



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. 84059-MI-001

<b>GROUP</b>	<b>P5</b>	<b>FUNGICIDE</b>
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**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.
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or if going for treatment. You may also contact 1-800-222-1222 for emergency medical treatment information.	

NET CONTENTS:  1 gallon  2.5 gallons  
 Lot #: PRINTED ON CONTAINER

REG\_EM0915v12\_2015\_10  
 PN 61494



CAN BE USED IN ORGANIC PRODUCTION



1540 Drew Ave  
 Davis, CA 95618 USA

## 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.

### 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

Exception: If the product is soil-injected or soil-incorporated, 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. The REI does not apply when this product is used for seed treatment at planting or in hopper box treatments.

## GENERAL INFORMATION

REGALIA® Bioprotectant Concentrate is an extract from the plant *Reynoutria sachalinensis* for use on edible and field crops. REGALIA® Bioprotectant Concentrate applied to actively growing plants (see DIRECTIONS FOR USE) will help protect treated portions from certain plant diseases and will improve plant health. Plant health benefits often result in greater yields at harvest, especially when crops are stressed by pathogens or environmental conditions. Use REGALIA® Bioprotectant Concentrate as a preventative rather than a curative application. Apply prior to disease infestation to protect the growing leaf tissue, flowers and above ground fruit and vegetables. See specific information below for diseases controlled and use rates on edible crops.

REGALIA® Bioprotectant Concentrate can be used in multiple application methods to control or suppress certain soil-borne or foliar diseases and to promote healthy plant growth. See below for specific information on diseases controlled and use rates.

## MODE OF ACTION

The extract obtained from *Reynoutria sachalinensis* plant material contains bioactive compounds. The extract, when applied to the host plant, activates the plant's defense system to increase phenolics and antioxidants, and strengthen cell walls. This mode of action is classified as induced systemic resistance.

When applied at rates and timing for disease control, the induced resistance against important diseases provides translaminar activity, which takes place within one to two days of application. Repeat foliar applications per label instructions. Use REGALIA® Bioprotectant Concentrate, therefore, as a preventative treatment. In addition to foliar applications, REGALIA® Bioprotectant Concentrate can be used in multiple application methods as a plant dip, soil drench, in-furrow spray, or applied through drip irrigation to control or suppress certain soil-borne diseases and to promote healthy root growth.

When applied at rates and timing for plant health effects, the improved plant defense responses minimize the impacts of stress and disease, resulting in optimized yields at harvest. Applying REGALIA® Bioprotectant Concentrate has been shown to increase leaf chlorophyll content and increase soluble protein content in some crops. These effects often lead to improved crop quality and/or yields.

## MIXING AND APPLICATION INSTRUCTIONS

### – SHAKE WELL PRIOR TO USE –

**Mixing instructions:** Prepare no more mixture than is required for the immediate operation. Agitate the solution continuously during mixing and application. Mechanical mixing is recommended for proper mixing of REGALIA® Bioprotectant Concentrate mixtures.

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

**REGALIA® Bioprotectant Concentrate + tank mixtures:** Add ½–¾ of the required amount of water to the mix tank. Start the agitation before adding any tank mix ingredients. In general, tank mix ingredients should be added in this order: wettable powders, dry flowable formulations, liquid flowable formulations, and emulsifiable formulations such as REGALIA® Bioprotectant Concentrate. Always allow each tank mix ingredient 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® Bioprotectant Concentrate cannot be mixed with another product with a prohibition against mixing. Use of the tank mix must be in accordance with the most restrictive label limitations and precautions. Do not pre-mix REGALIA® Bioprotectant Concentrate with any other tank mix component prior to adding to the spray tank.

**Note:** When using REGALIA® Bioprotectant Concentrate in tank-mixtures, all products in water soluble packaging should be added to the tank before any other tank-mix ingredient, including REGALIA® Bioprotectant Concentrate. Allow the water-soluble packaging to completely dissolve and the product(s) to completely disperse before adding any other tank-mix ingredient to the tank.

**Compatibility:** Do not combine REGALIA® Bioprotectant Concentrate 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® Bioprotectant Concentrate 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.

**Application Instructions:** REGALIA® Bioprotectant Concentrate is a micro-emulsion concentrate consisting of certain ingredients extracted from *Reynoutria sachalinensis*. Use 50-mesh nozzle screens or larger. Use higher water volumes with larger sized crops and extensive foliage to obtain thorough coverage.

See FOLIAR AERIAL and FOLIAR GROUND APPLICATION section for use directions.

See CHEMIGATION section for use directions.

See BACKPACK/HANDHELD SPRAYER section for use directions.

See PRE-PLANT DIP section for use directions.

See SOIL TREATMENT section for use directions.

### FOLIAR AERIAL APPLICATION INSTRUCTIONS

Apply REGALIA® Bioprotectant Concentrate by aerial application to the Edible Crops listed on this label at the rate of 0.5–1 quart per acre in a minimum of 5 gallons of water per acre unless otherwise specified in the SELECTED CROPS section. Increasing the amount of water applied per acre will 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.

#### FOLIAR GROUND APPLICATION USE DIRECTIONS

REGALIA® Bioprotectant Concentrate can be applied in most commonly-used ground application equipment, such as tractor-mounted boom, airblast, high clearance, hose-end, backpack, and other pressurized sprayers; or hand-held sprayers; foggers or mist blowers; water wheel and other drench applicators; and shank or other soil injection method. Apply in a minimum of 50 gal. of water per acre, unless specified otherwise. Thorough coverage is necessary to provide good disease control.

