84059-3 5/22/2009

1/13

UNIT STATES ENVIRONMENTAL PROTECTIC AGENCY

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Biopesticides and Pollution Prevention Division (7511P)
1200 Pennsylvania Avenue NW
Washington, DC 20460

EPA Reg. Number:	Date of Issuance:
84059-3	5/22/09

Term of Issuance: **Conditional**

Name of Pesticide Product:

Regalia 5% Concentrate

NOTICE OF PESTICIDE:
X Registration
___ Reregistration
(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Marrone Bio Innovations
2121 Second Street, Suite 107-B
Davis, CA 95618

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Biopesticides and Pollution Prevention Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA Sec. 3(c)(7) provided you:

1. Submit and/or cite all data required for registration/ reregistration of your product under FIFRA section 3(c)(5) and section 4 when the Agency requires all registrants of similar products to submit such data.

2. Revise the EPA Registration Number to read, "EPA Reg. No. 84059-3."

3. Submit three (3) copies of the revised final printed labeling before you release the product for shipment.

4. The Agency is currently reviewing data you submitted in support of this registration (MRIDs 477177-01 through 477177-06). If Agency review of these studies determines that they are not acceptable and you are not able to address the deficiencies, this product registration will expire within one year from the Date of Issuance of this registration.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA Section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Signature of Approving Official: Michael McDavit

Date: 5/22/09

Michael McDavit, Associate Director,
Biopesticides and Pollution Prevention Division

CONCURRENCES

SYMBOL			7511P	7511P				
SURNAME			Fournier					
DATE			5/22/09	5/22/09				

EPA Form 8570-6

EPA Form 1320-1A (1/90) *Printed on Recycled Paper* **OFFICIAL FILE COPY**

☆ U.S. Government Printing Office: 2005 206-899 (mac)

Marrone Bio Innovations
Regalia®
Bioprotectant Concentrate
For Use In Organic Production

A plant extract to boost the plants' natural defense mechanisms against certain fungal and bacterial diseases.

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

EPA Reg. No. 84059-3 EPA Est. No. 085970-FL-001

KEEP OUT OF REACH OF CHILDREN
WARNING

First Aid Statement	
IF SWALLOWED:	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.
IF ON SKIN OR CLOTHING:	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.
IF INHALED:	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.
IF IN EYES:	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.	

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING: Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear googles or safety glasses. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

ACCEPTED
MAY 22 2009
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 84059-3

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 detergents and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATION

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

Net Contents: 1 quart, 1 gallon, 2.5 gallon, 5 gallon , 55 gallon drum.
Marrone Bio Innovations, Inc. 2121 Second St. Suite B-107, Davis, CA 95618.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or 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 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® is an extract from the plant *Reynoutria* spp. for use on ornamental plants, turf and edible crops. Regalia applied to actively growing plants (see directions for use) will help make the treated leaf area resistant to certain plant diseases. Use Regalia as a preventative rather than a curative application. Apply prior to disease infestation to protect the growing leaf tissue. The principle diseases controlled in treated plants are Powdery Mildew, Gray Mold, Rust, Bacterial Canker, Bacterial Blast, Bacterial Leaf Spot, Target Spot and Bacterial Speck. See specific information for use rates on Ornamental Plants, Turf and Edible Crops.

MODE OF ACTION

The extract obtained from *Reynoutria spp.* plant material contains the active chemical compounds. The extract, when applied to the host plant, increases the plant's natural defense system due to a five-fold increase in phenolics. This induced resistance against some important diseases is not systemic, but there is some translaminar protection. Repeat applications at 7-14 day intervals to protect new plant growth. The resistance induction takes place in one to two days. Light is required for best results.

Use Regalia, therefore, as a preventative treatment.

MIXING AND APPLICATION INSTRUCTIONS
-SHAKE WELL PRIOR TO USE-

Regalia Bioprotectant is a micro-emulsion concentrate consisting of certain natural ingredients extracted from Knotweed (*Reynoutria* spp.). Use 50 -mesh nozzle screens or larger.

See Chemigation section for chemigation use directions.
See Aerial Application section for aerial application use directions.

Only the treated green tissues develop resistance and although there is some translaminar movement, thorough coverage of foliage is important.

