



# REGALIA<sup>®</sup> Rx

BIOFUNGICIDE

A plant extract to boost the plants' defense mechanisms to protect against certain fungal and bacterial diseases, and to improve plant health.

Active ingredient: Extract of *Reynoutria sachalinensis* ..... 5 %  
 Other ingredients: ..... 95 %  
 Total: ..... 100 %

EPA Reg. No. 84059-3

- EPA Est. No. 085970-FL-001
- EPA Est. No. 047857-CA-001
- EPA Est. No. 61842-CA-001

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

FIRST AID	
<b>IF SWALLOWED:</b>	Call 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.
<b>IF ON SKIN OR CLOTHING:</b>	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.
<b>IF INHALED:</b>	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
<b>IF IN EYES:</b>	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.

Have the product container or label with you when calling a poison control center or doctor, or if going for treatment.



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NET CONTENTS:

- 2.5 gallons    30 gallons    265 gallons    \_\_\_\_\_

REGRX-13-02   Lot #:

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear goggles or safety glasses. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

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

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### ENVIRONMENTAL HAZARDS

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 washwater or rinsate.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

## 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 State or Tribal 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 exemptions pertaining to the statements on this label about personal protective equipment (PPE) and the restricted-entry interval (REI). 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 4 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
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

### GENERAL INFORMATION

Regalia® Rx Biofungicide is an extract from the plant *Reynoutria* spp. for use on edible crops. Regalia® Rx Biofungicide applied to actively growing plants (see DIRECTIONS FOR USE) will improve plant health, and will help make the treated portions resistant to certain plant diseases. Plant health benefits often result in greater yields at harvest. Use Regalia® Rx Biofungicide as a preventative rather than a curative application. Apply prior to disease infestation to protect the growing leaf tissue. See specific information for diseases controlled and use rates on edible crops.

### MODE OF ACTION

The extract obtained from *Reynoutria* spp. plant material contains active chemical compounds. The extract, when applied to the host plant, increases the plant's defense system due to a five-fold increase in phenolics and antioxidants, and strengthens cell walls. This induced resistance against important diseases is not systemic, but provides some translaminar protection. Repeat foliar applications at 7- 14 day intervals to maintain induction and to protect new plant growth. The resistance induction takes place within one to two days.

Use Regalia® Rx Biofungicide, therefore, as a preventative treatment.

### MIXING AND APPLICATION INSTRUCTIONS

#### – SHAKE WELL PRIOR TO USE –

Regalia® Rx Biofungicide is a micro-emulsion concentrate consisting of certain natural ingredients extracted from *Reynoutria* spp. Use 50-mesh nozzle screens or larger.

Use higher water volumes with larger sized crops and extensive foliage to secure thorough coverage.

**Regalia® Rx Biofungicide alone:** Add ½ of the required amount of water to the mix tank. With the agitator running, add the Regalia® Rx Biofungicide to the mix tank. Continue agitation while adding the remainder of the water. Begin application of the solution after the Regalia® Rx Biofungicide has completely dispersed into the mix water. Maintain agitation until all the mixture has been applied.

**Regalia® Rx Biofungicide + tank-mixtures:** Add ½ - ¾ of the required amount of water to the mix tank. Start the agitation before adding any tank mix partners. In general, tank-mix partners should be added in this order: wettable powders, dry flowable formulations, liquid flowable formulations, and emulsifiable formulations such as Regalia® Rx Biofungicide. Always allow each tank mix partner to become completely dispersed before adding the next component. Maintain continuous agitation until all components have been dispersed and throughout the application process. After all components are completely dispersed add the remainder of the water. Regalia® Rx Biofungicide cannot be mixed with another product with a prohibition against mixing. Use of the tank mix must be in accordance with the more restrictive label limitations and precautions. **Do not pre-mix Regalia® Rx Biofungicide with any other tank mix component prior to adding to the spray tank.**

**Compatibility:** Do not combine Regalia® Rx Biofungicide in the spray tank with pesticides, adjuvants, or fertilizers if there has been no previous experience or use of the combination to show it is physically compatible, effective, and non-injurious under your use conditions.

