US00000000A (P130405) LABMC SERENADE ASO no content US extended text label
colors: cmyk 7/29/13

5.75”

6.125”

STATE OF HAWAII
Department of Agriculture
ACCEPTED
LICENSE NO. 9529.240

BAYER

SERENADE®
ASO

OMRI LISTED
For Organic Use

ACTIVE INGREDIENT:
QST 713 strain of *Bacillus subtilis** **1.34%**
OTHER INGREDIENTS: **98.66%**
*Contains a minimum of 1 x 10^9 cfu/g **TOTAL: 100.00%**

FOR AGRICULTURAL USE

EPA Reg. No. 264-1152

KEEP OUT OF REACH OF CHILDREN
CAUTION

FOR ADDITIONAL PRECAUTIONARY STATEMENTS and DIRECTIONS FOR USE: See Inside Booklet.

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)

LUS0101-008 USE OF PRODUCT INDICATES ACCEPTANCE OF “CONDITIONS FOR SALE AND WARRANTY” AQ1318-006

P130405A 04/13

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Produced for:
Bayer CropScience LP
P.O. Box 12014, 2 T.W. Alexander Drive
Research Triangle Park, North Carolina 27709
SERENADE is a registered trademark of Bayer.
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Product of Mexico

Can be Used for Organic Production

5.75”

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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 mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment.	

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.

Applicators and other handlers must wear:

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

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

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

ENGINEERING CONTROLS

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

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

USER SAFETY RECOMMENDATIONS

Users should:

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

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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. Do not apply when weather conditions favor drift or run-off from treated areas.

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 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, 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 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.

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

- coveralls
- waterproof gloves
- shoes plus socks

BASIC USE INFORMATION

Serenade® ASO is a broad spectrum, preventative product for the control or suppression of many important plant diseases. Apply Serenade ASO as a foliar spray alone, in alternating spray programs or in tank mixes with other registered crop protection products. Apply Serenade ASO as a soil drench alone or in tank mixes with other registered crop protection products. When conditions are conducive to heavy disease pressure, use Serenade ASO in a rotational program with other registered fungicides. Apply Serenade ASO with spray equipment commonly used for making ground or aerial applications and irrigation systems commonly used for chemigation. Heavy rainfall or irrigation shortly after application may require retreatment.

Serenade ASO is most effectively used in a preventive disease management program. For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides. When using Serenade ASO alone for the first time, use a rate of 4 qt Serenade ASO per acre. Increase the application rate and/or decrease spray intervals of Serenade ASO according to the application instructions depending upon disease pressure. 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.

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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, which may include rotating and/or tank mixing with other products with different modes of action.

USE RATE DETERMINATION
Carefully read and follow all label directions, use rates and restrictions. Application of Serenade ASO prior to or in the early stages of disease development provides the best control or suppression of the targeted plant disease. Use the stated maximum label rates and shorter spray intervals for conditions conducive to threatening or rapid disease development. For proper application, determine the number of acres to be treated, the label use rate and select appropriate gallonage to give good canopy penetration and coverage of plant parts to be protected. Prepare only the amount of spray solution required to treat the measured acreage. Accurate spray equipment calibration is essential prior to use.

PREHARVEST INTERVAL
Serenade ASO can be applied up to and on the day of harvest.

APPLICATION INSTRUCTIONS
SPRAY DRIFT: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator and the grower/treatment coordinator are responsible for considering all of these factors when making decisions. Where states have more stringent regulations, they should be observed.

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 catalogues for specific information on proper equipment calibration. Maintain agitation during mixing and application to assure uniform product suspension. Thorough coverage of all foliage is essential for effective disease control or suppression. Use the application rate, indicated for the appropriate crop in the Application Rate 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.

AERIAL: This product can be applied by aerial application. Refer to the Aerial Drift Reduction Information 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. Three gallons of water per acre is the minimum.

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 Directions for Use section of this label for additional directions and precautions. Maintain agitation during mixing and application to assure 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 through coverage.

MIXING INSTRUCTIONS
MIXING: Serenade ASO must be diluted with water. Partially fill the spray tank with clean water and begin agitation. Add the specified amount of Serenade ASO to the tank. Finish filling the tank to the necessary volume 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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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.

COMPATIBILITY: Do not combine Serenade ASO in the spray tank with pesticides, surfactants 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, 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 will not occur as a result of application.

ADDITIVES: Serenade ASO is compatible with a wide range of additives. Since the product is primarily a protectant, thorough coverage of all above-ground plant parts is required for effective product performance. To improve plant surface coverage, add a nonphytotoxic adjuvant to spray tank.

CHEMIGATION DIRECTIONS FOR USE

Basic Requirements:

1) Apply this product only through sprinkler (including center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set or hand move) or drip-type irrigation systems. Do not apply this product through any other type of irrigation system.
2) Crop injury or lack of effectiveness can result from non-uniform distribution of treated water.
3) Ensure that the irrigation system used is properly calibrated. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
4) Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
5) A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make any necessary adjustments should the need arise.

Requirements for Chemigation Systems Connected to Public Water Systems:

1) Public water supply means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2) Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone (RPZ), backflow 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 flow 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.

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3) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4) The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7) Do not apply when wind speed favors drift beyond the area intended for treatment.
8) 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.
9) 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.
10) Maintain agitation in the pesticide supply tank.
11) Apply Serenade ASO during the last half of the water application.
12) Dilute Serenade ASO in enough water to be able to draw through system for the last half of the water application.

Sprinkler Chemigation Requirements:

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

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8) 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.

9) 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.

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.

Drip Chemigation Requirements:

1) The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

2) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

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3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5) The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7) 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.
8) 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.
9) Maintain agitation in the pesticide supply tank.
10) Apply Serenade ASO during the last half of the water application.
11) Dilute Serenade ASO in enough water to be able to draw through system for the last half of the water application.

AERIAL DRIFT REDUCTION INFORMATION

BASIC: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator and the grower/treatment coordinator are responsible for considering all these factors when making decisions. Where states have more stringent regulations, they should be observed.

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

CONTROLLING DROPLET SIZE: Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets. Pressure - Do not exceed the nozzle manufacturer’s specified pressures. For many nozzle types, lower pressure produces larger droplets. When high flow rates are needed, use higher flow rate nozzles instead of increasing pressure. Number of Nozzles - Use the minimum number of nozzles that provide uniform coverage. Nozzle Orientation - Orienting nozzles, so that the spray is released parallel to the airstream, produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential. Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid-stream nozzles that are oriented straight back produce the largest droplets and the lowest drift. Use medium or coarser spray according to the ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles.

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BOOM WIDTH: For aerial applications, the boom width must not exceed 75% of the wingspan or 90% of the rotary blade.

APPLICATION HEIGHT: Do not release spray at a height greater than 10 feet above the top of the ground or the crop canopy unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above ground or canopy.

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

WIND: Apply only when wind speed is 3 - 10 miles per hour as measured by an anemometer. Drift potential is lowest between wind speeds of 3 – 10 miles per hour. Many factors, however, including droplet size and equipment type, determine drift potential at any given speed. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

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

TEMPERATURE INVERSIONS: Do not apply during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light, variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

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

IMPORTANT: READ CONDITIONS FOR SALE AND WARRANTY BEFORE USE

FOR USE AS A FOLIAR SPRAY ON SELECT AGRICULTURAL FIELD CROPS

Serenade ASO has a 0-Day PreHarvest Interval for all crops contained on this label.