GROUND APPLICATIONS: The use rate for Regalia is a 0.5-1.0% v/v dilution or 2-4 qt of Regalia concentrate in 50-100 gallons of water per acre when applied alone and 1-4 qt per acre when tank mixed with another fungicide. See APPLICATION RATES FOR SELECTED CROPS for additional details.

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

If mechanical mixing is available when preparing the spray solution, keep the agitators running. Regalia can be tank mixed in the spray tank with pesticides and adjuvants to enhance disease control. Do not exceed application rates. Regalia 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.

NOTE TO ORGANIC FARMERS

Growers using ORGANIC PRODUCTION methods must ensure that any tank mix pesticides, fertilizers, sufactants and adjuvants used with Regalia® are National Organic Program approved.

TOTAL GALLONS SPRAY VOLUME per ACRE	AMOUNT OF REGALIA per acre @ 0.5% rate	AMOUNT OF REGALIA per acre @ 1.0% rate
50	32 oz (1 qt)	64 oz (2 qt)
60	38 oz	77 oz
70	45 oz	90 oz
80	51 oz	102 oz
90	58 oz	115 oz
100	64 oz (2 qt)	128 oz (4 qt)

DILUTE APPLICATIONS: Regalia can be applied by ground equipment to vine and tree crops in dilute applications of 150-400 gallons of water. Apply Regalia at 2-4 quarts per acre in dilute applications to the point of runoff. Avoid excessive amounts of water that result in the runoff of spray material. Regalia can be applied at 1 qt per acre when tank mixed with another fungicide.

Compatibility: Do not combine Regalia 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 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.

CHEMIGATION USE DIRECTIONS

Apply Regalia at 1-4 quarts per acre according the instructions below

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation systems. Do not connect an irrigation system (including greenhouse systems) used for pesticide applications to a public water system.

Spray preparation

First prepare a suspension of Regalia in a mix tank. Fill tank ½ to ¾ the desired amount of water. Start mechanical or hydraulic agitation. Add the required amount of Regalia, and then the remaining volume of water. Then set the sprinkler to deliver a minimum of 0.1 to 0.3 inch of water per acre. Start sprinkler and uniformly inject the suspension of Regalia into the irrigation water line so as to deliver the desired rate per acre. Inject the suspension of Regalia with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing. Direct any questions on calibration to your State Extension Service Specialists, to equipment manufacturers, or to other experts.

Do not combine Regalia 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 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.

GENERAL PRECAUTIONS FOR APPLICATIONS THROUGH SPRINKLER IRRIGATION SYSTEMS

Maintain continuous agitation in the mix tank during mixing and application to insure a uniform suspension. Greater accuracy in calibration and distribution will be achieved by injecting a larger volume for a more dilute solution per unit time. Crop injury or lack of effectiveness, or illegal residues in the crop can result from non-uniform distribution of treated water. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise. Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation waters.

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.

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.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump stops.

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.

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. Do not apply when wind speed favors drift beyond the area intended for treatment.

Do not apply when wind speed favors drift, when system connections or fittings leak, when nozzles do not provide uniform distribution or when lines containing the product must be dismantled and drained.

AERIAL APPLICATION INSTRUCTIONS

Apply Regalia at 1 – 2 quarts per acre by aerial application according to the specific instructions in the "APPLICATION RATES FOR SELECTED CROPS – AGRICULTURAL USE" section.

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 the largest droplets that will 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 to 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

ORNAMENTAL PLANTS

The following plant species have been treated with Regalia, either for the purpose of rendering them more vigorous, or to prevent disease. The disease most prominently controlled is Powdery Mildew (*Oidium* spp.), but Regalia can also be used for treatment against Gray Mold (*Botrytis cinerea*) and Rust (*Puccinia antirrhini*). Additional diseases controlled by Regalia include Black Spot of Rose (*Diplocarpon rosea),* Leaf Spots (*Alternaria spp., Cercospora spp, Entomosporium spp, Myrothecium spp., Septoria spp.),* Scab *(Venturia spp.,)* and Anthracnose (*Colletotrichum spp.*).

