

# Serifel<sup>®</sup>



LICENSED

PERIOD 2015-2017 LIC. NO.

9131.244

Batch Code: (Printed on Bottle)

Group 44 Fungicide

## Biofungicide

Serifel is an agricultural biofungicide product for suppression of plant diseases in certain crops.

### Active Ingredient:

*Bacillus amyloliquifaciens* strain MBI 600<sup>††</sup> ..... 9.9%

Other Ingredients: ..... 90.1%

Total: ..... 100.0%

\*Serifel Biofungicide contains a minimum of  $5.5 \times 10^{10}$  viable spores per gram.

<sup>††</sup>Formerly named *Bacillus subtilis* strain MBI 600

EPA Reg. No. 71840-18

EPA Est. No. 67064-IA-001

## KEEP OUT OF REACH OF CHILDREN CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

See inside for complete **First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

**In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).**

Net Weight: **5 pounds**

81089818 NVA 2015-05-492-0017

BASF Corporation

26 Davis Drive

Research Triangle Park, NC 27709

Product of Japan. Formulated in the U.S. with imported and domestic materials.

**BASF**  
We create chemistry

## FIRST AID

### 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 center or doctor for treatment advice.

## HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).

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## Precautionary Statements

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### Hazards to Humans and Domestic Animals

**CAUTION.** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear protective eyewear. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

### Personal Protective Equipment (PPE)

#### Applicators and other handlers must wear:

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

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

Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

## USER SAFETY RECOMMENDATIONS

### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. 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 wash water or rinsate.

### In Case of Emergency

In case of large-scale spill of this product, call:

- CHEMTREC                    1-800-424-9300
- BASF Corporation        1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation        1-800-832-HELP (4357)

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## Directions For Use

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It is a violation of federal law to use this product in a manner inconsistent with its labeling. **DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

### 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), notification to workers, and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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

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

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

- Coveralls
- Chemical resistant gloves (made of any waterproof material)
- Shoes plus socks

## STORAGE AND DISPOSAL

**DO NOT** contaminate water, food, or feed by storage or disposal.

### Pesticide Storage

Store in a cool, dry place until used. **DO NOT** store this product near food, feed, seed, fertilizers, or other pesticides.

### Pesticide Disposal

To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

### Container Handling

**Nonrefillable Container. DO NOT** reuse or refill this container. Clean container promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 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. 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.

## Product Information

This package contains **Serifel® Biofungicide**, a wettable powder (WP). The active ingredient in **Serifel** is *Bacillus amyloliquefaciens* strain MBI 600, a biological agent providing suppression of listed foliar and soilborne plant diseases. Apply **Serifel** preventively in low to medium disease pressure situations. **Serifel** can be applied as a foliar spray, a directed or banded spray, a soil or plant drench, as an in-furrow application, or through chemigation. **Serifel** can be applied alone or in a tank mix with other registered pest control products, unless otherwise noted in the **Crop-Specific Directions**. Apply **Serifel** in a regularly scheduled protective spray program and use in a rotation program with other fungicides. Under higher disease pressure situations, tank mix **Serifel** with registered fungicide products.

### Label statement required by the State of Oregon

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.aapfco.org/metals.htm>.

## Integrated Pest Management (IPM)

**Serifel® Biofungicide** can be integrated into an overall disease and pest management program. Cultural practices known to reduce disease development should be followed. Consult your local extension specialist, certified crop advisor and/or BASF representative for additional IPM strategies established for your area. **Serifel** may be used in agricultural extension advisory (disease forecasting) programs, which recommend application timing based on environmental factors favorable for disease development.

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## Application Instructions

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Apply rates of **Serifel** as instructed by the **Crop-Specific Directions**. Apply **Serifel** with ground equipment, aerial equipment or through sprinkler irrigation equipment. Equipment must be checked frequently for calibration. If heavy rainfall or irrigation occurs shortly after application, reapplication of **Serifel** may be necessary.

Under low-level disease conditions, the minimum application rates can be used while maximum application rates and shortened spray schedules are to be used for severe or threatening disease conditions. Tank mixing **Serifel** with other fungicides can also improve performance.

## Cleaning Spray Equipment

Spraying equipment must be cleaned thoroughly before and after applying this product, particularly if a product with potential to injure crops was used prior to **Serifel**.

Consult BASF Representatives for additional information regarding agitation and recirculation.

## Foliar Ground Applications

Apply **Serifel** in sufficient water to ensure thorough coverage of foliage, bloom, and fruit. Thorough coverage is required for disease control. Complete coverage of the stem, all the way down to the soil, is required for suppression of soilborne diseases of the stem.

