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

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

March 4, 2015

Tammy Zimmer
Regulatory Manager
Bayer CropScience
PO Box 12014, 2 T.W. Alexander Drive
Research Triangle Park, NC 27709

Subject: Labeling Notification per Pesticide Registration Notice (PRN) 98-10 – Addition of Alternate Brand Name
Product Name: Sonata ASO
EPA Registration Number: 264-1153
Application Date: February 6, 2015
OPP Decision Number: 500608

Dear Ms. Zimmer:

The U.S. Environmental Protection Agency (EPA) is in receipt of your application for notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Biopesticides and Pollution Prevention Division (BPPD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The labeling submitted with this application has been stamped "Notification" and will be placed in our records. The alternate brand name "BAY2100" has also been added to the product's records. You must submit one (1) copy of the final printed labeling with the modifications.

If you have any questions, please contact me at (703) 305-7175 or via email at borges.shannon@epa.gov.

Sincerely,

Shannon Borges, Team Leader
Microbial Pesticides Branch
Biopesticides and Pollution
Prevention Division (7511P)
Office of Pesticide Programs

Enclosure

NOTIFICATION
03/04/2015

SONATA® ASO

[Alternate Brand Names: Sonata®, Ballad® Plus, BAY2100]

MASTER LABEL

Sub-Label A: Agricultural/Commercial Use

Sub-Label B: Seed Treatment

Active Ingredient:	
Bacillus pumilus strain QST 2808 (spores, solids, solubles, and water)*	1.38%
Other Ingredients	98.62%
Total:	**100.00%**

*Contains a minimum of 1 x 10^9 cfu/g

EPA Reg No.: 264-1153 **EPA Establishment No:**

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)

KEEP OUT OF REACH OF CHILDREN
CAUTION

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

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

SONATA® ASO

Sub-Label A: Agricultural/Commercial Use
Biofungicide

For Agricultural/Commercial Use

SONATA® ASO

[Alternate Brand Names: Sonata®, Ballad® Plus]

Sub-Label A: Agricultural/Commercial Use
Sub-Label B: Seed Treatment

Active Ingredient:	
Bacillus pumilus strain QST 2808 (spores, solids, solubles, and water)*	1.38%
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*Contains a minimum of 1 x 10^9 cfu/g

EPA Reg No.: 264-1153 **EPA Establishment No.:**

FOR AGRICULTURAL USE

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)

KEEP OUT OF REACH OF CHILDREN
CAUTION

FIRST AID	
IF INHALED:	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, and then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
IF ON SKIN OR CLOTHING:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 - 20 minutes. • Call a poison control center or doctor for further treatment advice.
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	

[Reference Statement for Booklets: For ADDITIONAL PRECAUTIONARY STATEMENTS and DIRECTIONS FOR USE: See Inside Booklet. See FIRST AID STATEMENT on the back panel.]
[USE OF PRODUCT INDICATES ACCEPTANCE OF CONDITIONS FOR SALE AND WARRANTY]

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

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if inhaled. Avoid breathing spray mist. Avoid contact with skin or clothing. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

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

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.

[OPTIONAL: ENGINEERING CONTROLS]

[Optional Statement: When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [(40 CFR 170.240(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:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial uses: Do not apply directly to water or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

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, 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.

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
- Chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

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

The WPS set out in Subpart B (40 CFR 170.102) does not apply when any pesticide is applied on an agricultural establishment (farm, forest, nursery or greenhouse) in the following circumstance(s):

Commercial Treatment of plants that are in ornamental gardens, parks, golf courses, and public or residential turf and grounds, and that are intended only for aesthetic purposes or climatic modification:

Keep unprotected persons out of treated areas until sprays have dried.

BASIC USE INFORMATION

Sonata® ASO is a broad spectrum, preventative product for the control or suppression of many important plant diseases. Apply Sonata ASO as a foliar spray alone, in alternating spray programs or in tank mixes with other registered crop protection products. [Apply Sonata 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 Sonata ASO in a rotational program with other registered fungicides. Apply Sonata ASO with spray equipment commonly used for making ground [or aerial] applications and sprinkler/irrigation systems commonly used for chemigation. Heavy rainfall or irrigation shortly after application may require retreatment. Sonata ASO can be used for organic production.

[**OPTIONAL STATEMENT:** Sonata ASO is most effectively used in a preventive disease management program. For improved performance, use Sonata ASO in a tank-mix or rotational program with other registered fungicides. When using Sonata ASO alone for the first time, use a rate of 4 qt Sonata ASO per acre. Increase the application rate and/or decrease spray intervals of Sonata 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.]]

INTEGRATED PEST MANAGEMENT (IPM)

Integrate Sonata 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 Sonata ASO prior to or in the early stages of disease development provides the best control or suppression of plant disease. Use the stated maximum label rates and shorter spray intervals for conditions conducive to 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 [alternate: chemigation] equipment calibration is essential prior to use.

PREHARVEST INTERVAL

Sonata ASO can be applied up to and including the day of harvest.

APPLICATION INSTRUCTIONS

GENERAL: 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: Thorough coverage is essential for optimum disease control. To achieve good coverage use proper spray pressure, gallonage per acre, nozzles, nozzle spacing and ground speed. Consult spray nozzle and accessory catalogues for specific information on proper equipment calibration.

AERIAL: This product can be applied by aerial application. Refer to the Aerial Drift Reduction Advisory Information section of this label for general directions and precautions. Use the application rate indicated for the appropriate crop 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, and hand move) or drip type irrigation systems. Refer to the Chemigation Directions for Use section of this label for general directions and precautions. Use the application rate indicated for the appropriate crop as specified in the Application Rate tables of this label.

MIXING INSTRUCTIONS

MIXING: Sonata ASO must be diluted with water. Partially fill the spray tank with clean water and begin agitation. Add the required amount of Sonata ASO needed for the area treated to the tank. Finish filling the tank to the necessary volume to obtain the proper spray concentration. It is critical to maintain agitation continuously 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.

Sonata ASO may be tank-mixed with other registered fungicides to enhance plant disease control. Sonata ASO cannot be mixed with any product with a prohibition against such mixing. When tank-mixing Sonata ASO with other registered pesticides, always read and follow all use directions, restrictions, and precautions of both Sonata 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 Sonata ASO in the spray tank with pesticides**,** adjuvants, 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 conditions of use.

Sonata 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 products to water. Add wettable powders first, followed by water dispersible granules, then liquid flowables, and lastly, emulsifiable concentrates. Mix thoroughly and let stand for at least five minutes. If the combination stays mixed or can be remixed, it is physically compatible. Before using this product on a large number of plants, 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, using the product in accordance with all label use directions.

ADDITIVES: Sonata 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

GENERAL REQUIREMENTS:

1) Apply this product 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 and if you have questions, call the State Extension Service specialists, the equipment manufacturer 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 25 individuals daily at least 60 days throughout the year.
2) Chemigation systems connected to the public water systems must contain a functional, reduced-pressure zone (RPZ), backflow preventer or the functional equivalent in the water supply upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top of the overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3) The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back towards the injection pump.
4) 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.
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 product to lose effectiveness or strength.
9) Do not combine Sonata 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. Sonata ASO has not been fully evaluated for compatibility with all adjuvants or surfactants. Conduct a spray compatibility test if mixture with adjuvants or surfactants is planned.
10) Maintain agitation in the pesticide supply tank.
11) Apply Sonata ASO during the last half of the water application.
12) Dilute Sonata 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.
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 product to lose effectiveness or strength.
9) Do not combine Sonata 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. Sonata ASO has <u>not</u> been fully evaluated for compatibility with all adjuvants or surfactants. Conduct a spray compatibility test if mixture with adjuvants or surfactants is planned.

