



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

February 17, 2022

Anne Park  
Regulatory Affairs Specialist  
Bayer CropScience LP  
700 Chesterfield Parkway West  
Chesterfield, MO 63017

Subject: Pesticide Registration Improvement Act (PRIA) Formulation and Labeling Amendment – Update the Manufacturing Process, Revise the Basic Confidential Statement of Formula (CSF), and Revise the Personal Protective Equipment (PPE) and the Fungicide Rodenticide Action Committee (FRAC) Code on the Label  
Product Name: Serenade ASO  
EPA Registration Number: 264-1152  
Application Date: 04/05/2021  
Action Case Number: 00299757

Dear Ms. Park:

The amended labeling and Confidential Statement of Formula (CSF) referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, are acceptable.

This approval does not affect any terms or conditions that were previously imposed on this registration. You continue to be subject to existing terms or conditions on your registration and any deadlines connected with them.

Please note that the record for this product currently contains the following acceptable CSF:

- Basic CSF dated 02/08/2022

Any CSFs other than those listed above are superseded/no longer valid.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one (1) copy of the final printed labeling before you release this product for shipment with the new labeling. In accordance with 40 CFR § 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling

or subsequently approved labeling. “To distribute or sell” is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR § 152.3.

Should you wish to add/retain a reference to your company’s website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the U.S. Environmental Protection Agency (EPA). If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA-approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6.

If you have any questions, please contact Susanne Cerrelli by phone at (202) 566-1516 or via email at [cerrelli.susanne@epa.gov](mailto:cerrelli.susanne@epa.gov).

Sincerely,

**DANIEL**  
**SCHOEFF**

Digitally signed by  
DANIEL SCHOEFF  
Date: 2022.02.17  
11:45:31 -05'00'

Daniel Schoeff, Risk Manager  
Microbial Pesticides Branch  
Biopesticides and Pollution  
Prevention Division (7511P)  
Office of Pesticide Programs

Enclosures: -Stamped Label  
-EPA Comprehensive Science Review of Product Chemistry dated 1/10/2022  
-Product Chemistry Data Evaluation Record dated 1/10/2022

BACILLUS SUBTILIS	GROUP	BM02	FUNGICIDE
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# SERENADE® ASO

Alternate Brand Names: [Serenade® Biofungicide, Serenade® Soil, Serenade® Garden Disease Control Concentrate, Serenade® Garden Disease Control Ready to Spray] [Alternate Names for Turf Label when sold for hose-end sprayers: Serenade® Garden Lawn Disease Control – Ready to Spray, Serenade® Garden Turf Disease Control – Ready to Spray, Serenade® Garden Lawn Disease Control, Serenade® Garden Turf Disease Control, Serenade® Garden Disease Control for Lawns - Ready to Spray, Serenade® Garden Disease Control for Turf - Ready to Spray]

Intended for:

- Sub-label A: Agricultural/Commercial Use
- Sub-label B: Seed Treatment
- Sub-label C: Residential Use (Home and Garden Use)

**ACTIVE INGREDIENT:**

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

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

**TOTAL:** ..... 100.00%

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

EPA Reg. No. 264-1152

EPA Est.

**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 (1-866-992-2937)

Net Contents:

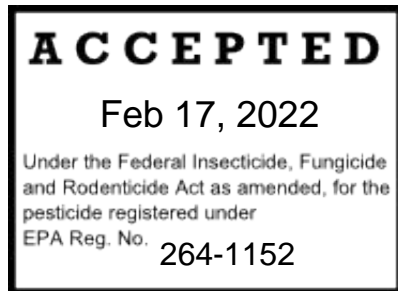
[Note: All text in brackets is optional language for the final printed container label.]



PRODUCED FOR



Bayer CropScience LP  
800 N. Lindbergh Blvd.  
St. Louis, MO 63167  
1-866-99BAYER (1-866-992-2937)



# SERENADE<sup>®</sup> ASO

AN AQUEOUS SUSPENSION BIOFUNGICIDE



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SUB-LABEL A

For Agricultural/Commercial Use

# SERENADE® ASO

**[Serenade® Biofungicide, Serenade® Soil, An Aqueous Suspension Biofungicide]**

[Optional/Alternate Statement: “ For Organic Production”]  
 [Optional/Alternate Statement: “ Can be Used for Organic Production”]  
 [Use Indoors and Outdoors]  
 [Use in field applications, greenhouses, glasshouses, nurseries, shadehouses, landscapes, interiorscapes, seedling production sites, and forest seedling production sites]  
 [Use in Tank Mixes or Rotational alternating spray programs with other crop protection products]  
 [Use in resistance management programs]  
 [Use ground, aerial, chemigation and hand application equipment]  
 [For Agricultural Use]

<b>ACTIVE INGREDIENT:</b>	
<i>Bacillus subtilis</i> strain QST 713* .....	1.34%
<b>OTHER INGREDIENTS:</b> .....	98.66%
<b>TOTAL:</b>	100.00%

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Net Contents:  
 [Note: All text in brackets is optional language for the final printed container label.]  
 [Reference Statement for Booklets: 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 “CONIDITIONS FOR SALE AND WARRANTY”]



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## FIRST AID

### 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.

**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 or Chemical-resistant Gloves
- Shoes plus socks
- Mixers/loaders and applicators must wear a minimum of a NIOSH-approved particulate filtering facepiece respirator with any N, R, or P filter; OR a NIOSH-approved elastomeric particulate respirator with any N, R, or P filter; OR a NIOSH-approved powered air- purifying respirator with an HE filter.

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]

[OPTIONAL STATEMENT: 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 170.607 (d)(e) and (f)], 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.

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## **ENVIRONMENTAL HAZARDS**

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**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.

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## **CONDITIONS OF SALE AND LIMITATIONS OF WARRANTY AND LIABILITY**

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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.

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## DIRECTIONS FOR USE

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**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 State or Tribal 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 if there will be no contact with anything that has been treated.

**For early entry into 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, wear:**

- Coveralls
- Waterproof or Chemical-resistant Gloves
- Shoes plus socks

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The Worker Protection Standard (WPS) applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

[Post-harvest applications:]

Post-harvest treatment of harvested agricultural plants does not fall within the scope of the WPS. An agricultural plant is considered harvested when 1) a desirable portion of the agricultural plant (seed, fruit, flower, stem, foliage, or roots) is detached from its parent or 2) a whole agricultural plant is separated from its growth media (soil, water, or other media).

Keep unprotected persons from handling portions of harvested agricultural plants that have been treated until sprays have dried.

[For commercial treatment of plants that are in ornamental gardens, parks, golf courses, and public or residential turf and grounds, and that are intended only for aesthetic purposes or climatic modification, Keep unprotected persons out of treated areas until sprays have dried.]



## 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 of 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.

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# SPECIFIC CROP DIRECTIONS

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## 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**

[\*Not for use in CA]

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 [and ozone damage]. 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.

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

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

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

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

<b>BERRY – 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 Fruit Rot</b> [*] - <i>Alternaria tenuissima</i> <b>Anthracnose 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

<b>BERRY – SOIL APPLICATION</b>		
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 spp.[*]</b> <b>Phytophthora Root Rot[*]</b> - <i>Phytophthora</i> spp. <b>Pythium spp.[*]</b> <b>Rhizoctonia spp.[*]</b> <b>Verticillium spp.[*]</b> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 – 4

<b>BRASSICA (COLE) LEAFY VEGETABLES – FOLIAR APPLICATION</b>		
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>Anthraco nose[*]</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> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 – 4

<b>BRASSICA (COLE) LEAFY VEGETABLES – SOIL APPLICATION</b>		
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>Macrophomina spp.[*]</b> <b>Pythium spp.[*]</b> <b>Phytophthora spp.[*]</b> <b>Rhizoctonia spp.</b> <b>Verticillium spp.[*]</b> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 – 4

<b>BULB VEGETABLES – 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>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>White Rot[*]</b> - <i>Sclerotium cepivorum</i> <b>Xanthomonas Leaf Blight[*]</b> - <i>Xanthomonas</i> spp. [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>BULB VEGETABLES – 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>Fusarium spp.[*]</b> <b>Phytophthora spp.[*]</b> <b>Pink Root[*]</b> - <i>Phoma</i> spp. <b>Pythium spp.[*]</b> <b>Rhizoctonia spp.[*]</b> <b>Verticillium spp.[*]</b> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4