Plants investigated:

Annual and Perennial Flowering Plants

Begonias	Lisianthus	Salvias
Petunias	Snapdragons	Roses
Freesias	Poinsettias	Zinnias
Gerbera		

Trees and Shrubs

Crape Myrtle , Azalea, Indian Hawthorne, Photinia, Boxwood, Japanese Maple, Rhododendron, *Ligustrum japonicum*, *Rosaceae* spp., Dogwood, Lilac, Soft Touch Holly, Jumbo Azalea, Loropetalum, Spirea

Tropical foliage

Aglaonema, Leatherleaf Fern, *Dieffenbachia*, *Spathiphyllum*, *Dracaena* spp, English Ivy, *Hibiscus*

Concentrations of 1% Regalia (4 qt per 100 gallons) or more applied to very small, tender plants may produce plant injury. Do not use on Gerbera and Lisianthus plugs. Wait for two weeks after transplanting.

Since it is not possible to test all ornamental species or varieties grown in the greenhouse, test Regalia on a few plants prior to large-scale usage.

Application Rates and Timing for Ornamental Plants

Mix Regalia concentrate with water at a concentration of 2-4 qt. Regalia/100 gal water when used alone or 1-4 qt per 100 gal water when tank-mixed with another fungicide. Begin applications preventatively (before disease symptoms become visible) at the 4-6 leaf stage and treat at 7-14 day intervals as needed prior to sale or harvest. Spray until just before point of run-off..

TURF

Regalia aids in control of turf diseases. For improved performance under moderate to severe disease pressure, reduce spray intervals or use Regalia in a tank mix or rotational program with other registered fungicides.

Turf, Sod, Lawns, Greens (Bluegrass, Bentgrass, Bermuda grass, Dichondra, Fescue, Orchard grass, *Poa annua*, St. Augustine, Ryegrass, Zoysia mixtures and other grasses or ornamental turf). Brown Patch (*Rhizoctonia solani*), Dollar Spot (*Lanzia* spp., *Moellerodiscus* spp. formerly *Sclerotinia homeocarpa*), Powdery Mildew (*Erysiphe graminis*), Rust *(Puccinia* spp.) and Anthracnose (*Colletotrichum graminicola*).

Application Rates and Timing for Turf

Mix Regalia concentrate with water at a concentration of 2-4 qt Regalia/100 gal water when used alone or 1-4 qt Regalia/100 gal water when tank-mixed with another fungicide. Begin applications preventatively (before disease symptoms become visible) and treat at 7-14 day intervals as needed. Spray water volumes must be of at least 2 gallons of water per 1000 sq. ft. Under moderate to high disease pressure, tank mix or rotate with other registered fungicides.

EDIBLE CROPS

Regalia used as specified will induce the natural defense system of the treated plants listed below towards the diseases specified below.

The general recommended use rate for Regalia is a 0.5-1.0% v/v dilution or 2-4 qt of Regalia concentrate in 50-100 gallons of water per acre when applied alone and 1-4 qt per acre when tank mixed with another fungicide. Use higher water volumes with larger sized crops and extensive foliage in order to secure thorough coverage.

Application Rates and Timing for Edible Crops

Asparagus- Botrytis Blight (*Botrytis cinerea)*
Apply Regalia preventatively in 50-100 gallons of water per acre when the first disease symptoms are visible and reapply every 7-14 days.

Artichoke- Powdery Mildew (*Leveillula taurica and Erysiphe cichoracearum*)
Apply Regalia preventatively in 50-100 gallons of water per acre when the first disease symptoms are visible and reapply every 7-14 days.

Berries – such as Blueberries, Blackberry, Raspberry, Loganberry, Gooseberry, Elderberry, and Other Berry Crops-Mummy Berry (*Monilinia vaccinni-corymbosi),* Botrytis Blight *(Botrytis cinerea),* Bacterial Canker (*Pseudomonas* spp.).
Mummy Berry- Initiate application at bud break stage of development. Apply Regalia preventatively in 50 to 100 gallons of water per acre and repeat on a 7 to 10 day interval or as needed. For best performance, tank mix Regalia with other registered fungicides for Mummy Berry control.

Bacterial Canker - Apply Regalia prior to fall rains and repeat applications during dormancy before spring growth. Apply Regalia in 50-100 gallons of water per acre. Regalia can be tank-mixed with another registered fungicide for improved control of bacterial canker.

Botrytis Blight - Apply Regalia preventatively in 50 -100 gallons of water per acre when the first disease symptoms are visible and reapply every 7-14 days.

