patterns overlap excessively, injury to desirable plants may result.

# **Drip or Microjet Chemigation Systems**

Medallion II may be applied through drip or microjet irrigation systems for soil-borne disease control. The soil should have adequate moisture capacity prior to drip application.

- Terminate drip irrigation at fungicide depletion from the main feed supply tank or after 6 hours from start, whichever is shorter.
- For maximum efficacy, subsequent irrigation (water only) should be delayed for at least for 24 hours following drip application.
- With microjet systems, apply additional water after application is complete to remove residues from the foliage.
- Apply enough supplemental water to wet the root zones of the plants.
- Plant injury or lack of effectiveness can result from non-uniform distribution of treated water.

# **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, 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 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.

#### **TURFGRASS**

Medallion II is a protectant fungicide for control of certain diseases of turfgrass. Medallion II provides control of brown patch, leaf spot, yellow patch, brown ring patch, large patch, summer patch, anthracnose, Fusarium/Microdochium patch, gray leaf spot, bentgrass dead spot, Rhizoctonia leaf and sheath spot, and pink and gray snow mold when used in an integrated, preventive disease management program. For control of other diseases of turfgrass such as Pythium blight, yellow tuft, and downy mildew, use Subdue MAXX.

#### DO NOT USE ON TURFGRASS IN HAWAII.

- 1. USE MEDALLION II AS A FOLIAR SPRAY IN AN INTEGRATED, PREVENTIVE DISEASE MANAGEMENT PROGRAM ALONE OR IN COMBINATION WITH OTHER FUNGICIDES.
- 2. Apply in sufficient water to ensure thorough coverage.
- 3. Apply after mowing.

- 4. For control of foliar diseases, allow sprayed area to completely dry before irrigation.
- 5. Under conditions optimum for high disease pressure, use the higher rate and the shorter interval.
- 6. For optimum turfgrass quality and disease control, use Medallion II in conjunction with turfgrass management practices that promote good plant health and optimum disease control.
- 7. Before use of any fungicide, proper diagnosis of the organism causing the disease is important. Use of diagnostic kits or other means of identification of the disease is essential to determine the best control measures.

**Notes:** (1) To avoid possible illegal residues, do not graze animals on treated areas, and (2) Do not feed clippings from treated areas to livestock or poultry. (3) **Note:** Do not apply more than 1.5 oz./1,000 sq. ft./year (4 lbs. product/A/year) on turfgrass and the single maximum application rate is 0.68 lb. of fludioxonil/A/application on turfgrass.

# **Turfgrass Disease Control With Medallion II**

	Rate product/ 1,000 sq. ft.	Application	
Algae (algal scum of close cut turfgrass)	*see chart 0.25-0.50 oz.	Interval 7-14 days	Instructions  Apply early before turf loss occurs. Repeat applications or use in combination with Daconil® fungicides to enhance control and turfgrass recovery.
Anthracnose (Colletotrichum cereale) (formerly known as C. graminicola)	0.25-0.50 oz.	14 days	Begin applications prior to disease development. For best control, use as a component of a preventive disease control program.
Bentgrass Dead Spot (Ophiosphaerella agrostis)	0.30-0.50 oz.	14 days	Begin applications prior to disease development. For more broad spectrum disease control, tank mix Medallion II with 1.0-2.0 fl. oz. of Banner MAXX per 1,000 sq. ft.
Brown Patch (Rhizoctonia solani) of cool season turf), Large patch (R. solani of warm season turf)	0.20-0.25 oz.	7 days	Begin applications prior to disease development. For extended and more broad spectrum disease control (up to 21 days), including dollar spot, tank mix 0.20-0.50 oz. of Medallion II with 1.0-2.0 fl. oz. of Banner MAXX per 1,000 sq. ft.
Cool Season Brown Patch, Yellow Patch, Brown Ring Patch, (Rhizoctonia cerealis, Waitea circinata var. circinata), Rhizoctonia leaf and sheath spot (Rhizoctonia/Chrysorhiza zeae)	0.25-0.50 oz.	14 days	Apply when conditions are favorable for disease development. For best disease control, tank mix with Heritage® 50WG at 0.2 oz. or 1.0-2.0 fl. oz. of Banner MAXX per 1,000 sq. ft. For large patch control, preventive applications made when soil temperatures drop to 70°F, will give best control (apply in 2 gals. water or greater/1000 sq. ft.).
Gray Leaf Spot (Pyricularia grisea)	0.25-0.50 oz.	14 days	Apply when conditions are favorable for disease development. For best control, use as a component of a preventive disease control program.
Leaf Spot ( <i>Bipolaris</i> spp., <i>Drechslera</i> spp.)	0.25-0.50 oz.	14-21 days	Apply when conditions are favorable for disease development.
Microdochium (Fusarium) Patch (Microdochium nivale)	0.25-0.50 oz.	14-21 days	For the control of Microdochium Patch without snow cover. Under Heavy infestations combine with Banner MAXX or Heritage. Repeat applications can be made at 7-14 day intervals when conditions are favorable for disease development.