Under moderate to severe disease pressure, for improved performance, increase rates and reduce spray intervals as stated or use Serenade ASO in a tank-mix or rotational program with other registered fungicides.

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Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Asparagus	**Botrytis Blight** *Botrytis cinerea*	2 - 6	Begin applications soon after emergence and when conditions are conducive to disease development. Repeat on 7- to 10-day intervals or as needed. Serenade ASO may be applied up to and on the day of harvest.
Berries Blueberry Blackberry Raspberry Loganberry Huckleberry Cranberry Gooseberry Elderberry Currant and other berry crops	**Mummy Berry** *Monilinia vaccinii-corymbosi* **Anthracnose Fruit Rot*** *Colletotrichum gloeosporiodes* *Colletotrichum acutatum* **Botrytis Blight** *Botrytis cinerea* **Alternaria Fruit Rot*** *Alternaria tenuissima* **Bacterial Canker** *Pseudomonas* spp. ***NOT FOR USE IN CALIFORNIA**	2 - 6	**Mummy Berry** - For control, begin applications at the bud break stage of development and repeat on 7- to 10-day intervals or as needed. **Bacterial Canker** – Apply before fall rains and again during dormancy before spring growth. Apply throughout the growing season prior to disease development and repeat on 2- to 10-day intervals or as needed. **Alternaria and Anthracnose Fruit Rot** – Begin applications at the first sign of disease or when conditions become conducive for disease development. Repeat on 7- to 10-day intervals or as needed. **Botrytis Blight** – Begin applications prior to disease development and repeat on 2- to 10-day intervals or as needed. For improved performance of Serenade ASO, add a surfactant to the spray tank to enhance coverage. Cranberries – Make applications to non-flooded fields only. Serenade ASO may be applied up to and on the day of harvest.

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Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Brassica Leafy Vegetables (Cole Crops) Broccoli Cabbage Cauliflower Brussels Sprouts Collards Kale Mustard Greens Kohlrabi and other brassica leafy vegetables	**Pin Rot Complex** *Alternaria/Xanthomonas* **Xanthomonas Leaf Spot** *Xanthomonas campestris* **Alternaria Leaf Spot** *Alternaria* spp. **Downy Mildew** *Peronospora parasitica* *Peronospora* spp. **Powdery Mildew** *Erysiphe polygoni*	2 - 6	**Pin Rot** - For suppression, begin applications when environmental conditions are conducive to disease development and repeat on 2- to 10-day intervals or as needed. For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides for Pin Rot control. **For all other diseases** - Begin applications soon after emergence or transplant and when conditions are conducive to disease development. Repeat on 3- to 10-day intervals or as needed.
Bulb Vegetables Onion Garlic Shallots and other bulb vegetables (including those grown for seed production)	**Botrytis Neck Rot** *Botrytis* spp. **Botrytis Leaf Blight** *Botrytis squamosa* **Onion Purple Blotch** *Alternaria porri* **Onion Downy Mildew** *Peronospora destructor* **Downy Mildew** *Peronospora* spp. **Powdery Mildew** *Erysiphe* spp.	2 - 6	Begin applications when environmental conditions are conducive to disease development and repeat on 7- to 10-day intervals or as needed. Apply sufficient water to provide complete coverage of plants. When conditions are conducive to rapid disease development, use Serenade ASO in a rotational program with other registered fungicides.
	Rust *Puccinia porri*	2 - 6	For suppression, begin applications when conditions are conducive to disease development and repeat on 7- to 10-day intervals or as needed. For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides for Rust control.

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Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Citrus Fruit Orange Grapefruit Lemon Tangerine Tangelo Pummelo and other citrus fruit	**Greasy Spot** *Mycosphaerella citri* **Post Bloom Fruit Drop** *Colletotrichum acutatum* **Scab** *Elsinoe fawcetti* **Melanose** *Diaporthe citri* **Alternaria Leaf Spot** *Alternaria alternate*	2 - 6	**Greasy Spot** - For suppression, begin applications at first new foliar flush, and repeat with subsequent new flushes. When conditions are conducive to rapid disease development, Serenade ASO must be used in a tank-mix program with other registered products, such as spray oil or copper-based fungicides, at labeled rates. **Post Bloom Fruit Drop** – For suppression, begin applications at early bloom and when conditions are conducive to disease development. Repeat on 7- to 10-day intervals or as needed. Utilize the shorter spray interval between applications if warm, wet conditions persist. **Citrus Scab** – For suppression, begin applications at first new foliar flush and repeat at petal fall and at ½ inch diameter fruit. **Melanose** – For suppression, begin applications at petal fall and repeat on 14- to 21-day intervals until fruit becomes resistant. **Alternaria Leaf Spot** – Begin applications when environmental conditions and plant stage are conducive to disease development. Repeat on 7- to 10-day intervals or as needed. For improved performance on Post Bloom Fruit Drop, Scab and Melanose, use Serenade ASO in a tank-mix or rotational program with other registered fungicides.
Corn Sweet Corn Popcorn Seed Corn Silage Corn Field Corn	**Common Rust** *Puccinia sorghi* **Southern Leaf Blight** *Bipolaris maydis* *Helminthosporium maydis* *Cochliobolus heterostrophus*	2 - 6	Begin applications when environmental conditions are conducive to disease development. Continue applications on 7- to 10-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.

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Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Nongrass Animal Feeds (Forage, Fodder, Straw, and Hay) Clover Alfalfa and other nongrass animal feed crops (including those grown for seed production)	**White Mold*** **(Sclerotinia Stem Rot)** *Sclerotinia sclerotiorum* ***NOT FOR USE IN CALIFORNIA**	2 - 6	For suppression of White Mold, begin applications soon after emergence or transplant and when conditions are conducive to disease development. Repeat on 7- to 10-day intervals or as needed.
Cucurbit Vegetables Cucumber Cantaloupe Melon Muskmelon Squash Watermelon and other cucurbit vegetables	**Powdery Mildew** *Erysiphe* spp. *Sphaerotheca* spp. **Gummy Stem Blight** *Didymella bryoniae* *Phoma cucurbitacearum* **Downy Mildew** *Pseudoperonospora cubensis*	2 - 6	Begin applications soon after emergence or transplant and when conditions are conducive to disease development. Repeat on 7- to 10-day intervals or as needed. When environmental conditions and plant stage are conducive to rapid disease development, use Serenade ASO in a rotational program with other registered fungicides.
Fruiting Vegetables Pepper Tomato Eggplant Ground Cherry Tomatillo Okra and other fruiting vegetables	**Bacterial Spot** *Xanthomonas* spp. **Target Spot** *Corynespora cassiicola*	2 - 6	Begin applications soon after emergence or transplant and when environmental conditions are conducive to disease development. Continue applications on 2- to 7-day intervals or as needed. When conditions are conducive to rapid disease development, for improved control, use Serenade ASO in a tank-mix program with copper-based bactericides, registered for control of Bacterial and Target Spot, at labeled rates.
	Bacterial Speck *Pseudomonas syringae* pv. *tomato*	2 - 6	Begin applications soon after emergence or transplant and when environmental conditions are conducive to disease development. Continue applications on 2- to 7-day intervals or as needed. Use the stated higher rates when conditions are conducive to rapid disease development.

