

GROUP	BM 02	FUNGICIDE
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**STARGUS® BIOFUNGICIDE**

**For suppression of listed fungal diseases**

**LIQUID**

**LIVE ORGANISM**

**COMMERCIAL**

**READ THE LABEL BEFORE USING**

**KEEP OUT OF REACH OF CHILDREN**

**ACTIVE INGREDIENT:**

*Bacillus amyloliquefaciens* strain F727.....  $\geq 1 \times 10^9$  CFU/mL (96.4% w/v)

**REGISTRATION NO: 33246 PEST CONTROL PRODUCTS ACT**

**WARNING: EYE IRRITANT  
POTENTIAL SENSITIZER**

**NET CONTENTS: (On Package)**

**Marrone Bio Innovations, Inc.  
1540 Drew Avenue  
Davis, California, USA 95618  
[info@marronebio.com](mailto:info@marronebio.com)  
1 (877) 664-4476**

Date of Manufacture:

**PRECAUTIONS:****KEEP OUT OF REACH OF CHILDREN.**

May cause eye irritation. DO NOT get in eyes. May cause sensitization. Avoid contact with skin or clothing. Avoid inhaling/breathing spray mist.

Wear a long-sleeved shirt, long pants, eye goggles or face shield, waterproof gloves, shoes with socks, wear a minimum of a NIOSH-approved particulate filtering facepiece with any N, R, or P filter during mixing, loading, application, clean-up, and repair. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Restricted Entry Interval: DO NOT enter or allow worker entry into treated areas for 4 hours or until sprays have dried, unless wearing personal protective equipment, including waterproof gloves, a long-sleeved shirt, long pants, and socks with shoes.

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools, and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

**FIRST AID:**

**If swallowed:** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

**If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15—20 minutes. Remove contact lenses if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

**TOXICOLOGICAL INFORMATION:**

Treat symptomatically.

**ENVIRONMENTAL PRECAUTIONS:**

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

DO NOT allow effluent or runoff from greenhouses containing this product to enter lakes, streams, ponds or other waters.

**GENERAL USE RECOMMENDATION:**

Stargus Biofungicide is a biological fungicide, containing *Bacillus amyloliquifaciens* strain F727 for use on listed edible and field crops. Apply prior to disease infestation to protect the growing leaf tissue, flowers and above ground fruits and vegetables. Stargus Biofungicide can be used in multiple application methods to suppress or partially suppress certain foliar and soil-borne diseases. See specific information below for diseases controlled, use rates and application interval on edible crops.

**INTEGRATED PEST MANAGEMENT (IPM):**

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

**USE RATE DETERMINATION:**

Carefully read and follow all label directions, use rates and restrictions. Stargus Biofungicide should be applied prior to or in the early stages of disease development. Use maximum label rates and 7-day spray intervals for conditions conducive to rapid disease development. For proper application, determine the number of hectares to be treated, the recommended label use rate and select appropriate water volumes to give good canopy penetration and coverage of plant parts to be protected. Prepare only the amount of spray solution required to treat the measured acreage. Accurate spray equipment calibration is essential prior to use.

**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 determine the potential for spray drift. The applicator and the grower/treatment coordinator are responsible for considering all of these factors when making decisions. Where provinces/territories have more stringent regulations, they should be observed.

DO NOT apply by air.

**GROUND:** Thorough coverage is essential for optimum disease control. To achieve good coverage, use the appropriate spray pressure, litres per hectare, nozzles, nozzle spacing and ground speed. Consult spray nozzle and accessory catalogues for specific information on proper equipment calibration.

**MIXING INSTRUCTIONS:**

**MIXING:** Stargus Biofungicide must be diluted with water for spray applications and may be used in spray equipment commonly used for making ground applications. Partially fill the spray tank with clean water and begin agitation. Add the specified amount of Stargus Biofungicide to the tank. Finish filling the tank to the desired volume to obtain proper spray concentration. Maintain agitation continuously while spraying. Do not allow spray mixture to stand overnight or for prolonged periods.

**DIRECTIONS FOR USE:**

When applied as directed (see below), Stargus Biofungicide will suppress or partially suppress the indicated diseases. Under conditions of moderate to high disease pressures, use the higher rate and 7-day application interval indicated. Apply in sufficient water carrier volume to ensure good coverage. See specific crop instructions for further directions.

Shake well prior to use. Use 50-mesh nozzle screens or larger.

**APPLICATION RATES AND INSTRUCTIONS FOR SELECTED CROPS**

<b>Crop</b>	<b>Disease</b>	<b>Crop Rate</b>	<b>Instructions</b>
<b>Field grown: Cantaloupe, Cucumber, Pumpkin, Zucchini, Watermelon, Melon, Muskmelon, and Squash</b>	Downy mildew ( <i>Pseudoperonospora cubensis</i> ) – Suppression	4-6 litres per hectare	Apply Stargus Biofungicide preventatively or when disease symptoms first appear in 500-1000 litres water per hectare. Repeat applications on a 7 day interval. When environmental conditions and plant stage are conducive to rapid disease development, use Stargus Biofungicide in a rotational program with other fungicides that are registered for use against the same disease on the same crop.
<b>Grape</b>	Botrytis bunch rot ( <i>Botrytis cinerea</i> ) Partial suppression	5 litres per hectare	Apply Stargus Biofungicide preventatively in 500-1500 litres water per hectare beginning at bloom. Repeat applications at bunch closure, veraison and preharvest. When environmental conditions and plant stage are conducive to rapid disease development, use Stargus Biofungicide in a rotational program with other fungicides that are registered for use against the same disease on the same crop.
	Downy mildew ( <i>Plasmopara viticola</i> ) – Suppression  Black rot ( <i>Guignardia bidwellii</i> ) – Suppression	2-6 litres per hectare	Apply Stargus Biofungicide preventatively or when disease symptoms first appear after shoot emergence and new shoots are approximately 1-3 cm in length. Apply Stargus Biofungicide in 500-1500 litres water per hectare. Repeat applications on a 7 day intervals.