Cereal Grains such as - Barley, Millets, Oat, Rice, Rye, Sorghum, Triticale, and Wheat- Powdery Mildew *(Erysiphe graminis)*, Rust (*Puccinia* spp.), Blast (*Pyricularia orysae)*; Sheath spot and Blight (*Rhizoctonia oryzae* and *Thanatephorus kernel)*, Smut (*Tilletia barclayana),* Bacterial Blight and Streak (*Xanthomonas* spp.), Stem Rot (*Sclerotium oryzae),* Rice Blast *(Magnaporthe* spp), Brown Rot, Leaf Spots and Smuts – (*Cerccospora* spp, *Entyloma* spp, *Dreschlera* spp, *Cochliobolus* spp. and *Ceratobasidium* spp.), and Septoria leaf spot (Septoria sp).

Apply Regalia preventatively in 50-100 gallons of water per acre when the first disease symptoms are visible. When the plants are under high disease pressure, tank mix Regalia with another registered fungicide for more effective control. Repeat applications in 7-14 day intervals depending upon crop growth and disease pressure.

Citrus crops such as- Orange, Grapefruit, Lemon, Tangerine, Tangelo, and Pummelo-
Bacterial Canker (*Xanthomonas spp.)*, Bacterial Blast (*Pseudomonas syringae)*, Greasy Spot (*Mycosphaerella citri).*
Apply Regalia preventatively in 50-100 gallons of water per acre. For improved performance use Regalia in a tank mix or rotational program with other registered fungicides. Repeat applications at 7-14 day intervals.

Dilute applications: Regalia can be applied by ground equipment to vine and tree crops in dilute applications of 150-400 gallons of water. Apply Regalia at a rate of 2-4 qt per acre when applied alone or at 1-4 qt per acre when tank-mixed with another fungicide in dilute applications to the point of runoff. Avoid excessive amounts of water that result in the runoff of spray material.

Corn including Field Corn, Sweet Corn, Popcorn, and Seed Corn- Common Rust (*Puccinia sorghi),* Northern Leaf Blight (*Exserohilum turcicum, Helminthosporium turcium),* Southern Leaf Blight (*Bipolaris maydis, Helminthosporium maydi, Cochliobolus heterostrophus).* Apply Regalia preventatively in 20-100 gallons of water per

acre using sufficient volume for thorough coverage. For improved performance use Regalia in a tank mix with another registered fungicide.

Aerial application – apply Regalia at 1-2 quarts per acre in a minimum of 3 gallons of water per acre.

Cucurbits - Cantaloupe, Cucumber, Pumpkin, Zucchini, Watermelon, Melon, Muskmelon, and Squash- Powdery Mildew (*Sphaerotheca fuliginea* and *Erysiphe cichoracerum),* Downy Mildew (*Pseudoperonospora cubensis*), Gummy Stem Blight (*Didymella bryoniae*). Apply Regalia preventatively in 50-100 gallons of water per acre or when the first symptoms of powdery mildew are visible. Repeat applications in 7-14 day intervals depending upon crop growth and disease pressure. When greenhouse cucurbits are under high disease conditions, use the shorter spray interval.

Grapes - Powdery Mildew (*Uncinula necactor*), and Gray Mold (*Botrytis cinerea*), Downy Mildew (*Plasmopara viticola*), Phomopsis fruit rot (*Phomopsis viticola*), Black Rot (*Guignardia bidwellii*). Apply Regalia preventatively in 50-100 gallons of water per acre or when the first disease symptoms are visible. Under high disease pressure use in a tank mix with another registered fungicide for more effective control. Repeat applications in 7-14 day intervals depending upon crop growth and disease pressure.

Dilute applications: Regalia can be applied by ground equipment to vine and tree crops in dilute applications of 150-400 gallons of water. Apply Regalia at a rate of 2-4 qt per acre when applied alone or at 1-4 qt per acre when tank-mixed with another fungicide in dilute applications to the point of runoff. Avoid excessive amounts of water that result in the runoff of spray material.

Hops- Powdery Mildew (*Sphaerotheca macularis*), Downy Mildew (*Peronospora* spp.). Apply Regalia 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.

Minimum spray volumes for hop growth stages are as follows:

Emergence to training: Apply 1-2 qt Regalia 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.

Training to wire touch: Apply 1-2 qt Regalia 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.

Wire touch through harvest: Apply 2-4 qt of Regalia 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 qt 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.