#### BACKPACK/HAND-HELD SPRAYER USE DIRECTIONS

The use rate for REGALIA® Bioprotectant Concentrate when applied alone or as an alternate spray in a backpack or hand-held sprayer is 1.3 – 2.6 tablespoons (0.64 – 1.28 fluid ounces) per gallon of water (0.5 – 1.0% v/v dilution of REGALIA® Bioprotectant Concentrate) applied at 1.15 – 2.3 gallons per 1000 square feet (50 – 100 gallons of water per acre). When tank mixed with another fungicide, the use rate for REGALIA® Bioprotectant Concentrate in a backpack or hand-held sprayer is 0.6 – 2.6 tablespoons (0.32 – 1.28 fluid ounces) per gallon of water applied at 1.15 – 2.3 gallons per 1000 square feet (50 – 100 gallons of water per acre). Use higher water volumes with larger sized crops and extensive foliage in order to secure thorough coverage. Do not use carrier volumes and/or adjuvants that create spray runoff or drip-accumulation at the base of fruit or on the harvested commodity. See specific application recommendations pertaining to each crop for additional details.

## CHEMIGATION USE DIRECTIONS

Apply this product through center pivot sprinkler systems or drip (trickle) irrigation systems. Do not connect an irrigation system (including greenhouse systems) used for pesticide applications to a public water system. Do not use reclaimed water for application of this product.

### Spray preparation

First prepare a suspension of REGALIA® Bioprotectant Concentrate in a mix tank. Fill tank  $\frac{1}{2}$  to  $\frac{3}{4}$  the desired amount of water. Start mechanical or hydraulic agitation. Add the required amount of REGALIA® Bioprotectant Concentrate, and then the remaining volume of water. Then set the irrigation system to deliver a minimum of 0.1 to 0.3 inch of water per acre. Start irrigation system and uniformly inject the suspension of REGALIA® Bioprotectant Concentrate into the irrigation water line so as to deliver the desired rate per acre. Inject the suspension of REGALIA® Bioprotectant Concentrate with a positive displacement pump into the main line after the filter, and ahead of a right angle turn to insure adequate mixing. Any questions on calibration should be directed to your State Extension Service Specialists, to equipment manufacturers or other experts.

Do not combine REGALIA® Bioprotectant Concentrate with pesticides, surfactants or fertilizers for application through chemigation equipment unless prior experience has shown the combination physically compatible, effective and non-injurious under conditions of use. REGALIA® Bioprotectant Concentrate has not been fully evaluated for compatibility with all adjuvants or surfactants. Conduct a spray compatibility test if a mixture with adjuvants or surfactants is planned.

**Apply REGALIA® Bioprotectant Concentrate at 1–4 quarts per acre according to the instructions below unless specified differently in the SELECTED CROPS section.**

## CHEMIGATION

### General Requirements –

1. Apply this product only through a drip or trickle system or center pivot sprinkler system.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
3. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
4. 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.
5. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

### Specific Requirements for Chemigation Systems Connected to Public Water Systems –

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **Specific Requirements for Sprinkler Chemigation –**

1. The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **Specific Requirements for Drip (Trickle) Chemigation –**

1. The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

#### **Application Instructions for All Types of Chemigation –**

1. Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues may cause product to lose effectiveness or strength.
2. Determine the treatment rates as indicated in the directions for use and make proper dilutions. Product can be applied continuously or at any time during the water application.
3. Prepare a solution in the chemical tank by filling the tank with the required water and then adding product as required.



## PRE-PLANT DIP USE DIRECTIONS

Apply REGALIA® Bioprotectant Concentrate as a pre-plant dip for improved plant health and suppression of certain soil-borne diseases (see use table for more information). Apply REGALIA® Bioprotectant Concentrate at a rate of 1–2 quarts product per 100 gallons of water as a dip (submerge roots or plugs ensuring full coverage, then remove) prior to transplanting, unless specified differently in the SELECTED CROPS section.

### SOIL TREATMENT USE DIRECTIONS

REGALIA® Bioprotectant Concentrate can be applied by soil drench, in-furrow spray to improve plant health and to protect against certain soil-borne diseases.

In general, REGALIA® Bioprotectant Concentrate can be applied by the following methods, unless specified differently in the SELECTED CROPS section:

#### Soil Drench Applications:

Apply REGALIA® Bioprotectant Concentrate at a concentration of 1–2 quarts per 100 gallons of water, and at a sufficient rate to thoroughly soak the growing media and root zone. Make an initial application of REGALIA® Bioprotectant Concentrate during or shortly after transplant to reduce transplant shock, suppress the listed soil-borne diseases and improve root growth. Multiple drench applications can be made on a 10–14 day interval.

#### In-Furrow Applications:

At planting, apply REGALIA® Bioprotectant Concentrate as an in-furrow spray at the rate of 1–2 quarts per acre or 0.73–4.9 fluid ounces per 1000 feet of row according to the chart below. Apply REGALIA® Bioprotectant Concentrate in 5–15 gallons of water so as the spray is directed into the seed furrow just before the seeds are covered.

Rate Per Acre	In-Furrow Application Rates Product per 1000 ft row (fl. oz.)														
	12" Rows	14" Rows	16" Rows	18" Rows	20" Rows	22" Rows	24" Rows	26" Rows	28" Rows	30" Rows	32" Rows	34" Rows	36" Rows	38" Rows	40" Rows
1 quart	0.73	0.86	0.98	1.1	1.2	1.3	1.5	1.6	1.7	1.8	2	2.1	2.2	2.3	2.4
2 quart	1.5	1.7	2	2.2	2.4	2.7	2.9	3.2	3.4	3.7	3.9	4.2	4.4	4.7	4.9

12" = 43,560 row ft./acre, 14" = 37,337 row ft./acre, 16" = 32,670 row ft./acre, 18" = 29,040 row ft./acre, 20" = 26,136 row ft./acre, 22" = 23,760 row ft./acre, 24" = 21,780 row ft./acre, 26" = 20,105 row ft./acre, 28" = 18,669 row ft./acre, 30" = 17,424 row ft./acre, 32" = 16,315 row ft./acre, 34" = 15,374 row ft./acre, 36" = 14,520 row ft./acre, 38" = 13,754 row ft./acre, 40" = 13,068 row ft./acre.