(continued)

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6.125”

Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Fruiting Vegetables (cont.) Pepper Tomato Eggplant Ground Cherry Tomatillo Okra and other fruiting vegetables	**Early Blight** *Alternaria solani* **Late Blight** *Phytophthora infestans*	2 - 6	For suppression, begin applications when plants are 4 to 6 inches high. Repeat applications on 5- to 7-day intervals or as needed. For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides. Use the stated shorter spray intervals under conditions conducive to rapid disease development.
	Powdery Mildew *Leveillula taurica* *Oidiopsis taurica* *Erysiphe* spp. *Sphaerotheca* spp.	2 - 6	For suppression, begin applications soon after emergence or transplant and continue on 7- to 10-day intervals or as needed. For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides.
	Gray Mold *Botrytis cinerea*	2 - 6	Begin applications soon after emergence or transplant and repeat on 7- to 10-day intervals or as needed.
Grape	**Gray Mold** *Botrytis cinerea* **Sour Rot** [a complex of pathogens: *Aspergillus niger, Alternaria tenuis, Botrytis cinerea, Cladosporium herbarum, Rhizopus arrhizus, Penicillium* spp., and others]	2 - 6	Begin applications at bloom, before bunch closure, at verasion and preharvest. Apply in sufficient water to provide full coverage. Serenade ASO may be applied up to and on the day of harvest.
	Powdery Mildew *Uncinula necator*	2 - 6	Begin applications when new shoots are ½ to 1½ inches long. Repeat when shoots are 3 to 5 inches long, when shoots are 8 to 10 inches long and then at 7- to 10-day intervals until disease conditions no longer exist. Use the stated high rates and shorter intervals when conditions are conducive to rapid disease development. Apply in sufficient water to provide thorough coverage.
	Downy Mildew *Plasmopara viticola*	2 - 6	For suppression, apply at 10-inch shoot, then at 7- to 10-day intervals until bunch closure (berry touch). For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides for Downy Mildew control.

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6.125”

Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Grape (cont.)	**Phomopsis** *Phomopsis viticola*	2 - 6	Begin applications when shoots are ½ to 1 inches long and repeat when shoots are 6 to 8 inches long.
	Eutypa *Eutypa lata*	2 – 5% v/v*	Apply solution to pruning wounds. Sanitation is critical. All wood from infected plants must be removed from the vineyard and destroyed (either buried or burned).
***2-5% v/v rate (Serenade ASO to water) for this use only.**			
Hop	**Powdery Mildew** *Sphaerotheca macularis*	4 – 6 Qt/100 gal spray volume	Mix 4- 6 qt of Serenade ASO per 100 gallons of water. Use the stated higher rates when moderate to high disease pressure is present or expected. Begin applications when environmental conditions are conducive to rapid disease development. Continue sprays at 7-day intervals or as needed. Coverage will vary with the size of the vines and the type of spray equipment. Apply adequate spray volume to achieve complete spray coverage. Maximum spray volume is 400 gallons per acre. Minimum spray volume for hop growth stages are as follows: Emergence to training: Apply by ground equipment using a minimum spray volume of 20 gallons per acre. Training to wire: Apply by ground equipment using a minimum spray volume of 50 gallons per acre. Wire touch through harvest: Apply by ground equipment using a minimum spray volume of 100 gallons per acre. Consider higher water volumes to achieve thorough coverage after side arms develop.

(continued)

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6.125”

Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Leafy Vegetables Lettuce Celery Spinach Parsley Radicchio and other leafy vegetables (including those grown for seed production)	**Downy Mildew** *Bremia lactucae* *Peronospora* spp. **Powdery Mildew** *Erysiphe cichoracearum* **White Rust*** *Albugo occidentalis* **Pink Rot** *Sclerotinia sclerotiorum* **Bacterial Blight** *Xanthomonas Campestris* ***NOT FOR USE IN CALIFORNIA**	2 - 6	**Pink Rot** – Begin applications approximately 8 weeks before harvest and repeat on 14-day intervals. Apply Serenade ASO as a directed spray in sufficient water to ensure thorough coverage of the base of the plants and the surrounding soil surface. After applications, light irrigation will better incorporate Serenade ASO into the soil and may improve disease control.
			Downy Mildew / Powdery Mildew / White Rust - For suppression, begin applications when conditions are conducive to disease development and repeat on 2- to 10-day intervals or as needed. For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides for White Rust, Downy Mildew and Powdery Mildew control.
			Bacterial Blight - Begin applications when environmental conditions are conducive to disease development. Repeat on 2- to 10-day intervals or as needed.
	Sclerotinia Head and Leaf Drop *Sclerotinia* spp.	2 - 6	For control of early Sclerotinia Head and Leaf Drop: Apply at planting or immediately following planting but prior to crop emergence as a 4- to 6-inch seed line treatment. Within 7 days of thinning, make a second application as a directed spray with multiple nozzles per each seed line in sufficient water to ensure thorough coverage of lower plant leaves and surrounding soil surface. Repeat applications on 10- to 14-day intervals if conditions for disease development persist. Use the stated higher rates under conditions conducive to moderate to severe disease pressure. After applications, light irrigation will better incorporate Serenade ASO into the soil and may improve disease control. OR For control of Sclerotinia Head and Leaf Drop: Within 7 days of thinning or transplanting, apply as a directed spray with multiple nozzles per each seed line in sufficient water to ensure thorough coverage of lower plant leaves and surrounding soil surface. Repeat applications on 10- to 14-day intervals if conditions for disease development persist. Use the stated higher rates under conditions conducive to moderate to severe disease pressure. After applications, light irrigation will better incorporate Serenade ASO into the soil and may improve disease control.

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Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Legumes Vegetables (Succulent or Dried) Beans Green Beans Snap Beans Shell Beans Soybeans Dry Beans Garbanzo Beans Lima Beans Peas Chick Peas Split Peas Lentils and other legume vegetables (including those grown for seed or oil production)	**Rust** *Uromyces appendiculatus*	2 - 6	For suppression, begin applications soon after emergence or transplant and when conditions are conducive to disease development. Repeat on 7- to 10-day intervals or as needed. For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides for Rust control.
	Rust *Puccinia* spp.	2 - 6	Begin applications when environmental conditions and plant stage are conducive to disease development. Repeat on 7- to 10-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
	Damping-Off* *Aphanomyces* spp. ***NOT FOR USE IN CALIFORNIA**	2 - 6	Begin applications soon after emergence or transplant and when conditions are conducive to disease development. Repeat on 7- to 10-day intervals or as needed.
	White Mold (Sclerotinia Stem Rot) *Sclerotinia sclerotiorum*	2 - 6	Begin applications soon after emergence or transplant and when conditions are conducive to disease development. Repeat on 7- to 10-day intervals or as needed. When conditions are conducive to rapid disease development, use Serenade ASO in a rotational program with other registered fungicides.
Mint and other herbs/spices	**Rust** *Puccinia menthae*	2 - 6	Begin applications soon after emergence and when conditions are conducive to disease development. Repeat on 7- to 10-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.