Tropical fruits such as Avocado, Mango, Papaya, Plantain, Pineapple, Banana, Pomegranate, Kiwi- Botrytis Fruit Rot (*Botrytis cinerea)* and Bacterial Blight (*Pseudomonas viridiflava* and *Pseudomonas syringae), Sigatoka (Mycosphaerella fijiensis), Anthracnose (Colletotrichum gloeosporiodes), Scab (Elsinoe mangiferae), Bacterial canker (Xanthomonas campestris).* Apply Regalia preventatively in 50-100 gallons of water per acre. Repeat applications at 7-14 day intervals.

Dilute applications: Regalia can be applied by ground equipment to vine and tree crops in dilute applications of 150-400 gallons of water. Apply Regalia at a rate of 2-4 qt per acre when applied alone or at 1-4 qt per acre when tank-mixed with another fungicide in dilute applications to the point of runoff. Avoid excessive amounts of water that result in the runoff of spray material.

Legumes/Vegetables such as - Beans, Green Beans, Peanuts, Snap Beans, Shell Beans, Soybeans, Dry Beans, Garbanzo Beans, Lima Beans, Peas, Chick Peas, Split Peas, and Lentils-Powdery Mildews (*Erysiphe* spp.), Rust *(Uromyces appendiculatus),* White mold *(Sclerotinia sclerotiorum),* Grey mold *(Botrytis cinerea),* Rust *(Puccinia spp.).* Apply Regalia preventatively in 20-100 gallons of water per acre. For improved performance, use Regalia in a tank mix or rotational program with another registered fungicide. Repeat applications at 7-14 day intervals.

Soybeans –For control of Cercospora blight (Cercospora kikuchii), Septoria brown spot (*Septoria glycines),* Frog-eyed leaf spot (*Cercospora sojina)* and Asian soybean rust (*Phakopsora pachyrhizi*). For ground application on

soybeans, apply Regalia preventatively in 20-50 gallons of water per acre. For aerial application on soybeans, apply Regalia at 1-2 quarts per acre in a minimum of 3 gallons of water per acre.

Peanuts – Early leafspot (*Cercospora arachidicola*), Late leafspot (*Cercospora personatum*), and white mold (Sclerotium rolfsii). Apply Regalia preventatively in 20-50 gallons of water per acre. Repeat applications at 7-14 day intervals. Under moderate to heavy disease pressure tank-mix Regalia with another fungicide.

Leafy vegetable crops such as - Lettuce, Celery, Spinach, Parsley, and Radiccho- Powdery Mildew (*Erysiphe cichoracearum*), Bacterial Blight/Rot (*Xanthomonas* spp.), Downy Mildew (*Bremia lactucae, Peronospora* spp.), White rust (*Albugo occidentalis*), Sclerotinia head and leaf drop (*Sclerotinia minor* and *Sclerotinia sclerotorium*), and Pink rot. Apply Regalia preventatively in 50 gallons of water per acre. Repeat applications at 7-14 day intervals.

Cole crops (Brassica) such as – broccoli, cabbage, cauliflower, brussel sprouts and collards – Powdery mildew (*Erysiphe cruciferarum*), Downy mildew (*Peronaspora parasitica*), Xanthomonas leaf spot (*Xanthomonas campestris*), Alternaria leaf spot (*Alternaria spp.*). Apply Regalia preventatively in 50-100 gallons of water per acre. Repeat applications at 7-14 day intervals. Under moderate to heavy disease pressure, tank-mix Regalia with another fungicide.

Bulb Vegetables such as Onion, Garlic, Shallots – Botrytis Neck Rot (*Botrytis* spp.), Botrytis Leaf Blight (*Botrytis squamosa*), Onion Purple Blotch (*Alternaria porri*), Onion Downy Mildew (*Peronospora destructor*), Downy Mldew (*Peronospora* spp.) Powdery Mildew (*Erysiphe* spp.) Apply Regalia preventatively in 50-100 gallons of water per acre. Repeat applications at 7-14 day intervals. Under moderate to heavy disease pressure tank-mix Regalia with another fungicide.

Mint and other Herb/Spices- Rust (*Puccinia menthae*), Powdery Mildew (*Erysiphe spp*) and Downy Mildew (*Peronospora spp.*). Apply Regalia preventatively in 50 gallons of water per acre, repeat applications at 7-14 day intervals.

Olive- Olive Knot (*Pseudomonas savastanoi*). Apply Regalia preventatively in 50-100 gallons of water per acre. Repeat applications at 7-14 day intervals.