### APPLICATION RATES FOR SELECTED CROPS

The use rate for REGALIA® Bioprotectant Concentrate when applied alone or as an alternate spray is 2–4 quarts per 100 gallons of water (0.5–1.0% v/v dilution of REGALIA® Bioprotectant Concentrate) applied at 50–100 gallons of water per acre. When tank mixed with another fungicide, the use rate for REGALIA® Bioprotectant Concentrate is 1–4 quarts in 100 gallons of water applied at 50–100 gallons of water per acre. Use higher water volumes with larger sized crops and extensive foliage in order to secure thorough coverage. Do not use carrier volumes and/or adjuvants that create spray runoff or drip-accumulation at the base of fruit or on the harvested commodity. See specific application recommendations pertaining to each crop for additional details.



Pre-harvest Interval (PHI) = 0 days

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
Artichoke	Powdery Mildew ( <i>Erysiphe cichoracearum</i> ) ( <i>Leveillula taurica</i> )	Foliar (Ground)	1–4 quarts per acre	For ground applications, apply this product in 50–100 gallons of water per acre. Do not exceed 1.0% v/v of the applied solution.  Apply this product preventatively or when the first disease symptoms are visible and reapply every 7–10 days.
		Foliar (Aerial)	0.5–1 quart per acre	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply this product preventatively or when the first disease symptoms are visible and reapply every 7–10 days.
		Chemigation	1–4 quarts per acre	For chemigation applications for improved plant growth and suppression of soil-borne diseases, apply this product through drip irrigation immediately after transplant and at 14-day intervals or begin 14 days after transplant when soil drench applications are used.

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
Avocado	Anthracnose ( <i>Colletotrichum gloeosporioides</i> )  Bacterial Canker ( <i>Xanthomonas campestris</i> )	Foliar (Ground)	1–4 quarts per acre	For ground applications, apply this product preventatively in 50–100 gallons of water per acre.  Repeat applications at 7–10 day intervals.  Dilute applications: this product can be applied by ground equipment to tree crops in dilute applications of 100–400 gallons of water. Apply this product at a rate of 2–4 quarts per acre when applied alone, or at 1–4 quarts per acre when tank mixed with another fungicide. Avoid excessive amounts of water that result in the runoff of spray material.
		Foliar (Aerial)	0.5–1 quart per acre	For aerial applications, apply this product in a minimum of 10 gallons per acre.  Repeat applications at 7–10 day intervals.

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Bulb Vegetables</b>  Onion (Bulb and Green) Leek Shallo	Botrytis Leaf Blight ( <i>Botrytis squamosa</i> )  Botrytis Neck Rot ( <i>Botrytis</i> spp.)  Downy Mildew ( <i>Peronospora destructor</i> )  Onion Purple Blotch ( <i>Alternaria porri</i> )  Powdery Mildew ( <i>Erysiphe</i> spp.)	Foliar (Ground)	1–4 quarts per acre	For foliar applications, apply this product preventatively in 50–100 gallons of water per acre. Do not exceed 1.0% v/v of the applied solution.  Repeat applications at 7–14-day intervals.  Under moderate to heavy disease pressure, tank mix this product with another fungicide.
	<i>Pythium</i> spp.  <i>Rhizoctonia</i> spp.	Soil Drench	1–2 quarts per 100 gallons	For soil drench applications, apply this product at a concentration of 1–2 quarts per 100 gallons of water, and at a sufficient rate to thoroughly soak the growing media and root zone. Make an initial application of this product during or shortly after transplant to reduce transplant shock, suppress soil-borne diseases and improve root growth. Multiple drench applications can be made on a 10–14-day interval.
		In-Furrow	1–2 quarts per acre  1.2–3.7 fl. oz. per 1000 ft. row	For in-furrow applications, at planting apply this product as an in-furrow spray at the rate of 1–2 quarts per acre or 1.2–3.7 fluid ounces per 1000 feet of row according to the chart in the SOIL TREATMENT USE DIRECTIONS section. Apply this product in 5–15 gallons of water so as the spray is directed into the seed furrow just before the seeds are covered.
		Chemigation	1–4 quarts per acre	For chemigation applications, apply this product through irrigation at the rate of 1–4 quarts per acre immediately after transplant and at 14-day intervals or begin 14 days after transplant when plant dip or soil drench applications are used.
		Plant Dip	1–2 quarts per 100 gallons	For plant dip applications for improved plant growth and suppression of soil-borne diseases, apply this product in a 0.25–1% v/v suspension (1–2 quarts of this product per 100 gallons water) as a pre-plant dip immediately prior to transplanting.

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Bushberries and Caneberries</b>  Blueberry† Blackberry (all varieties) Cranberry Currant Elderberry Gooseberry Loganberry Raspberry (red and black)	Mummy Berry ( <i>Monilinia vaccinii-corymbosi</i> )  Alternaria Fruit Rot ( <i>Alternaria</i> spp.)  Anthracnose Fruit Rot ( <i>Colletotrichum acutatum</i> )  Botrytis Blight ( <i>Botrytis cinerea</i> )  Cranberry Early Rot* / Cranberry Fruit Rots* ( <i>Pucciniastrum vaccinii</i> )  Powdery Mildew ( <i>Microsphaera alni</i> )	Foliar (Ground)	1–4 quarts per acre	For ground applications, apply this product in 25–100 gallons of water per acre. Do not exceed 1.0% v/v of the applied solution.  Mummy Berry – Initiate application at bud break stage of development. Apply this product preventatively and repeat on a 7–10-day interval or as needed.  Botrytis Blight – Apply this product preventatively or when the first disease symptoms are visible and reapply every 7–10 days.  Anthracnose Fruit Rot and Alternaria Fruit Rot on blueberries – Initiate application at green tip and continue applications on a 7–10-day interval.
		Foliar (Aerial)	0.5–1 quart per acre	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.

\* Not for use in California

† Some sensitive blueberry varieties have exhibited fruit spotting as a result of application. Spray a test strip to confirm your variety is not susceptible to spotting before spraying.

