

ACCEPTED  
VIA NOTIFICATION  
LABEL NOT REVIEWED

March 22, 2021

New York State Department  
of Environmental Conservation  
Division of Materials Management  
Pesticide Product Registration



Doc id: 572862



# SERENADE<sup>®</sup>

## ASO

Net Contents:

2.5 Gallons



Can be Used for Organic Production

**ACTIVE INGREDIENT:**

QST 713 strain of *Bacillus subtilis*\*.....1.34%

**OTHER INGREDIENTS:**.....98.66%

**TOTAL: 100.00%**

\*Contains a minimum of 1 x 10<sup>9</sup> cfu/g

Information regarding the contents and levels of metals in the product is available on  
the internet at: <http://www.aapfco.org/metals.html>

EPA Reg. No. 264-1152

EPA Est. 264-MEX-001

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

GROUP 44 FUNGICIDE



For **MEDICAL** And **TRANSPORTATION** Emergencies  
**ONLY** Call 24 Hours A Day

1-800-334-7577

For **PRODUCT USE** Information Call  
1-866-99BAYER (1-866-922-2937)

For **ADDITIONAL PRECAUTIONARY STATEMENTS** and **DIRECTIONS FOR USE:**  
See Inside Booklet. See **FIRST AID STATEMENT** on the back panel.

USE OF PRODUCT INDICATES ACCEPTANCE OF  
"CONDITIONS FOR SALE AND WARRANTY"

Produced for  
Bayer CropScience LP  
800 N. Lindbergh Blvd.  
St. Louis, MO 63167

Serenade<sup>®</sup> is a registered trademark of Bayer Group.  
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Product of Mexico

150603EUG 08/20  
US84947695E

## FIRST AID

### IF INHALED:

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for further treatment advice.

**In case of emergency call toll free the Bayer CropScience Emergency Response Telephone No. 1-800-334-7577. Have a product container or label with you when calling a poison control center or doctor, or going for treatment.**

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### CAUTION

- Harmful if inhaled. Avoid breathing spray mist.
- Remove and wash contaminated clothing before reuse.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

The PPE requirements below apply to both Worker Protection Standard (WPS) uses (in general, agricultural-plant uses are covered by the Worker Protection Standard (40 CFR Part 170)) and Non-WPS uses.

#### Applicators and other handlers must wear:

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

Mixers/loaders and applicators must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

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

### ENGINEERING CONTROLS

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

**IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment break-down.

## USER SAFETY RECOMMENDATIONS

- Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## ENVIRONMENTAL HAZARDS

**For Terrestrial Use:** Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. Do not apply when weather conditions favor drift or run-off from treated areas.

## CONDITIONS OF SALE AND LIMITATIONS OF WARRANTY AND LIABILITY

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product at once for a refund of the purchase price.

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties, and Limitations of Liability. These terms may only be modified by a written document signed by a duly authorized representative of Bayer CropScience LP.

**CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Bayer CropScience LP. All such risks shall be assumed by the user or buyer. To the extent consistent with applicable law, all such risks shall be assumed by the user or buyer.

**DISCLAIMER OF WARRANTIES:** TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Bayer CropScience LP is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

**LIMITATIONS OF LIABILITY:** TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT BAYER CROPSCIENCE LP'S ELECTION, THE REPLACEMENT OF PRODUCT.

## DIRECTIONS FOR USE

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

**Read the entire label before using this product.**

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. For use only as described on the labeling. Not for isolation or deformulation. Do not culture.

## 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, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers, and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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

Exception: If the product is soil injected or soil incorporated, the Worker Protection Standard under certain circumstances, allows workers to enter the treated area without restrictions if there will be no contact with anything that has been treated.

**PPE required for early entry to treated areas (that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water), is:**

- Coveralls
- Waterproof gloves
- Shoes plus socks

## PRODUCT INFORMATION

SERENADE® ASO:

is a broad spectrum fungicidal and bactericidal product for the control or suppression of many important plant diseases. The level of control is dependent on various environmental factors, host factors, disease pressure, and coverage of target host.

- Apply Serenade ASO as a soil drench or foliar spray alone, in alternating spray programs, or in tank mixes with other registered crop protection products.
- Apply Serenade ASO with spray equipment commonly used for making ground, aerial, and chemigation applications.
- For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides and bactericides.
- Adjust the application rate and/or spray intervals of Serenade ASO according to the application instructions depending upon disease pressure. Heavy rainfall or irrigation shortly after application may require retreatment.
- To enhance performance, consider adding a surfactant, known to be safe to the target crop, to the spray tank to improve penetration and coverage of above-ground portions of the plant.
- Serenade ASO is most effectively used in a preventive disease management program.

## APPLICATION INSTRUCTIONS

### Aerial

This product can be applied by aerial application. Refer to the Spray Drift Management section of this label for additional directions and precautions. Use the application rate, indicated for the appropriate crop in the Application Rate tables of this label, in sufficient water to achieve thorough coverage, typically between 3 – 20 gallons of water per acre depending upon the crop.

### Ground

This product can be applied by commonly used ground equipment, such as hose-end, pressurized, greenhouse and hand-held sprayers. Consult spray nozzle and accessory documentation for specific information on proper equipment calibration. Maintain agitation during mixing and application to ensure uniform product suspension. Thorough coverage of all foliage and/or soil surfaces is essential for effective disease control or suppression. Use the application rate indicated in the Specific Crop Directions tables of this label, in sufficient water to achieve thorough coverage. Overall, to achieve good coverage, use proper spray pressure, gallonage per acre, nozzles, nozzle spacing and ground speed.

## **Chemigation**

This product can be applied through sprinkler (center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set or hand move) or drip-type irrigation systems. Refer to the Chemigation section of this label for additional directions and precautions. Maintain agitation during mixing and application to ensure uniform product suspension. Use the application rate, indicated for the appropriate crop in the Application Rate tables for this label, in sufficient water to achieve thorough coverage.