Dilute applications: Regalia can be applied by ground equipment to vine and tree crops in dilute applications of 150-400 gallons of water. Apply Regalia at a rate of 2-4 qt per acre when applied alone or at 1-4 qt per acre when tank-mixed with another fungicide in dilute applications to the point of runoff. Avoid excessive amounts of water that result in the runoff of spray material.

Fruiting Vegetables such as - Peppers, Tomato, Eggplant, Ground Cherry, Tomatillo, and Okra-
Powdery Mildew (*Sphaerotheca* spp., *Leveillula taurica and Erysiphe* spp.), Bacterial Blight (*Xanthomonas* spp.), Bacterial Canker (*Clavibacter michigiganenis and Xanthomonas spp.*), Bacterial Leaf Spot *(Xanthomonas* spp.) , Target Spot (*Corynespora casslicola*), Bacterial Speck *(Pseudomonas syringae*), Gray Mold (*Botrytis cinerea*), Tomato Late Blight (*Phytophthora infestans*) and Early Blight of Tomato (*Alternaria solani*). Apply Regalia preventatively in 50-100 gallons of water per acre. Repeat applications at 7-10 day intervals.Tank mix Regalia at 1-4 qt per acre with other registered fungicides for improved disease control under heavy pressure.

Pome Fruit such as - Apple, Crabapple, Pear, Quince, and Mayhaw-
Powdery Mildew (*Podosphaera leucotricha*), ,Sooty blotch (*Peltaster fructicola, geastrumia polystigmatus and Leptodontium elatus*), Cedar-apple rust (*Gymnosporangium juniperi-virginianae*), Flyspeck (*Zygophiale jamaicensis*). Apply Regalia in 50-100 gallons of water per acre. Begin application at tight cluster, or sooner, if conditions are conducive to disease development. Repeat applications through the second cover spray on 7 to 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.

Scab (*Venturia* spp.) - For suppression, begin applications of Regalia in 50-100 gallons of water per acre at green tip or when environmental conditions become favorable for primary scab development and repeat on a 7 to 10 day interval or as needed. When environmental conditions are conducive to rapid disease development, for improved performance, use Regalia in a tank mix or rotational program with other registered fungicides.

Fire Blight (*Erwinia amylovóra*) - For suppression, apply Regalia in 50-100 gallons of water per acre. Begin application at 1 – 5% bloom and repeat as necessary to protect open, untreated blossoms when conditions favoring disease development are likely to occur. For maximum control, use Regalia prior to infection events. During periods

of rapid bloom development and frequent infection periods, use spray intervals of 3 – 7 days. After petal fall, continue applications on a 7-day interval while environmental conditions favor disease development.

Apply in sufficient water to provide full coverage. For improved performance, use Regalia in a rotational program with 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. Care must be taken to remove and destroy dead and diseased wood from the orchard prior to and during the growing season.

Use caution when selecting spray adjuvants. Select only those adjuvants which through prior experience do not affect fruit finish when combined with Regalia.

Dilute applications: Regalia can be applied by ground equipment to vine and tree crops in dilute applications of 150-400 gallons of water. Apply Regalia at a rate of 2-4 qt per acre when applied alone or at 1-4 qt per acre when tank-mixed with another fungicide in dilute applications to the point of runoff. Avoid excessive amounts of water that result in the runoff of spray material.

Root, Tuber and Corm Crops such as - Carrot, Potato, Sweet Potato, Beets, Ginger, Horseradish, Radish, Gingseng, and Turnip– Powdery Mildew *(Erysiphe* spp.), Gray Mold (*Botrytis* spp.) and Bacterial Leaf Blight (*Xanthomonas campestris*). Apply Regalia in 50-100 gallons of water per acre sufficient to provide thorough coverge. Begin application soon after emergence or transplant and when conditions are conducive to disease development. Repeat on a 7 to 10 day interval or as needed. Use shorter intervals when conditions are conducive to rapid disease development

Early Blight (*Alternaria solani*), Black Root Rot/Black Crown Rot (*Alternaria* spp.), Downy Mildew (*Peronospora* spp.) and Late Blight (*Phytophthora infestans*). For suppression, begin application of Regalia in 50-100 gallons of water per acre soon after emergence when conditions are conducive to disease development. Repeat on a 5 to 7 day interval or as needed. For improved performance, use Regalia in a tank mix or rotational program with other registered fungicides.