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Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Oilseed Crops* Canola Castor Cotton Flax Rapeseed Safflower Sesame Sunflower and other oilseed crops (including those grown for seed or oil production)	**White Mold*** (**Sclerotinia Stem Rot**) *Sclerotinia sclerotiorum* ***NOT FOR USE IN CALIFORNIA**	2 - 6	For suppression of White Mold, begin applications at the first sign of disease or when conditions become conducive for disease development. Repeat on 7- to 10-day intervals or as needed.
Peanut (including those grown for oil production)	**Early Leaf Spot** *Cercospora* spp. *Cercospora arachidicola* **Late Leaf Spot** *Cercosporidium personatum* **White Mold** *Sclerotinia sclerotiorum*	2 - 6	Begin applications when environmental conditions are conducive to disease development. Repeat applications on 14-day intervals or as needed. For improved control of Leaf Spot diseases, use Serenade ASO in a tank-mix program with copper-based fungicides registered for control of Peanut Leaf Spot diseases. Peanut hay may be fed to livestock.

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Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Pome Fruit Apple Crabapple Pear Quince Mayhaw and other pome fruit	**Fire Blight** *Erwinia amylovora*	2 - 6	For suppression, begin applications at 1 – 5% bloom and repeat as needed to protect open, untreated blossoms when conditions favoring disease development are likely to occur. For maximum control, use Serenade ASO prior to and as close as possible to Fire Blight infection events. During periods of rapid bloom development and frequent infection periods, use 2- to 7-day spray intervals. After petal fall, continue applications on 7-day intervals while environmental conditions favor disease development.
			Apply in sufficient water to provide full coverage. For improved performance, use Serenade ASO in a rotational program with antibiotics registered for Fire Blight control, such as oxytetracycline or streptomycin.
			Proper orchard cultural practices are essential to eliminate Fire Blight-infected tissue from the orchard to assure good performance of any crop protection product. Care must be taken to remove and destroy dead and diseased wood from the orchard prior to and during the growing season.
			Use of Serenade ASO alone has not been shown to affect fruit finish. Use caution when selecting spray adjuvants. Select only those adjuvants, which through prior experience, do not affect fruit finish when combined with Serenade ASO.
	Scab *Venturia* spp.	2 - 6	For suppression, begin applications at green tip or when environmental conditions become favorable for primary Scab development and repeat on 7- to 10-day intervals or as needed. For improved performance, use Serenade ASO in a tank–mix or rotational program with other registered fungicides for Scab control.

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Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Pome Fruit (cont.) Apple Crabapple Pear Quince Mayhaw and other pome fruit	**Brooks Spot*** *Mycosphaerella pomi* **Cedar Apple Rust*** *Gymnosporangium juniperi-virginianae* **Flyspeck*** *Schizothyrium pomi* **Sooty Blotch*** *Gloeodes pomigena* **Bot Rot*** *Botryosphaeria dothidea* **Bitter Rot*** *Colletotrichum* spp. **Bull's Eye Rot*** *Neofabraea* spp. ***NOT FOR USE IN CALIFORNIA**	2 – 6	**For control of Brooks Spot, Cedar Apple Rust, Flyspeck, Sooty Blotch, Bot Rot, Bitter Rot and Bull's Eye Rot:** Begin applications pre-bloom when environmental conditions are conducive to disease development. Repeat applications at 7- to 14-day intervals or as needed. Apply in sufficient spray volume to ensure thorough coverage. Use the stated higher application rates and shorter spray intervals when conditions are conducive to rapid disease development or heavy disease pressure. For improved performance of Serenade ASO, add a surfactant, known to be safe to the target crop, to the spray tank to enhance coverage and wetting of plant surfaces. Serenade ASO may be applied up to and on the day of harvest (0-day PHI).
	Powdery Mildew *Podosphaera leucotricha*	2 – 6	Begin applications at tight cluster, or sooner, if conditions are conducive to disease development. Repeat applications through the second cover spray on 7- to 10-day intervals. Additional sprays beyond second cover may be needed on susceptible varieties or when environmental conditions are conducive to rapid disease development. Use the stated higher label rates and shorter spray intervals when conditions are conducive to rapid disease development.

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Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Root and Tuber Vegetables Carrot Potato Sweet Potato Cassava Beets Ginger Horseradish Radish Ginseng Turnip and other root and tuber vegetables (including those grown for seed production)	**Black Rot/ Black Crown Rot** *Alternaria* spp.	2 - 6	Begin applications soon after emergence or transplant and when conditions are conducive to disease development. Repeat on 7- to 10-day intervals or as needed. Use the stated higher rates and shorter intervals when conditions are conducive to rapid disease development. Apply in sufficient water to provide thorough coverage.
	Bacterial Leaf Blight *Xanthomonas campestris* **Downy Mildew** *Peronospora* spp. **Powdery Mildew** *Erysiphe* spp. **White Mold** *Sclerotinia sclerotiorum* **Gray Mold** *Botrytis* spp.	2 - 6	Begin applications soon after emergence or transplant and when conditions are conducive to disease development. Repeat on 7- to 10-day intervals or as needed. For suppression of White Mold, begin applications soon after emergence or transplant and when conditions are conducive to disease development. Repeat on 7- to 10-day intervals or as needed.
	Aerial Stem Rot* *Erwinia carotovora* ***NOT FOR USE IN CALIFORNIA**	2 - 6	For suppression, begin applications at the first sign of disease or when conditions become conducive for disease development. Repeat on 7- to 10-day intervals or as needed.
	Early Blight *Alternaria solani* **Late Blight** *Phytophthora infestans*	2 - 6	For suppression, begin applications soon after emergence and when conditions are conducive to disease development. Repeat on 5- to 7-day intervals or as needed. For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides for Early and Late Blight control.

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Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Stone Fruit Apricot Cherry Nectarine Peach Plum Prune and other stone fruit crops	**Brown Rot Blossom Blight** *Monilinia laxa* **Bacterial Canker** *Pseudomonas* spp. **Powdery Mildew** *Sphaerotheca pannosa* *Podosphaera clandestina* *Podosphaera* spp. **Bacterial Leaf Spot / Bacterial Spot*** *Xanthomonas arboricola* **Fruit Brown Rot** *Monilinia fructicola* **Gray Mold** *Botrytis cinerea* ***NOT FOR USE IN CALIFORNIA**	2 - 6	**Brown Rot Blossom Blight** – Begin applications at early bloom and repeat through petal fall on 7-day intervals or as needed. **Bacterial Canker** – Apply post harvest before fall rains and again during dormancy before spring growth. **Powdery Mildew** - For suppression, begin applications at popcorn stage and repeat on 7-day intervals or as needed. **Bacterial Leaf Spot / Bacterial Spot** - Begin applications at bud break and continue on 7- to 14-day schedule or as needed until harvest. During periods of rapid disease development and frequent infection periods, use Serenade ASO in a program with other registered antibiotics and/or copper bactericides. For improved performance of Serenade ASO, add a surfactant to the spray tank to enhance coverage. **Fruit Brown Rot** – For suppression, begin applications prior to disease development when environmental conditions and plant stage are conducive to rapid disease development. Repeat on 7- to 10-day intervals or as needed. **Gray Mold** – Begin applications prior to disease development when environmental conditions and plant stage are conducive to rapid disease development. Repeat on 7- to 10-day intervals or as needed. For all diseases: Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides. Post-harvest disease protection – To aid in the control of post-harvest infections of *Botrytis* and *Monilinia,* apply Serenade ASO prior to harvest with sufficient water to thoroughly cover fruit. Apply on a 7-day schedule or as needed up until the time of harvest. Serenade ASO may be applied up to and on the day of harvest.