## **USE RESTRICTIONS**

- Do not apply when wind speed favors drift beyond the area intended for treatment.
- 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 Serenade ASO to lose effectiveness or strength.
- Do not combine Serenade ASO 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. Serenade ASO has not been fully evaluated for compatibility with all of these.
- Conduct a spray compatibility test if mixture with other pesticides, surfactants, or fertilizers is planned.

## **FUNGICIDE RESISTANCE MANAGEMENT RECOMMENDATIONS**

SERENADE ASO contains an active ingredient with a mode of action classified as a Group 44 Fungicide, i.e., a Microbial fungicide.

- Integrate Serenade ASO into an overall disease and pest management strategy. Follow practices known to reduce disease development.
- Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.
- Be sure use of this product conforms to resistance management strategies, which may include rotating and/or tank mixing with other products with different modes of action.

## **CHEMIGATION**

### **Types of irrigation systems**

Apply this product only through the following types of equipment:

- Sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set or hand move)
- Drip-type and micro-jet irrigation systems.

Do not apply this product through any other type of irrigation system.

Maintain agitation during mixing and application to ensure uniform product suspension. Use the application rate indicated in the Specific Crop Directions tables of this label, in sufficient water to achieve thorough coverage.

### **Uniform Water Distribution and System Calibration**

The chemigation system must provide uniform distribution of treated water. Crop injury or lack of effectiveness can result from non-uniform distribution of treated water. The chemigation system must be calibrated to uniformly apply the rates specified in crop-specific label sections. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.

### **Chemigation Monitoring**

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.

## Required System Safety Devices

The system must contain a functional check valve, a vacuum relief valve, and a low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. The pesticide injection pipeline must contain a functional automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump. 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. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor 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.

## Using Water From Public Water Systems

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.

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. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone (RPZ), back-flow preventer 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. The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump. 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 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. 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.

## Injection for Chemigation

Inject the specified dosage of SERENADE ASO into the irrigation main water stream: (1) through a constant flow, metering device; (2) into the center of the main line flow via a pivot tube or equivalent; (3) at a point ahead of at least one, right-angle turn in the main stream flow such that thorough mixing with the irrigation water is ensured.

## Center Pivot, Lateral Move, End Tow, and Traveler Irrigation Equipment (Use only with electric or oil hydraulic drive systems that provide a uniform water distribution)

- Determine size of area to be treated.
- Determine the time required to apply no more than 1/4 inch of water (6,750 gallons water per acre) over the area to be treated when the system and injection equipment are operated at normal pressures specified by the equipment manufacturer. Run system at 80 to 95% of manufacturer's rated capacity.
- Using only water, determine the injection pump output when operated at normal line pressure.
- Determine the amount of Serenade ASO fungicide required to treat area.
- Add required amount of Serenade ASO fungicide and sufficient water to meet the injection time requirements of the solution tank.

- Maintain constant solution tank agitation during the injection period.
- Stop injection equipment after treatment is completed. Continue to operate the system until Serenade ASO fungicide solution has cleared the sprinkler head.

### **Solid Set, Side (Wheel) Roll, and Hand Move Irrigation Equipment**

- Determine acreage covered by sprinkler.
- Fill injector solution tank with water and adjust flow rate to use contents over a 10- to 30-minute interval.
- Determine the amount of Serenade ASO fungicide required to treat area.
- Add the required amount of Serenade ASO fungicide into the same quantity of water used to calibrate the injection equipment.
- Maintain constant solution tank agitation during the injection period.
- Operate system at normal pressures specified by the manufacturer of the injection equipment and used for the time interval established during calibration.
- Inject Serenade ASO fungicide at the end of the irrigation cycle or as a separate application to maximize foliar fungicide retention.
- Stop injection equipment after treatment is completed. Continue to operate the system until Serenade ASO fungicide solution has cleared the last sprinkler head.

### **Flushing and Cleaning the Chemical Injection System**

At the end of the application period, allow time for all lines to flush the pesticide through all nozzles or emitters before turning off irrigation water. To ensure the lines are flushed and free of pesticides, a dye indicator may be injected into the lines to mark the end of the application period.

In order to apply pesticides accurately, the chemical injection system must be kept clean, free of chemical or fertilizer residues and sediments. Refer to your owner's manual or ask your equipment supplier for the cleaning procedure for your injection system.

### **SPRAY DRIFT MANAGEMENT**

The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator is responsible for considering all of these factors when making application decisions. Consult the local Cooperative Extension for additional information. Avoiding spray drift is the responsibility of the applicator.

#### **Droplet Size**

Use the largest droplet size which provides sufficient control and coverage. Higher flow nozzles and lower pressures will produce larger droplets and minimize drift. Low drift and air induction nozzles will provide lower drift potential. Use larger droplet size when applying in hot, dry conditions (droplet evaporation is higher under these conditions, thus reducing the effective droplet size and increasing drift potential).

#### **Wind Speed**

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. Applications during gusty or calm wind conditions should be avoided. However, many factors, including droplet size, canopy and equipment specifications determine drift potential at any given wind speed. For applications made in-furrow or below soil-level, wind speed restrictions are not applicable.

#### **Temperature Inversions**

Drift potential is high during temperature inversions and applications should be avoided under these conditions. Temperature inversions 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. If fog is not present, inversions can also be identified by the movement of smoke or dust from a ground source -- smoke or dust that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion.

## **Sensitive Areas**

When applying adjacent to residential areas, bodies of water, habitats known to have threatened or endangered species, or non-target crops, drift can be minimized to these areas by making application when the wind direction is away from these areas.

Where states or local authorities have more stringent regulations, they should be observed.

## **Airblast (Air Assist) Applications for Tree Crops and Vineyards**

Airblast sprayers carry droplets into the canopy of trees/vines via a radially, or laterally directed air stream. Follow the following specific drift management practices:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy;
- Block off upward pointed nozzles when there is no overhanging canopy;
- Use only enough air volume to penetrate the canopy and provide good coverage;
- Do not allow the spray to go beyond the edge of the cultivated area (i.e., turn off sprayer when turning at end rows);
- Only spray inward, toward the orchard or vineyard, for applications to the outside rows.