Disease	Rate product/ 1,000 sq. ft. *see chart	Application Interval	Instructions
Snow Mold: Gray (Typhula incarnata, Typhula ishikariensis) Pink (Microdochium nivale)	0.50 oz.	Late Fall	Apply one to two applications in late fall before snow cover. Do not apply on top of snow. For best disease control, tank mix with one to two registered snow mold products. For example, mix with a combination of Banner MAXX and Daconil Ultrex. Medallion II at 0.25-0.30 oz. rate can be used when tank mixing with Banner MAXX and Daconil Ultrex when disease conditions are expected to be light to moderate.
Summer Patch (Magnaporthe poae)	0.50 oz.	14 days	Apply when conditions are favorable for disease development. For best disease control, tank mix 0.30-0.50 oz. of Medallion II with 0.2 oz of Heritage 50WG or 1.0-2.0 fl. oz. of Banner MAXX per 1,000 sg. ft.

# \*Medallion II Conversion Chart

Rate Product/1,000 sq. ft.	Treated Area sq. ft./1 oz. Packet	Treated Area sq. ft./5 oz. Packet
0.20 oz.	5,000	25,000
0.25 oz.	4,000	20,000
0.30 oz.	3,340	16,700
0.50 oz.	2,000	10,000

#### **ORNAMENTALS**

Medallion II is a protectant fungicide for control of certain foliar, stem, crown and root diseases in ornamentals grown in interiorscapes, field nursery plantings, container nurseries, forest nurseries, residential and commercial landscapes, greenhouses, lath and shade houses, or other enclosed structures. Medallion II may be applied to ornamental crops by foliar spray, drench and mixing with growing media prior to seeding or transplanting. Medallion II may be applied by chemigation to control foliar, stem, crown and soil borne diseases.

**HAWAII ONLY:** Use is limited to ornamentals grown in interiorscapes, greenhouses, lath and shade houses, containers, or other enclosed structures.

Nassau and Suffolk Counties, New York: Use is limited to ornamentals grown in interiorscapes, greenhouses, lath and shade houses, containers, or other enclosed structures.

Medallion II controls foliar diseases of ornamentals caused by *Rhizoctonia* spp., *Botrytis* spp., *Cercospora* spp., *Cylindrocladium* spp., *Alternaria* spp., *Septoria* spp., and *Myrothecium* spp. when applied on a regular schedule as a full coverage spray.

Medallion II also will provide control of stem and root diseases caused by *Rhizoctonia* spp., *Fusarium* spp. (e.g., oxysporum), *Cylindrocladium* spp., *Sclerotium* spp., and *Thielaviopsis* spp., when mixed with the potting media or as a drench to the root zone of plants.

For control of stem and root diseases caused by *Pythium* spp. and *Phytophthora* spp., tank mix Medallion II with labeled rates of Subdue MAXX. See mixing instructions for these tank mixes.

#### **Maximum Use Rates**

For indoor drench applications, use up to 30 oz. of Medallion II per 1,000 sq. ft. (80 lbs. product/A) per year or crop cycle. Applications to pre-potting mix can be made up to 4 oz. of Medallion II per cu. yd.

The high use rates specified for container nurseries, greenhouses, or other enclosed structures are due to the high organic matter soil mixes used in these systems and the high binding affinity of Medallion II for organic matter.

For field grown and landscape ornamentals, apply up to a maximum of 1.5 oz./1,000 sq. ft./year (4 lbs. product/A/year) and the single maximum application rate is 0.68 lb. of fludioxonil/A/application. For outdoor container grown ornamentals, apply up to a maximum of 3 oz./1,000 sq. ft./year (8 lbs. product/A/year).