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Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Strawberry	**Powdery Mildew** *Sphaerotheca macularis* *Erysiphe* spp. **Anthracnose** *Colletotrichum acutatum* **Botrytis** *Botrytis cinerea* **Gray Mold** *Botrytis* spp.	2 - 6	**Botrytis / Powdery Mildew** - For suppression, begin applications at or before flowering and repeat on 7- to 10-day intervals or as needed through harvest. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides for Powdery Mildew and Botrytis control. **Anthracnose** – Begin applications prior to disease development and repeat on 7- to 10-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides. Thorough coverage is essential. Serenade ASO may be applied up to and on the day of harvest.
Tree Nuts Almond Pistachio Pecan Walnut Filberts Chestnut Cashew Beechnut Butternut Macadamia and other tree nuts	**Walnut Blight** *Xanthomonas campestris* **Anthracnose** *Colletotrichum acutatum* **Shot Hole** *Wilsonomyces carpophilus* *Xanthomonas pruni* *Blumeriella gaapi* *Cercospora* spp. **Brown Rot** *Monilinia* spp. **Bacterial Canker** *Pseudomonas syringae*	2 – 6	**Walnut Blight** – Begin applications no later than pistillate bloom and repeat on 3- to 10-day intervals or as needed. Apply in advance of rain for maximum protection. Under conditions conducive to heavy disease pressure, for improved control, use Serenade ASO in a tank-mix or rotational program with a copper-based bactericide registered for control of Walnut Blight. **Anthracnose**, **Shot Hole and Brown Rot** – For suppression, begin applications prior to disease development and repeat on 7- to 10-day intervals or as needed. **Bacterial Canker** – Begin applications prior to disease development and repeat on 7- to 10-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Serenade ASO in a tank-mix or rotational program with other registered fungicides.

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Application Rates of Serenade ASO for Selected Field Crops			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Avocado **Mango**	**Anthracnose** *Colletotrichum gloeosporioides* *Colletotrichum ananas*	2 - 6	Begin applications at budbreak and repeat on 14- to 21-day intervals or as needed through harvest.
	Bacterial Canker *Xanthomonas campestris*	2 - 6	Begin applications when environmental conditions are conducive to disease development. Repeat on 7- to 10-day intervals or as needed.
Papaya	**Anthracnose** *Colletotrichum gloeosporioides* *Colletotrichum ananas* **Bacterial Canker** *Erwinia* spp.	2 - 6	Begin applications at flowering and repeat on 14- to 21-day intervals or as needed through harvest.
Pineapple	**Anthracnose** *Colletotrichum gloeosporioides* *Colletotrichum ananas*	2 - 6	Begin applications at flowering and repeat on 14- to 21-day intervals or as needed through harvest.
Bananas **Plantains**	**Sigatoka** *Mycosphaerella fijiensis*	2 - 6	Begin applications when leaves first appear and repeat on 7- to 21-day intervals or as needed. Apply in sufficient water to obtain thorough coverage of foliage. For improved disease control, Serenade ASO may be tank mixed with oil or other fungicides, registered for control of Sigatoka, at labeled rates. When conditions are conducive to rapid disease development and/or heavy disease pressure, use the stated higher application rates and rotational spray programs with other fungicides registered for control of Sigatoka.
Watercress	**Cercospora Leaf Spot** *Cercospora* spp.	2 – 6	Begin applications when conditions are conducive to disease development. Continue applications on 7- to 10-day intervals or as needed.
Grass Seed Production Crops Bluegrass Ryegrass Fescue Orchardgrass and other grass grown for seed production	**Powdery Mildew*** *Erysiphe* spp. **Rust*** *Puccinia* spp. ***NOT FOR USE IN CALIFORNIA**	2 - 6	Begin applications when environmental conditions and plant stage are conducive to disease development. Repeat on 7- to 10-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.

5.75”

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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 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.

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.

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.

5.75”

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CONDITIONS FOR SALE AND WARRANTY

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.

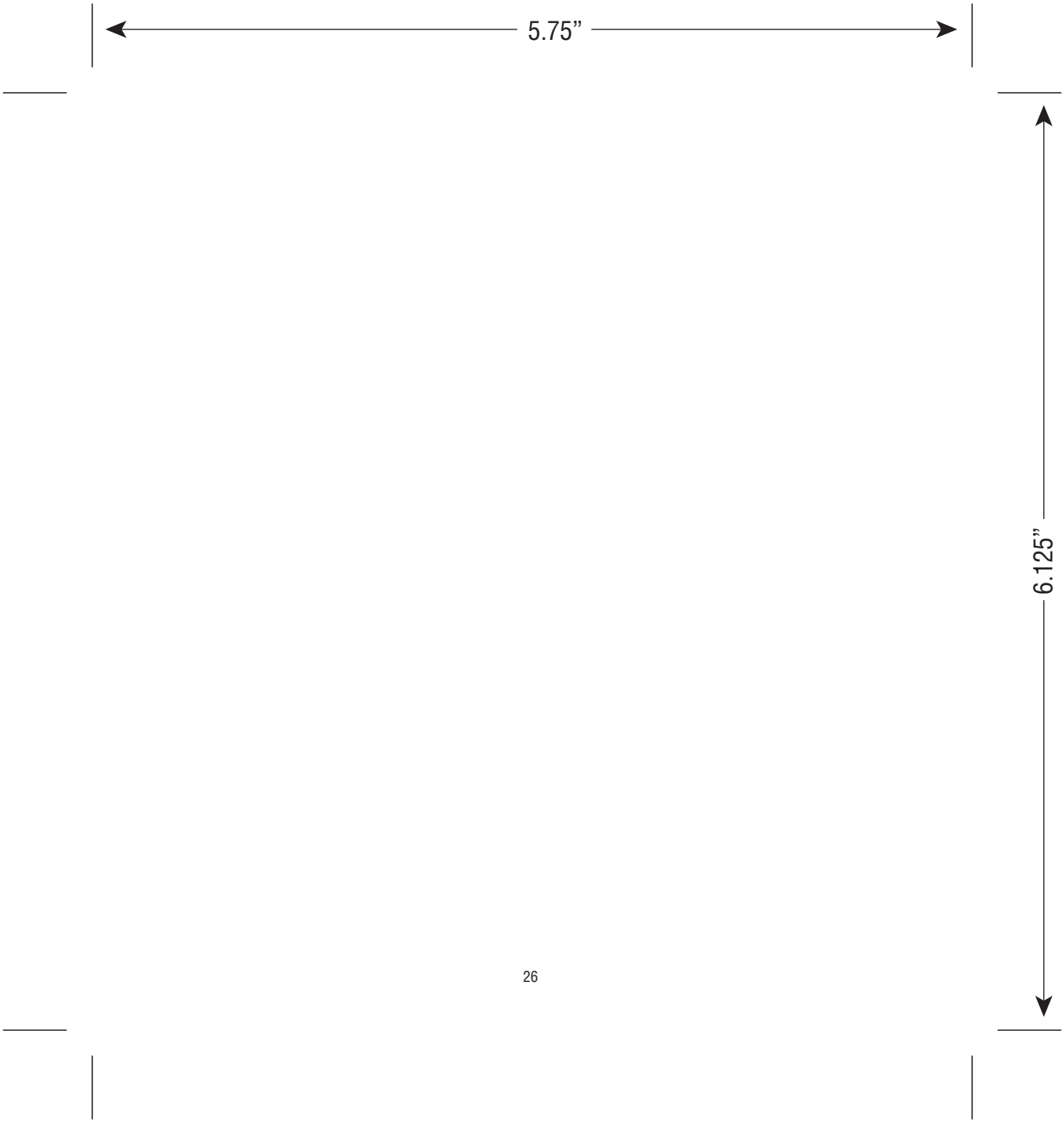
By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties, and Limitations of Liability. These terms may only be modified by a written document signed by a duly authorized representative of Bayer CropScience LP.

