



# Rayora™

## Fungicide

**Broad spectrum control of foliar, stem and root diseases in turf. For use on turf in golf courses, in lawns and landscape areas around public, industrial, and commercial properties. Not for residential use.**

**EPA Reg. No. 279-3633**

**EPA Est. No. 279-IL-1**

**Active Ingredient:**

Flutriafol.....11.8%

**Other Ingredients:** .....88.2%

**Total** .....100.0%

Contains 1.04 pounds per gallon of the active ingredient flutriafol

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

See back panel for additional precautionary statements

**Sold By**



FMC Corporation  
2929 Walnut Street  
Philadelphia PA 19104

**Net Contents:**

FIRST AID	
<b>IF ON SKIN OR CLOTHING</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF SWALLOWED</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>IF IN EYES</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
NOTE TO PHYSICIAN	
No specific antidote. Treat symptomatically.	
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-331-3148 for emergency medical treatment information.	
<b>For Information Regarding the Use of this Product Call 1-800-321-1FMC(1362)</b>	

**PRECAUTIONARY STATEMENTS**

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**CAUTION**

Harmful if swallowed. Harmful if absorbed through skin. Causes moderate eye irritation. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes or clothing.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Applicators and all other handlers must wear: long sleeved shirt and long pants, socks, shoes, and chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride or viton).

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: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

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

## ENVIRONMENTAL HAZARDS

This formulated product is toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

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

Surface Water Advisory: This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application.

## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in any 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.

### 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.

Re-entry Statement: Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treatment area until spray has dried.

## PRODUCT INFORMATION

Rayora Fungicide is a systemic, demethylation inhibitor (DMI) fungicide for the control of certain diseases. The active ingredient, flutriafol, moves rapidly into green tissue via translaminar and xylem movement. 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. When applied according to directions, Rayora Fungicide provides preventative and curative control for a wide spectrum of diseases. The mechanism of action of Rayora Fungicide on pathogens is the alteration of the biosynthesis of ergosterol by means of the inhibition of the demethylation of esteriodide, causing the collapse of the cell walls and inhibition of the development of hyphae. Rayora Fungicide is formulated as a suspension-concentrate (SC) containing 1.04 lb/gal of the active ingredient flutriafol. This product is intended for use by professional applicators.

### Resistance Management

For resistance management, please note that Rayora Fungicide contains a Group 3 fungicide. Any fungal population may contain individuals naturally resistant to Rayora Fungicide and other Group 3 fungicides. A gradual or total loss of pest control may occur over time if these fungicides are used repeatedly in the same field. Appropriate resistance-management strategies should be followed.

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

- Rotate the use of Rayora Fungicide or other Group 3 fungicides within a growing season sequence with different groups that control the same pathogens.
- Use tank mixtures with fungicides from a different group that are equally effective on the target disease 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 that using predictive models alone is not sufficient to manage resistance.
- Monitor treated fungal populations for resistance development.
- Contact your local extension specialist or pest control advisor for

any additional pesticide resistance-management and/or IPM recommendations for specific sites and pathogens.

To maintain performance of Rayora Fungicide and other fungicides in the same group, tank mix or rotate with a different fungicide group for good disease resistance management. For assistance on a disease control situation, consult your FMC Market Specialist, Distributor representative, or state extension personnel for specific practices or recommendations in your area.

### Mixing Instructions

**Spray Tank Preparation:** Spray equipment must be clean and free of existing pesticide deposits before using this product. Follow the spray tank clean out procedures specified on the label of product previously applied before adding Rayora Fungicide to the tank. Mix Rayora Fungicide thoroughly and continue agitation during application. If Rayora Fungicide is left standing for extended period of time in spray tank, re-agitate to assure uniform suspension of product in spray mixture. Use Rayora Fungicide spray mixture immediately after mixing. Do not store the mixture.

**Mixing with Water:** For best results, fill spray tank with one fourth of the volume of clean water needed for the area to be treated. Start the agitation system and add Rayora Fungicide to the tank. Make sure Rayora Fungicide is thoroughly mixed before application or before adding another product to the spray tank.

**Use of Adjuvants:** An adjuvant may be used with Rayora Fungicide unless otherwise specified in the use directions. Rayora Fungicide is compatible with most products, however not all have been tested. Use the compatibility jar test to ensure physical compatibility.