## **Aerial Applications**

- Mount the spray boom on the aircraft so as to minimize drift caused by wing tip vortices.
- The minimum practical boom length should be used, and should not exceed 75% of the wing span or rotor diameter.
- Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety.

## **COMPATIBILITY TESTING AND TANK MIX PARTNERS**

### **Compatibility**

Serenade ASO is physically and biologically compatible with many commonly used pesticides, fertilizers, adjuvants, and surfactants but has not been fully evaluated with all of these. To ensure compatibility of tank-mix combinations, evaluate them prior to use as follows: Using a suitable container, add proportional amounts of product to water. Add wettable powders first, followed by water dispersible granules, then by 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 combination on a small portion of the crop to be treated to ensure that a phytotoxic response does not occur as a result of application.

Do not combine Serenade ASO with pesticides, surfactants, or fertilizers with which there has been no previous experience or use demonstrating that they are physically compatible, effective, and non-injurious under your use conditions.

### **Order of Mixing**

Serenade ASO may be tank-mixed with other registered pesticides to enhance plant disease control or suppression. This product cannot be mixed with any product with a prohibition against such mixing. When tank-mixing Serenade ASO with other registered pesticides, always read and follow all use directions, restrictions, and precautions of both Serenade ASO and the tank-mix partner(s). Use of the resulting tank mix must be in accordance with the more restrictive label limitations and precautions. Do not exceed label dosage rates.

1. Partially fill the spray tank with clean water and begin agitation.
2. Add the specified amount of Serenade ASO
3. Finish filling the tank to the volume necessary to obtain the proper spray concentration.

It is critical that the spray solution be agitated during mixing and application to assure a uniform suspension. Do not allow spray mixture to stand overnight or for prolonged periods. Maintain a spray solution pH between 4.5 and 8.5.

## SPECIFIC CROP DIRECTIONS

### CROP USE DIRECTIONS

- Serenade ASO has a 0-Day Pre-Harvest Interval for all crops contained on this label.
- For improved performance under moderate to severe disease pressure, use the stated higher rates and reduced spray intervals and reduce spray intervals as stated or use Serenade ASO in a tank-mix or rotational program with other registered fungicides.

### Greenhouse Application Instructions

Serenade ASO may be applied as a foliar spray or soil treatment in Greenhouses. See foliar spray and soil treatment application instructions. Crop safety has not been confirmed on all cultivars. Plant compatibility testing is recommended when first using under your greenhouse conditions.

### Foliar Spray Application Instructions

Begin applications when environmental conditions are conducive to disease development and repeat as needed.

### Soil Treatment Application Instructions

Serenade ASO is a broad spectrum fungicide and bactericide for the prevention, suppression and control of soil borne diseases on a wide range of horticultural and broadacre crops. For all crops, Serenade ASO may be applied as a soil surface drench, shanked-in, side-dress, injected and in-furrow at any time.

### Preventative Applications for Plant Health and Optimum Disease Control

Serenade ASO provides benefits which can result in healthier plants. Serenade ASO colonizes plants, preventing the establishment of disease-causing fungi and bacteria. As the plant's root system develops, the bacteria in Serenade ASO, formulated and provided at optimized levels, grow with the roots, providing protection throughout the growing season and resulting in the establishment of a vigorous root system. Improved plant health may help the host plant tolerate environmental stresses such as drought, heat, and cold temperatures. Serenade ASO improves plant utilization of nitrogen, phosphorus, potassium, other micronutrients and iron and can increase the host plant's tolerance to infections. Overall increased plant health may improve crop vigor, yields and quality, especially under stressful conditions.

### ARTICHOKES – FOLIAR APPLICATION

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
Bacterial Crown Rot - <i>Erwinia chrysanthemi</i>		
Gray Mold - <i>Botrytis</i> spp.	2 - 4	1 - 4
Powdery Mildew - <i>Leveillula taurica</i>		

### ARTICHOKES – SOIL APPLICATION

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Pythium</i> spp.		
<i>Verticillium</i> spp.	2 - 4	1 - 4

**ASPARAGUS – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Botrytis Blight</b> - <i>Botrytis cinerea</i> <b>Rust</b> - <i>Puccinia asparagi</i>	2 - 4	1 - 4

**ASPARAGUS – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Phytophthora</b> spp. <b>Verticillium</b> spp.	2 - 4	1 - 4

**BERRY – FOLIAR APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Alternaria Fruit Rot*</b> - <i>Alternaria tenuissima</i> <b>Anthraxnose Fruit Rot</b> - <i>Colletotrichum gloeosporioides</i> , <i>Colletotrichum acutatum</i> <b>Bacterial Canker</b> - <i>Pseudomonas</i> spp. <b>Botrytis Blight</b> - <i>Botrytis cinerea</i> <b>Downy Mildew</b> - <i>Peronospora sparse</i> <b>Leaf Rust*</b> - <i>Pucciniastrum vaccinii</i> <b>Mummy Berry</b> - <i>Monilinia vaccinii-corymbosi</i> <b>Phomopsis</b> - <i>Phomopsis vaccinii</i> <b>Powdery Mildew</b> - <i>Microsphaera alni</i> <b>Sooty Mold*</b> - <i>Misc. fungi</i> <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**BERRY – SOIL APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Armillaria Root Rot*</b> - <i>Armillaria mellea</i> <b>Fusarium</b> spp. <b>Phytophthora Root Rot</b> - <i>Phytophthora</i> spp. <b>Pythium</b> spp. <b>Rhizoctonia</b> spp. <b>Verticillium</b> spp. <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**BRASSICA (COLE) LEAFY VEGETABLES – FOLIAR APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Alternaria Leaf Spot</b> - <i>Alternaria</i> spp. <b>Anthracnose</b> - <i>Colletotrichum higginsianum</i> <b>Bacterial Leaf Spot and Bacterial Blight</b> - <i>Pseudomonas</i> spp <b>Bacterial Rot</b> - <i>Erwinia</i> spp. <b>Black Rot</b> - <i>Xanthomonas campestris</i> <b>Cercospora Leaf Spot</b> - <i>Cercospora brassicicola</i> <b>Downy Mildew</b> - <i>Peronospora</i> spp. <b>Southern Blight</b> - <i>Sclerotium rolfsii</i> <b>Pin Rot</b> - <i>Alternaria</i> spp. <b>Powdery Mildew</b> - <i>Erysiphe polygoni</i> <b>Xanthomonas Leaf Spot</b> - <i>Xanthomonas campestris</i>	2 - 4	1 - 4