Crop	Disease	Crop Rate	Instructions
<b>Bean, Pea, Soybean (Succulent or Dried)</b>	White mold ( <i>Sclerotinia sclerotiorum</i> ) – Partial suppression	4-8 litres per hectare	Apply Stargus Biofungicide preventatively when environmental conditions are conducive for disease development or when disease symptoms first appear. Applications at growth stage R1 are most effective for protecting crop yield. A second application 7-10 days later may improve control and protect yield potential. Apply Stargus Biofungicide in 300 litres water per hectare using a nozzle configuration and pressure to maximize penetration of crop canopy.
<b>Canola, Rapeseed (<i>Brassica</i> spp.; <i>Brassica napus</i>)</b>	Sclerotinia stem rot ( <i>Sclerotinia sclerotiorum</i> ) – Partial suppression	4-8 litres per hectare	Apply Stargus Biofungicide preventatively when environmental conditions are conducive for disease development or when disease symptoms first appear. Applications at early flowering are most effective for protecting crop yield. A second application 7-14 days later may improve control and protect yield potential. Apply Stargus Biofungicide in 300 litres water per hectare using a nozzle configuration and pressure to maximize penetration of crop canopy.
<b>Sunflower</b>	Stalk rot ( <i>Sclerotinia sclerotiorum</i> ) – Partial suppression		

Crop	Disease	Crop Rate	Instructions
<b>Potato</b>	Pink rot ( <i>Phytophthora erythroseptica</i> ) – Suppression	8 litres per hectare	Apply Stargus Biofungicide at planting in 100 litres of water per hectare directing the spray mixture into the open furrow prior to closure of the furrow.
	Early blight ( <i>Alternaria solani</i> ) Partial Suppression	8-10 litres per hectare	Apply Stargus Biofungicide in 300-500 litres of water per hectare preventatively when environmental conditions are conducive for disease development or when disease symptoms first appear. Repeat applications on a 7-day interval. When environmental conditions and plant stage are conducive to rapid disease development, use Stargus Biofungicide in a rotational program with other fungicides that are registered for use against the same disease on the same crop.
	Late blight ( <i>Phytophthora infestans</i> ) Partial suppression at minimum rate; Suppression at maximum rate	8-10 litres per hectare	
<b>Beet, red (garden)</b>	Cercospora leaf spot ( <i>Cercospora beticola</i> ) Partial suppression	5 litres per hectare	Apply Stargus Biofungicide preventatively or when disease symptoms first appear in 175-250 litres of water per hectare. Additional applications should be made on a 7-day interval if conditions are conducive for disease development.
<b>Brussels sprouts Cabbage</b>	Black Rot ( <i>Xanthomonas campestris</i> )	6-8 litres per hectare	Apply Stargus Biofungicide preventatively or when disease

Crop	Disease	Crop Rate	Instructions
	Partial suppression		symptoms first appear in 300-500 litres water per hectare. Add a non-ionic surfactant to the spray solution at 0.125 – 0.25% v/v (1.25-2.5 L/1000 L). . Repeat applications on a 7-day interval.
<b>Tomato (outdoor)</b>	Late Blight ( <i>Phytophthora infestans</i> ) Partial suppression at minimum rate; Suppression at maximum rate	7-10 litres per hectare	Apply Stargus Biofungicide preventatively or when disease symptoms first appear in 300-500 litres water per hectare. Repeat applications on a 7-day interval. When environmental conditions and plant stage are conducive to rapid disease development, use Stargus Biofungicide in a rotational program with other fungicides that are registered for use against the same disease on the same crop..
	Early Blight ( <i>Alternaria solani</i> ) Partial suppression	5-10 litres per hectare	
<b>Hemp/field</b>	White mold ( <i>Sclerotinia sclerotiorum</i> ) Partial suppression  Grey mold ( <i>Botrytis cinerea</i> ) Partial suppression	4-8 litres per hectare	Apply Stargus Biofungicide in 300-500 litres of water per hectare and continue applications on a 7 day interval as long as conditions are conducive to disease development.
<b>Cannabis/Indoor</b>	Grey mold ( <i>Botrytis cinerea</i> ) Partial suppression	5-15 mL/Litre	Apply Stargus Biofungicide preventatively or when disease symptoms first appear in sufficient water to provide complete coverage without runoff. Repeat applications on a 7-day interval.
<b>Sugar beet</b>	Cercospora leaf spot ( <i>Cercospora beticola</i> ) Partial suppression	5 litres per hectare	Apply Stargus Biofungicide preventatively or when disease symptoms first appear in 175-250 litres of water per hectare. Additional applications should be made on a 7-day interval if conditions are conducive for disease development.

**PREHARVEST INTERVAL:**

Stargus Biofungicide can be used up to and including the day of harvest. PHI=0 days.

Read and understand the entire label before opening this product. If you have questions, call the manufacturers at 1 (877) 664-4476 or obtain technical advice from the distributor or your provincial agricultural or forestry representative.

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wash water.

DO NOT apply by any type of irrigation system.

DO NOT apply in greenhouses, except on: cannabis grown commercially indoors.

**STORAGE:**

Store the product away from food and feed. This product should be used within 24 months from the date of manufacture when stored at 4–30°C.

**DISPOSAL:**

1. Triple-or pressure-rinse the empty container. Add the rinsate to the spray mixture in the tank.
2. Follow provincial instruction for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

**NOTICE TO USER:**

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.