**Tank Mixing:** Rayora Fungicide may be tank mixed with other fungicides, herbicides, insecticides, and/or other additives unless prohibited on the label of the tank mix partner. Follow more restrictive labeling of any tank mix partner. Although Rayora Fungicide is compatible with most products, not all combinations have been tested. Use the compatibility jar test to ensure physical compatibility. Before applying any tank mixture not specifically recommended on this label, safety of the target plant should be confirmed. To test for turf safety, apply Rayora Fungicide to turf in a small area and in accordance with label instructions and observe plants over a period of time for the appearance of phytotoxicity symptoms.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

**Compatibility Jar Test:** Rayora Fungicide is compatible with most products, however not all combinations have been tested. Use the following compatibility jar test to ensure physical compatibility. Using a quart jar, add the proportionate amounts of the products to approximately one quart of water with agitation. Add wettable powders and water dispersible granular products first, next liquid flowables, then emulsifiable concentrates, and last liquid soluble products. After thorough mixing, allow this mixture to stand for 5 minutes. If the combination remains mixed or can be readily remixed, it is physically compatible. Once compatibility has been proven, use the same procedure for adding products to the spray tank. Use tank mix combinations on a small area before treating larger areas. When tank mixing, follow more restrictive labeling of any tank mix partner. Do not tank mix with any product that contains a prohibition on tank mixing.

### Application Instructions

#### Application through Irrigation Systems (Chemigation):

Apply Rayora Fungicide through irrigation at rates and timings specified in this label. Chemical tank and injector system must be thoroughly cleaned before and after use. Flush system with clean water.

**Drip Irrigation:** Use Rayora Fungicide for control of diseases at rates and timing as specified in this label. Ensure adequate soil moisture prior to utilizing Rayora Fungicide in a drip irrigation system. Do not apply Rayora Fungicide through drip irrigation that is deeper than 12" below the soil surface.

Discontinue drip irrigation application at fungicide depletion from the main feed supply tank or after 6 hours from start, whichever is shorter. Delay subsequent irrigation (water only) for at least 24 hours following drip application for best results.

**Sprinkler Irrigation:** Apply this product through sprinkler irrigation sys-

tems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, micro sprinkler or hand move irrigation systems. Do not apply this product through any other type of irrigation system except as specified on this label.

With Center Pivot irrigation equipment, use Rayora Fungicide only with equipment with drive systems that provide uniform water distribution. Do not use end guns for chemigation due to the non-uniform application pattern.

Add Rayora Fungicide to the pesticide supply tank containing sufficient water to maintain a continuous flow by the injection equipment. Maintain agitation during the entire application period.

For continuous-move irrigation systems, apply the labeled rate in 1/2 acre-inch or less per acre. For stationary or non-continuous moving systems, inject Rayora Fungicide spray mixture during the last 20-30 minutes of the set.

Do not apply when winds are greater than 10-15 mph to avoid drift or wind skips. Do not apply when wind speed favors drift beyond the area intended for treatment. Turf injury, lack of effectiveness, or illegal pesticide residues can result from non-uniform distribution of treated water. Thorough coverage of foliage is required for good control.

If you have questions about calibration you should contact a State Extension Service specialist, equipment manufacturer or other expert.

Operating Requirements for Application through Irrigation Systems:

- 1 Do not use chemigation when conditions are favorable for drift to non-target areas.
- 2 To prevent water-source contamination from backflow, a functional check valve, vacuum relief valve, and low-pressure drain should be located on the irrigation pipeline.
- 3 To prevent backflow back toward the injection pump, the pesticide injection pipeline must be equipped with a functional, automatic, quick-closing check valve.
- 4 To prevent fluid from being withdrawn from the supply tank when the irrigation system is shut down, the pesticide injection pipeline should also be equipped with a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock.
- 5 The system must also contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops and a functional pressure switch to stop the pump motor when water pressure decreases to a point at which pesticide distribution is adversely affected.
- 6 A metering pump, constructed of materials compatible with pesticides and capable of being fitted with a system interlock, such as a positive displacement injection pump (e.g., a diaphragm pump), must be included in the system.
- 7 A knowledgeable person responsible for the chemigation system should shut the system down and turn the irrigation water off, ensuring enough time for the pesticide to be flushed through all lines and nozzles.
- 8 No irrigation system, including those in greenhouses, used to distribute pesticides can be connected to a public water source unless safety measures and devices prescribed in the pesticide label for such connection are in place.

Specific Instructions for Public Water Systems:

- 1 Public water system means a system that provides piped water for human consumption if the 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 All measures and devices listed in the above section, "Operating Requirements for Application through Irrigation Systems", must be operational for connection to a public water system.
- 3 Additionally, 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 must 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.

**Spray Equipment/Volume:** Apply Rayora Fungicide in sufficient water volume to ensure thorough coverage as a broadcast foliar application for good disease control. For soil-borne diseases, use sufficient water to move the active ingredient into the crown and upper root zone.

For application to turfgrass, apply product in 87-174 gallons of water per acre (2-4 gallons per 1,000 sq ft).