<b>CEREAL GRAINS – FOLIAR APPLICATION (Including Forage, Fodder Or Straw From Cereal Grains)</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>Bacterial Blight and Streak[*]</b> - <i>Xanthomonas</i> spp. <b>Blast[*]</b> - <i>Pyricularia oryzae</i> <b>Brown Rot, Leaf Spots[*]</b> - <i>Cercospora</i> spp. <b>Common Rust[*]</b> - <i>Puccinia sorghi</i> <b>Northern Leaf Blight[*]</b> - <i>Exserohilum turcicum</i> <b>Powdery Mildew[*]</b> - <i>Erysiphe graminis</i> <b>Sclerotinia sclerotiorum[*]</b> <b>Sheath Spot[*]</b> - <i>Rhizoctonia oryzae</i> <b>Sheath Blight[*]</b> - <i>Rhizoctonia solani</i> <b>Smut[*]</b> - <i>Tilletia barclayana</i> <b>Southern Leaf Blight[*]</b> - <i>Bipolaris maydis</i> , <i>Cochliobolus heterostrophus</i> <b>Stem Rot[*]</b> - <i>Sclerotium oryzae</i> <b>Tan Spot[*]</b> - <i>Pyrenophora tritici-repentis</i> <b>[*NOT FOR USE IN CALIFORNIA]</b>	0.5 - 2	0.5 – 2

<b>CEREAL GRAINS – SOIL APPLICATION (Including Forage, Fodder Or Straw From Cereal Grains)</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>Bakanae[*]</b> - <i>Gibberella fujikuroi</i> <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 - 2	0.5 – 2

<b>CITRUS FRUITS – 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 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> <b>[*NOT FOR USE IN CALIFORNIA]</b>	2 - 4	1 - 4

<b>CITRUS FRUITS – SOIL APPLICATION</b>			
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>Macrophomina</i> spp.[*] <i>Phytophthora</i> spp.[*] <i>Pythium</i> spp.[*] <i>Rhizoctonia</i> spp.[*] <i>Verticillium</i> spp.[*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4	
<b>Citrus Application Instructions:</b>			
<u>Serenade ASO drench rate for immature citrus.</u> 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
<u>Serenade ASO rates for mature citrus.</u> Apply 3 to 4 quarts per acre as a soil drench or chemigated injection through micro-jet irrigation systems.			

<b>COFFEE – FOLIAR APPLICATION</b>		
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> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>COFFEE – SOIL APPLICATION</b>		
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.[*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>COTTON – FOLIAR APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Bacterial blight[*]</b> - <i>Xanthomonas</i> spp. [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>COTTON – 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>Pythium</i> spp.[*] <i>Phytophthora</i> spp.[*] <i>Rhizoctonia</i> spp.[*] <i>Verticillium</i> spp.[*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>CUCURBIT VEGETABLES – 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>Angular Leaf Spot[*]</b> - <i>Pseudomonas syringae</i> <b>Anthracnose[*]</b> - <i>Colletotrichum lagenarium</i> <b>Bacterial Fruit Blotch[*]</b> - <i>Acidovorax avenae</i> <b>Downy Mildew</b> - <i>Pseudoperonospora cubensis</i> <b>Gummy Stem Blight</b> - <i>Didymella bryoniae</i> <b>Powdery Mildew</b> - <i>Erysiphe</i> spp., <i>Sphaerotheca</i> spp. [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>CUCURBIT VEGETABLES – 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>
<i>Fusarium</i> spp. <i>Macrophomina</i> spp.[*] <i>Monosporascus cannonballus</i> [*] <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.[*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>FRUITING VEGETABLES – 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>Anthracnose[*]</b> - <i>Colletotrichum</i> spp. <b>Bacterial Canker[*]</b> - <i>Clavibacter michiganensis</i> <b>Bacterial Speck</b> - <i>Pseudomonas syringae</i> pv. <i>tomato</i> <b>Bacterial Spot</b> - <i>Xanthomonas</i> spp. <b>Buck-Eye Rot[*]</b> - <i>Phytophthora parasitica</i> <b>Early Blight</b> - <i>Alternaria solani</i> <b>Gray Mold</b> - <i>Botrytis cinerea</i> <b>Late Blight</b> - <i>Phytophthora infestans</i> <b>Powdery Mildew</b> - <i>Leveillula taurica</i> <b>Southern blight[*]</b> - <i>Sclerotium rolfsii</i> <b>Target Spot</b> - <i>Corynespora cassicola</i> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>FRUITING VEGETABLES – 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>Fusarium</b> spp. <b>Macrophomina</b> spp. [*] <b>Phytophthora</b> spp. <b>Pythium</b> spp. <b>Rhizoctonia</b> spp. <b>Southern blight[*]</b> - <i>Sclerotium rolfsii</i> <b>Verticillium</b> spp. [*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>GRAPE – FOLIAR APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<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> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>GRAPE – SOIL APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Armillaria Root Rot[*] - <i>Armillaria mellea</i></b> <b><i>Fusarium</i> spp.[*]</b> <b>Oak Root Fungus[*]</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>	2 - 4	1 - 4

<b>HERBS AND SPICES – 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 Leaf Blight[*] - <i>Alternaria</i> spp.</b> <b>Anthracnose[*] - <i>Colletotrichum</i> spp.</b> <b>Bacterial Blight[*] - <i>Pseudomonas syringae</i></b> <b>Botrytis[*] - <i>Botrytis</i> spp.</b> <b><i>Sclerotinia</i> spp.[*]</b> <b>[*NOT FOR USE IN CALIFORNIA]</b>	2 - 4	1 - 4

<b>HERBS AND SPICES – 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> <b>[*NOT FOR USE IN CALIFORNIA]</b>	2 - 4	1 - 4

<b>HOPS – FOLIAR APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Downy Mildew - <i>Peronospora</i> spp.</b> <b>Powdery Mildew - <i>Sphaerotheca macularis</i></b>	2 - 4	1 - 4
<b>Crop Specific Instructions:</b> Coverage will vary with the size of the vines and the type of spray equipment. Apply adequate spray volume to achieve complete spray coverage.		

<b>HOPS – 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.[*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>LEAFY VEGETABLES (EXCEPT BRASSICA) – 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>Anthracnose</b> [*] - <i>Colletotrichum</i> spp. <b>Bacterial Blight / Bacterial Leaf Spot</b> - <i>Xanthomonas</i> spp. <b>Botrytis</b> spp.[*] <b>Downy Mildew</b> - <i>Bremia lactucae</i> , <i>Peronospora</i> spp. <b>Powdery Mildew</b> - <i>Erysiphe cichoracearum</i> <b>Sclerotinia Head and Leaf Drop / Pink Rot</b> - <i>Sclerotinia</i> spp. <b>Spinach Bacterial Leaf Spot</b> [*] - <i>Pseudomonas syringae</i> <b>White Rust</b> [*] - <i>Albugo occidentalis</i> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>LEAFY VEGETABLES (EXCEPT BRASSICA) – 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>
<i>Fusarium</i> spp.[*] <i>Phytophthora</i> spp.[*] <i>Pythium</i> spp.[*] <i>Rhizoctonia</i> spp. <i>Sclerotinia</i> spp. <i>Verticillium</i> spp. [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>LEGUME VEGETABLES (EXCEPT SOYBEAN) – 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>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

<b>LEGUME VEGETABLES (EXCEPT SOYBEAN) – 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>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

<b>MINT – FOLIAR APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Downy Mildew[*] - <i>Peronospora</i> spp.</b> <b>Powdery Mildew[*] - <i>Erysiphe</i> spp.</b> <b>Rust - <i>Puccini amenthae</i></b> <b>[*NOT FOR USE IN CALIFORNIA]</b>	2 - 4	1 - 4

<b>MINT – SOIL APPLICATION</b>		
<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> <b>[*NOT FOR USE IN CALIFORNIA]</b>	2 - 4	1 - 4

<b>NONGRASS ANIMAL FEEDS – FOLIAR APPLICATION (FORAGE, FODDER, STRAW AND HAY)</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>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

<b>NONGRASS ANIMAL FEEDS – SOIL APPLICATION (FORAGE, FODDER, STRAW AND HAY)</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>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



<b>OILSEED CROPS (EXCEPT COTTON) – 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>Bacterial Pustule[*]</b> - <i>Xanthomonas</i> spp <b>Bacterial Speck[*]</b> - <i>Pseudomonas</i> spp. <b>Brown Spot[*]</b> - <i>Septoria glycines</i> <b>Downy Mildew[*]</b> - <i>Peronospora manshurica</i> <b>Leaf Spot[*]</b> - <i>Corynespora cassiicola</i> <b>Pod and Stem Blight[*]</b> - <i>Diaporthe phaseolorum</i> var. <i>sojae</i> , <i>Phomopsis longicolla</i> <b>Rust[*]</b> - <i>Albugo</i> spp., <i>Puccinia</i> spp. <b>White Mold (Sclerotinia Stem Rot)[*]</b> - <i>Sclerotinia sclerotiorum</i> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>OILSEED CROPS (EXCEPT COTTON) – 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>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> [*NOT FOR USE IN CALIFORNIA]	0.5 - 4	0.5 - 4