Maintain agitation of product during the application process. Apply the product mixture shortly after mixing. **DO NOT** store mixed slurries of **Serifel** overnight.

## Instructions for Directed or Banded Sprays Related to Ground Applications

The application rates shown in the **Crop-specific Directions** on this label reflect the amount of product to be applied uniformly over an acre of ground on a broadcast basis. In some crops, **Serifel® Biofungicide** may be used as a directed or banded spray over the rows or plant beds with the alleys or row middles left unsprayed. For such uses, reduce the labeled **Serifel** rates in proportion to the area actually sprayed. This adjustment is necessary to avoid applying the product at use rates higher than permitted according to label directions. The following formula may be used to determine the broadcast equivalent rate for doing directed or banded sprays:

sprayed bed width + unsprayed row middle width = total row width

$$\frac{\text{sprayed bed width in inches}}{\text{total row width in inches}} \times \frac{\text{broadcast rate}}{\text{treated acre}} = \frac{\text{band rate}}{\text{field acre}}$$

**Example:** A directed spray application will be made to 45-inch plant beds that are separated by 15-inch unsprayed row middles.

45 inches sprayed bed width + 15 inches unsprayed row middles = 60 inches total row width

The calculation to determine the appropriate equivalent rate of product to use for this situation based on a label broadcast rate recommendation of 4 ounces/acre follows:

$$\frac{45 \text{ inches sprayed bed width}}{60 \text{ inches total row width}} \times \frac{4 \text{ oz Serifel® Biofungicide}}{\text{treated acre}} = \frac{3 \text{ oz Serifel}}{\text{field acre}}$$

## Directions for Use through Sprinkler Chemigation Systems

### Sprayer Preparation

Clean chemical tank and injector system thoroughly. Flush system with clean water.

### Application Instructions

Apply **Serifel** at rates and timings as described in this label.

## Use Precautions for Sprinkler Irrigation Applications

- Apply this product only through a sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. **DO NOT** apply this product through any other type of irrigation system(s).
- Add **Serifel** to the pesticide supply tank under agitation containing sufficient water to maintain a continuous flow by the injection equipment. In continuous moving systems, inject this product-water mixture continuously, applying the labeled rate per acre for that crop.  
**DO NOT** exceed 1/2 inch (13,577 gallons) per acre. In stationary or noncontinuous moving systems, inject the product-water mixture in the last 15 to 30 minutes of each set allowing sufficient time for all of the required pesticide to be applied by all the sprinkler heads and applying the labeled rate per acre for that crop.  
**DO NOT** apply when wind speed favors drift beyond the area intended for treatment.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. Thorough coverage of foliage is required for good control. Maintain good agitation during the entire application period.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- 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 backflow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 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.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 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.
- 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.
- Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water.

- **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.
- 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 necessary adjustments should the need arise.

### **Specific Instructions for Public Water Systems**

1. Public water system 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 regular serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops or, in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. **DO NOT** apply when wind speed favors drift beyond the area intended for treatment.

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## Additives and Tank Mixing Information

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**Serifel® Biofungicide** can be tank mixed with most recommended fungicides, insecticides, herbicides, liquid fertilizers, biological control products, adjuvants, and additives as specified in **Crop-Specific Directions**. Before using any tank mix (fungicides, insecticides, herbicides, liquid fertilizers, biological control products, adjuvants, and additives); 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.

**Consult a BASF representative or local agricultural authorities for more information concerning additives.**

If tank mixtures are used, adhere to restrictions due to rates and precautions on all labels.

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## Compatibility Test for Tank Mix Components

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Using a suitable container, add proportional amounts of product to water following the tank mixing order below.

### TANK MIX COMPONENTS

1. **Water.** For 100 gallons per acre spray volume, use 16 cups (1 gallon) of water. For other spray volumes, adjust rates accordingly. Use only water from the intended source at the source temperature.
2. **Water-dispersible products** (dry flowables, wettable powders, suspension concentrates, or suspoemulsions). Cap the jar and invert 10 cycles.
3. **Water-soluble products.** Cap the jar and invert 10 cycles.
4. **Emulsifiable concentrates** (oil concentrate or methylated seed oil when applicable). Cap the jar and invert 10 cycles.
5. **Water-soluble additives.** Cap the jar and invert 10 cycles.
6. Let the solution stand for 5 minutes.

**Evaluate** the solution for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. Simulate tank agitation by inverting the jar for another 10 cycles to insure that the mixture resuspends. If the tank mix combination does not settle or can be resuspended by agitation, it is considered physically compatible. **DO NOT** use any spray solution that could clog spray nozzles.