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.

Bayer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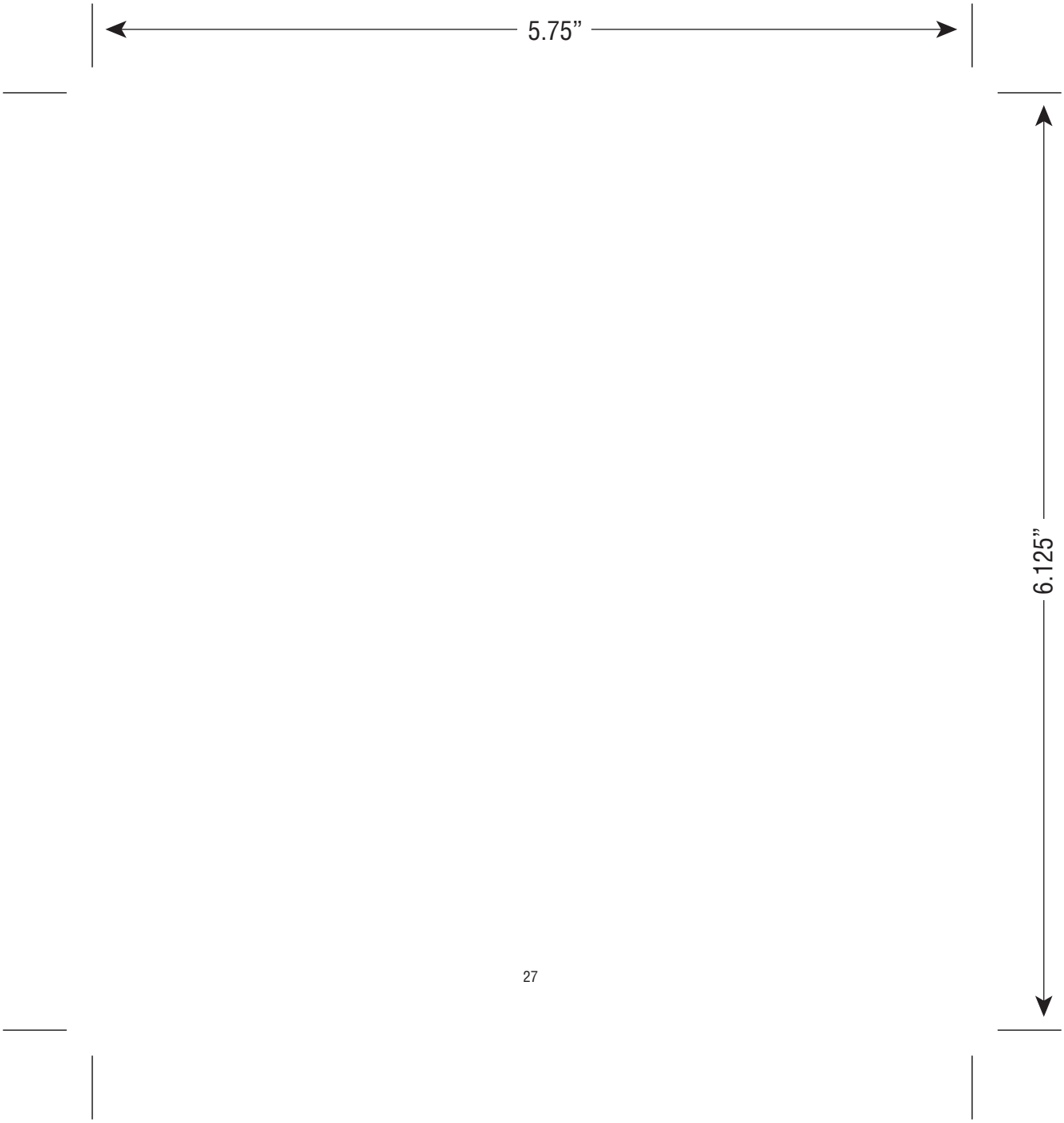
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Back Panel - remains affixed to the container.
Net Contents, EPA Est. No. and Lot No. will be added by codifier at time of labeling.

6.75”

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EPA Est. No.:

Net Contents: 2.5 GAL

Lot No.:

SERENADE® ASO

ACTIVE INGREDIENT:
QST 713 strain of *Bacillus subtilis** **1.34%**
OTHER INGREDIENTS: **98.66%**
*Contains a minimum of 1 x 10^9 cfu/g **TOTAL: 100.00%**

FOR AGRICULTURAL USE

EPA Reg. No. 264-1152

KEEP OUT OF REACH OF CHILDREN

CAUTION

FOR ADDITIONAL PRECAUTIONARY STATEMENTS: See Attached Booklet.

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

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

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

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS
CAUTION
Harmful if inhaled. Avoid breathing spray mist. Remove and wash contaminated clothing before reuse.

FOR ADDITIONAL PRECAUTIONARY STATEMENTS:
See attached label booklet: Personal Protective Equipment (PPE), User Safety Recommendations, and Environmental Hazards

EMERGENCY INFORMATION

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

DIRECTIONS FOR USE: See attached booklet.

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

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 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.

For complete CONTAINER DISPOSAL instructions, see attached booklet.

Bayer CropScience LP
P.O. Box 12014, 2 T.W. Alexander Drive
Research Triangle Park, North Carolina 27709
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LUS0101-008 AQ1318-006

Can be Used for Organic Production

OMRI LISTED For Organic Use

P130405A 04/13

US000000000A

US00000000A (P120919) Serenade ASO 2 x 2.5 gal 62044 Shipper 8/1/13 cmyk

6.75

6.75

SERENADE®
ASO

Net Contents:

2 x 2.5 Gal. (2 x 9.46 L)

ACTIVE INGREDIENT:
QST 713 strain of *Bacillus subtilis** **1.34%**
OTHER INGREDIENTS: **98.66%**
*Contains a minimum of 1 x 10^9 cfu/g. **TOTAL 100.00%**

FOR AGRICULTURAL USE

EPA Reg. No. 264-1152

KEEP OUT OF REACH OF CHILDREN
CAUTION

FOR ADDITIONAL PRECAUTIONARY STATEMENTS: See Label On Inside Container.