<b>OLIVE – FOLIAR APPLICATION</b>		
(including those grown for oil production)		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Leaf Spot[*]</b> - <i>Cercospora cladosporioides</i> <b>Olive Knot[*]</b> - <i>Pseudomonas savastanoi</i> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>OLIVE – SOIL APPLICATION</b>		
(including those grown for oil production)		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Fusarium spp.[*]</b> <b>Phytophthora spp.[*]</b> <b>Rhizoctonia spp.[*]</b> <b>Pythium spp.[*]</b> <b>Verticillium spp.[*]</b> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>PEANUT – FOLIAR APPLICATION</b> (including those grown for oil production)		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<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

<b>PEANUT – SOIL APPLICATION</b> (including those grown for oil production)		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Aspergillus spp.[*]</b> <b>Cylindrocladium Black Rot[*]</b> <b>Fusarium spp.[*]</b> <b>Phytophthora spp.[*]</b> <b>Pythium spp.[*]</b> <b>Rhizoctonia spp.[*]</b> <b>Verticillium spp.[*]</b> <b>White Mold</b> - <i>Sclerotium rolfsii</i> <b>[*NOT FOR USE IN CALIFORNIA]</b>	1 - 4	1 - 4

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

<b>POME FRUIT – SOIL APPLICATION</b>		
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.[*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

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

<b>POMEGRANATE – SOIL APPLICATION</b>		
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.[*] [*NOT FOR USE IN CALIFORNIA]	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[*] - <i>Erwinia carotovora</i></b> <b>Alternaria Leaf Blight / Black Rot / Black Crown Rot - <i>Alternaria</i> spp.</b> <b>Bacterial Leaf Spot / Leaf Blight - <i>Xanthomonas</i> spp.</b> <b>Black Dot - <i>Colletotrichum</i> spp.</b> <b>Downy Mildew - <i>Peronospora</i> spp.</b> <b>Early Blight - <i>Alternaria solani</i></b> <b>Gray Mold - <i>Botrytis</i> spp.</b> <b>Late Blight - <i>Phytophthora infestans</i></b> <b>Leaf Spot[*] - <i>Cercospora</i> spp</b> <b>Powdery Mildew - <i>Erysiphe</i> spp.</b> <b>Ramularia[*] - <i>Ramularia</i> spp.</b> <b>Rust[*] - <i>Uromyces betae</i></b> <b>White Mold - <i>Sclerotinia sclerotiorum</i></b> <b>[*NOT FOR USE IN CALIFORNIA]</b>	2 - 4	1 - 4

<b>ROOT AND TUBER VEGETABLES – SOIL 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><i>Aphanomyces</i> spp.[*]</b> <b>Clubroot[*] - <i>Plasmodiophora brassicae</i></b> <b><i>Colletotrichum</i> spp.[*]</b> <b><i>Erwinia</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>Sclerotium rolfsii</i>[*]</b> <b><i>Verticillium</i> spp.[*]</b> <b>Common Scab[*] - <i>Streptomyces scabies</i></b> <b>[*NOT FOR USE IN CALIFORNIA]</b>	2 - 4	1 - 4

<b>SOYBEANS – FOLIAR APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<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>	0.5 - 4	0.5 - 4

<b>SOYBEANS – SOIL APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<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

<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[*]</b> - <i>Alternaria alternata</i> <b>Bacterial Leaf Spot / Bacterial Spot[*]</b> - <i>Xanthomonas</i> spp. <b>Bacterial Canker</b> - <i>Pseudomonas</i> spp. <b>Brown Rot Blossom Blight</b> - <i>Monilinia laxa</i> <b>Fruit Brown Rot</b> - <i>Monilinia fructicola</i> <b>Gray Mold</b> - <i>Botrytis cinerea</i> <b>Anthracnose[*]</b> - <i>Colletotrichum</i> spp. <b>Cherry Leaf Spot[*]</b> - <i>Blumeriella jaapii</i> <b>Powdery Mildew</b> - <i>Sphaerotheca pannosa</i> , <i>Podosphaera</i> spp. <b>Rusty Spot[*]</b> - <i>Podosphaera leucotricha</i> <b>Scab[*]</b> - <i>Cladosporium carpophilum</i> <b>Shot Hole[*]</b> - <i>Wilsonomyces carpophilus</i> <b>[*NOT FOR USE IN CALIFORNIA]</b>	2 - 4	1 - 4

<b>STONE FRUIT – SOIL APPLICATION</b>		
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.[*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>STRAWBERRY – FOLIAR APPLICATION</b>		
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. [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>STRAWBERRY – SOIL APPLICATION</b>		
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.[*] <b>Verticillium Wilt</b> <i>Rhizoctonia</i> spp.[*] <i>Fusarium</i> spp.[*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>SUGARCANE – FOLIAR APPLICATION</b>		
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> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

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

<b>TOBACCO – FOLIAR APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Blue Mold</b> - <i>Peronospora</i> spp. <b>Target Spot</b> - <i>Rhizoctonia</i> spp.	2 - 4	1 - 4

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

<b>TREE NUTS – 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 Leaf Spot</b> [*] - <i>Alternaria alternata</i> <b>Anthracnose</b> - <i>Colletotrichum</i> spp. <b>Bacterial Canker</b> - <i>Pseudomonas syringae</i> <b>Bacterial Spot</b> [*] - <i>Xanthomonas</i> spp. <b>Botryosphaeria Blight</b> [*] - <i>Botryosphaeria dothidea</i> <b>Brown Rot</b> - <i>Monilinia</i> spp. <b>Hull Rot</b> - <i>Rhizopus</i> spp., <i>Monilinia</i> spp. <b>Pecan Scab</b> [*]- <i>Cladosporium caryigenum</i> <b>Powdery Mildew</b> [*] - <i>Sphaerotheca pannosa</i> , <i>Podosphaera</i> spp. <b>Rusty Spot</b> - <i>Podosphaera leucotricha</i> <b>Scab</b> [*] - <i>Cladosporium</i> spp. <b>Shot Hole</b> - <i>Wilsonomyces carpophilus</i> <b>Walnut Blight</b> - <i>Xanthomonas campestris</i> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>TREE NUTS – 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>
<i>Fusarium</i> spp.[*] <i>Phytophthora</i> spp.[*] <i>Pythium</i> spp.[*] <i>Rhizoctonia</i> spp.[*] <i>Verticillium</i> spp.[*] [*NOT FOR USE IN CALIFORNIA]	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. [*NOT FOR USE IN CALIFORNIA]	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.[*] [*NOT FOR USE IN CALIFORNIA]	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.[*] [*NOT FOR USE IN CALIFORNIA]	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.[*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4



<b>BANANAS AND PLANTAINS – FOLIAR APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Sigatoka</b> - <i>Mycosphaerella fijiensis</i>	2 - 4	1 - 4

<b>BANANAS AND PLANTAINS – 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.[*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>KIWI – FOLIAR APPLICATION</b>		
<b>Target Diseases</b>	<b>Rate (qt/acre)</b>	<b>Rate when Tank Mixed (qt/acre)</b>
<b>Bacterial Blight</b> [*] - <i>Pseudomonas</i> spp. <b>Botrytis Fruit Rot</b> [*] - <i>Botrytis cinerea</i> <b>Sclerotinia</b> [*] - <i>Sclerotinia sclerotiorum</i> [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>KIWI – 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.[*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

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

<b>WATERCRESS – 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.[*] [*NOT FOR USE IN CALIFORNIA]	2 - 4	1 - 4

<b>GRASS SEED PRODUCTION CROPS – 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>Powdery Mildew[*] - <i>Erysiphe</i> spp.</b> <b>Rust[*] - <i>Puccinia</i> spp.</b> <b>[*NOT FOR USE IN CALIFORNIA]</b>	2 - 4	1 - 4

<b>GRASS SEED PRODUCTION CROPS – 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> <b>[*NOT FOR USE IN CALIFORNIA]</b>	1 - 4	1 - 4

<b>STORAGE AND DISPOSAL</b>
<p>Do not contaminate water, food, or feed by storage or disposal.</p> <p><b>Pesticide storage</b> Store in a dry area inaccessible to children. Store in original container only. Keep container closed when not in use.</p> <p><b>Pesticide disposal</b> 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).</p> <p><b>Container handling</b> [For 2.5-gallon plastic containers] - 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.</p> <p>[For 30-gallon plastic containers] - 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. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke.</p> <p>[For 110-gallon or larger returnable mini-bulk containers] – Return empty container for reuse. Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing 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.</p>

[batch codes are sticker applied to the front panel of every label on every product container]

# SERENADE<sup>®</sup> ASO

AN AQUEOUS SUSPENSION BIOFUNGICIDE


SUB-LABEL B

For Seed Treatment Use

# SERENADE® ASO

[Alternate Brand Names: Serenade® Biofungicide, Serenade® Soil]

[An Aqueous Suspension Biofungicide]

[Optional/Alternate Statement: “ For Organic Production”]

[Optional/Alternate Statement: “ Can be Used for Organic Production”]

[use in field applications, greenhouses, glasshouses, nurseries, shadehouses, landscapes, interiorscapes, seedling production sites, and forest seedling production sites]

[Use in Application Mixes with other commercial seed treatment products]

[use in resistance management programs]

[For Agricultural Use]

[For use on Ornamentals, Trees, Shrubs, Turf, Lawns, Sod, Seedlings, and Conifers]

[Use In Production of Conifers For Reforestation]

**ACTIVE INGREDIENT:**

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

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

**TOTAL:** ..... 100.00%

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

EPA Registration No. 264-1152

EPA Est. No.:

## 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 (1-866-992-2937)

### FIRST AID

<b>IF INHALED:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor or going for treatment.	