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Cereal Grains</b>  Barley Rice Rye	Powdery Mildew ( <i>Erysiphe graminis</i> )  Rice Blast* ( <i>Piricularia grisea</i> )  Rust ( <i>Puccinia</i> spp.)  Septoria Leaf/ Speckled Leaf Spot/ Blotch ( <i>Septoria</i> spp.)	Foliar (Ground)	1–4 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 7–10-day intervals depending upon crop growth and disease pressure.  When the plants are under high disease pressure, tank mix this product with another fungicide for more effective control.
	Sheath Spot and Blight ( <i>Rhizoctonia oryzae</i> ) ( <i>Thanatephorus cucumeris</i> )  Stem Rot ( <i>Sclerotium oryzae</i> )  Smut ( <i>Tilletia barclayana</i> )  Tan Spot* ( <i>Tilletia barclayana</i> )	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 7–10-day intervals depending upon crop growth and disease pressure.  When the plants are under high disease pressure, tank mix this product with another registered fungicide for more effective control.

\* Not for use in California

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Citrus Crops</b>  Orange Grapefruit Lemon Tangelo Tangerine	Bacterial Canker <i>(Xanthomonas spp.)</i>  Bacterial Blast <i>(Pseudomonas syringae)</i>  Black Spot <i>(Guignardia citricarpa)</i> <i>(Phyllosticta citricarpa)</i>	Foliar (Ground)	1–4 quarts per acre	For ground applications, apply this product preventatively in 50–100 gallons of water per acre. Do not exceed 1.0% v/v of the applied solution.  For improved performance, use this product in a tank mix or rotational program with other registered fungicides.  Repeat applications at 7–10-day intervals.  Dilute applications: this product can be applied by ground equipment to tree crops in dilute applications of 100–400 gallons of water. Apply this product at a rate of 2–4 quarts per acre when applied alone, or at 1–4 quarts per acre when tank mixed with another fungicide. Avoid excessive amounts of water that result in the runoff of spray material.
	Greasy Spot <i>(Mycosphaerella citri)</i>  Melanose <i>(Diaporthe citri)</i>	Foliar (Aerial)	0.5–1 quart per acre	For aerial applications, apply this product in a minimum of 5 gallons water per acre.  For improved performance, use this product in a tank mix or rotational program with other registered fungicides.  Repeat applications at 7–10-day intervals.

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Cole Crops</b> (Brassicas)  Broccoli Broccoli Rabe Brussels Sprouts Cabbage Chinese Broccoli Chinese Cabbage (Bok Choy) Chinese Cabbage (Napa) Chinese Mustard Cabbage (Gai Choy) Cauliflower Collards Kale Mustard Greens Mustard Spinach Rape Greens Turnip	Powdery Mildew <i>(Erysiphe cruciferarum)</i> <i>(Erysiphe polygoni)</i>  Alternaria Leaf Spot <i>(Alternaria spp.)</i>	Foliar (Ground)	1–4 quarts per acre	For ground applications, apply this product at 1–4 quarts per 50-100 gallons of water per acre. Do not exceed 1.0% v/v of the applied solution.  Repeat applications at 5–10-day intervals.  Under moderate to heavy disease pressure, tank mix this product with another fungicide.
	Downy Mildew <i>(Peronospora parasitica)</i>  Pin Rot Complex <i>(Alternaria/ Xanthomonas)</i>  Xanthomonas Leaf Spot <i>(Xanthomonas campestris)</i>	Foliar (Aerial)	0.5–1 quart per acre	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Repeat applications at 5–10-day intervals.  Under moderate to heavy disease pressure, tank mix this product with another fungicide

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions		
<p><b>Cucurbits</b></p> <p>Includes all types and hybrids of: Cucumber Pumpkin Watermelon</p> <p><b>Muskmelon:</b> Cantaloupe Casaba Crenshaw melon Golden pershaw melon Honeydew melon Honey balls Mango melon Persian melon Pineapple melon Santa Claus melon Snake melon</p> <p><b>Summer Squash:</b> Crookneck squash Scallop squash Straightneck squash Vegetable marrow Zucchini</p> <p><b>Winter Squash:</b> Acorn squash Butternut squash Calabaza Hubbard squash Spaghetti squash</p>	<p>Powdery Mildew (<i>Erysiphe cichoracearum</i>) (<i>Sphaerotheca fuliginea</i>)</p> <p>Anthrachnose (<i>Colletotrichum lagenarium</i>)</p> <p>Alternaria Blight (<i>Alternaria cucumerina</i>)</p> <p>Downy Mildew (<i>Pseudoperonospora cubensis</i>)</p>	Foliar (Ground)	1–4 quarts per acre	<p>For ground applications, apply this product preventatively in 25–100 gallons of water per acre or when the first symptoms of disease are visible. Increase water volume as plant size increases.</p> <p>Repeat applications on 7–10 day intervals depending upon crop growth and disease pressure.</p> <p>Downy Mildew – Tank mix this product with another fungicide labeled for Downy Mildew control and re-apply at a 7-day interval or according to the label directions of the tank mix partner.</p> <p>Phytophthora Blight – Apply this product in combination with labeled rates of a copper fungicide or with another fungicide labeled for Phytophthora Blight control.</p>		
	<p>Gummy Stem Blight (<i>Didymella bryoniae</i>)</p> <p>Phytophthora Blight (<i>Phytophthora capsici</i>)</p> <p>Bacterial Spot* (<i>Xanthomonas cucurbitae</i>)</p>			Foliar (Aerial)	0.5–1 quart per acre	<p>For aerial applications, apply this product in a minimum of 2 gallons of water per acre.</p> <p>Repeat applications in 7–10-day intervals depending upon crop growth and disease pressure.</p> <p>Downy Mildew – Tank mix this product with another fungicide labeled for Downy Mildew control and re-apply at a 7-day interval or according to the label directions of the tank mix partner.</p> <p>Phytophthora Blight – Apply this product in combination with labeled rates of a copper fungicide or with another fungicide labeled for Phytophthora Blight control.</p>
			Soil Drench	1–2 quarts per 100 gallons	For soil drench applications, apply this product at a concentration of 1–2 quarts per 100 gallons of water, and at a sufficient rate to thoroughly soak the growing media and root zone. Make an initial application of this product during or shortly after transplant to reduce transplant shock, suppress soil-borne diseases and improve root growth.	
		<i>Phytophthora</i> spp.	In-Furrow	1–2 quarts per acre	For in-furrow applications at planting, apply this product as an in-furrow spray at the rate of 1–2 quarts per acre or 1.8-4.4 fluid ounces per 1000 feet of row according to the chart in the SOIL TREATMENT USE DIRECTIONS section. Apply this product in 5–15 gallons of water so as the spray is directed into the seed furrow just before the seeds are covered.	
		<i>Pythium</i> spp.		1.8-4.4 fl.oz. per 1000 ft. row		
		<i>Rhizoctonia</i> spp.	Plant Dip	1–2 quarts per 100 gallons	For plant dip applications for improved plant growth and suppression of soil-borne diseases, apply this product in a 0.25–1% v/v suspension (1–2 quarts this product per 100 gallons water) as a pre-plant dip immediately prior to transplanting.	
		<i>Verticillium</i> spp.				
			Chemigation	1–4 quarts per acre	For chemigation applications for improved plant growth and suppression of soil-borne diseases, apply this product through drip irrigation at the rate of 1–4 quarts per acre immediately after transplant and at 14-day intervals or begin 14 days after transplant when plant dip or soil drench applications are used.	