Center-pivot, Lateral Move, End Tow, and Traveler Irrigation Equipment (Use only with electric or oil hydraulic drive systems which 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 recommended 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 Sonata ASO fungicide required to treat area.
- Add required amount of Sonata 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 Sonata 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 Sonata ASO fungicide required to treat area.
- Add the required amount of Sonata 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 recommended by the manufacturer of the injection equipment and used for the time interval established during calibration.
- Inject Sonata 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 Sonata 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.
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 inter-locking 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 product to lose effectiveness or strength.
8) Do not combine Sonata 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. Sonata ASO has not been fully evaluated for compatibility with all adjuvants or surfactants. Conduct a spray compatibility test if mixture with adjuvants or surfactants is planned.
9) Maintain agitation in the pesticide supply tank.
10) Apply Sonata ASO during the last half of the water application.
11) Dilute Sonata ASO in enough water to be able to draw through system for the last half of the water application.

AERIAL DRIFT REDUCTION ADVISORY INFORMATION

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

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 reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

CONTROLLING DROPLET SIZE: 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 recommended pressures. For many nozzle types, lower pressure produces larger droplets. When high flow rates are needed, use higher flow rate nozzles instead of increasing pressure. **# of Nozzles -** Use the minimum number of nozzles that provide uniform coverage. **Nozzle Orientation -** Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential. **Nozzle Type -** Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

BOOM WIDTH: For aerial applications, the boom width must not exceed 75% of the wingspan or 90% of the rotary blade. Use upwind swath displacement and apply only when wind speed is 3 - 10 mph as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground or the crop canopy.

APPLICATION HEIGHT: Do not make application at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

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

WIND: Drift potential is lowest between wind speeds of 2 - 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Do not apply when wind speed is below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

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

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

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

IMPORTANT: READ CONDITIONS FOR SALE AND WARRANTY BEFORE USE

FOR USE AS A FOLIAR SPRAY ON SELECT AGRICULTURAL FIELD CROPS AND SELECT AGRICULTURAL GREENHOUSE CROPS

Sonata ASO has a 0-Day Pre-Harvest 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 Sonata ASO in a tank mix or rotational program with other registered fungicides.

Application Rates of Sonata ASO for Selected Agricultural Field Crops

Crops	Diseases	Rate qt/acre	Application Instructions
Artichoke	**Powdery Mildew** *Leveillula taurica* *Erysiphe cichoracearum*	2 - 4	Begin application when conditions are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Sonata ASO may be applied up to and including the day of harvest.
Asparagus	**Rust** *Puccinia asparagi* **Botrytis Blight** *Botrytis cinerea*	2 - 4	Begin application soon after emergence and when conditions are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Sonata ASO may be applied up to and including the day of harvest.
Avocado	**Anthracnose** *Colletotrichum gloeosporioides* **Scab** *Sphaceloma perseae*	2 - 4	Begin application at bud break and repeat on 7- to 14-day intervals or as needed through harvest. Sonata ASO may be applied to fruit up to and including the day of harvest.
Bananas **Plantains**	**Sigatoka** *Mycosphaerella* spp.	2 - 4	Begin application when leaves first appear and repeat on 7- to 14-day intervals or as needed. The addition of an approved emulsifiable oil to spray solutions will improve performance.
Berry Blueberries Blackberry Raspberry Loganberry Huckleberry Cranberry Gooseberry Elderberry Currant Caneberry and other Berry crops	**Mummy Berry** *Monilinia vaccinii-corymbosi* **Anthracnose Fruit Rot** *Colletotrichum gloeosporioides* **Botrytis Blight** *Botrytis cinerea* **Leaf Rust** *Pucciniastrum vaccinii* **Powdery Mildew** *Microsphaera alni* **Sooty Mold** Misc. fungi **Alternaria Fruit Rot** *Alternaria tenuissima* **Bacterial Canker** *Pseudomonas* spp.	2 - 4	Mummy Berry - For suppression, begin application at the bud break stage of development and repeat at 7- to 14-day intervals or as needed. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Mummy Berry control. 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 a 7- to 14-day interval or as needed. For all other diseases – Begin application prior to disease development and repeat on 7- to 14-day intervals or as needed. Sonata ASO may be applied to fruit up to and including the day of harvest.

Crops	Diseases	Rate qt/acre	Application Instructions
Brassica Vegetables (Cole Crops) Broccoli Cabbage Cauliflower Brussels Sprouts Collards Kale Mustard Greens Kohlrabi and other brassica crops	**Pin Rot Complex** *Alternaria/Xanthomonas* **Bacterial Leaf Spot** *Pseudomonas syringae* **Bacterial Soft Rot** *Erwinia / Pseudomonas* **Black Rot** *Xanthomonas campestris* **Xanthomonas Leaf Spot** *Xanthomonas campestris* **Alternaria Leaf Spot** *Alternaria* spp. **Anthracnose** *Colletotrichum higginsianum* **Cercospora Leaf Spot** *Cercospora brassicicola* **Downy Mildew** *Peronospora parasitica* *Peronospora* spp. **Powdery Mildew** *Erysiphe polygoni* **Southern Blight** *Sclerotium rolfsii*	2 - 4	Pin Rot - For suppression, begin application when environmental conditions are conducive to disease development and repeat on 7- to 14-day intervals or as needed. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Pin Rot control. For all other diseases - Begin application soon after emergence or transplant and when conditions are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides.
Bulb Vegetables Onion Garlic Shallots and other bulb vegetables including those grown for seed production	***Downy Mildew*** *Peronospora spp.* **Powdery Mildew** *Erysiphe* spp. **Botrytis Neck Rot** *Botrytis* spp. **Botrytis Leaf Blight** *Botrytis squamosa* **Onion Purple Blotch** *Alternaria porri* **Onion Downy Mildew** *Peronospora destructor*	2 - 4	Begin application when environmental conditions and plant stage are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
	Rust *Puccinia porri*	2 - 4	For suppression, begin application when conditions are conducive to disease development and repeat on 7- to 14-day intervals or as needed. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Rust control.

Crops	Diseases	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 and Blight[*]** *Rhizoctonia oryzae* *Thanatephorus kernel* *Thanatephorus cucumeris* (Anamorph: *Rhizoctonia solani*) **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. **[*Not registered for use in California on Cereal Grains]**	1 - 4	Begin applications when environmental conditions and plant stage are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
Citrus[*] Orange Grapefruit Lemon Tangerine Tangelo Pummelo and other citrus crops	**Greasy Spot[*]** *Mycosphaerella citri* **Post Bloom Fruit Drop[*]** *Colletotrichum acutatum* **Scab[*]** *Elsinoe fawcetti* **Melanose[*]** *Diaporthe citri* **Alternaria Leaf Spot[*]** *Alternaria alternate* **[*Not registered for use in California on Citrus]**	2 - 4	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, Sonata 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 14-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 7- to 14-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 14-day intervals or as needed.

			For improved performance on Post Bloom Fruit Drop, Scab, Melanose and Alternaria Leaf Spot, use Sonata ASO in a tank mix or rotational program with other registered fungicides.
Clover, forage[*] **Alfalfa, forage[*]** Other animal feed nongrass crops including those grown for seed production	**White Mold[*]** (Sclerotinia Stem Rot) *Sclerotinia sclerotiorum* **[*Not registered for suppression of White Mold in California]**	2 - 4	For suppression of White Mold, begin application soon after emergence or transplant and when conditions are conducive to disease development. Repeat on a 7- to 14-day interval or as needed.
Cucurbit Vegetables Cucumber Cantaloupe Melon Muskmelon Squash Watermelon and other cucurbits	**Powdery Mildew** *Erysiphe* spp. *Sphaerotheca* spp. **Downy Mildew** *Pseudoperonospora cubensis* **Gummy Stem Blight** *Phoma cucurbitacearum* *Didymella bryoniae* **Angular Leaf Spot** *Pseudomonas syringae* **Anthracnose** *Colletotrichum lagenarium* **Bacterial Fruit Blotch** *Acidovorax avenae*	2 - 4	Begin applications soon after emergence or transplant when environmental conditions and plant stage are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides.