Stone Fruits such as - Apricot, Cherry, Nectarine, Peach, Plum, and Prune -Anthracnose (*Colletotrichum* spp.), Powdery Mildew (*Sphaerotheca pamnosa, Podosphaera clandestine Podosphaera* spp.), Rusty Spot (*Podosphaera leucotricha*), Bacterial Canker (*Pseudomonas* spp.), Alternaria Spot/Fruit Rot (*Alternaria alternata*), Scab (*Cladosporium carpophilum*), Brown Rot/ Blossom Blight (*Monilinia laxa*), Fruit Brown Rot (*Monilinia fruticola*), Gray Mold (*Botrytis cinerea)* and Shot Hole (*Wilsonomyces carpophilus, Xanthomonas pruni, Bhumeriella gaapi* and *Cercospora* spp.)

Apply Regalia preventatively in 50-100 gallons of water per acre.

Brown Rot Blossom Blight – Begin application of Regalia in 50-100 gallons of water per acre at early bloom and repeat through petal fall on a 7 day interval or as needed.

Scab – Begin application of Regalia in 50-100 gallons of water per acre at petal fall and repeat on a 7 to 10 day interval or as needed.

Bacterial Blight – Apply Regalia in 50-100 gallons of water per acre post harvest before fall rains.

Powdery Mildew- Begin application of Regalia 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 Regalia in a tank mix or rotational program with other registered fungicides for powdery mildew control.

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 day 7 to 10 day interval or as needed. Use in a tank mix or rotational program when disease conditions are severe.

Dilute applications: Regalia can be applied by ground equipment to vine and tree crops in dilute applications of 150-400 gallons of water. Apply Regalia at a rate of 2-4 qt per acre when applied alone or at 1-4 qt per acre when tank-mixed with another fungicide in dilute applications to the point of runoff. Avoid excessive amounts of water that result in the runoff of spray material.

Strawberries – Powdery Mildew (*Sphaerotheca* spp.), Leaf spot (*Mycosphaerella fragariae), Botytis (Botrytis cinerae), Anthracnose (Colletotrichum spp.) and Phomopsis leaf blight (Phomopsis obscurans)*. Apply Regalia preventatively in 50-100 gallons of water per acre at 7-14 day spray intervals or as soon as first symptoms of disease appear.

Tree Nut Crops such as Walnuts – Bacterial Blight (*Xanthomonas campestris*), Anthracnose (*Gnomonia leptostyla*) and Bacterial canker (*Erwinia nigrifluens*). For the preventative control apply Regalia in 50-100 gallons of water per acre. Repeat applications at 7 to10 day intervals. Under conditions of heavy disease pressure, tank mix Regalia with a copper based fungicide.

Dilute applications: Regalia can be applied by ground equipment to vine and tree crops in dilute applications of 150-400 gallons of water. Apply Regalia at a rate of 2-4 qt per acre when applied alone or at 1-4 qt per acre when tank-mixed with another fungicide in dilute applications to the point of runoff. Avoid excessive amounts of water that result in the runoff of spray material.

Almonds, Pistachio, Pecan, Filberts, Chestnut, Cashew, Beechnut, Butternut and Macadamia – Anthracnose (*Colletotrichum gloeosporioides, C. ananas,* and *C. acutatum),* Scab *(Sphaceloma perseae* and *Cladosporium carpophilum),* Bacterial Canker (*Pseudomonas syringae),* Brown Rot *(Monilinia* spp.), Alternaria Leaf Spot (*Alternaria* spp.) and Botryosphaeria Blight (*Botryosphaeria dothidea*). Apply Regalia in 50 - 100 gallons of water per acre. Regalia can be tank mixed at the lower rate with another registered fungicide under heavy disease pressure.

Dilute applications: Regalia can be applied by ground equipment to vine and tree crops in dilute applications of 150-400 gallons of water. Apply Regalia at a rate of 2-4 qt per acre when applied alone or at 1-4 qt per acre when tank-mixed with another fungicide in dilute applications to the point of runoff. Avoid excessive amounts of water that result in the runoff of spray material.

INTEGRATED PEST MANAGEMENT (IPM)

Although only some conventional fungicides have been tested in an IPM regime with Regalia, results have been very satisfactory. 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 Regalia (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 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 Disposal: 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
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: May XX, 2009

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