[Reference Statement for Booklets: 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 “CONIDITIONS FOR SALE AND WARRANTY”]

Bayer CropScience LP  
800 N. Lindbergh Blvd.  
St. Louis, MO 63167  
1-866-99BAYER (1-866-992-2937)

# PRECAUTIONARY STATEMENTS

## HAZARDS TO HUMANS & 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.

**Workers involved with treating the seed (e.g. connecting and disconnecting hoses and transfer pumps, mixing, equipment calibration, etc.) and others exposed to the concentrate, and cleaners/repairers of seed treatment equipment must wear:**

- Long-sleeved shirt and long pants
- Shoes plus socks
- Waterproof or Chemical-resistant Gloves
- NIOSH-approved particulate respirator with a minimum of a NIOSH-approved particulate filtering facepiece respirator with any N, R or P filter; OR a NIOSH-approved elastomeric particulate respirator with any N, R or P filter; OR a NIOSH-approved power air-purifying respirator with an HE filter.

**Baggers and bag sewers must wear:**

- Long-sleeved shirt and long pants
- Shoes plus socks
- Waterproof or Chemical-resistant Gloves
- NIOSH-approved particulate respirator with a minimum of a NIOSH-approved particulate filtering facepiece respirator with any N, R or P filter; OR a NIOSH-approved elastomeric particulate respirator with any N, R or P filter; OR a NIOSH-approved power air-purifying respirator with an HE filter.

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.

### [OPTIONAL: ENGINEERING CONTROLS]

[OPTIONAL STATEMENT: 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 170.607 (d)(e) and (f)], 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.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### ENVIRONMENTAL HAZARDS

**For terrestrial uses:** 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. Cover spilled seed, or collect spilled seed from soil surface.

### EMERGENCY INFORMATION

For emergencies such as leaks or spills, call 24-hour, toll-free BAYER hotline at **1-800-334-7577**.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation. [For use only as described on this label. Not for isolation or reformulation. Do not culture.]

[Note to the reviewer: All uses on the label may be for Commercial and or Non-commercial (on agricultural establishments).]

[For Commercial Seed Treatment Use: Not for use on agricultural establishments in hopper-box, planter-box, slurry-box or other seed treatment applications at or immediately before planting.

The U.S. Environmental Protection Agency requires the following statements on containers containing seed treated with Serenade ASO:

- Store treated seed away from food and feedstuff
- Do not allow children, pets or livestock to have access to treated seeds.
- Treated seeds exposed on soil surface may be hazardous to wildlife.
- Cover spilled seed or collect spilled treated seeds from the soil surface spilled during loading and planting (such as in row ends).
- Dispose of all excess treated seed by burying seed away from bodies of water.
- Dispose of seed packaging or containers in accordance with local requirements.

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Keep unprotected persons from handling portions of harvested agricultural plants that have been treated until sprays have dried.

Note: This product does not contain dye and is not covered by an appropriate tolerance, tolerance exemption, or other clearance under the Federal Food, Drug and Cosmetic Act. To comply with 40 CFR 153.155, therefore, all seed treated commercially with this product must be colored with an EPA-approved dye or colorant of a suitable color to prevent accidental use as food for man or feed for animals.]

[Seed Treatment Use on Agricultural Establishments in hopper-box, planter-box, slurry-box or other seed treatment applications at or immediately before planting.

### 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 exceptions pertaining to the statements on this label about personal protective equipment (PPE) 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 seed is treated with the product and the seed is soil injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

For early entry into 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, wear:

- Coveralls

- Waterproof or Chemical-resistant Gloves
- Shoes plus socks

### **BASIC USE INFORMATION**

Serenade ASO is a broad spectrum biofungicide seed treatment for the prevention, suppression and control of soil borne diseases that attack root systems. Serenade ASO enhances germination and plant growth by suppressing soil diseases such as those caused by *Rhizoctonia*, *Pythium*, *Fusarium*, *Aspergillus* and *Phytophthora*. Additionally, Serenade ASO has been shown to increase nodulation of nitrogen-fixing bacteria when used on many legumes.

### **INTEGRATED PEST MANAGEMENT (IPM)**

Integrate Serenade ASO into an overall disease and pest management strategy whenever fungicide use is necessary. 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.

### **USE RATE DETERMINATION**

Carefully read and follow all label directions, use rates and restrictions. Prepare only the amount of product solution required to treat the amount of seed required.

**IMPORTANT: READ CONDITIONS FOR SALE AND WARRANTY BEFORE USE**

## APPLICATION INSTRUCTIONS

[For Commercial Seed Treatment: Serenade ASO as a seed treatment may be applied as a water-based slurry alone or with other registered seed treatment insecticides and fungicides through standard slurry or mist commercial seed treatment equipment.]

[additional/alternate statement:

[For Seed Treatment Use on Agricultural Establishments in hopper-box, planter-box, slurry-box or other seed treatment applications at or immediately before planting: Do not store excess treated seeds beyond planting time.]

For improved performance use Serenade ASO in a program with other registered fungicides for seed treatment.

## MIXING INSTRUCTIONS

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

**COMPATIBILITY:** Do not combine Serenade ASO in the slurry with pesticides, 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.

Serenade ASO is compatible with many commonly used pesticides, but has not been fully evaluated with all of these.

### **For Use as a Seed Treatment:**

To mix when using with other chemical insecticide or fungicide seed treatments: first add the chemical insecticides or fungicides to the slurry mix with approximately ½ of the required water. Slowly add the Serenade ASO to the slurry until a suspension is obtained. Add the remainder of the water and maintain continuous agitation. Do not store mixed slurries for **more than 4 hours**.

To mix when using only Serenade ASO seed treatment: Add ½ the required water to the slurry mix. Slowly add the Serenade ASO to the slurry until a suspension is obtained. Add the remainder of the water and maintain continuous agitation. Do not store mixed slurries for **more than 4 hours**.

See application rate tables for more detailed application instructions.



<b>Application Rates of Serenade ASO for Seed Treatment For Select Agricultural Crops</b>			
<b>Seed Crops</b>	<b>Disease Suppressed</b>	<b>Rate fl oz per 100 lb of seed</b>	<b>Application Instructions</b>
<b>Artichoke</b>	<i>Pythium</i> spp. <i>Verticillium dahliae</i>	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
<b>Asparagus</b>	<i>Fusarium</i> spp. <i>Phytophthora</i> spp.	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
<b>Brassica</b> Broccoli Cabbage Cauliflower Brussels Sprouts Collards Kale Mustard Greens Kohlrabi and other brassica crops	<i>Rhizoctonia</i> spp. <i>Pythium</i> spp. <i>Fusarium</i> spp. <i>Verticillium</i> spp. <i>Phytophthora</i> spp. <i>Sclerotinia</i> spp. <i>Plasmodiophora brassicae</i>	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
<b>Legume Vegetables</b> Beans Sprouts Bean, Adzuki Bean, Black Blue Lake Bean, Broad Bean, Butter Bean, Cacao Bean, Dry Bean, Fava Bean, French Bean, Garden Bean, Garbanzo Bean, Green Bean, Kidney Bean, Lima Bean, Mung Bean, Navy Bean, Pea Bean, Pigeon Bean, Pinto Bean, Red Bean, String Bean, Sugar Bean, Snap and other fresh, dry, vine, fuel and forage legume vegetables grown for seed	<i>Alternaria</i> spp. <i>Anthraco</i> se spp. Ascochyta Blight <i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed. For improvement of nodulation by <i>Rhizobium</i> , apply at 0.1 to 2 fl oz per 100 lb of seed.
<b>Seed Crops</b>	<b>Disease Suppressed</b>	<b>Rate fl oz per 100 lb of seed</b>	<b>Application Instructions</b>