Crops	Diseases	Rate qt/acre	Application Instructions
Fruiting Vegetables Pepper Tomato Eggplant and other fruiting vegetables	**Bacterial Spot[*]** *Xanthomonas* spp. **[*Not Registered For Control Of Bacterial Spot In California]**	2 - 4	Begin application soon after emergence or transplant and when environmental conditions are conducive to disease development. Continue applications on 7- to 14-day intervals or as needed. When conditions are conducive to rapid disease development, for improved control, use Sonata ASO in a tank mix program with copper-based bactericides registered for control of Bacterial Spot at labeled rates.
	Bacterial Speck[*] *Pseudomonas syringae* pv. *Tomato* **[*Not Registered For Control Of Bacterial Speck In California]**	2 - 4	Begin application soon after emergence or transplant and when environmental conditions are conducive to disease development. Continue applications on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter intervals under heavy disease development.
	Early Blight *Alternaria solani* **Late Blight** *Phytophthora infestans*	2 - 4	For suppression of Early Blight and Late Blight, begin applications when plants are 4 to 6 inches high. Repeat applications on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter intervals under heavy disease development. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Early and Late Blight control.
	Powdery Mildew[*] *Oidiopsis taurica* *Erysiphe* spp. *Sphaerotheca* spp. **Downy Mildew[*]** *Pseudoperonospora cubensis* **[*Not Registered For Control Of Powdery Mildew And Downy Mildew In California]**	2 - 4	Begin application soon after emergence or transplant and when environmental conditions are conducive to disease development. Continue applications on 7- to 14-day intervals or as needed. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Powdery and Downy Mildew control.
	Gray Mold[*] *Botrytis cinerea* **[*Not For Use In California]**	2 - 4	Begin application soon after emergence or transplant and repeat on 7- to 14-day intervals or as needed.
	White Mold[*] *Sclerotinia sclerotiorum* **[*Not For Use In California]**	2 - 4	Begin application soon after emergence or transplant and when environmental conditions are conducive to disease development. Continue applications on 7- to 14-day intervals or as needed. When conditions are conducive to rapid disease development for improved control. Use Sonata ASO in a tank mix program fungicides registered for control of White Mold.

	Black Mold *Alternia alternata*	2-4	Begin applications at 4 – 6 weeks prior to harvest. Repeat at 7 – 14 day intervals as needed based on presence of rain and/or dew and disease potential. Applications can be made up to the day of harvest.

Crops	Diseases	Rate qt/acre	Application Instructions
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 - 4	Begin application at bloom, before bunch closure, at veraison and pre-harvest. Repeat on 7- to 14-day intervals or as needed. Sonata ASO may be applied to fruit up to and including the day of harvest.
	Powdery Mildew *Uncinula necator*	2 - 4	Begin applications at prebloom. Continue at 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. Use of a spreader/sticker or wetting agent is recommended to ensure optimum control. (Begin application when new shoots are 1/2 to 1-1/2 inches long. Repeat when shoots are 3 to 5 inches long, when shoots are 8 to 10 inches long and then at 7- to 14-day intervals until disease conditions no longer exist.)
	Downy Mildew *Plasmopara viticola*	2 - 4	Begin application when shoots are ½ to 1-1/2 inches long. Repeat applications at 3- to 5-inch shoots, 8- to 10-inch shoots, and then on 7- to 14-day intervals as needed. (For suppression, apply at 10-inch shoot, then at 7- to 14-day intervals until bunch closure (berry touch). For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Downy Mildew control.)
	Phomopsis *Phomopsis viticola*	2 - 8	Begin applications when shoots are ½ to 1 inch 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 (Sonata ASO to water) for this use only.

Crops	Diseases	Rate qt/acre	Application Instructions
Grass Grown for Seed Production[*]	**Powdery Mildew[*]** *Erysiphe graminis* **Rust[*]** *Puccinia* spp. **[*Not Registered For Use On Grass Grown For Seed Production In California]**	1 - 4	Begin applications when environmental conditions are conducive to disease development. Continue at 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
Herbs/ Spices[*]	**Bacterial Blight[*]** *Pseudomonas syringae* **Anthracnose[*]** *Colletotrichum* spp. **Alternaria Leaf Blight[*]** *Alternaria* spp. **[*Not For Use On Herbs/Spices In California]**	2 - 4	Begin application when environmental conditions are conducive to disease development. Repeat on a 7- to 14-day interval or as needed.
Hops	**Powdery Mildew** *Sphaerotheca macularis* **Downy Mildew** *Peronospora* spp.	2- 4 qt/100 gal	Begin applications when environmental conditions are conducive to rapid disease development. Continue at 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under moderate to heavy disease pressure. Apply at a rate of 2 - 4 qt per 100 gallons of water using ground equipment. Apply adequate spray volume to achieve complete spray coverage. Spray volume ranges for hop growth stages are as follows: Emergence to training: Use 2 - 4 qt of product per 100 gallons of water. Apply using a minimum spray volume of 20 gallons per acre. Coverage will vary with the size of the vines and the type of spray equipment. Apply adequate spray volume to achieve complete spray coverage. Maximum spray volume is 400 gallons per acre. Training to wire: Use 2 - 4 qt of product per 100 gallons of water. Apply using a minimum spray volume of 50 gallons per acre. Coverage will vary with the size of the vines and the type of spray equipment. Apply adequate spray

			volume to achieve complete spray coverage. Maximum spray volume is 400 gallons per acre. Wire touch through harvest: Use 2 - 4 qt of product per acre. Apply in a minimum spray volume of 100 gallons per acre. Higher water volumes may be necessary to achieve thorough coverage after side arms develop. Maximum spray volume is 400 gallons per acre.
Hops continued	**Powdery Mildew** *Sphaerotheca macularis* **Downy Mildew** *Peronospora* spp.	2- 4 qt/acre	For aerial applications only[**] Begin applications when environmental conditions are conducive to rapid disease development. Continue at 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under moderate to heavy disease pressure. Apply at a rate of 2- 4 qt per acre. **[**Not Registered For Aerial Application On Hops In California]**
Kiwi	**Botrytis Fruit Rot** *Botrytis cinerea* **Bacterial Blight** *Pseudomonas viridiflava* *Pseudomonas syringae* **Sclerotinia** Sclerotinia sclerotiorum	2- 4	Begin application at early bloom and repeat on a 7- to 14-day interval or as needed. Sonata ASO may be applied to fruit up to and including the day of harvest.
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* **Pink Rot** *Sclerotinia sclerotiorum*	2 - 4	Begin applications when environmental conditions are conducive to disease development. Continue on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. For suppression of Downy Mildew and control of Powdery Mildew, begin application when conditions are conducive to disease development and repeat on a 7- to 14-day interval or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides. Pink Rot – Begin application approximately 8 weeks before harvest and repeat on a 7 to 14 interval. Apply Sonata ASO as a directed spray in sufficient water to ensure thorough coverage of the base of the plants and the surrounding soil surface. Light irrigation following application to incorporate Sonata ASO may improve

			disease control.
Crops	**Diseases**	**Rate qt/acre**	**Application Instructions**
Leafy Vegetables Lettuce Celery Spinach Parsley Radicchio and other leafy vegetables including those grown for seed production	**Sclerotinia Head and Leaf Drop** *Sclerotinia* spp.	2 - 4	Begin applications when environmental conditions are conducive to disease development. Continue at 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. 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. 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 within 7 days of thinning. Repeat applications on 7- 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. OR For control of Sclerotinia Head And Leaf Drop: 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 within 7 days of thinning or transplanting. Repeat applications on 7- 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.