# **Plant Species**

Medallion II has been tested and found to be safe on the ornamentals listed in this table at specified rates. For plants not listed in the table, see the **NOTICE TO USER** box at the bottom of the table. Numbers in parentheses refer to diseases controlled. See Table 1.

African Violets (1-12)	Coreopsis* (1-12)	Petunia (1-12)
Ageratum (1-10)	Cyclamen (1-12)	Pittosporium (8-12)
Alyssum (1-12)	Daffodil (4, 9, 10)	Poinsettia (1,4, 9-12)
Aster (1-12)	Dahlia* (1-12)	Portulaca* (1-12)
Azalea (4, 11, 12)	Daisy* (1-12)	Pothos (1-12)
Begonia (1-12)	Fern** (1-12)	Rose (1, 4, 9)
Bleeding Heart* (1-12)	Fuchsia* (1-4)	Salvia (1-12)
Bridal Veil* (1-12)	Gerbera Daisy (1-12)	Snapdragon (1-12)
Caladium (1-12)	Gomphrena (1-12)	Spathiphyllum (1-12)
Calendula (1-12)	Iris (4, 9, 10)	Sunflower* (1-12)
Carnation (1-12)	Lantana* (1-12)	Tobacco, flowering* (1-12)
Celosia (1-12)	Lysianthus (8-12)	Tulip (4, 9, 10)
Centrosa* (1-12)	Marigold (1-12)	Verbena (1-12)
Chenille* (1-12)	Mexican Heather* (1-7)	Vinca (1-12)
Christmas Cactus (1-12)	Nephthytis* (1-12)	Wandering Jew* (1-12)
Chrysanthemums (1-12)	Pansy (1-12)	Zinnia (1-12)
Coleus (1-12)		

<sup>\*</sup>Indicates that only foliar applications have been tested for plant safety.

#### Note:

- Drench or at seedling applications to Impatiens or New Guinea Impatiens may cause stunting and/or chlorosis.
- Foliar or drench applications to Geranium can cause stunting or chlorosis.
   Responses may vary depending on environmental conditions. Medallion II should be tested on a limited area to evaluate for any possible damage before proceeding with treatment of the entire crop.

**NOTICE TO USER:** Plant tolerance to Medallion II has been found to be acceptable for the specific genera and species listed on this label. Due to the large number of species and varieties of ornamentals and nursery plants, it is impossible to test every one for tolerance to Medallion II. Neither the Manufacturer nor the Seller has determined whether or not Medallion II can be used safely on ornamental plants not specified on this label. The professional user should determine if Medallion II can be used safely prior to commercial use. In a small area, test the required rates on a small number of plants for phytotoxicity prior to widespread use.

Table 1: Diseases Controlled by Medallion II

<sup>\*\*</sup>Do not apply Medallion II to leather leaf fern.

#### **Foliar Diseases**

- 1. Aerial Blight (*Rhizoctonia* spp.)
- 2. Alternaria Leaf Blight (*Alternaria* spp.)
- 3. Alternaria Leaf Spot (*Alternaria* spp.)
- 4. Botrytis Blight (*Botrytis* spp.)
- 5. Cercospora Leaf Spot (*Cercospora* spp.)
- 6. Cylindrocladium Blight (*Cylindrocladium* spp.)
- 7. Myrothecium Leaf Spot and Blight (*Myrothecium* spp.)
- 8. Septoria Leaf Spot (Septoria spp.)

## Stem, Crown, and Root Rots

- 9. Cylindrocladium Stem and Root Rot (*Cylindrocladium* spp.)
- 10. Fusarium Stem and Root Rot (*Fusarium* spp.)
- 11. Rhizoctonia Stem and Root Rot (*Rhizoctonia* spp.)
- 12. Southern Blight (Sclerotium rolfsii)
- 13. Black Root Rot (*Thielaviopsis* spp.)

# **Foliar Spray**

For control of *Rhizoctonia* spp., *Alternaria* spp., *Septoria* spp., *Myrothecium* spp., and *Cercospora* spp., use 1-2 oz./100 gals. of water and spray to runoff at 7 to 14-day intervals while conditions are favorable for disease development.

For control of *Botrytis* spp., use 2-4 oz./100 gals. of water and spray to runoff at 7 to 14-day intervals while conditions are favorable for disease development. For management of the potential development of resistance in the Botrytis population, use no more than two consecutive applications of Medallion II before rotating to another effective product registered for Botrytis control on ornamentals with a different mode of action.