\* Not for use in California

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Fruiting Vegetables</b>  Tomato Pepper Eggplant Okra	Anthracnose* ( <i>Colletotrichum</i> spp.)  Bacterial Spot ( <i>Xanthomonas</i> spp.)  Bacterial Speck ( <i>Pseudomonas syringae</i> )  Black Mold ( <i>Alternaria alternata</i> )	Foliar (Ground)	1–4 quarts per acre	For ground applications, apply this product preventatively in 25–100 gallons of water per acre. Increase water volume as plant size increases. Do not exceed 1.0% v/v of the applied solution.  Repeat applications at 7–10 day intervals.  Tank mix this product with other registered fungicides for improved disease control under heavy pressure.  Phytophthora Blight – Apply this product in combination with labeled rates of a copper fungicide or with another fungicide labeled for Phytophthora Blight control.
	Damping-off ( <i>Fusarium</i> spp.), ( <i>Pythium</i> spp.), ( <i>Rhizoctonia solani</i> )  Early Blight ( <i>Alternaria solani</i> )  Gray Mold ( <i>Botrytis cinerea</i> )  Late Blight ( <i>Phytophthora infestans</i> )  Phytophthora Blight ( <i>Phytophthora capsici</i> )	Foliar (Aerial)	0.5–1 quart per acre	For aerial applications, apply this product in a minimum of 10 gallons of water per acre.  Repeat applications at 7–10 day intervals.  Tank mix this product with other registered fungicides for improved disease control under heavy pressure.  Phytophthora Blight – Apply this product in combination with labeled rates of a copper fungicide.
	Powdery Mildew ( <i>Erysiphe</i> spp.) ( <i>Leveillula taurica</i> ) ( <i>Oidopsis taurica</i> ) ( <i>Sphaerotheca</i> spp.)			
		Soil Drench	1–2 quarts per 100 gallons	For soil drench applications, apply this product at a concentration of 1–3 quarts per 100 gallons of water, and at a sufficient rate to thoroughly soak the growing media and root zone. Make an initial application of this product during or shortly after transplant to reduce transplant shock, suppress soil-borne diseases and improve root growth. Multiple drench applications can be made on a 10–14-day interval.
	<i>Fusarium</i> spp.  <i>Phytophthora</i> spp.  <i>Pythium</i> spp.  <i>Rhizoctonia</i> spp.	In-Furrow	1–2 quarts per acre  2.2–4.9 fl. oz per 1000 ft. row	For in-furrow applications, at planting, apply this product as an in-furrow spray at the rate of 1–2 quarts per acre or 2.2–4.9 fluid ounces per 1000 feet of row according to the chart in the SOIL TREATMENT USE DIRECTIONS section. Apply this product in 5–15 gallons of water so as the spray is directed into the seed furrow just before the seeds are covered.
		Plant Dip	1–2 quarts per 100 gallons	For plant dip applications for improved plant growth and suppression of soil-borne diseases, apply this product in a 0.25–1% v/v suspension (1–4 quarts this product per 100 gallons water) as a pre-plant dip immediately prior to transplanting.
		Chemigation	1–4 quarts per acre	For chemigation applications for improved plant growth and suppression of soil-borne diseases, apply this product through drip irrigation at the rate of 1–4 quarts per acre immediately after transplant and at 14-day intervals or begin 14 days after transplant when plant dip or soil drench applications are used.

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Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
Grape	Powdery Mildew ( <i>Uncinula necator</i> )	Foliar	1–4 quarts per acre	For ground applications, apply this product preventatively in 50–100 gallons of water per acre or when the first disease symptoms are visible. Do not exceed 1.0% v/v of the applied solution.
	Botrytis Bunch Rot ( <i>Botrytis cinerea</i> )			The use rate when applied alone or as an alternate spray is 2–4 quarts per acre. When tank mixed with another fungicide, the use rate is 1–4 quarts per acre. Under high disease pressure, use in a tank mix with another registered fungicide for more effective control.
	Downy Mildew ( <i>Plasmopara viticola</i> )			Repeat applications in 7–10 day intervals depending upon crop growth and disease pressure.

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
Grass Grown For Seed	Powdery Mildew ( <i>Erysiphe graminis</i> ) ( <i>Oidium</i> spp.) ( <i>Podosphaera</i> spp.) ( <i>Sphaerotheca</i> spp.)	Foliar (Ground)	1–4 quarts per acre	For ground applications, apply this product preventatively in 25–100 gallons of water per acre when disease symptoms are first visible or when environmental conditions are conducive to rapid disease development. Continue sprays at 7-day intervals or as needed. Do not exceed 1.0% v/v of the applied solution.
	Rust ( <i>Puccinia</i> spp.)	Foliar (Aerial)	0.5–1 quart per acre	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.



Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Herbs/Spices</b> Angelica Balm Basil Borage Burnet Chamomile Catnip Chervil Chive Clary Coriander Costmary Cilantro Curry Dillweed Horehound Hyssop Lavender Lemongrass Lovage Marjoram Mint Nasturtium Parsley (dried) Peppermint Rosemary Sage Savory (summer and winter) Sweet Bay Tansy Tarragon Thyme Wintergreen Woodruff Wormwood and other herbs/spices	Downy Mildew ( <i>Peronospora</i> spp.)  Powdery Mildew ( <i>Erysiphe</i> spp.)	Foliar (Ground)	1–4 quarts per acre	For ground applications, apply this product preventatively in a minimum of 50 gallons of water per acre.  Repeat applications at 7–10 day intervals.
		Foliar (Aerial)	0.5–1 quart per acre	For aerial applications, apply this product in a minimum of 5 gallons water per acre.  Repeat applications at 7–10 day intervals.

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
Hops	<p>Downy Mildew (<i>Pseudoperonospora humuli</i>)</p> <p>Powdery Mildew (<i>Sphaerotheca macularis</i>)</p>	Foliar	1–4 quarts per acre	<p>Apply this product preventatively when disease symptoms are first visible or when environmental conditions are conducive to rapid disease development. Continue sprays at 7-day intervals or as needed.</p> <p>Apply product at 1-4 quarts per acre when applied in a tank mix, or at 2-4 quarts per acre when applied alone. Minimum spray volumes for hop growth stages are as follows:</p> <p>Emergence to Training: Apply 1–2 quarts this product per acre using a minimum spray volume of 20 gallons per acre. Coverage will vary with the size of the vines and the type of spray equipment. Apply adequate spray volume to achieve complete spray coverage.</p> <p>Training to Wire-Touch: Apply 1–2 quarts this product per acre using a minimum spray volume of 50 gallons per acre. Coverage will vary with the size of the vines and the type of spray equipment. Apply adequate spray volume to achieve complete spray coverage.</p> <p>Wire-Touch through Harvest: Apply 2–4 quarts of this product using a minimum of 100 gallons of water per acre. Higher water volumes may be necessary to achieve thorough coverage after side arms develop. Do not apply more than 4 quarts of product per acre per application. Apply adequate spray volume to achieve complete spray coverage. Use the higher rates when moderate to high disease pressure is present or expected.</p> <p>For control of Downy Mildew, tank mix this product with another fungicide labeled for Downy Mildew control and re-apply at a 7-day interval or according to the label directions of the tank mix partner.</p>

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Leafy Vegetable Crops</b> Arugula Beet Celery Cress Endive Head Lettuce Leaf Lettuce Radicchio Rhubarb Spinach Swiss Chard Watercress	Downy Mildew ( <i>Bremia lactuca</i> ) ( <i>Peronospora</i> spp.)	Foliar (Ground)	0.5–4 quarts per acre	For ground applications, apply this product at 0.5–4 quarts in 25–100 gallons of water per acre, in a 0.5% -1.0% v/v applied solution.
	Bacterial Blight/Rot ( <i>Xanthomonas</i> spp.)			For concentrated ground applications, apply this product at 0.5–1.5 quarts per acre in a minimum of 10 gallons of water per acre.
	Early Blight of celery ( <i>Cercospora</i> spp.)			Repeat applications at 5-10 day intervals.
	Late Blight ( <i>Septoria apicola</i> )	Foliar (Aerial)	0.5–1.5 quarts per acre	West of the Rocky Mountains – For aerial applications, apply this product at 0.5–1.5 quarts per acre in a minimum of 10 gallons of water per acre.
	Powdery Mildew ( <i>Erysiphe cichoracearum</i> )			East of the Rocky Mountains – For aerial applications, apply this product at 0.5–1 quarts per acre in a minimum of 5 gallons of water per acre.
	Sclerotinia Head and Leaf Drop ( <i>Sclerotinia minor</i> ) ( <i>Sclerotinia sclerotiorum</i> )			For California: For aerial application, apply REGALIA® Biofungicide at 1–3 pints per acre in 10–20 gallons of water per acre.
				Repeat applications at 5-10 day intervals.
<b>Restrictions:</b> Do not apply REGALIA® Biofungicide when extended/unseasonably cold or cold and cloudy conditions are expected. Regalia should not be applied when night-time temperatures will fall below 45°F and relative humidity is predicted to be above 80%. Applications during daylight hours are preferred over night-time applications.				

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
Legumes/ Vegetables (not including soybeans and peanuts)	Bacterial Blight ( <i>Xanthomonas campestris</i> )	Foliar	1–4 quarts per acre	For foliar applications, apply this product preventatively in 20–100 gallons of water per acre.  For improved performance, use this product in a tank mix or rotational program with another registered fungicide.  Repeat applications at 7–10 day intervals.
Chick Peas	Gray Mold ( <i>Botrytis cinerea</i> )			
Dry Beans	Pythium (aerial blight phase) ( <i>Pythium</i> spp.)			
Garden Peas	Powdery Mildew ( <i>Erysiphe</i> spp.)			
Beans	Rust ( <i>Puccinia</i> spp.) ( <i>Uromyces appendiculatus</i> )			
Green Beans				
Lentils				
Lima Beans				
Peas				
Shell Beans				
Snap Beans				
Split Peas				
(including those grown for seed or oil production)	White Mold ( <i>Sclerotinia sclerotiorum</i> )			

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
Non-Grass Animal Feed* Alfalfa*	Anthracnose and Black Stem Rot ( <i>Colletotrichum trifolii</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.  Apply this product preventatively or when the first disease symptoms appear. Repeat applications on 7–14 day intervals depending upon crop growth and disease pressure.  For plant health applications, apply 10-14 days prior to cutting.  When the plants are under high disease pressure, tank-mix this product with another fungicide for more effective control.
	Downy Mildew ( <i>Peronospora trifoliorum</i> )  Powdery Mildew ( <i>Erysiphe polygoni</i> )  Sclerotinia stem and crown rot ( <i>Sclerotinia sclerotiorum</i> )	Foliar (Aerial)	1–2 quarts 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 on 7–14 day intervals depending upon crop growth and disease pressure.  For plant health applications, apply 10-14 days prior to cutting.  When the plants are under high disease pressure, tank-mix this product with another registered fungicide for more effective control.