Crops	Diseases	Rate qt/acre	Application Instructions
Legumes Vegetables Beans Green beans Snap beans Shell beans Dry beans Garbanzo beans Lima beans Peas Chick Peas Soybeans Split Peas Lentils and other legumes vegetables including those grown for seed production	**Rust[*]** *Uromyces appendiculatus* **[*Not Registered For Control Of Rust In California]**	1 - 4	Begin application soon after emergence or transplant and when conditions are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Rust control.
	Rust *Puccinia* spp. **Bacterial Blight[*]** *Pseudomonas syringae* **Brown Spot[*]** *Septoria glycines* **Bacterial Pustule[*]** *Xanthomonas* spp. **Cercospora Leaf Spot[*]** *Cercospora* spp. **Downy Mildew[*]** *Peronospora manshurica* **Powdery Mildew** *Erysiphe* spp. **[*Not For Use In California]**	1 - 4	Begin applications when environmental conditions are conducive to disease development. Continue at 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
	Asian Soybean Rust[*] *Phakopsora pachyrhizi* **[*Not For Use In California]**	1 - 4	Use as part of a program with other fungicides labeled for Asian Soybean Rust. Begin applications when environmental conditions are conducive to disease development. Continue at 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
	Damping-Off[*] *Aphonomyces* spp. **[*Not Registered For Control Of Damping-Off In California]**	1 - 4	Begin application soon after emergence or transplant and when environmental conditions are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
	White Mold[*] (Sclerotinia Stem Rot) *Sclerotinia sclerotiorum* **[*Not Registered for Control White Mold In California]**	1 - 4	Begin application soon after emergence or transplant and when environmental conditions are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.

Crops	Diseases	Rate qt/acre	Application Instructions
Mango	**Anthracnose** *Colletotrichum gloeosporioides*	2- 4	Begin application at bud break and repeat on 7- to 14-day intervals or as needed through harvest. Sonata ASO may be applied to fruit up to and including the day of harvest.
Mint[*]	**Rust[*]** *Puccinia menthae* **Powdery Mildew[*]** *Erysiphe* spp. **Downy Mildew[*]** *Peronospora* spp. **[*Not Registered For Use On Mint In California]**	2 - 4	Begin application soon after emergence and when conditions are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
Olive	**Olive Knot** *Pseudomonas savastanoi*	2 - 4	Apply before fall rains and again during dormancy before spring growth. Under conditions conducive to heavy disease pressure, for improved control, use Sonata ASO in a tank-mix or rotational program with a copper-based bactericide registered for control of Olive Knot.
Oil Seed Crops[*] Canola Castor Coconut Cotton Flax Oil Palm Olive Peanut Rapeseed Safflower Sesame Sunflower Soybeans and other oilseed crops including those grown for seed production	**Bacterial Speck[*]** *Pseudomonas syringae* pv. *glycinea* **Brown Spot[*]** *Septoria glycines* **Cercospora Leaf Spot[*]** *Cercospora* spp. **Pod and Stem Blight[*]** *Diaporthe phaseolorum* var. *sojae* *Phomopsis longicolla* **Downy Mildew[*]** *Peronospora manshurica* **White Mold[*]** (Sclerotinia Stem Rot) *Sclerotinia sclerotiorum* **Bacterial Pustule[*]** *Xanthomonas* spp. **[*Not Registered For Use On Oil Seed Crops In California]**	1 - 4	Begin application soon after emergence and when conditions are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
	Asian Soybean Rust[*] *Phakopsora pachyrhizi* **[*Not Registered For Use On Oil Seed Crops In California]**	1 - 4	Use as part of a program with other fungicides labeled for Asian Soybean Rust. Begin application soon after emergence and when conditions are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.

Crops	Diseases	Rate qt/acre	Application Instructions
Papaya	**Anthracnose** *Colletotrichum gloeosporioides*	2 - 4	Begin application at flowering and repeat on 7- to 14-day intervals or as needed through harvest. Sonata ASO may be applied to fruit up to and including the day of harvest.
Peanut[*]	**Early Leaf Spot[*]** *Cercospora arachidicola* **Late Leaf Spot[*]** *Cercosporidium personatum* **Rust[*]** *Puccinia arachidis* **White Mold[*]** *Sclerotinia sclerotiorum* **[*Not Registered For Use On Peanuts In California]**	2 - 4	Begin application when environmental conditions are conducive to disease development. Repeat applications on 7- to 14-day intervals or as needed. For improved control of Leaf Spot diseases, use Sonata ASO in a tank mix program. Peanut hay may be fed to livestock.
Pome Fruit Apple Crabapple Pear Quince Mayhaw and other pome fruit crops	**Fire Blight** *Erwinia amylovora*	2 - 4	For suppression begin application at 1 – 5% bloom and repeat as necessary to protect open, untreated blossoms when conditions favoring disease development are likely to occur. For maximum control, use Sonata ASO prior to and as close as possible to fire blight infection events. During periods of rapid bloom development and frequent infection periods, spray intervals of 3 to 7 days may be required. For apples and pears after petal fall, continue applications on a 7-day interval while environmental conditions favor disease development. Apply in sufficient water to provide full coverage. For improved performance, use Sonata ASO in a rotational program with antibiotics registered for Fire Blight control such as but not limited to oxytetracycline or streptomycin. Proper orchard cultural practices are essential to eliminate Fire Blight-infected tissue from the orchard to assure good performance of any crop protection product. Care must be taken to remove and destroy dead and diseased wood from the orchard prior to and during the growing season.
			Use of Sonata 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 Sonata ASO.

Crops	Diseases	Rate qt/acre	Application Instructions
Pome Fruit Apple Crabapple Pear Quince Mayhaw and other pome fruit crops	**Scab** *Venturia* spp.	2 - 4	For suppression, begin application at green tip or when environmental conditions become favorable for primary Scab development and repeat on 7- to 14-day intervals. When environmental conditions are conducive to rapid disease development, for improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Scab control.
	Powdery Mildew *Podosphaera leucotricha*	2 - 4	Begin application at tight cluster, or sooner, if conditions are conducive to disease development. Repeat applications through the second cover spray at 7- to 14-day intervals. Additional sprays beyond second cover may be needed on susceptible varieties or when environmental conditions are conducive to rapid disease development or under heavy disease pressure. Use the stated higher rates and shorter spray intervals when conditions are conducive to rapid disease development or heavy disease pressure.
Root / Tuber and Corm Vegetables Carrot Potato Sweet Potato Beets Ginger Horseradish Radish Ginseng Turnip and other root/tuber vegetables crops including those grown for seed production	**Black Root Rot/** **Black Crown Rot** *Alternaria* spp.	2 - 4	Begin application soon after emergence or transplant and when conditions are conducive to disease development. Repeat application at 7- to 14-day intervals or as needed. Use the stated higher rates and shorter intervals under heavy disease pressure.
	Bacterial Leaf Blight *Xanthomonas campestris* **Downy Mildew** *Peronospora* spp. **Powdery Mildew** *Erysiphe* spp. **White Mold** *Sclerotinia sclerotiorum* **Gray Mold** *Botrytis* spp.	2 - 4	Begin application soon after emergence or transplant and when conditions are conducive to disease development. Repeat application at 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.