## Mixing Order

1. **Water.** Begin by agitating a thoroughly clean sprayer tank 3/4 full of clean water. The pH of the spray solution should be between 4 and 9. The product mixture should be applied shortly after mixing. **DO NOT** store mixed slurries of **Serifel® Biofungicide** overnight.
2. **Agitation.** Maintain constant agitation throughout mixing and application.
3. **Inductor.** If an inductor is used, rinse it thoroughly after each component has been added.
4. **Products in PVA bags.** Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
5. **Water-dispersible products** (such as **Serifel**, dry flowables, wettable powders, suspension concentrates, or suspoemulsions).
6. **Water-soluble products.**
7. **Emulsifiable concentrates** (such as oil concentrates when applicable).
8. **Water-soluble additives** (such as AMS or UAN when applicable).
9. **Remaining quantity of water.**

Make sure that each component is thoroughly mixed and suspended before adding tank mix partners. Maintain constant agitation during application. See section **Crop-Specific Directions** for more details.

## Restrictions and Limitations

- Crop Rotation Restriction - None
- Preharvest Interval (PHI) – 0 Day
- Re-entry Interval (REI) – 4 hour
- **Not for use** in greenhouse or transplant production

## Crop-Specific Directions

Crop	Target Diseases	Serifel® Biofungicide Use Rate per Application	Application Directions
<p><b>Cucurbit vegetables group</b> Chayote Chinese waxgourd Citron melon Cucumber Gherkin Pumpkin Watermelon</p> <p><b>Edible gourd</b> Hyotan Cucuzza Chinese okra</p> <p><b>Momordica spp.</b> Balsam apple Balsam pear Bitter melon Chinese cucumber</p>	<p><b>Foliar diseases</b> Anthracnose (<i>Colletotrichum</i> spp.) Alternaria leaf spot (<i>Alternaria</i> spp.) Downy mildew (<i>Pseudoperonospora</i> spp.) Gummy stem blight (<i>Didymella bryoniae</i>) Powdery mildew (<i>Erysiphe</i> spp., <i>Sphaerotheca</i> spp.)</p>	<p>4 – 16 oz/A (0.25 – 1.0 lb/A)</p>	<p>Begin foliar applications prior to infection and continue on 7-10 day intervals if conditions are conducive for disease development. Use the higher rate and shorter interval when disease pressure is high.</p> <p>Mix and apply <b>Serifel</b> in sufficient water volume to ensure uniform dispersion in spray tank and thorough coverage of foliage and shoot tissue.</p>

## Crop-Specific Directions *(continued)*

Crop	Target Diseases	Serifel® Biofungicide Use Rate per Application	Application Directions
<p><b>Cucurbit vegetables group</b> <i>(continued)</i></p> <p><b>Muskmelon</b> Cantaloupe Casaba Crenshaw melon Golden pershaw melon Honeydew melon Honey balls Mango melon Persioan melon Pineapple melon Santaclaus melon Snake melon</p> <p><b>Summer squash</b> Crookneck squash Scallop squash Straightneck squash Vegetable marrow Zucchini</p>	<p><b>Foliar diseases</b></p> <p>Anthrachnose <i>(Colletotrichum spp.)</i></p> <p>Alternaria leaf spot <i>(Alternaria spp.)</i></p> <p>Downy mildew <i>(Pseudoperonospora spp.)</i></p> <p>Gummy stem blight <i>(Didymella bryoniae)</i></p> <p>Powdery mildew <i>(Erysiphe spp., Sphaerotheca spp.)</i></p>	<p>4 – 16 oz/A (0.25 – 1.0 lb/A)</p>	<p>Begin foliar applications prior to infection and continue on 7-10 day intervals if conditions are conducive for disease development. Use the higher rate and shorter interval when disease pressure is high.</p> <p>Mix and apply <b>Serifel</b> in sufficient water volume to ensure uniform dispersion in spray tank and thorough coverage of foliage and shoot tissue.</p>

## Crop-Specific Directions *(continued)*

Crop	Target Diseases	Serifel® Biofungicide Use Rate per Application	Application Directions
<p><b>Cucurbit vegetables group</b> <i>(continued)</i></p> <p><b>Winter squash</b> Butternut squash Calabaza Hubbard squash Acorn squash Spaghetti squash</p>	<p><b>Foliar diseases</b></p> <p>Anthrachnose <i>(Colletotrichum spp.)</i></p> <p>Alternaria leaf spot <i>(Alternaria spp.)</i></p> <p>Downy mildew <i>(Pseudoperonospora spp.)</i></p> <p>Gummy stem blight <i>(Didymella bryoniae)</i></p> <p>Powdery mildew <i>(Erysiphe spp., Sphaerotheca spp.)</i></p>	<p>4 – 16 oz/A (0.25 – 1.0 lb/A)</p>	<p>Begin foliar applications prior to infection and continue on 7-10 day intervals if conditions are conducive for disease development. Use the higher rate and shorter interval when disease pressure is high.</p> <p>Mix and apply <b>Serifel</b> in sufficient water volume to ensure uniform dispersion in spray tank and thorough coverage of foliage and shoot tissue.</p>