**BRASSICA (COLE) LEAFY VEGETABLES – SOIL APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Clubroot</b> - <i>Plasmodiophora brassicae</i> <b>Fusarium</b> spp. <b>Macrophomina</b> spp. <b>Pythium</b> spp. <b>Phytophthora</b> spp. <b>Rhizoctonia</b> spp. <b>Verticillium</b> spp.	2 - 4	1 - 4

**BULB VEGETABLES – FOLIAR APPLICATION**

Includes cultivars, varieties, and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Bacterial Leaf Streak</b> - <i>Pseudomonas</i> spp. <b>Botrytis Neck Rot</b> - <i>Botrytis</i> spp. <b>Botrytis Leaf Blight</b> - <i>Botrytis squamosa</i> <b>Downy Mildew</b> - <i>Peronospora</i> spp. <b>Onion Purple Blotch</b> - <i>Alternaria porri</i> <b>Powdery Mildew</b> - <i>Erysiphe</i> spp. <b>Rust</b> - <i>Puccinia porri</i> <b>Xanthomonas Leaf Blight</b> - <i>Xanthomonas</i> spp.	2 - 4	1 - 4

**BULB VEGETABLES – SOIL APPLICATION**

Includes cultivars, varieties, and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b><i>Fusarium</i> spp.</b> <b><i>Phytophthora</i> spp.</b> <b>Pink Root - <i>Phoma</i> spp.</b> <b><i>Pythium</i> spp.</b> <b><i>Rhizoctonia</i> spp.</b> <b><i>Verticillium</i> spp.</b>	2 - 4	1 - 4

**CEREAL GRAINS – FOLIAR APPLICATION (Including Forage, Fodder Or Straw From Cereal Grains)**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Bacterial Blight and Streak - <i>Xanthomonas</i> spp.</b> <b>Blast* - <i>Pyricularia oryzae</i></b> <b>Brown Rot, Leaf Spots - <i>Cercospora</i> spp.</b> <b>Common Rust - <i>Puccinia sorghi</i></b> <b>Northern Leaf Blight* - <i>Exserohilum turcicum</i></b> <b>Powdery Mildew - <i>Erysiphe graminis</i></b> <b><i>Sclerotinia sclerotiorum</i></b> <b>Sheath Spot - <i>Rhizoctonia oryzae</i></b> <b>Sheath Blight - <i>Rhizoctonia solani</i></b> <b>Smut* - <i>Tilletia barclayana</i></b> <b>Southern Leaf Blight* - <i>Bipolaris maydis</i>, <i>Cochliobolus heterostrophus</i></b> <b>Stem Rot - <i>Sclerotium oryzae</i></b> <b>Tan Spot* - <i>Pyrenophora tritici-repentis</i></b> <b>*NOT FOR USE IN CALIFORNIA</b>	0.5 - 2	0.5 - 2

**CEREAL GRAINS – SOIL APPLICATION (Including Forage, Fodder Or Straw From Cereal Grains)**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Bakanae* - <i>Gibberella fujikuroi</i></b> <b><i>Fusarium</i> spp.</b> <b><i>Macrophomina</i> spp.</b> <b><i>Phytophthora</i> spp.</b> <b><i>Pythium</i> spp.</b> <b><i>Rhizoctonia</i> spp.</b> <b><i>Verticillium</i> spp.</b> <b>*NOT FOR USE IN CALIFORNIA</b>	0.5 - 2	0.5 - 2

**CITRUS FRUITS – FOLIAR APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Alternaria Leaf Spot</b> - <i>Alternaria alternata</i> <b>Bacterial Blast</b> - <i>Pseudomonas syringae</i> <b>Citrus Canker</b> - <i>Xanthomonas</i> spp. <b>Greasy Spot</b> - <i>Mycosphaerella citri</i> <b>Melanose</b> - <i>Diaporthe citri</i> <b>Post Bloom Fruit Drop</b> - <i>Colletotrichum acutatum</i> <b>Scab</b> - <i>Elsinoe fawcetti</i>	2 - 4	1 - 4

**CITRUS FRUITS – SOIL APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Fusarium spp.</b> <b>Macrophomina spp.</b> <b>Phytophthora spp.</b> <b>Pythium spp.</b> <b>Rhizoctonia spp.</b> <b>Verticillium spp.</b>	2 - 4	1 - 4

**Citrus Application Instructions:**

Serenade ASO drench rate for immature citrus. Apply 2 to 4 quarts per acre as a soil drench using a metered dose directed to the soil around the trunk. Make applications in a volume not to exceed 32 ounces of diluted spray solution per tree (8 to 16 ounces is recommended).

Rate per Acre	Trees	Fluid ounces / Tree
2 qt rate	140 trees	0.46 fl oz
3 qt rate	140 trees	0.69 fl oz
4 qt rate	140 trees	0.92 fl oz

Serenade ASO rates for mature citrus. Apply 3 to 4 quarts per acre as a soil drench or chemigated injection through micro-jet irrigation systems.