Crops	Diseases	Rate qt/acre	Application Instructions
Root / Tuber and Corm Vegetables Carrot Potato Sweet Potato Beets Ginger Horseradish Radish Ginseng Turnip and other root/tuber vegetables crops including those grown for seed production	**Early Blight** *Alternaria solani* **Late Blight** *Phytophthora infestans*	2 - 4	For suppression, begin application soon after emergence and when conditions are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Early and Late Blight control.
	Aerial Stem Rot *Erwinia carotovora*	2 - 4	For suppression, begin applications at the first sign of disease, or when conditions become conducive for disease development. Repeat on a 7- to 14-day interval or as needed.
Roses, Field	**Powdery Mildew** *Sphaerotheca* spp. **Rust** *Puccinia* spp.	2 - 4	Begin applications when environmental conditions and plant stage are conducive to disease development. Continue applications on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
Stone Fruit Apricot Cherry Nectarine Peach Plum Prune and other stone fruit crops	**Anthracnose** *Colletotrichum* spp. **Powdery Mildew** *Sphaerotheca pannosa* *Podosphaera clandestine* *Podosphaera* spp. **Rusty Spot** *Podosphaera leucotricha* **Bacterial Canker** *Pseudomonas* spp. **Alternaria Spot / Fruit Rot** *Alternaria alternata* **Scab** *Cladosporium carpophilum* **Brown Rot Blossom Blight** *Monilinia laxa* **Fruit Brown Rot** *Monilinia fructicola* **Gray Mold** *Botrytis cinerea* **Shot Hole** *Wilsonomyces carpophilus* *Xanthomonas pruni* *Blumeriella jaapii* *Cercospora* spp.	2 - 4	Brown Rot Blossom Blight – Begin application at early bloom and repeat through petal fall on 7- to 14-day intervals or as needed. Scab – Begin application at petal fall and repeat on 7- to 14-day intervals or as needed. Bacterial Canker – Apply post harvest before fall rains and again during dormancy before spring growth. Powdery Mildew- Begin application at popcorn stage and repeat on 7- to 14-day intervals or as needed. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Powdery Mildew control. For all other diseases – Begin application prior to disease development and repeat on 7- to 14-day intervals or as needed. Sonata ASO may be applied to fruit up to and including the day of harvest.

Crops	Diseases	Rate qt/acre	Application Instructions
Strawberry	**Powdery Mildew** *Erysiphe* spp. **Gray Mold** *Botrytis* spp.	2 - 4	Begin applications when new growth starts and before fruit starts to form. Continue applications on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
	Powdery Mildew *Sphaerotheca macularis* A**nthracnose** *Colletotrichum acutatum* **Botrytis** *Botrytis cinerea*	2 - 4	Botrytis/Powdery Mildew - For suppression, begin application at or before flowering and repeat on 7- to 14 - day intervals or as needed through harvest. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Powdery Mildew and Botrytis control. Anthracnose – Begin application prior to disease development and repeat on 7- to - 14 day intervals or as needed. Sonata ASO may be applied up to and including the day of harvest.
Sugar Beets[*] including crop grown for seed production	**Powdery Mildew[*]** *Erysiphe betae* *Erysiphe polygoni* **Leaf Spot[*]** *Cercospora beticola* **Ramularia[*]** *Ramularia* spp. **Rust[*]** *Uromyces betae* **[*Not Registered For Use On Sugar Beets In California]**	2 - 4	Begin applications when environmental conditions are conducive to disease development. Continue applications on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
Sweet Corn[*] including crop grown for seed production	**Common Rust[*]** *Puccinia sorghi* **Northern Leaf Blight[*]** *Exserohilum turcicum* *Helminthosporium turcium* **Southern Leaf Blight[*]** *Bipolaris maydis* *Helminthosporium maydis* *Cochliobolus heterostrophus* **[*Not Registered For Use On Sweet Corn In California]**	1-4	Begin applications when environmental conditions are conducive to disease development. Continue applications on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.

Crops	Diseases	Rate qt/acre	Application Instructions
Tobacco	**Blue Mold** *Peronospora hyoscyami*	2 - 4	Begin applications when conditions are conducive to disease development. Continue applications on a 7- to 14-day interval or as needed.
Watercress	**Cercospora Leafspot** *Cercospora* spp.	2 - 4	Begin applications when conditions are conducive to disease development. Continue applications on a 7- to 14-day interval or as needed.
Tree Nut Almond Pistachio Pecan Walnut Filberts Chestnut Cashew Beechnut Butternut and other tree nut crops	**Walnut Blight** *Xanthomonas campestris* **Alternaria Leaf Spot** *Alternaria alternata* **Anthracnose** *Colletotrichum acutatum* **Bacterial Canker** *Pseudomonas syringae* **Scab** *Cladosporium carpophilum* **Botryosphaeria Blight** *Botryosphaeria dothidea* **Shot Hole** *Wilsonomyces carpophilus* *Xanthomonas pruni* *Cercospora* spp. **Brown Rot** *Monilinia* spp.	2- 4	Walnut Blight – Begin application no later than pistillate bloom and repeat on 7- to 14-day intervals or as needed. Apply in advance of rain for maximum protection. Under conditions conducive to heavy disease pressure, for improved control, use Sonata ASO in a tank-mix or rotational program with a copper-based bactericide registered for control of Walnut Blight. For all other diseases – Begin application prior to disease development and repeat on 7- to 14-day intervals or as needed.

Application Rates of Sonata ASO for Selected Greenhouse Crops			
Greenhouse Crops	**Diseases**	**Rate qt/100 gallons spray mix**	**Application Instructions**
Brassica Vegetables (Cole Crops) Broccoli Cabbage Cauliflower Brussels Sprouts Collards Kale Mustard Greens Kohlrabi and other brassica crops	**Pin Rot Complex** *Alternaria/ Xanthomonas* **Bacterial Leaf Spot** *Pseudomonas syringae* **Bacterial Soft Rot** *Erwinia / Pseudomonas* **Black Rot** *Xanthomonas campestris* **Xanthomonas Leaf Spot** *Xanthomonas campestris* **Alternaria Leaf Spot** *Alternaria* spp. **Anthracnose** *Colletotrichum higginsianum* **Cercospora Leaf Spot** *Cercospora brassicicola* **Downy Mildew** *Peronospora parasitica* *Peronospora* spp. **Powdery Mildew** *Erysiphe polygoni* **Southern Blight** *Sclerotium rolfsii*	2 - 4	Pin Rot - For suppression, begin application when environmental conditions in the greenhouse are conducive to disease development and repeat on 7- to 14-day intervals or as needed. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Pin Rot control. For all other diseases - Begin application soon after emergence or transplant and when conditions in the greenhouse are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides.

Greenhouse Crops	Diseases	Rate qt/100 gallons spray mix	Application Instructions
Bulb Vegetables Onion Garlic Shallots and other bulb vegetables	**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 - 4	Begin application when environmental conditions in the greenhouse are conducive to disease development and repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure.
	Rust *Puccinia porri*	2 - 4	For suppression, begin application when conditions are conducive to disease development and repeat on a 7- to 14-day interval or as needed. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Rust control.
Cucurbit Vegetables Cucumber Cantaloupe Melon Muskmelon Squash Watermelon and other cucurbits	**Powdery Mildew** *Erysiphe* spp. *Sphaerotheca* spp. **Downy Mildew** *Pseudoperonospora cubensis* **Gummy Stem Blight** *Phoma cucurbitacearum* *Didymella bryoniae* **Angular Leaf Spot** *Pseudomonas syringae* **Anthracnose** *Colletotrichum lagenarium* **Bacterial Fruit Blotch** *Acidovorax avenae*	2 - 4	Begin application soon after emergence or transplant and when environmental conditions in the greenhouse are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides.

Greenhouse Crops	Diseases	Rate qt/100 gallons spray mix	Application Instructions
Fruiting Vegetables Pepper Tomato Eggplant and other fruiting vegetables	**Gray Mold** *Botrytis cinerea*	2 - 4	Begin application soon after emergence or transplant and repeat on 7- to 14-day intervals or as needed
	Powdery Mildew[*] *Oidiopsis taurica* *Erysiphe* spp. *Sphaerotheca* spp. **Downy Mildew[*]** *Pseudoperonospora Cubensis* **[*Registered For Suppression Only Of Powdery Mildew And Downy Mildew In California]**	2 - 4	Begin application soon after emergence or transplant and continue on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Powdery and Downy Mildew control.
	Bacterial Spot *Xanthomonas* spp.	2 - 4	Begin application soon after emergence or transplant and when environmental conditions are conducive to disease development. Continue applications on 7- to 14-day intervals or as needed. When conditions are conducive to rapid disease development, for improved control, use Sonata ASO in a tank mix program with copper-based bactericides registered for control of Bacterial Spot at labeled rates
	Early Blight *Alternaria solani* **Late Blight** *Phytophthora infestans*	2 - 4	For suppression of Early Blight and Late Blight, begin application when plants are 4- to 6-inches high. Repeat applications on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Early and Late Blight control.
	White mold *Sclerotinia sclerotiorum*	2 - 4	Begin application soon after emergence or transplant and when environmental conditions are conducive to disease development. Continue applications on 7- to 14-day intervals or as needed. When conditions are conducive to rapid disease development, for improved control, use Sonata ASO in a tank mix program fungicides registered for control of White Mold.