## Crop-Specific Directions *(continued)*

Crop	Target Diseases	Serifel® Biofungicide Use Rate per Application	Application Directions
<b>Fruiting vegetables group</b> Eggplant Ground cherry Pepino Pepper (all varieties) Tomatillo Tomato	<b>Foliar diseases</b> Anthracnose <i>(Colletotrichum spp.)</i> Botrytis gray mold <i>(Botrytis spp.)</i> Buck-eye rot <i>(Phytophthora parasitica)</i> Early blight <i>(Alternaria spp.)</i> Late blight <i>(Phytophthora infestans)</i> Powdery mildew <i>(Leveillula spp.,</i> <i>Oidiopsis spp.,</i> <i>Erysiphe spp.,</i> <i>Sphaerotheca spp.)</i> Target spot <i>(Corynespora cassiicola)</i>	4 – 16 oz/A (0.25 – 1.0 lb/A)	<p><b>For Target spot</b>, begin application shortly after emergence or transplanting and continue on 2-7 day intervals as needed. Use <b>Serifel</b> in a rotational program or tank mix with registered copper based bactericides.</p> <p><b>For Anthracnose, Botrytis gray mold, Buckeye rot and Powdery mildew</b>, begin application shortly after emergence or transplanting and continue on 7-10 day intervals as needed.</p> <p><b>For Early blight and Late blight</b>, begin application when plants are 4-6 inches tall and continue on 5-10 day intervals as needed.</p> <p>Mix and apply <b>Serifel</b> in sufficient water volume to ensure uniform dispersion in spray tank and thorough coverage of foliage and shoot tissue.</p>

## Crop-Specific Directions *(continued)*

Crop	Target Diseases	Serifel® Biofungicide Use Rate per Application	Application Directions
<p><b>Grape</b></p>	<p><b>Foliar diseases</b></p> <p>Botrytis gray mold (<i>Botrytis</i> spp.)</p> <p>Downy mildew (<i>Plasmopara viticola</i>)</p> <p>Eutypa (<i>Eutypa lata</i>)</p> <p>Phomopsis (<i>Phomopsis viticola</i>)</p> <p>Powdery mildew (<i>Uncinula</i> spp., <i>Erysiphe</i> spp.)</p> <p>Summer bunch rot (<i>Aspergillus</i> spp., <i>Alternaria</i> spp., <i>Botrytis</i> spp., <i>Cladosporium</i> spp., <i>Penicillium</i> spp., <i>Rhizopus</i> spp.)</p>	<p>4 – 16 oz/A (0.25 – 1.0 lb/A)</p>	<p><b>For Powdery mildew and Phomopsis</b>, begin foliar applications at bud break or prior to onset of disease. Repeat applications on 5-10 day intervals as needed.</p> <p><b>For Downy mildew</b>, begin applications before pre-bloom and continue on 7-10 day intervals as needed.</p> <p><b>For Botrytis and Summer bunch rot</b>, begin applications prior to disease development when conditions favor the development of Botrytis and sour rot such as during early bloom, bunch preclosure and veraison. Use higher rates and shorter intervals when disease pressure is high.</p> <p><b>For Eutypa</b>, apply to pruning wounds. Sanitation of pruning tools is critical.</p> <p>Mix and apply <b>Serifel</b> in sufficient water volume to ensure uniform dispersion in spray tank and thorough coverage of foliage and shoot tissue.</p>