<b>Bulb Vegetables</b> Onion Garlic Shallots and other bulb vegetables including those grown for seed production	<i>Rhizoctonia</i> spp. <i>Pythium</i> spp. <i>Fusarium</i> spp. <i>Verticillium</i> spp. <i>Phytophthora</i> spp. <i>Phoma</i> spp.	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
<b>Coffee Bean</b>	<i>Alternaria</i> spp. <i>Anthraco</i> spp. <i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed. For improvement of nodulation by <i>Rhizobium</i> , apply at 0.1 to 2 fl oz per 100 lb of seed.
<b>Canola Rapeseed</b>	<i>Alternaria</i> spp. <i>Fusarium</i> spp. <i>Leptosphaeria</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Sclerotinia</i> spp.	<b>0.3 – 5</b>	For suppression of seedling and root diseases apply 0.3 to 5 fl oz per 100 lb of seed.
<b>Corn</b> Corn, Sweet Corn, Feed Corn, Field Corn, Fuel Corn, Pop	<i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	<b>0.2 – 5</b>	For suppression of seedling and root diseases apply 0.2 to 5 fl oz per 100 lb of seed
<b>Cotton</b> Cotton, Short Staple Cotton, Long Staple Cotton, Upland Cotton, Pima	<i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Phoma</i> spp. <i>Rhizoctonia</i> spp.	<b>0.2 – 3</b>	For suppression of and root diseases, apply 0.2 to 3 fl oz per 100 lb of seed.
<b>Cucurbits</b> Cucumber Cantaloupe Melon Muskmelon Squash Watermelon and other cucurbit crops	<i>Rhizoctonia</i> spp. <i>Pythium</i> spp. <i>Fusarium</i> spp. <i>Verticillium</i> spp. <i>Phytophthora</i> spp. <i>Macrophomina</i> spp. <i>Acremonium</i> spp. <i>Thielaviopsis</i> spp.	<b>0.1 – 5</b>	For suppression of seedling and root diseases apply 0.1 to 5 fl oz per 100 lb of seed.
<b>Fruiting Vegetables</b> Pepper Tomato Eggplant Ground Cherry Tomatillo Okra and other fruiting vegetables	<i>Rhizoctonia</i> spp. <i>Pythium</i> spp. <i>Fusarium</i> spp. <i>Verticillium</i> spp. <i>Phytophthora</i> spp.	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.

<b>Seed Crops</b>	<b>Disease Suppressed</b>	<b>Rate fl oz per 100 lb of seed</b>	<b>Application Instructions</b>
<b>Leafy Vegetables</b> Lettuce Celery Spinach Parsley Radicchio and other leafy vegetables crops including those grown for seed production	<i>Rhizoctonia</i> spp. <i>Pythium</i> spp. <i>Fusarium</i> spp. <i>Verticillium</i> spp. <i>Phytophthora</i> spp. <i>Phoma</i> spp. <i>Rhizomonas</i> spp. <i>Sclerotinia</i> spp	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
<b>Legume Vegetable Foliage</b> Vegetable, grain, seed and pod, fodder and forage  Legume Fuel	<i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
<b>Grain Cereal Crops</b> Amaranth, Grain Sorghum, Grain Barley, Grain Oat, Grain Wheat, Grain Lupine Grain	<i>Cochliobus</i> spp. <i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Penicillium</i> spp. <i>Rhizoctonia</i> spp <i>Stagonospora</i> spp. <i>Tilletia</i> spp. <i>Ustilago</i> spp.	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
<b>Peanut</b>	<i>Aspergillus</i> spp. <i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Rhizopus</i> spp. <i>Sclerotinia</i> spp.	<b>0.2 – 4.0</b>	For suppression of seedling and root diseases and for improvement of nodulation by <i>Rhizobium</i> , apply 0.2 to 4.0 fl oz per 100 lb of seed.
<b>Rice</b> Rice, Indian Rice, sweet Rice, waxy Rice, wild	<i>Fusarium</i> spp. <i>Helminthosporium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	<b>0.1 – 3</b>	For suppression of seed diseases apply 0.1 to 3 fl oz per 100 lb of seed.
<b>Soybean</b>	<i>Fusarium</i> spp. <i>Penicillium</i> spp. <i>Pythium</i> spp. <i>Phytophthora</i> spp. <i>Rhizoctonia</i> spp.	<b>0.1 – 3</b>	For suppression of seedling and root diseases or improvement of nodulation by <i>Bradyrhizobium</i> , apply 0.1 to 3 fl oz per 100 lb of seed.

Seed Crops	Disease Suppressed	Rate fl oz per 100 lb of seed	Application Instructions
<b>Sugarbeet</b>	<i>Aphanomyces</i> spp. <i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp	<b>0.1 – 3</b>	For suppression of seed diseases apply 0.1 to 3 fl oz per 100 lb of seed.
<b>Sunflower</b>	<i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Phytophthora</i> spp. <i>Plasmopara</i> spp. <i>Rhizoctonia</i> spp.	<b>0.1 – 3</b>	For suppression of seed diseases apply 0.1 to 3 fl oz per 100 lb of seed.
<b>Grass, Forage, Fodder, Hay</b>  Bahiagrass Grass, Pasture, Forage Grass, Pasture, Hay Grass, Pasture, Silage Grass, Rangeland, Forage Grass, Rangeland, Hay Grass, Rangeland, Silage Grass, Rangeland, Straw Savannah Grass, Straw Switch grass Sudan grass	<i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.

Crops	Disease Suppressed	Rate fl oz per 100 lb of seed	Application Instructions
<b>Grass</b> Bluegrass Bentgrass Bermudagrass Dichondra Fescue Orchardgrass Poa annua St. Augustine Rye grass Zoysia Mixtures and other grass or ornamental turf seeds	<i>Fusarium spp.</i> <i>Pythium spp.</i> <i>Rhizoctonia spp.</i>	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.  Serenade ASO can be used for all types of grass seeds including those produced for Turf, Sod, Lawns, and Golf Courses.
<b>Animal Feed, Nongrass</b>  Alfalfa	<i>Fusarium spp.</i> <i>Pythium spp.</i> <i>Rhizoctonia spp.</i>	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
<b>Oil Seed Crops</b>  Canola Castor Coconut Cotton Flax Oil Palm Olive Peanut Rapeseed Safflower Sesame Sunflower Soybeans and other oil seed crops including those grown for seed production	<i>Rhizoctonia spp.</i> <i>Pythium spp.</i> <i>Fusarium spp.</i> <i>Verticillium spp.</i> <i>Phytophthora spp.</i> <i>Plasmodiophora brassicae</i> <i>Thielaviopsis spp.</i>	<b>0.1 – 3</b>	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.

<b>Application Rates of Serenade ASO for Seed Treatment For Ornamental Crops</b>			
<b>Crops</b>	<b>Disease Suppressed</b>	<b>Rate fl oz per 100 lb of seed</b>	<b>Application Instructions</b>
<b>Ornamental Plant Seeds</b>  Annual and Perennial Flower, Herb and other Vegetable Seeds  Forestry Seeds	<b><i>Alternaria</i> spp.</b> <b><i>Anthraco</i>se spp.</b> <b><i>Ascochyta rabiei</i></b> <b><i>Aphanomyces</i> spp.</b> <b><i>Aspergillus</i> spp.</b> <b><i>Fusarium</i> spp.</b> <b><i>Leptosphaeria</i> spp.</b> <b><i>Macrophomina</i> spp.</b> <b><i>Phoma</i> spp.</b> <b><i>Phytophthora</i> spp.</b> <b><i>Pythium</i> spp.</b> <b><i>Rhizoctonia</i> spp.</b> <b><i>Rhizopus</i> spp.</b> <b><i>Sclerotinia</i> spp.</b> <b><i>Sphacelotheca</i> spp.</b> <b><i>Thielaviopsis</i> spp.</b> <b><i>Ustilago</i> spp.</b> <b><i>Verticillium</i> spp.</b>	<b>0.1 - 10</b>	For suppression of root disease, apply 0.1 to 10 fl oz per 100 lb of seed. Adjust rate accordingly to provide good coverage. Larger seeds, because of reduced surface area, require less product per 100 lb than smaller seeds.

## STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and 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: [For 2.5-gallon plastic containers]** - 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  $\frac{1}{4}$  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.

**[For 30-gallon plastic containers]** - 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. Fill the container  $\frac{1}{4}$  full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke.

**[For 110-gallon or larger returnable mini-bulk containers]** – Return empty container for reuse. Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or 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.