Greenhouse Crops	Diseases	Rate qt/100 gallons spray mix	Application Instructions
Herbs/ Spices	**Bacterial Blight** *Pseudomonas syringae* **Anthracnose** *Colletotrichum* spp. Alternaria Leaf Blight *Alternaria* spp.	2 - 4	Begin application when environmental conditions in the greenhouse are conducive to disease development. Repeat on 7- to 14-day intervals or as needed.
Leafy Vegetables Lettuce Celery Spinach Parsley Radicchio and other leafy vegetables	**Downy Mildew** *Bremia lactucae* *Peronospora* spp. **Powdery Mildew** *Erysiphe cichoracearum* *Erysiphe* spp. **Pink Rot** *Sclerotinia sclerotiorum*	2 - 4	For suppression of Downy Mildew and control of Powdery Mildew, begin application when conditions are conducive to disease development and repeat on 7- to 14-day intervals or as needed. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Downy Mildew and Powdery Mildew control. Pink Rot – Begin application approximately 8 weeks before harvest and repeat on 7 to 14 intervals. Apply Sonata ASO as a directed spray in sufficient water to ensure thorough coverage of the base of the plants and the surrounding soil surface. Light irrigation following application to incorporate Sonata ASO may improve disease control.
	Sclerotinia Head and Leaf Drop *Sclerotinia* spp.	2 - 4	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. 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 within 7 days of thinning. Repeat applications on 7- 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. OR For control of Sclerotinia Head and Leaf Drop: 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 within 7 days of thinning or transplanting. Repeat applications on 7- 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.

Greenhouse Crops	Diseases	Rate qt/100 gallons spray mix	Application Instructions
Root / Tuber and Corm Vegetables Carrot Potato Sweet Potato Beets Ginger Horseradish Radish Ginseng Turnip and other root/tuber and corm crops	**Black Root Rot/ Black Crown Rot** *Alternaria* spp.	2 - 4	Begin application soon after emergence or transplant and when conditions are conducive to disease development. Repeat on a 7- to 14-day interval or as needed.
	Bacterial Leaf Blight *Xanthomonas campestris* **White Mold** *Sclerotinia sclerotiorum*	2 - 4	Begin application soon after emergence or transplant and when conditions are conducive to disease development. Repeat on a 7- to 14-day interval or as needed.
	Aerial Stem Rot *Erwinia carotovora*	2 - 4	For suppression, begin applications at the first sign of disease, or when conditions become conducive for disease development. Repeat on a 7- to 14-day interval or as needed.
	Early Blight *Alternaria solani* **Late Blight** *Phytophthora infestans*	2 - 4	For suppression, begin application soon after emergence and when conditions are conducive to disease development. Repeat on 7- to 14-day intervals or as needed. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Early and Late Blight control.

Greenhouse Crops	Diseases	Rate qt/100 gallons spray mix	Application Instructions
Strawberry	**Powdery Mildew** *Sphaerotheca macularis* *Erysiphe* spp. **Anthracnose** *Colletotrichum acutatum* **Botrytis** *Botrytis cinerea* **Gray Mold** *Botrytis* spp.	2 - 4	Botrytis/Powdery Mildew - For suppression, begin application at or before flowering, when new growth starts and before fruit starts to form, when environmental conditions are conducive to disease development. Repeat on 7- to 14-day intervals or as needed through harvest. Use the stated higher rates and shorter application intervals under heavy disease pressure. For improved performance, use Sonata ASO in a tank mix or rotational program with other registered fungicides for Powdery Mildew and Botrytis control. Anthracnose – Begin application prior to disease development and repeat on a 7- to 14-day interval or as needed. Sonata ASO may be applied up to and including the day of harvest.

FOR USE AS A SOIL TREATMENT ON SELECT AGRICULTURAL FIELD CROPS

Sonata 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 Sonata ASO in a tank mix or rotational program with other registered fungicides.

Sonata 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. Sonata ASO enhances germination and plant growth by suppressing diseases 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 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Sonata ASO in appropriate amount of water per acre. Use the stated higher application 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. Sonata 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 handheld, 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: Sonata 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 Sonata 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.

Application Rates of Sonata ASO for Soil Uses in Field for Soil borne/Seedling Disease Control			
Crops	**Disease**	**Rate (qt/acre)**	**Application Instructions**
Animal Feed, Nongrass Alfalfa Clover Kudzu Lupin Vetch and other animal feed nongrass crops	***Aphanomyces* spp.** ***Fusarium* spp.** **Bacterial Wilt** ***Macrophomina* spp.** ***Phytophthora* spp.** ***Verticillium* spp.**	1 – 6	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Sonata ASO in 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. Sonata 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:** Sonata 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 Sonata 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 seed 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.
Brassica Leafy Vegetables (Cole Crops) Broccoli Cabbage Cauliflower Brussels Sprouts Collards Kale Mustard Greens Kohlrabi and other brassica leafy vegetables	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.** **Clubroot** *Plasmodiophora brassicae* ***Macrophomina* spp.**		
Bulb Vegetables Onion Garlic Shallots and other bulb vegetables including those grown for seed production	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.** **Bacterial Neck Rot** **Pink Rot** *Phoma* spp. – (Suppression)		

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.** **Bakanae** *Gibberella fujikuroi* ***Macrophomina* spp.**	0.25 – 6	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 0.25 qt [(8 fl oz)] to 6 qt [(192 fl oz)] of Sonata ASO in 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. Sonata 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:** Sonata 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 Sonata 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 seed 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.

Crops	Disease	Rate (qt/acre)	Application Instructions
Citrus Fruit Orange Grapefruit Lemon Tangerine Tangelo Pummelo and other citrus crops	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.** ***Macrophomina* spp.**	1 – 6	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Sonata ASO in 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. Sonata 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:** Sonata 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 Sonata 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 seed 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.**	1 – 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.

Crops	Disease	Rate (qt/acre)	Application Instructions
Corn Sweet Corn Popcorn Seed Corn Silage Corn Field Corn and other corn crops	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.**	1 – 6	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Sonata ASO in 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. Sonata 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:** Sonata 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 Sonata 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 seed 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.
Cotton			
Cucurbits Vegetables Cucumber Cantaloupe Melon Muskmelon Squash Watermelon and other cucurbit vegetables	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.** ***Monosporascus cannonballus*** ***Macrophomina* spp.**		

Crops	Disease	Rate (qt/acre)	Application Instructions
Fruiting Vegetables Pepper Tomato Eggplant Ground Cherry Tomatillo Okra and other fruiting vegetables	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.** ***Macrophomina* spp.**	1 – 6	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Sonata ASO in 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. Sonata 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:** Sonata 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 Sonata 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 seed 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.
Leafy Vegetables Lettuce Celery Spinach Parsley Radicchio and other leafy vegetables	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.**		

Crops	Disease	Rate (qt/acre)	Application Instructions
Leafy Vegetables Lettuce Celery Spinach Parsley Radicchio and other leafy vegetables	**Sclerotinia Head and Leaf Drop** *Sclerotinia* spp.	1 - 6	**All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications:** Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Sonata 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. Sonata 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:** Sonata 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 Sonata 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 14-days intervals if conditions for disease development persist. Use the stated higher rates under conditions conducive to moderate to severe disease pressure.
Legumes/ Vegetables (Succulent and Dried) Bean Green beans Snap beans Shell beans Soybeans Dry Beans Garbanzo beans Lima beans Peas Chick peas Split peas Lentils and other legume / vegetable crops including those grown for seed production	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.** ***Macrophomina* spp.** ***Aphanomyces* spp.**	1 – 6	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Sonata ASO in 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. Sonata 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:** Sonata 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 Sonata 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 seed 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.
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)	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.** **Clubroot** *Plasmodiophora brassicae*	1 – 6	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Sonata ASO in 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. Sonata 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:** Sonata 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 Sonata 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 seed 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.