For **MEDICAL** And **TRANSPORTATION** Emergencies **ONLY**
Call 24 Hours A Day 1-800-334-7577
For **PRODUCT USE** Information 1-866-99BAYER (1-866-992-2937)

FIRST AID

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

LUS0021-007 AQ1318-006

OMRI LISTED For Organic Use

Can be Used for Organic Production

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

DIRECTIONS FOR USE: See label on inside container.
It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

STORAGE

Do not contaminate water, food, or feed by storage and disposal.
PESTICIDE STORAGE: Store in a dry area inaccessible to children. Store in original containers only. Keep container closed when not in use.

For complete STORAGE AND DISPOSAL instructions, see label on inside container.

Lot No.

EPA Est. No.

P120919A 02/13

US00000000A

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Bayer CropScience LP
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2 T.W. Alexander Drive
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1-866-99BAYER (1-866-992-2937)

Serenade® ASO

EPA Reg. No. 264-1152

For Use On: For use as a soil treatment on select agricultural field crops.

This supplemental label expires on 09/05/2017 and must not be used or distributed after this date.

Supplemental Label

KEEP OUT OF REACH OF CHILDREN
CAUTION

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. Read this label and the product package label before using this product. This Supplemental Label must be in the possession of the user at the time of pesticide application. Follow all applicable directions, restrictions, Worker Protection Standard requirements, and precautions on the product label for Serenade® ASO attached to the container.

USE DIRECTIONS FOR SPECIFIC CROPS

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

Serenade ASO is a broad spectrum biofungicide for the prevention, suppression and control of soil borne diseases on a wide range of fruits and vegetables as well as cotton. Serenade ASO enhances germination and plant growth by suppressing soil diseases, such as those caused by *Rhizoctonia, Pythium, Fusarium, Verticillium* and *Phytophthora*. See the application tables for specific information.

APPLICATION INSTRUCTIONS:

All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications:
Mix 0.5 qt to 2 qts of Serenade ASO in the appropriate amount of water per acre. Use the stated higher rates when the weather conditions are expected to be conducive for disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. Serenade ASO can be mixed with chemical fungicides registered for soil applications.

Soil Surface (Drench) Applications at Planting: Use at planting**,** seeding, or transplant. Apply finished spray mixture, at a rate to thoroughly soak the growing media through the root zone, as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems.

Shanked-In or Injected Applications: Serenade ASO can be shanked-in or injected into the soil prior to-, at-, or post-planting/ transplanting of crops alone or with most types of liquid nutrients.

In-Furrow Applications:
For in-furrow applications, apply Serenade ASO as an in-furrow spray in the required amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered.

Soil Surface (Drench) Applications at Any Stage of Growth: Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g., via hydraulic nozzles at low volumes), it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.

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Application Rates of Serenade ASO for Soil Uses in Field for Soil Borne/Seedling Disease Control

Crops	Disease	Rate (qt/acre)	Application Instructions
Cereal Grains Barley Corn Millets Oat Rice Rye Sorghum Triticale Wheat and other cereal grain crops	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.**	**0.5 – 2**	**All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications:** Mix 0.5 qt to 2 qts of Serenade ASO in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. SERENADE ASO can be mixed with chemical fungicides registered for soil applications. **Soil Surface (Drench) Applications At Planting:** Use at planting, seeding or transplant. Apply finished spray mixture, at a rate to thoroughly soak the growing media through the root zone, as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. **Shanked-In and Injected Applications**: Serenade ASO can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops alone or with most types of liquid nutrients. **In-Furrow Applications**: For in-furrow applications, apply Serenade ASO as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered. **Soil Surface (Drench) Applications At Any Stage of Growth:** Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g., via hydraulic nozzles at low volumes), it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.

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For PRODUCT USE Information Call 1-866-99BAYER (1-866-992-2937)

As with any crop-protection product, always read and follow label directions.
For additional information call toll-free 1-866-99BAYER (1-866-992-2937).

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Serenade® ASO

EPA Reg. No. 264-1152

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CAUTION

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. Read this label and the product package label before using this product. This Supplemental Label must be in the possession of the user at the time of pesticide application. Follow all applicable directions, restrictions, Worker Protection Standard requirements, and precautions on the product label for Serenade® ASO attached to the container.

USE DIRECTIONS FOR SPECIFIC CROPS

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Under moderate to severe disease pressure, for improved performance, increase rates and reduce spray intervals as stated or use Serenade ASO in a tank-mix or rotational program with other registered fungicides.

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APPLICATION INSTRUCTIONS:

All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications:
Mix 2 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade ASO in the appropriate amount of water per acre. Use the stated higher rates when the weather conditions are expected to be conducive for disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. Serenade ASO can be mixed with chemical fungicides registered for soil applications.

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Shanked-In or Injected Applications: Serenade ASO can be shanked-in or injected into the soil prior to-, at-, or post-planting/ transplanting of crops alone or with most types of liquid nutrients.

In-Furrow Applications:
For in-furrow applications, apply Serenade ASO as an in-furrow spray in the required amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered.

Soil Surface (Drench) Applications at Any Stage of Growth: Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g., via hydraulic nozzles at low volumes), it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.

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Application Rates of Serenade ASO for Soil Uses in Field for Soil Borne/Seedling Disease Control

Crops	Disease	Rate (qt/acre)	Application Instructions
Brassica Leafy Vegetables (Cole Crops) Broccoli Cabbage Cauliflower Brussels Sprouts Collards Kale Mustard Greens Kohlrabi and other brassica leafy vegetables	***Rhizoctonia* spp.** ***Verticillium* spp. [*]** **Clubroot [*]** *Plasmodiophora brassicae* **[*Not For Use In California]**	2 - 6	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 2 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade ASO in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. SERENADE ASO can be mixed with chemical fungicides registered for soil applications. **Soil Surface (Drench) Applications At Planting:** Use at planting, seeding or transplant. Apply finished spray mixture, at a rate to thoroughly soak the growing media through the root zone, as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. **Shanked-In and Injected Applications**: Serenade ASO can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops alone or with most types of liquid nutrients. **In-Furrow Applications**: For in-furrow applications, apply Serenade ASO as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered. **Soil Surface (Drench) Applications At Any Stage of Growth:** Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g., via hydraulic nozzles at low volumes), it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.
Bulb Vegetables [*] Onion Garlic Shallots and other bulb vegetables (including those grown for seed production)	**Pink Root [*]** *Phoma* spp. – (Suppression) **[*Not For Use In California]**		

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Crops	Disease	Rate (qt/acre)	Application Instructions
Citrus Fruit [*] Orange Grapefruit Lemon Tangerine Tangelo Pummelo and other citrus crops	***Pythium* spp. [*]** **[*Not For Use In California]**	**4 - 6**	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 4 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade ASO in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. SERENADE ASO can be mixed with chemical fungicides registered for soil applications. **Soil Surface (Drench) Applications At Planting:** Use at planting, seeding or transplant. Apply finished spray mixture, at a rate to thoroughly soak the growing media through the root zone, as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. **Shanked-In and Injected Applications**: Serenade ASO can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops alone or with most types of liquid nutrients. **In-Furrow Applications**: For in-furrow applications, apply Serenade ASO as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered. **Soil Surface (Drench) Applications At Any Stage of Growth:** Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g., via hydraulic nozzles at low volumes), it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.
	***Phytophthora* spp. [*]** **[*Not For Use In California]**	**4 - 6**	**Soil Surface (Drench) Applications At Root Flush:** Apply 1 fl oz of the finished spray mixture per plant to the surface of the soil at root flush (just prior to foliar (vegetative) flush) as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g., via hydraulic nozzles at low volumes), it is important to irrigate to move the material into the root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications.