[batch codes are sticker applied to the front panel of every label on every product container]

## **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.

**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.

### **NET CONTENTS:**



### **PRODUCED FOR**



**Bayer CropScience LP  
800 N. Lindbergh Blvd.  
St. Louis, MO 63167  
1-866-99BAYER (1-866-992-2937)**



# SERENADE<sup>®</sup> ASO

AN AQUEOUS SUSPENSION BIOFUNGICIDE



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SUB-LABEL C

For Home and Garden Use

# SERENADE® ASO

[Alternate Brand Name: Serenade® Garden Disease Control Concentrate]  
 [Alternate Brand Name: Serenade® Garden Disease Control Ready to Spray]  
 [Alternate Names for Turf Label when sold for hose-end sprayers:]  
 [Serenade® Garden Lawn Disease Control – Ready to Spray],  
 [Serenade® Garden Turf Disease Control – Ready to Spray],  
 [Serenade® Garden Lawn Disease Control],  
 [Serenade® Garden Turf Disease Control],  
 [Serenade® Garden Disease Control for Lawns - Ready to Spray],  
 [Serenade® Garden Disease Control for Turf - Ready to Spray]

[An Aqueous Suspension Biofungicide]  
 [For Home and Garden Use][For Home, Garden and [Lawn] [(Turf)] Use]  
 [Optional/Alternate Statement: “ For Organic Gardening”]  
 [Optional/Alternate Statement: “ Can be Used for Organic Gardening”]  
 [“NOP Logo: For Organic Lawn Care”]

<b>ACTIVE INGREDIENT:</b>	
<i>Bacillus subtilis</i> strain QST 713 *.....	1.34%
<b>OTHER INGREDIENTS</b> .....	98.66%
<b>TOTAL:</b>	100.00%

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

**EPA Reg. No. 264-1152** **EPA Est. No.:**

## 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 1-877-229-3724

### FIRST AID

<b>IF INHALED:</b>	<ul style="list-style-type: none"> <li>Move person to fresh air.</li> <li>If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>Call a poison control center or doctor for further treatment advice.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor or going for treatment.	

[Reference Statement for Booklets: For FIRST AID STATEMENT, ADDITIONAL PRECAUTIONARY STATEMENTS and DIRECTIONS FOR USE: See Inside Booklet.]

[USE OF PRODUCT INDICATES ACCEPTANCE OF “CONIDITIONS FOR SALE AND WARRANTY”]

**Bayer CropScience LP**  
**800 N. Lindbergh Blvd.**  
**St. Louis, MO 63167**  
**1-866-99BAYER (1-866-992-2937)**

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS & DOMESTIC ANIMALS

#### CAUTION

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

### ENVIRONMENTAL HAZARDS

To protect the environment, do not allow pesticide to enter or run-off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run-off to water bodies or drainage systems.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. [For use only as described on this label. Not for isolation or reformulation. Do not culture.]

### BASIC USE INFORMATION

[Serenade ASO] [This product] [Alternate Statement: is a broad spectrum, preventative biofungicide recommended for the control or suppression of many important plant diseases.] [Alternate Statement: effectively controls or prevents a wide range of important fungal and bacterial plant diseases.] [Serenade ASO] It may be used on roses, vegetables, fruits, nuts, flowers, houseplants, foliage, trees, shrubs, lawns, turf, sod, and ornamental turf [located in residential landscapes] [located in residential interiorscapes] [[located in residential greenhouses].

[Serenade ASO may be applied any time of day, in full sun and high temperatures, without stressing or burning foliage.]

[Serenade ASO [This product] can be applied up to and on the day of harvest.]

[Serenade ASO can be used on the day of harvest and on all fruits and vegetables used in canning.]

IMPORTANT: READ CONDITIONS FOR SALE AND WARRANTY BEFORE USE

[QUICK FACTS] [READ THE LABEL FIRST!] [READ LABEL FIRST graphic]

### WHEN TO USE

- For best results, treat prior to foliar disease development or at the first sign of foliar disease infection.
- Repeat at 7-day intervals or as needed.
- [Under conditions of high disease pressure,] [When environmental conditions favor rapid disease development (high humidity, excessive rain, extreme moisture condition, etc.), spray more often] [Alternate: shorten the spray interval].

### BEFORE YOU USE

**Read and follow these directions when using:**

- Do not allow spray to drift from application site.
- [[For Pressurized Hand-Held Sprayer and Spray Trigger Bottle Use Only] - Do not allow spray mixture to stand overnight or for prolonged periods.]

### [FOR BEST RESULTS]

- [Shake Well Before Use.]
- [Spray to ensure thorough coverage.]
- [Repeat at 7-day intervals or as needed.]
- [Under conditions of high disease pressure,] [When environmental conditions favor rapid disease development (high humidity, excessive rain, extreme moisture condition, etc.), spray more often] [Alternate: shorten the spray interval].

[Specific Application Instructions in four groups as appropriate for the type of sprayer]

**[Pressurized Hand-Held Sprayer and Spray Trigger Bottle] [Serenade ASO can be applied in commonly used pressurized hand-held sprayers and spray trigger bottles.]**

**HOW TO USE [Alternate statement: MIXING AND APPLICATION INSTRUCTIONS]**

- Shake Well Before Use
- Fill sprayer or bottle with appropriate amounts of concentrate and water (use water only).
- Mix the spray solution thoroughly.
- Keep spray solution agitated during application.

**HOW MUCH TO USE**

**[For] Fruits, Vegetables, Nuts [(e. g. Apples/Pears, Broccoli, Carrot, Cherries, Cucurbits, Grapes, Leafy Vegetables, Onions/Garlic, Pepper, Tomato, and Walnuts)]:**

- 2 fl oz ( $\frac{1}{4}$  cup = 4 TBSP) to 4 fl oz ( $\frac{1}{2}$  cup = 8 TBSP) of Serenade ASO per gallon of water.
- Spray plants to run-off, covering both top and bottom surface of foliage to ensure thorough coverage.

**[For] [Annual and Perennial] Ornamental Plants, Flowers, Flowering Plants, Tropical Foliage, Foliage, Trees and Shrubs:**

- 2 fl oz ( $\frac{1}{4}$  cup = 4 TBSP) to 4 fl oz ( $\frac{1}{2}$  cup = 8 TBSP) of Serenade ASO per gallon of water.
- Spray plants to run-off, covering both top and bottom surface of foliage to ensure thorough coverage.

**[For] Lawns [, Turf, Sod and Ornamental Turf]:**

- 2 fl oz ( $\frac{1}{4}$  cup = 4 TBSP) to 8 fl oz (1 cup = 16 TBSP) of Serenade ASO per gallon of water.
- Apply at a rate of 1 gallon of spray solution per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf].

**[Optional/Alternate: [For] Lawns [, Turf, Sod and Ornamental Turf]:**

- 1 fl oz ( $\frac{1}{8}$  cup = 2 TBSP) to 4 fl oz ( $\frac{1}{2}$  cup = 8 TBSP) of Serenade ASO per gallon of water.
- Apply at a rate of 2 gallons of spray solution per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf] (equivalent to 2 to 8 fl oz of Serenade ASO per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf].)

[Hose-End Sprayer]

[Alternate statement: How To Use Hose-end Sprayer]

#### HOW TO USE [APPLICATION INSTRUCTIONS]

- Shake Well Before Use
- Follow hose-end sprayer directions to determine how to fill, set dial, clean and disconnect from hose.
- Set dial on sprayer to deliver rates of Serenade ASO [this product] per gallon of water as directed below.

#### **HOW MUCH TO USE**

- No mixing or measuring is needed. Dilutes automatically as you spray. Spray plants to run-off.

#### **[For] Fruits, Vegetables, Nuts [(e. g. Apples/Pears, Broccoli, Carrot, Cherries, Cucurbits, Grapes, Leafy Vegetables, Onions/Garlic, Pepper, Tomato, and Walnuts)]:**

- Set sprayer to apply 2 fl oz ( $\frac{1}{4}$  cup = 4 TBSP) to 4 fl oz ( $\frac{1}{2}$  cup = 8 TBSP) of Serenade ASO per gallon of water.
- Spray plants to run-off, covering both top and bottom surface of foliage to ensure thorough coverage.

#### **[For] [Annual and Perennial] Ornamental Plants, Flowers, Flowering Plants, Tropical Foliage, Foliage, Trees and Shrubs:**

- Set sprayer to apply 2 fl oz ( $\frac{1}{4}$  cup = 4 TBSP) to 4 fl oz ( $\frac{1}{2}$  cup = 8 TBSP) of Serenade ASO per gallon of water.
- Spray plants to run-off, covering both top and bottom surface of foliage to ensure thorough coverage.

#### **[For] Lawns [, Turf, Sod and Ornamental Turf]:**

- Set sprayer to apply 2 fl oz ( $\frac{1}{4}$  cup = 4 TBSP) to 8 fl oz (1 cup = 16 TBSP) of Serenade ASO per gallon of water.
- Apply at a rate of 1 gallon of spray solution per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf].

#### **[Optional/Alternate: [For] Lawns [, Turf, Sod and Ornamental Turf]:**

- Set sprayer to apply 1 fl oz ( $\frac{1}{8}$  cup = 2 TBSP) to 4 fl oz ( $\frac{1}{2}$  cup = 8 TBSP) of Serenade ASO per gallon of water.
- Apply at a rate of 2 gallons of spray solution per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf] (equivalent to 2 to 8 fl oz of Serenade ASO per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf]).]

#### **[Optional/Alternative: [For] Lawns [, Turf, Sod and Ornamental Turf]:**

- Set sprayer to apply 2 fl oz ( $\frac{1}{4}$  cup = 4 TBSP) to 4 fl oz ( $\frac{1}{2}$  cup = 8 TBSP) of Serenade ASO per gallon of water.
- Apply one gallon of spray solution to thoroughly cover 500 square feet of lawn [or Turf, Sod and Ornamental Turf] (equivalent to 4 to 8 fl oz of Serenade ASO per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf]).]