Crops	Disease	Rate (qt/acre)	Application Instructions
Olive (including those grown for oil production)	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.**	1 – 6	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Sonata ASO in 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. Sonata 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:** Sonata 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 Sonata 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 seed 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.
Peanut (including those grown for oil production)	*R***hizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.** ***Macrophomina* spp.** ***Sclerotium rolfsii*** ***Aspergillus* spp.** **Cylindrocladium Black Rot**		
Pome Fruit Apple Crabapple Pear Quince Mayhaw and other pome fruit	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.**		

Crops	Disease	Rate (qt/acre)	Application Instructions
Root / Tuber and Corm Vegetables Carrot Potato Sweet Potato Cassava Beets Ginger Horseradish Radish Ginseng Turnip and other root/ tuber and corm vegetables including those grown for seed production	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.** **Clubfoot** *Plasmodiophora brassicae* ***Macrophomina* spp.** ***Aphanomyces* spp.** ***Sclerotium rolfsii*** ***Erwinia* spp.** ***Colletotrichum* spp.**	1 – 6	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Sonata ASO in 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. Sonata 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:** Sonata 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 Sonata 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 seed 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. **<u>For Colletotrichum spp. Uses:</u>** Use a foliar fungicide to control stem lesions once plants have emerged.
	Common Scab *Streptomyces scabies* (Suppression Only)		
Stone Fruit Apricot Cherry Nectarine Peach Plum Prune and other stone fruit	***Rhizoctonia* spp.** ***Pythium* spp.** ***Fusarium* spp.** ***Verticillium* spp.** ***Phytophthora* spp.**		
Tobacco			

Crops	Disease	Rate (qt/acre)	Application Instructions
Strawberry	**Angular Leaf Spot** *Xanthomonas fragariae* **Black Root Rot** *(complex)* **Common Leaf Spot** *Ramularia tulasneii* **Leather Rot** *Phytophthora cactorum* ***Macrophomina* spp.** **Phytophthora Crown Rot** *Phytophthora* spp. **Red Stele** *Phytophthora fragariae* **Verticillium Wilt** *Verticillium dahlia* ***Rhizoctonia* spp.** ***Fusarium* spp.**	1 – 6	**<u>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications</u>:** Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Sonata ASO in 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. Sonata 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:** Sonata 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 Sonata 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 seed 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.

Crops	Disease	Rate (qt/acre)	Application Instructions
Berries Blueberry Blackberry Raspberry Loganberry Huckleberry Cranberry Gooseberry Elderberry Currant and other berry crops	**Armillaria Root Rot** *Armillaria* spp. **Verticillium Wilt** *Verticillium dahlia* **Phytophthora Root Rot** *Phytophthora* spp.	1 – 6	**<u>All Soil Surface (Drench) Applications</u>:** Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Sonata 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. Sonata 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. **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.
Grape	**Oak Root Fungus** **Armillaria Root Rot** *Armillaria mellea*		

FOR USE ON ORNAMENTALS, TREES, SHRUBS, FLOWERS, BEDDING PLANTS, TROPICAL PLANTS and FRUITS – [(Bananas, Mangos, Papaya),] -[Agricultural Use], [Commercial], [Residential Use]

Sonata 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 in the Application Rates table or use Sonata ASO in a tank mix or rotational program with other registered fungicides.
[As appropriate for uses:]
Sonata ASO is a protectant fungicide for use indoors and outdoors for control of certain foliar diseases in the field, greenhouses [open or enclosed], interiorscape, residential and commercial landscapes, nurseries [open or enclosed] and shade house environments.

Sonata ASO can be applied to ornamentals, trees, shrubs, flowers, annual and perennial bedding plants, potted flowers, cut flowers, tropical foliage, container grown trees and shrubs (greenhouses, shadehouses, nurseries, indoors, outdoors, containers or field).

Application Rates for Sonata ASO When Used as a Foliar Spray on Ornamentals, Trees, Shrubs, Flowers, Bedding Plants, Tropical Plants, and Fruits			
Crops	**Disease**	**Rate qt/100 - 300 gallons spray mix**	**Application Instructions**
Ornamentals Trees Shrubs Flowering Plants Tropical Plants and Fruits **Fields, Outdoors,** Indoors, Greenhouses, Nurseries, Shadehouses **Annuals Perennials** Bedding plants Potted flowers Cut flowers Foliage plants Deciduous trees **Deciduous shrubs** **Tropical foliage** **Bananas, Mangos, Papaya** **Container grown plants**	**Anthracnose** *Colletotrichum* spp. **Bacteria** *Erwinia* spp. *Pseudomonas* spp. *Xanthomonas* spp. **Black Spot of Rose** *Diplocarpon rosea* **Botrytis** *Botrytis cinerea* **Downy Mildew** *Peronospora* spp. **Leaf Spots** *Alternaria* spp. *Cercospora* spp. *Entomosporium* spp. *Helminthosporium* spp. *Myrothecium* spp. *Septoria* spp. **Powdery Mildew** *Erysiphe* spp. *Oidium* spp. *Podosphaera* spp. *Sphaerotheca* spp. *Phytophthora* spp **Rust** *Puccinia* spp. **Needle Rust** *Melamspora occidentalis* **Scab** *Venturia* spp.	2- 4	Begin applications when conditions favor disease development but before the onset of disease symptoms. Repeat application on 7- to 14-day intervals or as needed. Thorough coverage is important. A surfactant may be used to improve coverage. For Suppression of Needle Rust - Begin applications when conditions favor disease development but before the onset of disease symptoms. Repeat application on 7- to 14-day intervals or as needed. Thorough coverage is important. A surfactant may be used to improve coverage.

STORAGE AND DISPOSAL

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

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

PESTICIDE DISPOSAL: To avoid waste, 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 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.]

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

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.

NET CONTENTS:

PRODUCED FOR

Bayer CropScience

Bayer CropScience LP
P.O. Box 12014, 2 T.W. Alexander Drive
Research Triangle Park, North Carolina 27709
1-866-99BAYER (1-866-992-2937)

SONATA® ASO

Sub-Label B: Seed Treatment
Biofungicide
FOR SEED TREATMENT USE

SONATA® ASO

[Alternate Brand Names: Sonata®, Ballad® Plus, BAY2100]

[OPTIONAL/ALTERNATE STATEMENT: "NOP LOGO: FOR ORGANIC PRODUCTION"]

[OPTIONAL/ALTERNATE STATEMENT: "NOP LOGO: CAN BE USED FOR ORGANIC PRODUCTION"]

[USE IN APPLICATION MIXES WITH OTHER COMMERCIAL SEED TREATMENT PRODUCTS]

ACTIVE INGREDIENT:

Bacillus pumilus strain QST 2808

(spores, solids, solubles, and water)*……..1.38%

OTHER INGREDIENTS: ……..98.62%

TOTAL: 100.00%

*Contains a minimum of 1 x 10^9 cfu/g.

EPA Reg. No: 264-1153 **EPA Establishment. No:**

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)

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID	
IF INHALED:	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, and then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
IF ON SKIN OR CLOTHING:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for further treatment advice.
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.	

[USE OF PRODUCT INDICATES ACCEPTANCE OF CONIDTIONS FOR SALE AND WARRANTY]

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

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

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

Harmful if inhaled. Avoid breathing spray mist. Avoid contact with skin or clothing. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

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

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.

[OPTIONAL: ENGINEERING CONTROLS]

[Optional Statement: When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [(40 CFR 170.240(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:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial uses: Do not apply directly to water or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. Cover spilled seed, or collect spilled seed from soil surface.