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Crops	Disease	Rate (qt/acre)	Application Instructions
Corn[*] Sweet Corn Popcorn Seed Corn Silage Corn Field Corn	***Rhizoctonia* spp. [*]** ***Pythium* spp. [*]** ***Fusarium* spp. [*]** **[*Not For Use In California]**	**2 – 6**	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 2 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade ASO in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. SERENADE ASO can be mixed with chemical fungicides registered for soil applications. **Soil Surface (Drench) Applications At Planting:** Use at planting, seeding or transplant. Apply finished spray mixture, at a rate to thoroughly soak the growing media through the root zone, as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. **Shanked-In and Injected Applications**: Serenade ASO can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops alone or with most types of liquid nutrients. **In-Furrow Applications**: For in-furrow applications, apply Serenade ASO as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered. **Soil Surface (Drench) Applications At Any Stage of Growth:** Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g., via hydraulic nozzles at low volumes), it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.
Cucurbit Vegetables Cucumber Cantaloupe Melon Muskmelon Squash Watermelon and other cucurbit vegetables	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp. [*]** ***Phytophthora* spp.** **[*Not For Use In California]**		
Fruiting Vegetables Pepper Tomato Eggplant Ground Cherry Tomatillo Okra and other fruiting vegetables	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp. [*]** ***Phytophthora* spp.** **[*Not For Use In California]**		
Leafy Vegetables Lettuce Celery Spinach Parsley Radicchio and other leafy vegetables	***Rhizoctonia* spp.** ***Verticillium* spp.**		

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Crops	Disease	Rate (qt/acre)	Application Instructions
Continued Leafy Vegetables Lettuce Celery Spinach Parsley Radicchio and other leafy vegetables	**Sclerotinia Head and Leaf Drop -** *Sclerotinia* spp.	**2 - 6**	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 2 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade ASO in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. SERENADE ASO can be mixed with chemical fungicides registered for soil applications. **Soil Surface (Drench) Applications At Planting:** Use at planting, seeding or transplant. Apply finished spray mixture, at a rate to thoroughly soak the growing media through the root zone, as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. Repeat applications on 10- to 14-day intervals if conditions for disease development persist. Use the stated higher rates under conditions conducive to moderate to severe disease pressure. Light irrigation after application to incorporate the product may improve disease control. **Shanked-In and Injected Applications**: Serenade ASO can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops alone or with most types of liquid nutrients. Repeat applications on 10- to 14-day intervals if conditions for disease development persist. Use the stated higher rates under conditions conducive to moderate to severe disease pressure. Light irrigation after application to incorporate the product may improve disease control. **In-Furrow Applications**: For in-furrow applications, apply Serenade ASO as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered. Repeat applications on 10- to 14-day intervals if conditions for disease development persist. Use the stated higher rates under conditions conducive to moderate to severe disease pressure. Light irrigation after application to incorporate the product may improve disease control. **Soil Surface (Drench) Applications At Any Stage of Growth:** Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g., via hydraulic nozzles at low volumes), it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated on 10- to

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			14-days intervals if conditions for disease development persist. Use the stated higher rates under conditions conducive to moderate to severe disease pressure.

Crops	Disease	Rate (qt/acre)	Application Instructions
Legumes Vegetables (Succulent or Dried) Beans Green Beans Snap Beans Shell Beans Soybeans Dry Beans Garbanzo Beans Lima Beans Peas Chick Peas Split Peas Lentils and other legume vegetables (including those grown for seed or oil production)	***Rhizoctonia* spp.** ***Pythium* spp. [*]** ***Fusarium* spp. [*]** ***Verticillium* spp. [*]** ***Phytophthora* spp. [*]** **[*Not For Use In California]**	**2 – 6**	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 2 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade ASO in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. SERENADE ASO can be mixed with chemical fungicides registered for soil applications. **Soil Surface (Drench) Applications At Planting:** Use at planting, seeding or transplant. Apply finished spray mixture, at a rate to thoroughly soak the growing media through the root zone, as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. **Shanked-In and Injected Applications**: Serenade ASO can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops alone or with most types of liquid nutrients. **In-Furrow Applications**: For in-furrow applications, apply Serenade ASO as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered. **Soil Surface (Drench) Applications At Any Stage of Growth:** Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g., via hydraulic nozzles at low volumes), it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.

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Crops	Disease	Rate (qt/acre)	Application Instructions
Root and Tuber Vegetables Carrot Potato Sweet Potato Cassava Beets Ginger Horseradish Radish Ginseng Turnip and other root and tuber vegetables (including those grown for seed production)	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp. [*]** ***Phytophthora* spp.** ***Erwinia* spp. [*]** **[*Not For Use In California]**	2-6	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 2 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade ASO in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. SERENADE ASO can be mixed with chemical fungicides registered for soil applications. **Soil Surface (Drench) Applications At Planting:** Use at planting, seeding or transplant. Apply finished spray mixture, at a rate to thoroughly soak the growing media through the root zone, as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. **Shanked-In and Injected Applications**: Serenade ASO can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops alone or with most types of liquid nutrients. **In-Furrow Applications**: For in-furrow applications, apply Serenade ASO as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered. **Soil Surface (Drench) Applications At Any Stage of Growth:** Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g., via hydraulic nozzles at low volumes), it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle. For Colletotrichum spp. Uses: Use a foliar fungicide to control stem lesions once plants have emerged.
Strawberry	**Verticillium Wilt** *Verticillium dahlia*		

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This supplemental label expires on 07/25/2016 and must not be used or distributed after this date.

Supplemental Label

KEEP OUT OF REACH OF CHILDREN

CAUTION

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. Read this label and the product package label before using this product. This Supplemental Label must be in the possession of the user at the time of pesticide application. Follow all applicable directions, restrictions, Worker Protection Standard requirements, and precautions on the product label for SERENADE® ASO attached to the container.

Application Rates of Serenade ASO for Selected Field Crops

Crops	Disease	Rate (qt/acre)	Application Instructions
Cereal Grains Barley Corn Millets Oat Rice Rye Sorghum Triticale Wheat and other cereal grain crops	**Powdery Mildew** *Erysiphe graminis* **Rust** *Puccinia* spp. **Blast** *Pyricularia oryzae* **Sheath Spot** *Rhizoctonia oryzae* **Sheath Blight** *Thanatephorus cucumeris* (Anamorph: *Rhizoctonia solani*) *Thanatephorus kernel* **Smut** *Tilletia barclayana* **Bacterial Blight and Streak** *Xanthomonas* spp. **Stem Rot** *Sclerotium oryzae* *Magnaporthe* spp. **Brown Rot, Leaf Spots and Smuts** *Cercospora* spp. *Entyloma* spp. *Dreschlera* spp. *Cochliobolus* spp. *Ceratobasidium* spp.	1 - 6	Begin applications when environmental conditions and plant stage are conducive to disease development. Repeat on 7- to 10-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.

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)

As with any crop-protection product, always read and follow label directions.
For additional information call toll-free 1-866-99BAYER (1-866-992-2937).