**COFFEE – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Bacterial Blight</b> - <i>Pseudomonas syringae</i> <b>Coffee Berry Disease*</b> - <i>Colletotrichum coffeanum</i> <b>Coffee Rust*</b> - <i>Hemileia vastatrix</i> <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**COFFEE – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

**COTTON – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
Bacterial blight - <i>Xanthomonas</i> spp.	2 - 4	1 - 4

**COTTON – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Phytophthora</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

**CUCURBIT VEGETABLES – FOLIAR APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
Angular Leaf Spot - <i>Pseudomonas syringae</i> Anthracnose - <i>Colletotrichum lagenarium</i> Bacterial Fruit Blotch - <i>Acidovorax avenae</i> Downy Mildew - <i>Pseudoperonospora cubensis</i> Gummy Stem Blight - <i>Didymella bryoniae</i> Powdery Mildew - <i>Erysiphe</i> spp., <i>Sphaerotheca</i> spp.	2 - 4	1 - 4

**CUCURBIT VEGETABLES – SOIL APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Fusarium spp.</b> <b>Macrophomina spp.</b> <b>Monosporascus cannonballus*</b> <b>Phytophthora spp.</b> <b>Pythium spp.</b> <b>Rhizoctonia spp.</b> <b>Verticillium spp.</b> <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**FRUITING VEGETABLES – FOLIAR APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Anthraxnose - Colletotrichum spp.</b> <b>Bacterial Canker - Clavibacter michiganensis</b> <b>Bacterial Speck - Pseudomonas syringae pv. tomato</b> <b>Bacterial Spot - Xanthomonas spp.</b> <b>Buck-Eye Rot* - Phytophthora parasitica</b> <b>Early Blight - Alternaria solani</b> <b>Gray Mold - Botrytis cinerea</b> <b>Late Blight - Phytophthora infestans</b> <b>Powdery Mildew - Leveillula taurica</b> <b>Southern blight - Sclerotium rolfsii</b> <b>Target Spot - Corynespora cassiicola</b> <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**FRUITING VEGETABLES – SOIL APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Fusarium spp.</b> <b>Macrophomina spp.</b> <b>Phytophthora spp.</b> <b>Pythium spp.</b> <b>Rhizoctonia spp.</b> <b>Southern blight - Sclerotium rolfsii</b> <b>Verticillium spp.</b>	2 - 4	1 - 4

**GRAPE – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Black Rot</b> - <i>Guignardia bidwellii</i> <b>Downy Mildew</b> - <i>Plasmopara viticola</i> <b>Eutypa</b> - <i>Eutypa lata</i> <b>Gray Mold</b> - <i>Botrytis cinerea</i> <b>Phomopsis</b> - <i>Phomopsis viticola</i> <b>Powdery Mildew</b> - <i>Uncinula necator</i> <b>Sour Rot Complex</b>	2 - 4	1 - 4

**GRAPE – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Armillaria Root Rot</b> - <i>Armillaria mellea</i> <i>Fusarium</i> spp. <b>Oak Root Fungus*</b> <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp. <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**HERBS AND SPICES – FOLIAR APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Alternaria Leaf Blight</b> - <i>Alternaria</i> spp. <b>Anthracnose</b> - <i>Colletotrichum</i> spp. <b>Bacterial Blight</b> - <i>Pseudomonas syringae</i> <b>Botrytis</b> - <i>Botrytis</i> spp. <b>Sclerotinia</b> spp.	2 - 4	1 - 4

**HERBS AND SPICES – SOIL APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

**HOPS – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
Downy Mildew - <i>Peronospora</i> spp. Powdery Mildew - <i>Sphaerotheca macularis</i>	2 - 4	1 - 4

**Crop Specific Instructions:**

Coverage will vary with the size of the vines and the type of spray equipment. Apply adequate spray volume to achieve complete spray coverage.

**HOPS – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

**LEAFY VEGETABLES (EXCEPT BRASSICA) – FOLIAR APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
Anthracnose - <i>Colletotrichum</i> spp. Bacterial Blight / Bacterial Leaf Spot - <i>Xanthomonas</i> spp. <i>Botrytis</i> spp. Downy Mildew - <i>Bremia lactucae</i> , <i>Peronospora</i> spp. Powdery Mildew - <i>Erysiphe cichoracearum</i> Sclerotinia Head and Leaf Drop / Pink Rot - <i>Sclerotinia</i> spp. Spinach Bacterial Leaf Spot - <i>Pseudomonas syringae</i> White Rust* - <i>Albugo occidentalis</i> <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**LEAFY VEGETABLES (EXCEPT BRASSICA) – SOIL APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Sclerotinia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

**LEGUME VEGETABLES (EXCEPT SOYBEAN) – FOLIAR APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Asian Soybean Rust*</b> - <i>Phakospora pachyrhizi</i> <b>Bacterial Pustule</b> - <i>Xanthomonas</i> spp. <b>Downy Mildew</b> - <i>Peronospora manshurice</i> <b>Gray Mold (Botrytis Blight)</b> - <i>Botrytis</i> spp. <b>Leaf spot</b> - <i>Cercospora</i> spp. <b>Powdery Mildew</b> - <i>Erysiphe</i> spp. <b>Rust</b> - <i>Uromyces appendiculatus</i> , <i>Puccinia</i> spp. <b>White Mold (Sclerotinia Stem Rot)</b> - <i>Sclerotinia sclerotiorum</i> <b>*NOT FOR USE IN CALIFORNIA</b>	0.5 - 4	0.5 - 4

**LEGUME VEGETABLES (EXCEPT SOYBEAN) – SOIL APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Aphanomyces spp.*</b> <b>Fusarium spp.</b> <b>Macrophomina spp.</b> <b>Phytophthora spp.</b> <b>Pythium spp.</b> <b>Rhizoctonia spp.</b> <b>Verticillium spp.</b> <b>*NOT FOR USE IN CALIFORNIA</b>	0.5 - 4	0.5 - 4

**MINT – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Downy Mildew</b> - <i>Peronospora</i> spp. <b>Powdery Mildew</b> - <i>Erysiphe</i> spp. <b>Rust</b> - <i>Puccini amenthae</i>	2 - 4	1 - 4

