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READ SAFETY DIRECTIONS BEFORE OPENING OR USING

Serenade[®] Opti

BIOFUNGICIDE

ACTIVE CONSTITUENT: Not less than 1.3×10^{10} CFU/g *Bacillus amyloliquefaciens* strain QST 713 (formerly known as *Bacillus subtilis* strain QST 713)GROUP **BM02** FUNGICIDE

For the control or suppression of various diseases as specified in the DIRECTIONS FOR USE table

DIRECTIONS FOR USE**RESTRAINTS****DO NOT** apply with aircraft.**DO NOT** apply when wind speed is less than 3 or more than 20 kilometres per hour as measured at the application site.

Users of this product **MUST make an accurate written record** of the details of each spray application within 24 hours following application and **KEEP** this record for a minimum of 2 years. The spray application details that must be recorded are: **1.**date with start and finish times of application; **2.**location address and paddock/s sprayed; **3.**full name of this product; **4.**amount of product used per hectare and number of hectares applied to; **5.**crop/situation and weed/pest; **6.**wind speed and direction during application; **7.**air temperature and relative humidity during application; **8.**nozzle brand, type, spray angle, nozzle capacity and spray system pressure measured during application; **9.**name and address of person applying this product. (Additional record details may be required by the State or Territory where this product is used.)

CROP	DISEASE/PEST	RATE	CRITICAL COMMENTS
Grapevines	Botrytis bunch rot (<i>Botrytis cinerea</i>)	250 g/100 L water	<p>As part of a preventative spray program, applications may be made at, but not limited to, flowering, pre bunch closure, veraison through to harvest.</p> <p>Serenade Opti should not be applied to an existing disease infection.</p> <p>Ensure thorough coverage of all foliage and fruit. For dilute spraying, spray to point of runoff.</p> <p>For concentrate spraying, do not use at rates greater than 2 times the dilute spraying rate (i.e. at a concentration factor greater than 2X) – refer “Application” section in GENERAL INSTRUCTIONS.</p>
Strawberries (field and protected cropping systems)	Botrytis (<i>Botrytis cinerea</i>)	1.5 kg/ha	<p>Reduce background levels of disease by removal of plant debris and rotted fruit. Serenade Opti provides more effective disease prevention than curative control.</p> <p>Apply every 5 to 10 days commencing at early flowering stage. If conditions favour botrytis development, apply Serenade Opti every 5 days. As part of a preventative botrytis program rotate applications of Serenade Opti with other registered botryticides.</p> <p>Spray to point of runoff, ensuring thorough coverage of all foliage and fruit.</p>



CROP	DISEASE/PEST	RATE	CRITICAL COMMENTS
Tomatoes, capsicums, chillies (field and protected cropping systems)	Bacterial spot (<i>Xanthomonas</i> spp.) (suppression only)	150 to 200 g/100 L water or 1.5 to 2.0 kg/ha	<p>Begin applications soon after emergence or transplant as part of a preventative bacterial spot spray program. Rotate applications of Serenade Opti with other registered bactericides and repeat every 3 to 7 days. These applications will help reduce the spread of bacterial spot, but will not control existing infections. Serenade Opti should be applied preventatively before disease symptoms are visible.</p> <p>Use the shortest interval and highest rate when conditions are very favourable for infection i.e. during wet weather, high inoculum levels and/or physical damage e.g. through pruning or harvesting.</p> <p>Use the lowest rate when used in rotation with protectant fungicides e.g. copper based fungicides. Continue applications at 3 - 7 days following a protectant fungicide if conditions are conducive to disease development.</p> <p>Apply as a high volume spray at a water volume appropriate to the crop stage to ensure good coverage of all foliage, flowers and fruit. Concentrate spraying is not recommended.</p>
Avocado and other tropical fruit crops (excluding banana)	Anthracnose (<i>Colletotrichum</i> spp.) Stem end rot (Suppression only)	150 to 200 g/100 L water	<p>Begin applications as soon as crop development has reached susceptible stages for anthracnose infections to occur.</p> <p>Serenade Opti should be applied preventatively before disease symptoms are visible.</p> <p>Rotate applications of Serenade Opti with other registered fungicides and repeat every 7 to 21 days. In mangoes repeat applications using shorter spray intervals will provide greater disease suppression.</p> <p>In avocado and other tropical fruit crops use the shortest interval and highest rate when conditions are very favourable for infection i.e. during wet weather and/or presence of high inoculum levels.</p> <p>Apply as a high volume dilute foliar spray at a water volume appropriate to the crop canopy up to a maximum of 1,800 L/ha to ensure good coverage of all foliage, flowers and fruit. Concentrate spraying is not recommended.</p>
Mango		200 g/100 L water	

NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION

WITHHOLDING PERIODS (WHP)

Capsicums, chillies, grapevines, strawberries, tomatoes, tropical fruit: NOT REQUIRED WHEN USED AS DIRECTED

GENERAL INSTRUCTIONS

Serenade Opti has been developed from a naturally occurring strain of *Bacillus amyloliquefaciens* (also known as *Bacillus subtilis*). It is a broad spectrum preventative fungicide recommended for the control or suppression of a number of diseases as described on the label. Serenade Opti acts as a fungicide by preventing spore germination, germ tube elongation and germ tube penetration and as a bactericide by direct contact activity of biological chemistry and through activation of plant resistance. Serenade Opti can be integrated into an overall disease management strategy wherever fungicide/bactericide use is necessary in an IPM programme and is also an important tool in resistance management strategies. Serenade Opti should be applied prior to disease development, and should be part of a comprehensive disease management program.