For control of *Cylindrocladium* spp., use 4 oz./100 gals. of water and spray to runoff at 7- to 14-day intervals while conditions are favorable for disease development.

**Notes:** (1) Under severe conditions, use the highest rate and/or the shortest application interval. (2) Use sufficient spray volume to wet the plants to the point of drip. (3) For a single foliar application, apply up to a maximum of 4 oz./100 gals. (1 oz./25 gals). Not to exceed the maximum single application rate of 0.68 lb. fludioxonil/A/application.

# **Pre-Potting Growing Media Mix**

Medallion II can be mixed with the potting media before seeding or transplanting by uniformly mixing 1-2 oz. per cu. yd. of potting media. The desired amount of Medallion II should be mixed with 0.50-1 gal. of water and applied to 1 (one) cu. yd. of potting media. It is recommended that Medallion II treatment should be made just before the plants are seeded or potted up. Uniform mixing can be accomplished by placing the potting mix in a rotating drum and spraying the Medallion II solution onto the mix while the drum is rotating.

# **Growing Medium Drench**

#### At Seeding

For the control of damping-off, root, and stem diseases, mix 1 oz./100 gals. of water. When using Medallion II for control of *Rhizoctonia* spp., apply sufficient mix to wet the upper one-half of the growing medium. For control of other root and stem diseases, completely drench the growing medium. Make only one application to the seeding crop prior to transplanting or transfer to larger containers.

# **Transplants and Cuttings**

For the control of root and stem diseases, mix 1-2 oz./100 gals. of water. When using Medallion II for control of *Rhizoctonia* spp., apply sufficient mix to wet the upper one-half of the growing medium. For control of other root and stem diseases, completely drench the growing medium. If needed, retreat transplants and cuttings with Medallion II as described above at 21 to 28-day intervals. Two applications per year during conditions favorable for disease development are usually adequate to control diseases of ornamentals.

**Notes:** (1) Under severe conditions, use the highest rates and/or the shortest application interval. (2) For control of Pythium and Phytophthora diseases in addition to *Rhizoctonia* spp., *Cylindrocladium* spp., *Thielaviopsis* spp., *Fusarium* spp., and *Sclerotium* spp., tank mix Medallion II with labeled rates of Subdue MAXX. (3) Drench applications can be made at up to a maximum of 2 pts./sq. ft. to wet the root zone of plants.

For Commercial Use in Ornamental Bulb and Corm Dips: Use Medallion II for control of basal rot (*Fusarium* spp.) on ornamental bulbs and corms.

Dip clean bulbs or corms into tanks containing 8 oz. Medallion II per 100 gallons of water. Place bulbs in a dipping tray or nylon bag for dipping. Tanks should be agitated to suspend Medallion II in water and ensure uniform coverage. Soak bulbs or corms at least 20 minutes and air dry prior to storage. Replace liquid in tanks at rate of 0.8 oz. Medallion II per 10 gallons of water.

**Post harvest dipping of bulbs from freshly dug plant material**: Clean and treat bulbs within 24-48 hours of digging. Follow instructions above for preparing dip mixture, dipping and drying of bulbs.

Preplant dipping of bulbs prior to planting into fields or bulbs used in containers: Start with clean, dry bulbs. Follow instructions above for preparing dip mixture, dipping and drying of bulbs.

#### STORAGE AND DISPOSAL

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

# **Pesticide Storage**

Store in a cool, dry, secure place. Do not store this product under wet conditions. Handle outer container carefully to avoid breakage of inner water-soluble packets.

# **Pesticide Disposal**

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

**Container Handling** [For boxes and paper and plastic bags]

**Non-refillable container.** Do not reuse or refill this container. Completely empty box or bag into application equipment. Then offer for recycling if available or dispose of empty box or bag in a sanitary landfill or by incineration.

#### Container Handling [less than or equal to 50 pounds]

**Non-refillable container.** Do not reuse or refill this container. Triple 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 ¼ 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

## **Container Handling** [For water-soluble packets]

**Non-refillable container.** Do not reuse or refill this container. Offer for recycling if available or dispose of the empty foil pouch in the trash as long as water-soluble packet is unbroken.

# **Container Handling [fiber drums with liners]**

**Non-refillable container.** Do not reuse or refill this container. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then offer for recycling if available or dispose of liner in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities. If drum is contaminated and cannot be reused, dispose of it in the manner required for its liner.

## CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER.

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