**MINT – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Fusarium spp.</b> <b>Phytophthora spp.</b> <b>Pythium spp.</b> <b>Rhizoctonia spp.</b> <b>Verticillium spp.</b>	2 - 4	1 - 4

**NONGRASS ANIMAL FEEDS – FOLIAR APPLICATION  
(FORAGE, FODDER, STRAW AND HAY)**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Bacterial Wilt*</b> <b>Spring Black Stem *</b> <b>White Mold (Sclerotinia Stem Rot) – <i>Sclerotinia sclerotiorum</i></b> <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**NONGRASS ANIMAL FEEDS – SOIL APPLICATION  
(FORAGE, FODDER, STRAW AND HAY)**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b><i>Aphanomyces</i> spp.*</b> <b><i>Fusarium</i> spp.</b> <b><i>Macrophomina</i> spp.</b> <b><i>Phytophthora</i> spp.</b> <b><i>Pythium</i> spp.</b> <b><i>Rhizoctonia</i> spp.</b> <b><i>Verticillium</i> spp.</b> <b>*NOT FOR USE IN CALIFORNIA</b>	1 - 4	1 - 4

**OILSEED CROPS (EXCEPT COTTON) – FOLIAR APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Bacterial Pustule - <i>Xanthomonas</i> spp</b> <b>Bacterial Speck - <i>Pseudomonas</i> spp.</b> <b>Brown Spot* - <i>Septoria glycines</i></b> <b>Downy Mildew - <i>Peronospora manshurica</i></b> <b>Leaf Spot* - <i>Corynespora cassiicola</i></b> <b>Pod and Stem Blight* - <i>Diaporthe phaseolorum</i> var. <i>sojae</i>, <i>Phomopsis longicollis</i></b> <b>Rust* - <i>Albugo</i> spp., <i>Puccinia</i> spp.</b> <b>White Mold (Sclerotinia Stem Rot) - <i>Sclerotinia sclerotiorum</i></b> <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**OILSEED CROPS (EXCEPT COTTON) – SOIL APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Clubroot*</b> - <i>Plasmodiophora brassicae</i> <b>Fusarium spp.</b> <b>Phytophthora spp.</b> <b>Pythium spp.</b> <b>Rhizoctonia spp.</b> <b>Verticillium spp.</b> <b>*NOT FOR USE IN CALIFORNIA</b>	0.5 - 4	0.5 - 4

**OLIVE – FOLIAR APPLICATION**

(including those grown for oil production)

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Leaf Spot*</b> - <i>Cercospora cladosporioides</i> <b>Olive Knot*</b> - <i>Pseudomonas savastanoi</i> <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**OLIVE – SOIL APPLICATION**

(including those grown for oil production)

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Fusarium spp.</b> <b>Phytophthora spp.</b> <b>Rhizoctonia spp.</b> <b>Pythium spp.</b> <b>Verticillium spp.</b>	2 - 4	1 - 4

**PEANUT – FOLIAR APPLICATION**

(including those grown for oil production)

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Early Leaf Spot</b> - <i>Cercospora</i> spp. <b>Late Leaf Spot</b> - <i>Cercosporidium personatum</i> <b>Rust*</b> - <i>Puccinia arachidis</i> <b>Sclerotinia</b> - <i>Sclerotinia</i> spp. <b>Web Blotch*</b> - <i>Phoma arachidicola</i> <b>White Mold</b> - <i>Sclerotium rolfsii</i> <b>*NOT FOR USE IN CALIFORNIA</b>	1 - 4	1 - 4

**PEANUT – SOIL APPLICATION**

(including those grown for oil production)

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b><i>Aspergillus</i> spp.*</b> <b>Cylindrocladium Black Rot*</b> <b><i>Fusarium</i> spp.</b> <b><i>Phytophthora</i> spp.</b> <b><i>Pythium</i> spp.</b> <b><i>Rhizoctonia</i> spp.</b> <b><i>Verticillium</i> spp.</b> <b>White Mold - <i>Sclerotium rolfsii</i></b> <b>*NOT FOR USE IN CALIFORNIA</b>	1 - 4	1 - 4

**POME FRUIT – FOLIAR APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Bitter Rot - <i>Colletotrichum</i> spp.</b> <b>Bot Rot - <i>Botryosphaeria dothidea</i></b> <b>Brooks Spot - <i>Mycosphaerella pomi</i></b> <b>Bull's Eye Rot* - <i>Neofabraea</i> spp.</b> <b>Cedar Apple Rust* - <i>Gymnosporangium juniperi-virginianae</i></b> <b>Fire Blight - <i>Erwinia amylovora</i></b> <b>Flyspeck - <i>Schizothyrium pomi</i></b> <b>Powdery Mildew - <i>Podosphaera leucotricha</i></b> <b>Sooty Blotch - <i>Gloeodes pomigena</i></b> <b>Scab - <i>Venturia</i> spp.</b> <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**POME FRUIT – SOIL APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b><i>Fusarium</i> spp.</b> <b><i>Phytophthora</i> spp.</b> <b><i>Pythium</i> spp.</b> <b><i>Rhizoctonia</i> spp.</b> <b><i>Verticillium</i> spp.</b>	2 - 4	1 - 4

<b>POMEGRANATE – FOLIAR APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Heart Rot*</b> - <i>Alternaria</i> spp. <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

<b>POMEGRANATE – SOIL APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<i>Fusarium</i> spp.* <i>Phytophthora</i> spp.* <i>Pythium</i> spp.* <i>Rhizoctonia</i> spp.* <i>Verticillium</i> spp.* <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