**Visual residues on fruit**

Visual residues may be left on fruit from application of this product.

Mixing

Partially fill the spray tank with clean water and start agitation. Add the specified amount of Serenade Opti for the area to be treated to the spray tank. Complete filling the tank to the required volume for the area to be treated. Maintain agitation until spraying is complete. Do NOT allow the spray mixture to stand overnight or for any prolonged periods. Spray pH must be not less than pH 4.5 and not greater than pH 8.5.

Application

Application should be by ground spray equipment only. Thorough coverage of the target area is essential. Apply in sufficient water, and using suitable application parameters (nozzles, pressure, boom height, speed, swath width, etc.) to ensure thorough and even coverage of leaves and fruit. Adjust water volumes according to the crop growth stage.

Dilute Spraying (capsicums, chillies, grapevines, strawberries, tomatoes, tropical fruit)

- Use a sprayer designed to apply high spray volumes, up to the point of run-off and matched to the crop being sprayed.
- Set up and operate the sprayer to achieve even coverage throughout the crop canopy, including fruit. Apply sufficient water to cover the crop to the point of run-off. Avoid excessive run-off.
- The required spray volume may be determined by applying different test volumes, using different settings on the sprayer, or from industry guidelines or expert advice.
- Add the amount of product specified in the Direction for Use table for each 100 L of water. Spray to the point of run-off.
- The required dilute spray volume will change and the sprayer set up and operation may also need to be changed, as the crop grows.

Concentrate Spraying (grapevines only)

- Use a sprayer designed and set up for concentrate spraying (that is a sprayer which applies spray volumes less than those required to reach the point of run-off) and matched to the crop being sprayed.
- Set up and operate the sprayer to achieve even coverage throughout the crop canopy using your chosen spray volume.
- Determine an appropriate dilute spray volume (See *Dilute Spraying* above) for the crop canopy. This is needed to calculate the concentrate mixing rate.
- The mixing rate for concentrate spraying can then be calculated in the following way:

EXAMPLE ONLY

1. Dilute spray volume as determined above: For example 1500 L/ha
 2. Your chosen concentrate spray volume: For example 750 L/ha
 3. The concentration factor in this example is 2 X (i.e. $1500 \text{ L} \div 750 \text{ L} = 2$)
 4. If the dilute label rate is 250 g/100 L, then the concentrate rate becomes 2 x 250, that is 500 g/100 L of concentrate spray.
- The chosen spray volume, amount of product per 100 L of water, and the sprayer set up and operation may need to be changed as the crop grows.
 - Do not use at a concentration factor greater than 2X (e.g. at a rate higher than 500 g/100 L where a dilute spraying rate of 250 g/100 L is specified).
 - For further information on concentrate spraying, users are advised to consult relevant industry guidelines, undertake appropriate competency training and follow industry best practice.

Sprayer Clean Up

If clean-up of spray equipment is required, rinse equipment twice with clean water after use.

COMPATIBILITY

For the latest compatibility recommendations contact the Bayer Crop Science Technical Information Service 1800 804 479 or your local Bayer Crop Science representative.

IPM compatibility

Serenade Opti is compatible with integrated pest management (IPM) production systems.



FUNGICIDE RESISTANCE WARNING

GROUP	BM02	FUNGICIDE
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Serenade Opti Biofungicide is a microbial fungicide. For fungicide resistance management the product is a Group BM02 fungicide. Some naturally occurring individual fungi resistant to the product and other Group BM02 fungicides may exist through normal genetic variability in any fungal population. The resistant individuals can eventually dominate the fungal population if these fungicides are used repeatedly. These resistant fungi will not be controlled by this product and other Group BM02 fungicides, thus resulting in a reduction in efficacy and possible yield loss. Since the occurrence of resistant fungi is difficult to detect prior to use, Bayer CropScience Pty Ltd accepts no liability for any losses that result from failure of this product to control resistant fungi.

STORAGE AND DISPOSAL

Store in closed original container in a dry, well ventilated place as cool as possible out of direct sunlight. Serenade Opti can be stored for 36 months from the date of manufacture when stored at ambient temperature conditions (17 - 27 °C).

Single-rinse or shake remainder into spray tank. Do not dispose of undiluted chemicals on site. Puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. Do not burn empty containers or product.

SAFETY DIRECTIONS

Harmful if inhaled. Will irritate the eyes. Repeated exposure may cause allergic disorders. Do not inhale dust or spray mist. Avoid contact with the eyes. When opening the container and preparing the spray wear cotton overalls buttoned to the neck and wrist, disposable dust face mask covering mouth and nose and disposable gloves. If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use wash contaminated clothing.

FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26.

SAFETY DATA SHEET

Additional information is listed in the Safety Data Sheet, which can be obtained from www.crop.bayer.com.au.

EXCLUSION OF LIABILITY

This product must be used strictly as directed, and in accordance with all instructions appearing on the label and in other reference material. So far as it is lawfully able to do so, Bayer CropScience Pty Ltd accepts no liability or responsibility for loss or damage arising from failure to follow such directions and instructions.

Serenade® is a Registered Trademark of the Bayer Group.

APVMA Approval No.: 82242/117388

FOR 24 HOUR SPECIALIST ADVICE IN EMERGENCY ONLY PHONE 1800 033 111
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GHS STATEMENTS

<p>•Harmful if inhaled. •May cause an allergic skin reaction. •IF ON SKIN: Wash with plenty of soap and water. •If skin irritation or rash occurs: Get medical advice/attention. •IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.</p>