#### **[Optional/Alternative: [For] Lawns [, Turf, Sod and Ornamental Turf]:**

- Set sprayer to apply 1 fl oz ( $\frac{1}{8}$  cup = 2 TBSP) to 2 fl oz ( $\frac{1}{4}$  cup = 4 TBSP) of Serenade ASO per gallon of water.
- Apply one gallon of spray solution to thoroughly cover 250 square feet of lawn [or Turf, Sod and Ornamental Turf] (equivalent to 4 to 8 fl oz of Serenade ASO per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf]).]

**[Hose-End Sprayer on Ready to Spray Bottle]**

[Note to Reviewer: These instructions will recommend either 4 fl oz or 5 fl oz of Serenade ASO applied depending upon the nozzle that is used. Nozzles are manufactured to deliver set volumes of product and cannot be altered by the consumer.]

**HOW MUCH TO USE**

- No mixing or measuring is needed. Dilutes automatically as you spray.

**[COVERAGE]**

- [For Lawns: Treats up to 5600 square feet. [(28 fl oz size)]
- [Alternate Statement: Treats up to 6400 square feet. [(32 fl oz size)]

**HOW TO USE [APPLICATION INSTRUCTIONS] For Lawns [, Turf, Sod and Ornamental Turf]:**

1. Shake container well before using.
2. Make sure the nozzle is in the “OFF” position with the safety tab in the valve notch.
3. Securely attach a garden hose to the hose-end spray nozzle, tightening nozzle.
4. Calculate the square feet of the area to be treated by multiplying length by width. 4 [alternate text: 5] fl oz of Serenade ASO - will treat 1000 square feet of lawn [, Turf, Sod and Ornamental Turf].
5. Turn on water at faucet. Extend hose to the farthest area to be treated and work backward toward the faucet.
6. To begin spraying, point nozzle at the lawn [, Turf, Sod and Ornamental Turf] to be treated and bend the safety tab back while turning the dial clockwise. The water will automatically start mixing and spraying. Walk backwards at a steady pace sweeping the spray in an overlapping motion to cover the area to be treated. Refer to the sight gauge on the side of the bottle to guide coverage (example: When 1 fl oz of [Serenade ASO] [this product] has been used, you should have covered 200 [Alternate text: 250] square feet of lawn [, Turf, Sod and Ornamental Turf]).
7. To turn the sprayer off, turn the dial in the opposite direction (counter-clockwise) until the water stops flowing and the safety tab engages. Turn the water off at the faucet. To relieve pressure before detaching sprayer, bend the safety tab back and turn the dial on (clockwise) until the water stops spraying. Then, turn the dial back to the off position until the safety tab engages.
8. Detach the hose-end sprayer from the hose and store unused product in a cool, dark place until its next use.

**[Hose-End Sprayer on Ready to Spray Bottle]**

[Note to Reviewer: This nozzle is calibrated to deliver 2 - 4 fl oz of Serenade ASO per gallon of spray solution applied.]

**HOW MUCH TO USE**

- No mixing or measuring is needed. Dilutes automatically as you spray.
- Spray plants to run-off.

**[COVERAGE]**

- [For other Uses:] Makes up to 14 gallons finished spray. [(28 fl oz size)]
- [Alternate Statement: Makes up to 16 gallons finished spray [(32 fl oz size)]

## **HOW TO USE [APPLICATION INSTRUCTIONS]**

**[For] Fruits, Vegetables, Nuts [(e. g. Apples/Pears, Broccoli, Carrot, Cherries, Cucurbits, Grapes, Leafy Vegetables, Onions/Garlic, Pepper, Tomato, and Walnuts)] [Annual and Perennial] Ornamental Plants, Flowers, Flowering Plants, Tropical Foliage, Foliage, Trees and Shrubs:**

1. Shake container well before using.
2. Make sure the nozzle is in the "OFF" position with the safety tab in the valve notch.
3. Securely attach a garden hose to the hose-end spray nozzle, tightening nozzle.
4. Turn on water at faucet
5. To begin spraying, point nozzle at the area to be treated and bend the safety tab back while turning the dial clockwise. The water will automatically start mixing and spraying.
6. Spray plants to run-off, thoroughly covering both top and bottom surface of foliage to ensure thorough coverage, sweeping the spray in an overlapping motion to cover the area to be treated.
7. To turn the sprayer off, turn the dial in the opposite direction (counter-clockwise) until the water stops flowing and the safety tab engages. Turn the water off at the faucet. To relieve pressure before detaching sprayer, bend the safety tab back and turn the dial on (clockwise) until the water stops spraying. Then, turn the dial back to the off position until the safety tab engages.
8. Detach the hose-end sprayer from the hose and store unused product in a cool, dark place until its next use.

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**[ALTERNATE STATEMENT: WHERE TO USE: VEGETABLES, FRUITS, NUTS, FLOWERS, FOLIAGE, TREES, AND SHRUBS]**

**[ALTERNATE STATEMENT: USE SITES: VEGETABLES, FRUITS, NUTS, FLOWERS, FOLIAGE, TREES, AND SHRUBS]**

**[SERENADE ASO] [MAY BE USED ON [THE FOLLOWING]]:**

**[Alternate: VEGETABLES, FRUITS, NUTS, FLOWERS, FOLIAGE AND ORNAMENTAL PLANTS]**

**[Alternate: [PLANTS] [SITES] ]**

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**[HOME and GARDEN] [VEGETABLE[S], FRUIT[S] AND NUT[S] PLANTS:]**

**[Artichoke, Asparagus**

**Berries** (Blueberry, Blackberry, Raspberry, Loganberry, Huckleberry, Cranberry, Gooseberry, Elderberry, Currant, and other berries)

**Brassica Leafy Vegetables** (Broccoli, Cabbage, Cauliflower, Brussels Sprouts, Collards, Kale, Mustard Greens, Kohlrabi and other brassica leafy vegetables)

**Bulb Vegetables** (Onion, Garlic, Shallots and other bulb vegetables)

**Citrus Fruit** (Orange, Grapefruit, Lemon, Tangerine, Tangelo, Pummelo and other citrus fruit)

**Cucurbit Vegetables** (Cucumber, Cantaloupe, Melon, Muskmelon, Squash, Watermelon and other cucurbit vegetables)

**Fruiting Vegetables** (Pepper, Tomato, Eggplant and other fruiting vegetables)

**Grape, Herbs and Spices, Hop**

**Leafy Vegetables** (Lettuce, Celery, Spinach, Parsley, Radicchio and other leafy vegetables)

**Legume Vegetables** (Beans, Green Beans, Snap Beans, Shell Beans, Dry Beans, Garbanzo Beans, Lima Beans, Peas, Chick Peas, Split Peas, Lentils and other legume vegetables)

**Mango, Mint, Olive, Papaya, Peanuts**

**Pome Fruit** (Apple, Crabapple, Pear, Quince, Mayhaw and other pome fruit)

**Root and Tuber Vegetables** (Carrot, Potato, Sweet Potato, Beets, Ginger, Horseradish, Radish, Ginseng, Turnip and other root and tuber vegetables)

**Stone Fruit** (Apricot, Cherry, Nectarine, Peach, Plum, Prune and other stone fruit)

**Strawberry, Sweet Corn, Tobacco, Watercress**

**Tree Nuts** (Almond, Pistachio, Pecan, Walnut, Filberts, Chestnut, Cashew, Beechnut, Butternut and other tree nuts)]

## **[[RESIDENTIAL] GREENHOUSE PLANTS:]**

**[Brassica Leafy Vegetables** (Broccoli, Cabbage, Cauliflower, Brussels Sprouts, Collards, Kale, Mustard Greens, Kohlrabi and other brassica leafy vegetables)

**Bulb Vegetables** (Onion, Garlic, Shallots and other bulb vegetables)

**Cucurbit Vegetables** (Cucumber, Cantaloupe, Melon, Muskmelon, Squash, Watermelon and other cucurbit vegetables)

**Fruiting Vegetables** (Pepper, Tomato, Eggplant and other fruiting vegetables)

**Herbs and Spices**

**Leafy Vegetables** (Lettuce, Celery, Spinach, Parsley, Radicchio and other leafy vegetables)

**Root and Tuber Vegetables** (Carrot, Potato, Sweet Potato, Beets, Ginger, Horseradish, Radish, Ginseng, Turnip and other root and tuber vegetables)

**Strawberry]**

## **[[ORNAMENTALS, TREES, FOLIAGE, SHRUBS, FLOWERS, FLOWERING PLANTS, TROPICAL PLANTS:]**

### **[Roses]**

[Other Ornamentals, Trees, Shrubs, Foliage, Flowers, Flowering Plants, Tropical Plants, including any or all of the plants listed as evaluated for phytotoxicity as shown below:]