<b>ROOT AND TUBER VEGETABLES – FOLIAR APPLICATION (INCLUDING LEAVES OF ROOT AND TUBER VEGETABLES)</b>		
Includes cultivars, varieties and/or hybrids of these commodities.		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Aerial Stem Rot</b> - <i>Erwinia carotovora</i> <b>Alternaria Leaf Blight / Black Rot / Black Crown Rot</b> - <i>Alternaria</i> spp. <b>Bacterial Leaf Spot / Leaf Blight</b> - <i>Xanthomonas</i> spp. <b>Black Dot</b> - <i>Colletotrichum</i> spp. <b>Downy Mildew</b> - <i>Peronospora</i> spp. <b>Early Blight</b> - <i>Alternaria solani</i> <b>Gray Mold</b> - <i>Botrytis</i> spp. <b>Late Blight</b> - <i>Phytophthora infestans</i> <b>Leaf Spot</b> - <i>Cercospora</i> spp. <b>Powdery Mildew</b> - <i>Erysiphe</i> spp. <b>Ramularia*</b> - <i>Ramularia</i> spp. <b>Rust*</b> - <i>Uromyces betae</i> <b>White Mold</b> - <i>Sclerotinia sclerotiorum</i> <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**ROOT AND TUBER VEGETABLES – SOIL APPLICATION  
(INCLUDING LEAVES OF ROOT AND TUBER VEGETABLES)**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<p><b>Aphanomyces spp.*</b>  <b>Clubroot*</b> - <i>Plasmodiophora brassicae</i>  <b>Colletotrichum spp.</b>  <b>Erwinia spp.</b>  <b>Fusarium spp.</b>  <b>Macrophomina spp.</b>  <b>Phytophthora spp.</b>  <b>Pythium spp.</b>  <b>Rhizoctonia spp.</b>  <b>Sclerotium rolfsii</b>  <b>Verticillium spp.</b>  <b>Common Scab</b> - <i>Streptomyces scabies</i>  <b>*NOT FOR USE IN CALIFORNIA</b></p>	<p>2 - 4</p>	<p>1 - 4</p>

**SOYBEANS – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<p><b>Asian Soybean Rust*</b> - <i>Phakospora pachyrhizi</i>  <b>Bacterial Pustule</b> - <i>Xanthomonas</i> spp.  <b>Brown Spot</b> - <i>Septoria glycines</i>  <b>Downy Mildew</b> - <i>Peronospora manshurice</i>  <b>Gray Mold (Botrytis Blight)</b> - <i>Botrytis</i> spp.  <b>Leaf spot</b> - <i>Cercospora</i> spp.  <b>Powdery Mildew</b> - <i>Erysiphe</i> spp.  <b>Rust</b> - <i>Uromyces appendiculatus</i>, <i>Puccinia</i> spp.  <b>White Mold (Sclerotinia Stem Rot)</b> - <i>Sclerotinia sclerotiorum</i>  <b>*NOT FOR USE IN CALIFORNIA</b></p>	<p>0.5 - 4</p>	<p>0.5 - 4</p>

<b>SOYBEANS – SOIL APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b><i>Aphanomyces</i> spp.*</b> <b><i>Fusarium</i> spp.</b> <b><i>Macrophomina</i> spp.</b> <b><i>Phytophthora</i> spp.</b> <b><i>Pythium</i> spp.</b> <b><i>Rhizoctonia</i> spp.</b> <b><i>Verticillium</i> spp.</b> <b>*NOT FOR USE IN CALIFORNIA</b>	0.5 - 4	0.5 - 4

<b>STONE FRUIT – FOLIAR APPLICATION</b>		
Includes cultivars, varieties and/or hybrids of these commodities.		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Alternaria Spot / Fruit Rot - <i>Alternaria alternata</i></b> <b>Bacterial Leaf Spot / Bacterial Spot - <i>Xanthomonas</i> spp.</b> <b>Bacterial Canker - <i>Pseudomonas</i> spp.</b> <b>Brown Rot Blossom Blight - <i>Monilinia laxa</i></b> <b>Fruit Brown Rot - <i>Monilinia fructicola</i></b> <b>Gray Mold - <i>Botrytis cinerea</i></b> <b>Anthracnose - <i>Colletotrichum</i> spp.</b> <b>Cherry Leaf Spot - <i>Blumeriella jaapii</i></b> <b>Powdery Mildew - <i>Sphaerotheca pannosa</i>, <i>Podosphaera</i> spp.</b> <b>Rusty Spot - <i>Podosphaera leucotricha</i></b> <b>Scab - <i>Cladosporium carpophilum</i></b> <b>Shot Hole - <i>Wilsonomyces carpophilus</i></b>	2 - 4	1 - 4

<b>STONE FRUIT – SOIL APPLICATION</b>		
Includes cultivars, varieties and/or hybrids of these commodities.		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b><i>Fusarium</i> spp.</b> <b><i>Phytophthora</i> spp.</b> <b><i>Pythium</i> spp.</b> <b><i>Rhizoctonia</i> spp.</b> <b><i>Verticillium</i> spp.</b>	2 - 4	1 - 4

**STRAWBERRY – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Angular Leaf Spot</b> - <i>Xanthomonas fragariae</i> <b>Anthracnose</b> - <i>Colletotrichum acutatum</i> <b>Botrytis / Gray Mold</b> - <i>Botrytis</i> spp. <b>Common Leaf Spot*</b> - <i>Ramularia tulasneii</i> <b>Powdery Mildew</b> - <i>Sphaerotheca macularis</i> , <i>Erysiphe</i> spp. <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**STRAWBERRY – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Angular Leaf Spot*</b> - <i>Xanthomonas fragariae</i> <b>Black Root Rot (complex)</b> <i>Macrophomina</i> spp. <i>Phytophthora</i> spp. <i>Verticillium Wilt</i> <i>Rhizoctonia</i> spp. <i>Fusarium</i> spp. <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**SUGARCANE – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Gumming disease*</b> - <i>Xanthomonas</i> spp. <b>Rust*</b> - <i>Puccinia melanocephala</i> <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

**SUGARCANE – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	1 - 4	1 - 4

**TOBACCO – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
Blue Mold - <i>Peronospora</i> spp.	2 - 4	1 - 4

**TOBACCO – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
Black Shank - <i>Phytophthora</i> spp. <i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