**Sprayer Equipment Clean-Out: After spraying Rayora Fungicide and before using sprayer equipment for any other applications, the sprayer must be thoroughly cleaned using the following procedure:**

- 1 Drain sprayer tank, hoses, and spray boom and thoroughly rinse the inside of the sprayer tank with clean water to remove sediment and residues. In addition, thoroughly flush sprayer hoses, boom, and nozzles with clean water.
- 2 Fill the tank 1/2 full with clean water, and add appropriate detergent or ammonia (follow manufacturer's directions for use). Fill the tank to capacity and operate the sprayer for 15 minutes to flush hoses, boom, and nozzles.
- 3 Drain the sprayer system. Rinse the tank with clean water and flush through the hoses, boom, and nozzles. Remove and clean spray tips and screens separately.
- 4 Properly dispose of all cleaning solution and rinsate in accordance with Federal, State and local regulations and guidelines.

Do not contaminate any body of water including irrigation water that may be used on other plants.

**TURFGRASS USE DIRECTIONS**

Rayora Fungicide provides control of many important diseases in turfgrass. Use Rayora Fungicide in conjunction with cultural practices that promote healthy, vigorous turf. These cultural practices include nutrient management, thatch management, water management and the judicious use of non-Group 3 fungicides.

For use on turf in golf courses, in lawns and landscape areas around public, industrial, and commercial properties.

Restrictions: Do not use on home lawns and turf sites associated with apartment buildings, daycare centers, playgrounds, playfields, recreational park athletic fields, athletic fields located on or next to schools (i.e., elementary, middle and high school), campgrounds, churches, and theme parks.

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

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

Turfgrass Use Rate Conversion	
fl oz product/A	lb of ai flutriafol/A
32	0.26
62	0.50

Disease Controlled		Rate (fl oz)		Application Interval (Days)
		Per acre	Per 1000 ft <sup>2</sup>	
Apply preventatively or when conditions are favorable for disease development*	Anthraxnose Basal and Foliar ( <i>Colletotrichum cereale</i> )	32 - 62	0.7 - 1.4	14-21
	Brown Patch/ Rhizoctonia Blight ( <i>Rhizoctonia solani</i> )			14-21
	Copper Spot ( <i>Gloeocercospora sorghi</i> )			14-21
	Dollar Spot ( <i>Clariireedia spp.</i> formerly known as <i>Sclerotinia homoeocarpa</i> )			14-21
	Gray Leaf Spot ( <i>Pyricularia grisea</i> )			14-21
	Powdery Mildew ( <i>Erysiphe graminis</i> )			14-21
	Rusts ( <i>Puccinia spp</i> )			14-21
*For most effective results, use the high rate at 14 days intervals in combination or rotation with alternate modes-of-action.				
Apply Preventively in Fall†	Large Patch ( <i>Rhizoctonia solani</i> ) Apply when soil temperature at a 2 inch depth are between 50 and 55°F. Two applications should be made.	32 - 62	0.7 - 1.4	28
	Spring Dead Spot ( <i>Ophiosphaerella korrea</i> , <i>O.narmari</i> , <i>Ophiosphaerella herpotricha</i> ) Apply when soil temperatures at 2 inch depth are between 65 and 70°F. Two applications are needed for best results.			21-28
†Apply using the high rate when conditions are favorable for disease development.				
Apply Preventively in Spring‡	Summer Patch ( <i>Magnaporthe poae</i> ) Apply when conditions are favorable for disease development. Pathogen is active when soil temperatures reach 65°F at 2 inch depth.	32 - 62	0.7 - 1.4	21-28
‡Apply in sufficient water volumes of 2-4 gallons per 1,000 square feet.				
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>No single application may exceed 62 fl oz of product/A (0.50 lb ai of flutriafol/A).</li> <li>Do not apply more than 3 applications per year.</li> <li>Do not apply more than 186 fl oz of product (1.45 gals of product) /A per year.</li> <li>Do not apply more than 1.5 lb ai of flutriafol/acre per year.</li> <li>Do not use clippings for animal feed.</li> <li>Not for use on residential turf or on athletic fields.</li> <li>Do not use on home lawns and turf sites associated with apartment buildings, daycare centers, playgrounds, playfields, recreational park athletic fields, athletic fields located on or next to schools (i.e., elementary, middle and high school), campgrounds, churches, and theme parks.</li> </ul>				

## STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store unused product in original container in a cool, dry, secure area.

**Pesticide Disposal:** Pesticide wastes may be hazardous. 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:

#### Nonrefillable container

Do not reuse or refill this container. Offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. 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.

**In Case of Spill:** Avoid contact, isolate area and keep out unprotected persons and animals. Confine spills. For assistance call: 800-424-9300.

### 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 beyond the control of FMC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

**Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) seller or FMC, and buyer assumes the risk of any such use.**

To the extent consistent with applicable law, FMC or seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF FMC 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 FMC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

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