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Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Pome Fruits</b>  Apple Crabapple Loquat Oriental Pear Pear Quince	Powdery Mildew ( <i>Podosphaera leucotricha</i> )  Alternaria Blotch ( <i>Alternaria mali</i> )  Apple Scab ( <i>Venturia inaequalis</i> ) Suppression only  Bitter Rot ( <i>Colletotrichum</i> spp.)  Cedar-Apple Rust ( <i>Gymnosporangium juniperi-virginianae</i> ) Suppression only	Foliar	1–4 quarts per acre	For foliar applications, apply this product in 50–100 gallons of water per acre. Do not exceed 1.0% v/v of the applied solution. Repeat applications on 7–10 day intervals. Additional sprays beyond second cover may be needed on susceptible varieties, or when environmental conditions are conducive to rapid disease development. Use high label rate and shorter spray intervals when conditions are conducive to rapid disease development.  Use caution when selecting spray adjuvants. Select only those adjuvants which through prior experience do not affect fruit finish when combined with this product.  Fire Blight – For suppression, apply 1–2 quarts of this product in 50–100 gallons of water per acre beginning at green tip through bloom. Following bloom, this product can be applied at 2-4 quarts per acre. For maximum control, use this product prior to infection events. During periods of rapid development and frequent infection periods, use spray intervals of 3–7 days.  Apply in sufficient water to provide full coverage. For improved Fire Blight performance, use this product in a rotational program with copper or antibiotics registered for Fire Blight control such as but not limited to oxytetracycline or streptomycin.  Proper orchard cultural practices are essential to eliminate Fire Blight-infected tissue from the orchard to assure good performance of any crop protection product. Remove and destroy dead and diseased wood from the orchard prior to and during the growing season.  Scab – For suppression, apply 1 quart of this product in 50–100 gallons of water per acre at green tip and through bloom when environmental conditions become favorable for primary Scab development and repeat on a 7–10-day interval or as needed. Use this product in a tank mix or rotational program with other fungicides labeled for Scab control. Following bloom, this product can be applied at 2–4 quarts per acre.
	Fire Blight ( <i>Erwinia amylovora</i> ) Suppression only  Flayspeck ( <i>Zygothia jamaicensis</i> )  Sooty Blotch ( <i>Geastrum polystigmati</i> ) ( <i>Leptodontium elatius</i> ) ( <i>Peltaster fructicola</i> )  White Rot ( <i>Botryosphaeria dothidea</i> )			Some sensitive tree fruit varieties have exhibited petal staining and/or necrosis after application of higher use rates. To minimize petal staining and/or necrosis: <ul style="list-style-type: none"> <li>• Use adjuvants that improve coverage, not penetration; follow the manufacturer’s mixing instructions.</li> <li>• Use adjuvants that through prior experience do not affect petal integrity when combined with this product.</li> <li>• Apply 1 quart of this product in 50–100 gallons of water per acre in Pome Fruit, from 10% bloom to full bloom.</li> </ul>

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<b>Root, Tuber &amp; Corm Crops</b>  Potato Beet Carrot Ginger Horseradish Radish Sweet Potato Turnip  (including those for seed production)	<i>Fusarium</i> spp.  <i>Pythium</i> spp.  <i>Rhizoctonia</i> spp.  <i>Verticillium</i> spp.	In-Furrow	1–2 quarts per acre  2.2-4.9 fl. oz per 1000 ft. row	For in-furrow applications at planting, apply this product as an in-furrow spray at the rate of 1–2 quarts per acre or 2.2-4.9 fluid ounces per 1000 feet of row according to the chart in the SOIL TREATMENT USE DIRECTIONS section. Apply this product in 5–15 gallons of water so as the spray is directed into the seed furrow just before the seeds are covered.
	Bacterial Leaf Blight ( <i>Xanthomonas campestris</i> )  Early Blight ( <i>Alternaria solani</i> )	Foliar	1–4 quarts per acre	For foliar applications, apply this product in 25–100 gallons of water per acre sufficient to provide thorough coverage. Do not exceed 1.0% v/v of the applied solution. Begin application soon after emergence or transplant, and when conditions are conducive to disease development. Repeat on a 7–10 day interval or as needed. Use shorter intervals when conditions are conducive to rapid disease development.  For suppression of Early Blight, begin application of this product in 25–100 gallons of water per acre soon after emergence when conditions are conducive to disease development. Do not exceed 1.0% v/v of the applied solution. Repeat on a 5–7-day interval or as needed. For improved performance, use this product in a tank mix with other registered fungicides.