**TREE NUTS – FOLIAR APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
Alternaria Leaf Spot - <i>Alternaria alternata</i> Anthracnose - <i>Colletotrichum</i> spp. Bacterial Canker - <i>Pseudomonas syringae</i> Bacterial Spot - <i>Xanthomonas</i> spp. Botryosphaeria Blight - <i>Botryosphaeria dothidea</i> Brown Rot - <i>Monilinia</i> spp. Pecan Scab- <i>Cladosporium caryigenum</i> Powdery Mildew - <i>Sphaerotheca pannosa</i> , <i>Podosphaera</i> spp. Rusty Spot - <i>Podosphaera leucotricha</i> Scab - <i>Cladosporium</i> spp Shot Hole - <i>Wilsonomyces carpophilus</i> Walnut Blight - <i>Xanthomonas campestris</i>	2 - 4	1 - 4

**TREE NUTS – SOIL APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

## TROPICAL FRUITS

### AVOCADO AND MANGO – FOLIAR APPLICATION

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Anthracnose</b> - <i>Colletotrichum</i> spp. <b>Bacterial Canker</b> - <i>Xanthomonas campestris</i> <b>Scab*</b> - <i>Sphaceloma</i> spp. <b>*NOT FOR USE IN CALIFORNIA</b>	2 - 4	1 - 4

### AVOCADO AND MANGO – SOIL APPLICATION

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

### PAPAYA – FOLIAR APPLICATION

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Anthracnose</b> - <i>Colletotrichum</i> spp. <b>Bacterial Canker</b> - <i>Erwinia</i> spp.	2 - 4	1 - 4

### PAPAYA – SOIL APPLICATION

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

### PINEAPPLE – FOLIAR APPLICATION

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<b>Anthracnose</b> - <i>Colletotrichum</i> spp.	2 - 4	1 - 4

**PINEAPPLE – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

**BANANAS AND PLANTAINS – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Sigatoka</i> - <i>Mycosphaerella fijiensis</i>	2 - 4	1 - 4

**BANANAS AND PLANTAINS – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

**KIWI – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Bacterial Blight</i> - <i>Pseudomonas</i> spp. <i>Botrytis Fruit Rot</i> - <i>Botrytis cinerea</i> <i>Sclerotinia</i> - <i>Sclerotinia sclerotiorum</i>	2 - 4	1 - 4

**KIWI – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

**WATERCRESS – FOLIAR APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Cercospora</i> Leaf Spot - <i>Cercospora</i> spp.	2 - 4	1 - 4

**WATERCRESS – SOIL APPLICATION**

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	2 - 4	1 - 4

**GRASS SEED PRODUCTION CROPS – FOLIAR APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
Powdery Mildew - <i>Erysiphe</i> spp. Rust* - <i>Puccinia</i> spp.	2 - 4	1 - 4
<b>*NOT FOR USE IN CALIFORNIA</b>		

**GRASS SEED PRODUCTION CROPS – SOIL APPLICATION**

Includes cultivars, varieties and/or hybrids of these commodities.

Target Diseases	Rate (qt/acre)	Rate when Tank Mixed (qt/acre)
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	1 - 4	1 - 4

**STORAGE AND DISPOSAL**

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

**Pesticide storage**

Store in a dry area inaccessible to children. Store in original container only. Keep container closed when not in use.

**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).

(continued)

**Container handling**

Nonrefillable 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 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. If burned, stay out of smoke.

**IMPORTANT: READ BEFORE USE**

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product at once for a refund of the purchase price.

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties, and Limitations of Liability. These terms may only be modified by a written document signed by a duly authorized representative of Bayer CropScience LP.

[FOR SEED TREATMENT ONLY: Treatment of highly mechanically damaged seed, or seed of known low vigor and poor quality, may result in reduced germination and/or reduction of seed and seedling vigor. Treat and conduct germination tests on a small portion of seed before committing the total seed lot to a selected chemical treatment. Due to seed quality conditions beyond the control of Bayer CropScience LP, no claims are made to guarantee germination of carry-over seed.]

**CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Bayer CropScience LP. All such risks shall be assumed by the user or buyer.

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The Bayer logo, consisting of the word "Bayer" in a bold, sans-serif font.

Lot No.:



 Can be Used for Organic Production

GROUP 44 FUNGICIDE

## PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

- Harmful if inhaled. Avoid breathing spray mist.
- Remove and wash contaminated clothing before reuse.

## STORAGE AND DISPOSAL

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

### Pesticide storage

Store in a dry area inaccessible to children. Store in original container only. Keep container closed when not in use.

### 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

Nonrefillable 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 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. If burned, stay out of smoke.



### ACTIVE INGREDIENT:

QST 713 strain of *Bacillus subtilis*\* ..... 1.34%

OTHER INGREDIENTS: ..... 98.66%

\*Contains a minimum of  $1 \times 10^9$  cfu/g TOTAL: 100.00%

Information regarding the contents and levels of metals in the product is available on the internet at: <http://www.aapfco.org/metals.html>

EPA Reg. No. 264-1152

EPA Est. 264-MEX-001

## KEEP OUT OF REACH OF CHILDREN CAUTION

For **MEDICAL** And **TRANSPORTATION**  
Emergencies **ONLY**

Call 24 Hours A Day 1-800-334-7577  
For **PRODUCT USE** Information Call  
1-866-99BAYER (1-866-922-2937)

For **ADDITIONAL PRECAUTIONARY STATEMENTS** and  
**DIRECTIONS FOR USE: See Inside Booklet.**  
**USE OF PRODUCT INDICATES ACCEPTANCE OF**  
**"CONDITIONS FOR SALE AND WARRANTY"**

### FIRST AID

#### IF INHALED:

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for further treatment advice.

In case of emergency call toll free the Bayer CropScience  
Emergency Response Telephone No. 1-800-334-7577.

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

Produced for:  
Bayer CropScience LP  
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St. Louis, MO 63167  
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**Net Contents:**  
**2.5 Gallons**