Regalia® Rx Biofungicide is compatible with many commonly used pesticides, fertilizers, adjuvants, and surfactants, but has not been evaluated with all potential combinations. To ensure compatibility of the tank mix combinations, evaluate prior to use as follows: Using a suitable container, add the proportional amounts of product to water. Add wettable powders first, then water dispersible granules, then liquid flowables, and lastly, emulsifiable concentrates. Mix thoroughly and let stand for at least five minutes. If the combination stays mixed or can be remixed, it is physically compatible. Test the mix on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of the application.

### **AERIAL APPLICATION INSTRUCTIONS**

Apply Regalia® Rx Biofungicide by aerial application to the Edible Crops listed at the rate of 0.5 – 1 quart per acre in a minimum of 5 gallons of water per acre unless specified differently in the SELECTED CROPS section. Increasing the amount of water applied per acre may improve product performance. Follow all instructions to reduce aerial drift.

### **AERIAL DRIFT REDUCTION ADVISORY INFORMATION**

**GENERAL:** Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. Where states have more stringent regulations, they should be observed. Note: This section is advisory in nature and does not supersede the mandatory label requirements.

**INFORMATION ON DROPLET SIZE:** The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply droplets large enough to provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

**CONTROLLING DROPLET SIZE:** Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets. Pressure – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When high flow rates are needed, use higher flow rate nozzles instead of increasing pressure. Number of Nozzles – Use the minimum number of nozzles that provide uniform coverage. Nozzle Orientation – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential. Nozzle Type – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

**BOOM WIDTH:** For aerial applications, the boom width must not exceed 75% of the wingspan or 90% of the rotary blade. Use upwind swath displacement and apply only when wind speed is 3-10 mph as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground or crop canopy.

**APPLICATION HEIGHT:** Do not make application at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

**SWATH ADJUSTMENT:** When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

**WIND:** Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**TEMPERATURE AND HUMIDITY:** When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**TEMPERATURE INVERSIONS:** Do not apply during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified 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.

**SENSITIVE AREAS:** The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas). Do not allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks and recreation areas, non-target crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals.

#### APPLICATION RATES FOR SELECTED CROPS

Regalia® Rx Biofungicide used as specified will improve plant health, and induce the defense system of the treated plants listed below towards the diseases specified below.

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
Cereal Grains  Rice Wheat	Powdery Mildew ( <i>Erysiphe graminis</i> )	Foliar (Ground)	1 – 2 quarts per acre	For ground applications to optimize disease control and to maximize yields, apply this product in 15 - 40 gallons of water per acre.  It is important to apply this product at the flag leaf stage to maximize yield. Apply this product preventatively or when the first disease symptoms appear. Repeat applications in 7- 14 day intervals depending upon crop growth and disease pressure.
	Bacterial Blight and Streak ( <i>Xanthomonas</i> spp.)			
	Brown Rot, Leaf Spots and Smuts ( <i>Ceratobasidium</i> spp.) ( <i>Cercospora</i> spp.) ( <i>Cochliobolus</i> spp.) ( <i>Drechslera</i> spp.)			When the plants are under high disease pressure, tank mix this product with another fungicide for more effective control.
	Rice Blast ( <i>Pyricularia grisea</i> )			
	Rust ( <i>Puccinia</i> spp.)			
	Septoria Leaf Spot ( <i>Septoria</i> spp.)	Foliar (Aerial)	0.5 - 1 quart per acre	For aerial applications, apply this product in a minimum of 5 gallons water per acre.  It is important to apply this product at the flag leaf stage to maximize yield. Apply this product preventatively or when the first disease symptoms appear. Repeat applications in 7- 14 day intervals depending upon crop growth and disease pressure.
	Sheath Spot and Blight ( <i>Rhizoctonia oryzae</i> ) ( <i>Thanatephorus cucumeris</i> )			
	Stem Rot ( <i>Sclerotium oryzae</i> )			
	Smut ( <i>Tilletia barclayana</i> )			
Regalia® Rx Biofungicide has a <b>pre-harvest interval (PHI) of 0 days</b> . Do not enter or allow worker entry into treated areas during the <b>restricted-entry interval (REI) of 4 hours</b> .				

