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READ SAFETY DIRECTIONS BEFORE OPENING OR USING

Serenade[®] Prime

Soil Ameliorant and Biofungicide

ACTIVE CONSTITUENT: Not less than 1.0×10^{12} CFU/L *Bacillus amyloliquefaciens* strain QST 713

GROUP **BM02** FUNGICIDE

A suspension concentrate form of the QST 713 strain of *Bacillus amyloliquefaciens* for use in agricultural and horticultural crops, as per the Directions for Use

DIRECTIONS FOR USE

RESTRAINTS

Specific definitions for terms used in this section of the label can be found at apvma.gov.au/spraydrift.

DO NOT allow bystanders to come into contact with the spray cloud.

DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

DO NOT apply if there are hazardous surface temperature inversion conditions present at the application site during the time of application. Surface temperature conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

APPLICATION TO SOIL TO IMPROVE BIOAVAILABILITY OF SOIL RESOURCES FOR AGRICULTURAL AND HORTICULTURAL CROPS

Root colonisation is critical for a beneficial outcome from Serenade Prime Soil Ameliorant and Biofungicide. Apply Serenade Prime in a manner that will concentrate the product in the seed, root or transplant zone. This may include delivery of Serenade Prime via drip or micro sprinkler irrigation, soil drench, in-furrow application or plant-hole drench.



CROP	PURPOSE	RATE	CRITICAL COMMENTS
Vegetable crops, berries and other small fruits, row crops	Serenade Prime is a ready-to-use formulation of the highly active QST 713 strain of <i>Bacillus amyloliquefaciens</i> for application to soil to improve bioavailability of soil resources for agricultural and horticultural crops	5 - 10 L/ha	<p>Plant hole drench at transplanting: Apply the selected volume of drench mixture in the planting hole. Mix with sufficient water to allow a consistent volume to be applied to each plant (e.g. 50 mL of drench mixture per plant).</p> <p>In-furrow application (direct sown): Apply as an in-furrow spray in the required amount of water per hectare for the crop at planting. Mount the spray nozzle so the spray is directed into the furrow just before the seeds or seed pieces are covered.</p> <p>Drip irrigation: Apply product with the first irrigation after transplanting. Repeat applications may be made every 21 - 28 days depending on crop and growth rate.</p> <p>Soil surface boom spray: Apply after sowing or transplanting at the start of active root growth. Use irrigation or rainfall to incorporate the product into the root zone.</p>
Tree crops		35 mL/tree	<p>Drip or micro-sprinkler irrigation or soil drench at root flush: Apply spray mixture to the surface of the soil at root flush (just prior to vegetative flush) through micro sprinkler, drip irrigation or soil drench system. Apply a sufficient quantity of irrigation to reach the root zone. In high density plantings do not exceed 10 L/ha of Serenade Prime.</p>
Bananas		2 - 5 mL/plant	<p>Micro-sprinkler irrigation or soil drench at root flush: Apply a sufficient quantity of irrigation to reach the root zone. Do not exceed 10 L/ha of Serenade Prime.</p>
Newly established tree, vine and berry crops		2 - 10 mL/plant	<p>Drip or micro-sprinkler irrigation or soil drench: Apply a sufficient quantity of irrigation to reach the root zone. In high density plantings do not exceed 10 L/ha of Serenade Prime.</p>



APPLICATION AS A BIOLOGICAL FUNGICIDE

CROP	DISEASE	RATE	CRITICAL COMMENTS
Avocados, mangoes and other tropical and sub-tropical fruits, inedible peel (excluding bananas)	Anthrachnose (<i>Colletotrichum</i> spp.) (suppression only), stem end rot (suppression only)	600 mL/100 L water	<p>Begin applications as soon as crop development has reached susceptible stages for anthracnose infections to occur.</p> <p>Serenade Prime should be applied preventatively before anthracnose or stem end rot disease symptoms are visible.</p> <p>Rotate applications of Serenade Prime with other registered fungicides and repeat every 7 - 21 days.</p> <p>In mangoes repeat applications using shorter spray intervals will provide greater disease suppression.</p> <p>In avocado and other tropical and sub-tropical fruit crops use the shortest interval 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 1,650 L/ha to ensure good coverage of all foliage, flowers and fruit. Concentrate spraying is not recommended.</p>
Bananas	Yellow Sigatoka (<i>Mycosphaerella musicola</i>), common leaf speckle (<i>Mycosphaerella musae</i>) (suppression only)	1.0 L/ha (plus a high quality water miscible mineral crop oil at 3.5 - 5.0 L/ha*)	<p>This use is subject to a CropLife resistance management strategy.</p> <p>Serenade Prime should be applied as part of a regular program of fungicide sprays, alternating with fungicides from different mode of action groups. For optimum disease control maintain thorough de-leaving practices, in accordance with industry guidelines, to reduce disease inoculum. Old leaves and leaves with advanced lesions should be removed, or infected parts of the leaf removed, prior to the application of Serenade Prime.</p> <p>Intervals between fungicide applications generally should be 14 - 21 days, but should be modified for locality, disease conditions and leaf emergence rates. Use a shorter interval when applied during conditions favourable to disease development (warm and high humidity).</p> <p>*Water miscible mineral crop oil</p> <p><u>Yellow Sigatoka</u> Under conditions favourable to disease development such as prolonged periods of warm temperatures and high humidity, the use with a high quality water miscible mineral crop oil at 3.5 - 5.0 L/ha is required for control. Without the addition of a high quality water miscible mineral crop oil, suppression only of the disease may result.</p> <p><u>Common leaf speckle</u> The addition of a high quality water miscible mineral crop oil is required to achieve suppression of the disease.</p>