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
<p><b>Stone Fruits</b></p> <p>Apricot† Cherry (sweet and tart) Nectarine Peach Plum Plumcot Prune</p>	<p>Brown Rot Blossom Blight (<i>Monilinia laxa</i>)</p> <p>Brown Rot Fruit Rot (<i>Monilinia fruticola</i>)</p> <p>Powdery Mildew (<i>Podosphaera</i> spp.) (<i>Sphaerotheca pannosa</i>)</p> <p>Shot Hole (<i>Wilsonomyces carpophilus</i>)</p>	<p>Foliar</p>	<p>1–4 quarts per acre</p>	<p>For foliar applications, apply this product preventatively in 50–100 gallons of water per acre. Do not exceed 1.0% v/v of the applied solution.</p> <p>Apply 1 quart in 50 gallons or 2 quarts in 100 gallons of water per acre from pink bud through bloom.</p> <p>Brown Rot Blossom Blight – Begin application of this product in 50–100 gallons of water per acre at early bloom, and repeat through petal fall on a 7-day interval or as needed.</p> <p>Powdery Mildew – Begin application of this product in 50–100 gallons of water per acre at popcorn stage, and repeat on a 7-day interval or as needed. For improved performance, use this product in a tank mix or rotational program with other registered fungicides for powdery mildew control.</p> <p>For all other diseases – Begin application prior to disease development when environmental conditions and plant stage are conducive to rapid disease development, and repeat on a 7–10-day interval or as needed. Use in a tank mix or rotational program when disease conditions are severe.</p>
<p>†Some sensitive apricot varieties have exhibited fruit spotting as a result of application. Spray a test strip to confirm your variety is not susceptible to spotting before spraying.</p> <p>Some sensitive tree fruit varieties have exhibited petal staining and/or necrosis after application of higher use rates. To minimize petal staining and/or necrosis:</p> <ul style="list-style-type: none"> <li>• Use adjuvants that improve coverage, not penetration; follow the manufacturer's mixing instructions.</li> <li>• Use adjuvants that through prior experience do not affect petal integrity when combined with this product.</li> <li>• Apply 1 quart of this product in 50–100 gallons of water per acre in: <ul style="list-style-type: none"> <li>- Cherries, from white bud (first white, popcorn) to full bloom,</li> <li>- Stone fruit, from 10% bloom to full bloom.</li> </ul> </li> </ul>				



Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions
Strawberry	Anthracnose ( <i>Collectotrichum</i> spp.) Suppression only  Botrytis ( <i>Botrytis cinerea</i> )  Powdery Mildew ( <i>Sphaerotheca macularis</i> )	Foliar	1–4 quarts per acre	For foliar applications, apply this product preventatively in 50–100 gallons of water per acre at 7–14-day spray intervals or as soon as first symptoms of disease appear. Do not exceed 1.0% v/v of the applied solution.  Anthracnose – For suppression, apply this product preventatively in 50–100 gallons of water per acre and repeat on a 7–10-day interval or as needed. For best performance, tank mix this product with other registered fungicides for Anthracnose control.
	Colletotrichum Crown Rot* ( <i>Colletotrichum</i> spp.)  Phytophthora Root Rot and Crown Rot ( <i>Phytophthora</i> spp.)  Verticillium Wilt ( <i>Verticillium</i> spp.)	Plant Dip	1–2 quarts per 100 gallons	For plant dip applications for improved plant growth and suppression of soil-borne diseases, apply this product in a 0.25–0.5% v/v suspension (1–2 quarts per 100 gallons water) as a pre-plant dip to strawberry plants, roots and crowns immediately prior to transplanting.
		Soil Drench	1–3 quarts per 100 gallons	For soil drench applications, apply this product at a concentration of 1–3 quarts per 100 gallons of water, and at a sufficient rate to thoroughly soak the growing media and root zone. Make an initial application of this product during or shortly after transplant to reduce transplant shock, suppress soil-borne diseases and improve root growth. Multiple drench applications can be made on a 10–14 day interval.
		Chemigation	1–4 quarts per acre	For chemigation applications for improved plant growth and suppression of soil-borne diseases, apply this product through drip irrigation at the rate of 1–4 quarts per acre immediately after transplant and at 14-day intervals or begin 14 days after transplant when plant dip or soil drench applications are used.
* Not for use in California				

Crop	Target Disease	Application Method	Product Use Rate per Application	Application Instructions			
<b>Tree Nut Crops</b>  Walnut (Black and English) Almond Cashew Chestnut Filbert Macadamia nut Pecan Pistachio	Walnut Blight ( <i>Xanthomonas campestris</i> )	Foliar (Ground)	1–4 quarts per acre	For ground applications, apply this product in 50–100 gallons of water per acre. Do not exceed 1.0% v/v of the applied solution.  This product can be tank mixed at the lower rate with another registered fungicide under heavy disease pressure.  Avoid excessive amounts of water that result in the runoff of spray material.  Walnut Blight –Under conditions of heavy disease pressure, tank mix this product with a copper-based fungicide.			
	Alternaria Late Blight, Alternaria Leaf Spot ( <i>Alternaria</i> spp.)						
	Anthracnose ( <i>Collectotrichum</i> spp.) ( <i>Gnomonia leptostyla</i> )						
	Bacterial Canker ( <i>Erwinia nigrifluens</i> ) ( <i>Pseudomonas syringae</i> )						
	Botryosphaeria Blight ( <i>Botryosphaeria dothidea</i> )						
	Brown / Hull Rot ( <i>Monilinia</i> spp.)						
	Eastern Filbert Blight ( <i>Anisogramma anomala</i> )						
	Green Fruit Rot ( <i>Botrytis cinerea</i> )						
	Leaf Rust ( <i>Tranzschelia discolor</i> )				Foliar (Aerial)	0.5–1 quart per acre	For aerial applications, apply this product in a minimum of 10 gallons per acre.
	Scab ( <i>Cladosporium carpophilum</i> ) ( <i>Sphaceloma perseae</i> )						
Shot Hole ( <i>Wilsonomyces carpophilus</i> )							

Some tree nut varieties have exhibited petal staining and/or necrosis after application of higher use rates.

To minimize petal staining and/or necrosis:

- Use adjuvants that improve coverage, not penetration; follow the manufacturer's mixing instructions.
- Use adjuvants that through prior experience do not affect petal integrity when combined with this product.
- Apply 1 quart in 50 gallons or 2 quarts in 100 gallons of water per acre from pink bud through bloom.
- Apply 1 quart of this product in 50–100 gallons of water per acre from 10% bloom to full bloom.

## INTEGRATED PEST MANAGEMENT (IPM)

Many conventional fungicides have been tested in an IPM regime with REGALIA® 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.

## 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. To the extent permitted by applicable law, the user assumes all risks of use, storage or handling that are not in strict accordance with the accompanying directions.

### 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:** 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.

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.



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