EMERGENCY INFORMATION

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

DIRECTIONS FOR USE

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

Commercial Seed Treatment Use Directions

[Note to the reviewer: All uses on the label may be for Commercial and or Non-commercial (on agricultural establishments). The bracketed statement below will only appear on Commercial seed treatment labels that do not bear agricultural establishment seed treatment use sites.]

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

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

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

NON-AGRICULTURAL USE REQUIREMENTS

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

Keep unprotected persons out of treated areas until sprays have dried.

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

NON-COMMERCIAL SEED TREATMENT USE DIRECTIONS

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

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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

Exception: If the seed is treated with the product and the seed is soil injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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

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

INTEGRATED PEST MANAGEMENT (IPM)

Integrate Sonata ASO into an overall disease and pest management strategy whenever fungicide use is necessary. Follow practices known to reduce disease development. Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.

Be sure use of this product conforms to resistance management strategies.

USE RATE DETERMINATION

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

IMPORTANT: READ CONDITIONS FOR SALE AND WARRANTY BEFORE USE

APPLICATION INSTRUCTIONS

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

[Note to Reviewer: the statement below would be used only if the container label has non-Commercial Seed Treatment Uses (seed treatment on agricultural establishments).]

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

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

MIXING INSTRUCTIONS

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

COMPATIBILITY: Do not combine Sonata ASO in the slurry with pesticides, or fertilizers if there has been no previous experience or use of the combination to show it is physically compatible, effective and non-injurious under your use conditions.

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

For Use as a Seed Treatment:

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

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

See Application Rate tables for more detailed application instructions.

Application Rates of Sonata ASO for Seed Treatment For Select Agricultural Crops			
Seed Crops	**Disease Suppressed**	**Rate fl oz per 100 lb of seed**	**Application Instructions**
Artichoke	***Pythium* spp.** ***Verticillium dahliae***	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
Asparagus	***Fusarium* spp.** ***Phytophthora* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
Brassica Broccoli Cabbage Cauliflower Brussels Sprouts Collards Kale Mustard Greens Kohlrabi and other brassica crops	***Aphanomyces* spp.** ***Fusarium* spp.** ***Phytophthora* spp.** ***Plasmodiophora brassicae*** ***Pythium* spp.** ***Rhizoctonia* spp.** ***Sclerotinia* spp.** ***Verticillium* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
Bulb Vegetables Onion Garlic Shallots and other bulb vegetables including those grown for seed production	***Aphanomyces* spp.** ***Fusarium* spp.** ***Phoma* spp.** ***Phytophthora* spp.** ***Pythium* spp.** ***Plasmodiophora* spp.** ***Rhizoctonia* spp.** ***Sclerotinia* spp.** ***Verticillium* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
Canola **Rapeseed**	***Alternaria* spp.** ***Fusarium* spp.** ***Leptosphaeria* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.** ***Sclerotinia* spp.**	0.3 – 5	For suppression of seedling and root diseases apply 0.3 to 5 fl oz per 100 lb of seed.

Corn Corn, Sweet Corn, Feed Corn, Field Corn, Fuel Corn, Pop	***Fusarium* spp.** ***Macrophomina* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.**	0.2 – 5	For suppression of seedling and root diseases apply 0.2 to 5 fl oz per 100 lb of seed
Cotton Cotton, Short Staple Cotton, Long Staple Cotton, Upland Cotton, Pima	***Fusarium* spp.** ***Macrophomina* spp.** ***Phoma* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.**	0.2 – 3	For suppression of seedling and root diseases, apply 0.2 to 3 fl oz per 100 lb of seed.

Seed Crops	Disease Suppressed	Rate fl oz per 100 lb of seed	Application Instructions
Cucurbits Cucumber Cantaloupe Melon Muskmelon Squash Watermelon and other cucurbit crops	***Acremonium* spp.** ***Fusarium* spp.** ***Macrophomina* spp.** ***Phytophthora* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.** ***Thielaviopsis* spp.** ***Verticillium* spp.**	0.1 – 5	For suppression of seedling and root diseases apply 0.1 to 5 fl oz per 100 lb of seed.
Fruiting Vegetables Pepper Tomato Eggplant Ground Cherry Tomatillo Okra and other fruiting vegetables	***Fusarium* spp.** ***Phytophthora* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.** ***Verticillium* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
Leafy Vegetables Lettuce Celery Spinach Parsley Radicchio and other leafy vegetables crops including those grown for seed production	***Fusarium* spp.** ***Phoma* spp.** ***Phytophthora* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.** ***Rhizomonas* spp.** ***Sclerotinia* spp.** ***Verticillium* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.

Seed Crops	Disease Suppressed	Rate fl oz per 100 lb of seed	Application Instructions
Legume Vegetables Beans Sprouts Bean, Adzuki Bean, Black Blue Lake Bean, Broad Bean, Butter Bean, Cacao Bean, Dry Bean, Fava Bean, French Bean, Garden Bean, Garbanzo Bean, Green Bean, Kidney Bean, Lima Bean, Mung Bean, Navy Bean, Pea Bean, Pigeon Bean, Pinto Bean, Red Bean, String Bean, Sugar Bean, Snap and other fresh, dry, vine, fuel and forage legume vegetables grown for seed	***Alternaria* spp.** ***Anthracnose* spp.** **Ascochyta Blight** ***Fusarium* spp.** ***Phytophthora* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed. For improvement of nodulation by *Rhizobium*, apply at 0.1 to 2 fl oz per 100 lb of seed.
Legume Vegetable Foliage Vegetable, grain, seed and pod, fodder and forage Legume Fuel	***Aphanomyces* spp.** ***Fusarium* spp.** ***Phytophthora* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.** ***Verticillium* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
Coffee Bean	***Alternaria* spp.** ***Anthracnose* spp.** ***Fusarium* spp.** ***Phytophthora* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed. For improvement of nodulation by *Rhizobium*, apply at 0.1 to 2 fl oz per 100 lb of seed.
Grain Cereal Crops Amaranth, Grain Sorghum, Grain Barley, Grain Oat, Grain Wheat, Grain Lupine Grain	***Cochliobolus* spp.** ***Fusarium* spp.** ***Macrophomina* spp.** ***Penicillium* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.** ***Stagonospora* spp.** ***Tilletia* spp.** ***Ustilago* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
Peanut	***Aspergillus* spp.** ***Fusarium* spp.** ***Phytophthora* spp.**	0.2 – 4	For suppression of seedling and root diseases and for improvement of nodulation by Rhizobium, apply 0.2 to 4 fl oz per 100 lb of seed.

	***Pythium* spp.** ***Rhizoctonia* spp.** ***Rhizopus* spp.** ***Sclerotinia* spp.**		
Crops	**Disease Suppressed**	**Rate fl oz per 100 lb of seed**	**Application Instructions**
Rice Rice, Indian Rice, sweet Rice, waxy Rice, wild	***Fusarium* spp.** ***Helminthosporium* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
Soybean	***Fusarium* spp.** ***Penicillium* spp.** ***Phytophthora* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.**	0.1 – 3	For suppression of seedling and root diseases or improvement of nodulation by Bradyrhizobium, apply 0.1 to 3 fl oz per 100 lb of seed.
Beet, Sugar	***Aphanomyces* spp.** ***Fusarium* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
Sunflower	***Fusarium* spp.** ***Peronospora* spp.** ***Phytophthora* spp.** ***Plasmopara* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
Grass, Forage, Fodder, Hay Bahiagrass Grass, Pasture, Forage Grass, Pasture, Hay Grass, Pasture, Silage Grass, Rangeland, Forage Grass, Rangeland, Hay Grass, Rangeland, Silage Grass, Rangeland, Straw Savannah Grass, Straw Switch Grass Sudan Grass	***Fusarium* spp.** ***Pythium* spp.** ***Rhizoctonia* spp.**	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.

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

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

STORAGE AND DISPOSAL

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

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

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

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

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

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

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

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

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