Serenade Prime

CROP	DISEASE	RATE	CRITICAL COMMENTS
Fruiting vegetables, other than cucurbits, e.g. tomatoes, capsicums, chillies (field and protected cropping systems)	Bacterial spot (<i>Xanthomonas</i> spp.) (suppression only)	800 mL to 1 L/100 L water or 8 to 10 L/ha	<p>Begin applications soon after emergence or transplant as part of a preventative bacterial spot spray program. Rotate applications of Serenade Prime with other registered bactericides and repeat every 3 - 7 days. These applications will help reduce the spread of bacterial spot but will not control existing infections. Serenade Prime 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>
Potatoes	Soil borne black scurf - rhizoctonia root rot (<i>Rhizoctonia solani</i>) (suppression only)	60 mL/ 100 m row	<p>Apply Serenade Prime once as an in-furrow spray at planting. Mount the spray nozzle so the spray is directed into the furrow at the seed as a 15 - 20 cm band applied just before the seed is covered. Alternatively use a 2 nozzle system spraying the furrow prior to seed drop and after it has dropped just prior to covering.</p> <p>Apply Serenade Prime in 1 - 3 L of water/100 m of row. Ensure the water volume applied does not wash off any previously applied seed treatments.</p> <p>DO NOT apply Serenade Prime if conditions (e.g. high soil temperature and moisture in sandy soils) or seed quality favour seed piece breakdown, as the addition of any moisture to the seed may enhance the problem.</p>
Sugarcane	Pineapple disease (<i>Ceratocystis paradoxa</i>) (suppression only)	60 mL/ 100 m of row (equivalent to 4 L/ha for single row cane with 1.52 m spacing between rows) (for dual row each row is treated at the above row rate)	<p>For the suppression of pineapple disease in sugarcane, apply as a spray onto cane setts in the planting chute. Serenade Prime should be applied immediately prior to placement in the furrow using an appropriate water volume (minimum of 5 L water/100 m of row) to ensure all surfaces of the cane setts are covered especially on the cut ends. Dip planters have not been tested with Serenade Prime.</p> <p>In situations where very heavy rainfall is predicted or where there may be prolonged waterlogging and/or cold weather conditions, the use of an additional fungicidal product is recommended.</p>

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

**WITHHOLDING PERIOD
NOT REQUIRED WHEN USED AS DIRECTED**

GENERAL INSTRUCTIONS

Mixing

Prior to opening, shake or agitate the container vigorously, then add the required quantity of Serenade Prime to clean water (do not use hard/saline water or water with suspended solids) in the tank while stirring or with agitators in motion. Maintain agitation until spraying is complete.

Application

Bananas

Ground application

Apply in sufficient water, using suitable application parameters (nozzles, pressure, speed, etc.) to ensure thorough and even coverage of the target area, as both are essential. Except when applying with orchard airblast equipment, use only MEDIUM spray quality.

Aerial application

Apply at least 20 L of spray mixture per hectare for aerial application. Use suitable application parameters (nozzles, pressure, speed, etc.) to deliver only a MEDIUM spray quality.

Fruit vegetables, other than cucurbits, tropical and sub-tropical fruits, inedible peel (excluding bananas)

Ground 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

- 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.

Cleaning up

Equipment should be thoroughly cleaned by rinsing with water several times.

Compatibility

Serenade Prime has been tested for compatibility with many other conventional products including fungicides, insecticides, herbicides, and fertilizers. However, as formulations of other manufacturers' products are beyond the control of Bayer, all mixtures should be tested prior to mixing commercial quantities. As changes in climatic conditions can alter the sensitivity of plants to mixtures of sprays, Bayer cannot be responsible for the behaviour of such mixtures.

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

FUNGICIDE RESISTANCE WARNING

GROUP	BM02	FUNGICIDE
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Serenade Prime Soil Ameliorant and 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 cannot be controlled by this product and other Group BM02 fungicides, thus resulting in a reduction of 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.



PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

DO NOT contaminate wetlands or watercourses with this product or used containers.

STORAGE AND DISPOSAL

Store out of reach of children.

Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. Serenade Prime can be stored for 36 months from the date of manufacture when stored at ambient temperature conditions (17-25 °C).

(10 L)

Triple rinse container before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or 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. Do not re-use empty container for any other purpose.

(1000 L)

If tamper evident seals are broken prior to initial use then the integrity of the contents cannot be assured. The container must be vented before discharging contents. To empty connect a camlock fitted hose to the bottom valve. Remove top cap when discharging for venting purposes. When the container is empty, close all caps and valves and return the container to the point of purchase.

SAFETY DIRECTIONS

May irritate the eyes. Avoid contact with eyes. When opening the container and preparing the product for use, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) 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

First aid is not generally required. If in doubt, contact a Poisons Information Centre (phone Australia 13 11 26) or a doctor.

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: 85292/140786

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

GHS STATEMENTS

Classification not required according to GHS criteria.