### **[PLANTS EVALUATED FOR PHYTOTOXICITY]**

#### **[Annual and Perennial Flowering Plants:]**

Alyssum	Asters	Azalea	Begonia	Calla Lily	
Chrysanthemum		Cyclamen	Dianthus	Dwarf Bee-Balm	
Easter Lily	Garden Phlox	Geraniums	Gerbera	Golden Star	
Hydrangea	Impatiens	Kalanchoe	Linaria	Lisianthus	Lobelia
Marigolds	Orchids	Pansies	Petunia	Poinsettia	Portulaca
Ranunculus	Roses	<i>Salvia</i> spp.	Snapdragons	Stock	
<i>Verbena</i> spp.	Vinca	Violas	Zinnias]		

#### **[Tropical Foliage:]**

[Aglaonema	Dieffenbachia	<i>Dracaena</i> spp.	English Ivy
Hibiscus	Leatherleaf Fern	Spathiphyllum]	

#### **[Trees and Shrubs:]**

[Azalea	Boxwood	Crape Myrtle	Dogwood
Gumpo	Azalea	Indian Hawthorn	Japanese Maple
<i>Ligustrum japonicum</i>		Lilac	Loropetalum
Photinia		Rhododendron	<i>Rosaceae</i> spp.
Spirea]			Soft Touch Holly

## **[[ORNAMENTALS, TREES, FOLIAGE, SHRUBS, FLOWERS, FLOWERING PLANTS, TROPICAL PLANTS:]**

[Optional Statement: Some pesticides can cause phytotoxic effects, ranging from slight burning or browning of leaves to distorted leaves, fruit, flowers or stems. Damage symptoms may vary with the type of plant that has been treated. It is impossible to test all plants for phytotoxicity. To assure that the plants to be treated are not sensitive to the treatment, apply a small amount of the highest application rate of the product to a few leaves or the above ground portion of a plant and check within 3 days for signs of phytotoxicity. Use product according to label directions.]

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## **DISEASES CONTROLLED [OR SUPPRESSED] [OR PREVENTED] [BY SERENADE ASO] [ON VEGETABLES, FRUITS, NUTS, ORNAMENTAL PLANTS, TREES, SHRUBS, FOLIAGE, FLOWERS, FLOWERING PLANTS, TROPICAL PLANTS] [Alternate: [ON PLANTS] [SITES] ]**

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Anthracoise [(*Colletotrichum* spp.)]

Bacteria [(*Erwinia* spp., *Pseudomonas* spp., *Xanthomonas* spp.)]

Bacterial Leaf Blight [(*Xanthomonas campestris*)]

Bacterial Speck [(*Pseudomonas syringae* pv. *tomato*)]

Bacterial Spot [(*Xanthomonas* spp.)] - suppression



Bean Rust [(*Uromyces appendiculatus*)] - suppression  
 Black Mold [(*Alternaria alternata*)]  
 Black Rot/Black Crown Rot [(*Alternaria* spp.)]  
 Black Spot [of Rose] [(*Diplocarpon rosea*)]  
 Botrytis [(*Botrytis* spp.)]  
 Botrytis Leaf Blight [(*Botrytis squamosa*)]  
 Botrytis Neck Rot [(*Botrytis* spp.)]  
 Downy Mildew [(*Bremia lactucae*, *Peronospora* spp., and *Plasmopara viticola*)] - suppression  
 Early Blight [(*Alternaria solani*)] – suppression  
 Fire Blight [(*Erwinia amylovora*)] – suppression  
 Gray Mold [(*Botrytis cinerea*)]  
 Greasy Spot [(*Mycosphaerella citri*)] - suppression  
 Late Blight [(*Phytophthora infestans*)] – suppression  
 Leaf Spots [(*Alternaria* spp., *Cercospora* spp., *Entomosporium* spp., *Helminthosporium* spp., *Myrothecium* spp., *Septoria* spp.)]  
 Onion Downy Mildew [(*Peronospora destructor*)]  
 Onion Purple Blotch [(*Alternaria porri*)]  
*Phytophthora* spp.  
 Pin Rot [(*Alternaria/Xanthomonas* complex)] - suppression  
 Powdery Mildew [(*Uncinula necator*, *Erysiphe* spp., *Sphaerotheca* spp., *Oidiopsis taurica*, *Leveillula taurica*, *Podosphaera leucotricha*, *Oidium* spp., *Podosphaera* spp.)]  
 Rust [(*Puccinia* spp.)]  
 Scab [(*Venturia* spp.)] - suppression  
 Sclerotinia Head and Leaf Drop [(*Sclerotinia* spp.)]  
 Sour Rot  
 Target Spot [(*Corynespora cassiicola*)]  
 Walnut Blight [(*Xanthomonas campestris*)]  
 White Mold [(*Sclerotinia sclerotiorum*)] – suppression

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[SERENADE ASO] [MAY BE USED ON LAWNS, TURF, SOD AND ORNAMENTAL TURF]  
[ALTERNATE STATEMENT: WHERE TO USE]  
[ALTERNATE STATEMENT: USE SITE]

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**LAWNS [,TURF] [, SOD] [AND ORNAMENTAL TURF]:**

Bluegrass, Bentgrass, Bermudagrass, Dichondra, Fescue, Orchardgrass, Annual Bluegrass (*Poa annua*), St. Augustine, Ryegrass, Zoysia, Mixtures and other grasses or ornamental turf.

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**DISEASES CONTROLLED [OR SUPPRESSED] [OR PREVENTED] [BY SERENADE ASO] [ON LAWNS] [, SOD] [,TURF] [AND ORNAMENTAL TURF]]**

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**Lawn [and Turf[, Sod]] Diseases:**

Brown Patch [(*Rhizoctonia solani*)]  
Dollar Spot [(*Lanzia* spp., *Moellerodiscus* spp., formerly *Sclerotinia homeocarpa*)]  
Powdery Mildew [(*Erysiphe graminis*)]  
Rust [(*Puccinia* spp.)]  
Anthracnose [(*Colletotrichum graminicola*)]  
Red Thread [(*Laetisaria fuciformis*)]  
Fairy Ring [(Various *Basidiomycetes*)]  
Gray Snow Mold, Typhula Blight [(*Typhula* spp.)]  
Pink Snow Mold, Fusarium Patch [(*Microdochium nivale*)]  
Pythium Blight [(*Pythium aphanidermatum*)] [(*Pythium* spp.)]

**STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE:** Store in original container only. [Alternate: in an area inaccessible to children] [or Alternate: out of reach of children]. Keep container closed when not in use. Store at room temperature.

**PESTICIDE DISPOSAL AND CONTAINER HANDLING:**

Nonrefillable container. Do not reuse or refill this container.

**If empty:**

Place in trash or offer for recycling, if available.

**If partly filled:**

Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

[batch codes are sticker applied to the front panel of every label on every product container]

## **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 container at once. By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

**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. Ineffectiveness, plant injury, other property damage, as well as other unintended consequences may result because of factors beyond the control of Bayer CropScience LP. Those factors include, but are not limited to, weather conditions, presence of other materials or the manner of use or application. 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.

### **NET CONTENTS:**



### **PRODUCED FOR**



**Bayer CropScience LP**  
**800 N. Lindbergh Blvd.**  
**St. Louis, MO 63167**  
**1-866-99BAYER (1-866-992-2937)**

**Serenade ASO (PENDING) 03/29/2021, 11/18/2021, 02/15/2022**

[Optional Claims:]

[Attacks over 40 diseases] [Attacks both fungal & bacterial diseases]  
[Apply any time of day] [Will not burn or injure [leaves] [or [lawns] [(turf)] [sod]]  
[Fungicide (or Biofungicide) that attacks harmful garden and lawn diseases]  
[[For] Use on Roses, Vegetables, Fruits, Flowering Plants, Trees, Shrubs and Lawns [(Turf)] [Sod]]  
[Controls Powdery Mildew, Rust, Gray Mold [and other listed diseases]]  
[Suppresses Black Spot, Late Blight, Scab [and other listed diseases]]  
[Concentrate] [Same active ingredient used by farmers]  
[Effectively controls or prevents a wide range of fungal and bacterial plant diseases]  
[Promotes healthier gardens]  
[Prevents and controls harmful garden diseases]  
[Powered by BAYER]

[Optional Claims for Lawn and Turf Label:]

[Prevents and controls harmful (major) lawn diseases (including Brown Patch, Dollar Spot, Red Thread)]  
[Controls Brown Patch, Dollar Spot and other listed [common] lawn diseases]  
[Use on all lawns to prevent and control major lawn diseases]  
[Promotes healthy, disease-free lawns] [“Easy,[.] [!] Attach Hose and Spray.[!]”]  
[Same active ingredient used on golf courses] [Promotes Greener, Healthier Lawns]  
[Promotes greener, healthy, disease-free lawns]  
[Easy to use]