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
Corn Field Corn Popcorn Silage Corn Seed Corn and other corn crops (includes crops grown for seed)	Anthracnose Leaf Blight ( <i>Colletotrichum graminicola</i> )	Foliar (Ground)	0.5 – 2 quarts per acre	For ground applications to optimize disease control and to maximize yields, apply 1 - 2 quarts of this product preventatively in 15 - 40 gallons of water per acre prior to disease development using sufficient volume for thorough coverage.  For improved performance, apply 0.5 - 2 quarts this product in a tank mix with another registered fungicide. Consult your local Extension Specialist or Crop Consultant regarding the optimum timing of fungicide applications.
	Eye Spot ( <i>Aureobasidium zeae</i> )			
	Gray leafspot ( <i>Cercospora zeae-maydis</i> )			
	Rusts ( <i>Puccinia</i> spp.)			
	Northern Leaf Blight ( <i>Exserohilum turcicum</i> )			
	Northern Leaf Spot ( <i>Cochliobus carbonum</i> )	Foliar (Aerial)	0.5 - 1 quart per acre	For aerial applications, apply this product in a minimum of 3 gallons of water per acre.
	Southern Leaf Blight ( <i>Cochliobolus heterostrophus</i> )			

Regalia® Rx Biofungicide has a **pre-harvest interval (PHI)** of **0 days**.

Do not enter or allow worker entry into treated areas during the **restricted-entry interval (REI)** of **4 hours**.

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
Soybean	Aerial Web Blight ( <i>Rhizoctonia solani</i> )	Foliar (Ground)	0.5 - 2 quarts per acre	For ground applications to optimize disease control and to maximize yields, apply 1 - 2 quarts of this product preventatively in 15 - 40 gallons of water per acre.  For improved performance, apply 0.5 - 2 quarts of this product in a tank mix with another registered fungicide.
	Alternaria Leafspot ( <i>Alternaria</i> spp.)			
	Anthracnose ( <i>Colletotrichum truncatum</i> )			Consult your local Extension Specialist or Crop Consultant regarding the optimum timing of fungicide applications.
	Asian Soybean Rust ( <i>Phakopsora pachyrhizi</i> )			
	Brown Spot ( <i>Septoria glycines</i> )	Foliar (Aerial)	0.5 - 1 quart per acre	For aerial applications, apply this product in a minimum of 3 gallons of water per acre.  For improved performance, apply this product in a tank mix with another registered fungicide.
	Cercospora Blight ( <i>Cercospora kikuchii</i> )			
	Frog-eyed Leaf Spot ( <i>Cercospora sojina</i> )			Consult your local Extension Specialist or Crop Consultant regarding the optimum timing of fungicide applications.
	Pod and Stem Blight ( <i>Diaporthe</i> spp.)			
	Septoria Brown Spot ( <i>Septoria glycines</i> )			
	White Mold ( <i>Sclerotinia sclerotiorum</i> )			

Regalia® Rx Biofungicide has a **pre-harvest interval (PHI)** of **0 days**.

Do not enter or allow worker entry into treated areas during the **restricted-entry interval (REI)** of **4 hours**.

#### INTEGRATED PEST MANAGEMENT (IPM)

Many conventional fungicides have been tested in an IPM regime with Regalia® Rx Biofungicide with very satisfactory results. One of the major objectives of IPM has been to reduce the probability of disease resistance development to a particular active ingredient.

The alternate use of (1-2 sprays) followed by a conventional, registered fungicide (1-2 sprays) has been successfully used in many crops. In addition, the use of tank mixes with a conventional fungicide has also been successful.

Follow label instructions of the particular registered product: Do not exceed amounts or treatment intervals on the label.

#### STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store in a cool, dry place. Avoid freezing.

**Pesticide Disposal:** To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

**Container Handling (under 5 gallons):** 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 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. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

**Container Handling (over 5 gallons):** Non-refillable container. Do not reuse or refill this container. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

Marrone Bio Innovations is a member of the Ag Container Recycling Council. Visit <http://www.acrecycle.org/contact> for information on how to arrange pick-up of this empty pesticide container.



#### WARRANTY

To the extent permitted by applicable law, the seller makes no warranty, expressed or implied, of merchantability, fitness or otherwise concerning use of this product. The user assumes all risks of use, storage or handling that are not in strict accordance with the accompanying directions.

Label date: February 11, 2013

Made in the U.S.A.

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