## Crop-Specific Directions *(continued)*

Crop	Target Diseases	Serifel® Biofungicide Use Rate per Application	Application Directions
<b>Strawberry</b>	<b>Foliar diseases</b> Anthracnose <i>(Colletotrichum spp.)</i> Botrytis gray mold <i>(Botrytis spp.)</i> Leaf scorch <i>(Diplocarpon earliana)</i> Leaf spot <i>(Mycosphaerella fragariae)</i> Powdery mildew <i>(Erysiphe spp., Sphaerotheca spp.)</i>	4 – 16 oz/A (0.25 – 1.0 lb/A)	<p><b>For Angular leaf spot, Anthracnose and Leaf scorch</b>, begin foliar applications prior to infection and continue on 7-10 day intervals if conditions are conducive for disease development. Use the higher rate and shorter interval when disease pressure is high.</p> <p><b>For Botrytis and Powdery mildew</b>, begin applications at or before flowering continue on 7-10 days intervals as needed. Use higher rates and shorter intervals when disease pressure is high. Use <b>Serifel</b> in a rotational program or tank mix with other registered fungicides labeled for Botrytis and Powdery mildew control.</p> <p>Mix and apply <b>Serifel</b> in sufficient water volume to ensure uniform dispersion in spray tank and thorough coverage of foliage and shoot tissue.</p>

## Crop-Specific Directions *(continued)*

Crop	Target Diseases	Serifel® Biofungicide Use Rate per Application	Application Directions
<p><b>Tuberous and corm vegetables*</b></p> <p><b>Subgroup Potato</b></p> <p>Arracacha Arrowroot Cassava (bitter and sweet) Chayote Chinese artichoke Chufa Dasheen (taro) Edible canna Ginger Jerusalem artichoke Leren Sweet potato Tanier True yam Turmeric Yam bean</p>	<p><b>Foliar diseases</b></p> <p>Black dot <i>(Colletotrichum coccodes)</i></p> <p>Black rot/Crown rot <i>(Alternaria spp.)</i></p> <p>Brown spot and black pit <i>(Alternaria alternata)</i></p> <p>Early blight <i>(Alternaria solani)</i></p> <p>Botrytis gray mold <i>(Botrytis spp.)</i></p> <p>Late blight <i>(Phytophthora infestans)</i></p> <p>White mold <i>(Sclerotinia sclerotiorum)</i></p>	<p>4 – 16 oz/A (0.25 – 1.0 lb/A)</p>	<p><b>For Black rot and Botrytis gray mold,</b> begin foliar applications shortly after emergence or transplanting and continue on 7-10 day intervals if conditions are favorable for disease development. Use the higher rate and shorter interval when disease pressure is high.</p> <p><b>For White mold,</b> begin foliar applications shortly after emergence or transplanting and continue on 7-10 day intervals if conditions are favorable for disease development.</p> <p><b>For Early blight and Late blight,</b> Begin applications shortly after emergence or transplanting and continue on 5-7 day intervals as needed. Use <b>Serifel</b> in a rotational program or tank mix with other registered fungicides labeled for Early blight and Late blight control.</p> <p><b>For all other diseases,</b> begin application prior to disease development and continue on 7-10 day intervals as needed.</p> <p>Mix and apply <b>Serifel</b> in sufficient water volume to ensure uniform dispersion in spray tank and thorough coverage of foliage and shoot tissue.</p>

\* Not for use in California

## Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently 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 use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.**

**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF THE PRODUCT.**

**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, EXEMPLARY, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.**

BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

**Serifel** is a registered trademark of BASF.

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BASF Corporation  
26 Davis Drive  
Research Triangle Park, NC 27709



We create chemistry

Batch Code: (Printed on Bottle)

Group 44 Fungicide

# Serifel®

## Biofungicide

Serifel is an agricultural biofungicide product for suppression of plant diseases in certain crops.

**Active Ingredient:**

*Bacillus amyloliquefaciens* strain MBI 600\*† ..... 9.9%

**Other Ingredients:** ..... 90.1%

**Total:** ..... 100.0%

\*Serifel Biofungicide contains a minimum of  $5.5 \times 10^{10}$  viable spores per gram.

†Formerly named *Bacillus subtilis* strain MBI 600

EPA Reg. No. 71840-18

EPA Est. No. 67064-IA-001

## KEEP OUT OF REACH OF CHILDREN CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See inside booklet for complete **First Aid, Precautionary Statements, Directions for Use, Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

**In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).**

**Net Weight: 5 pounds**

BASF Corporation  
26 Davis Drive  
Research Triangle Park, NC 27709



We create chemistry

**FIRST AID: 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 center or doctor for treatment advice. **HOTLINE NUMBER:** Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).

**Precautionary Statements - Hazards to Humans and Domestic Animals - CAUTION.** Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear protective eyewear. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

**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 wash water or rinsate.

**STORAGE AND DISPOSAL: DO NOT** contaminate water, food, or feed by storage or disposal.

**Pesticide Storage:** Store in a cool, dry place until used. **DO NOT** store this product near food, feed, seed, fertilizers, or other pesticides.

**Pesticide Disposal:** To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

**Container Handling: Nonrefillable Container. DO NOT** reuse or refill this container. Clean container promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 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. 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.

Product of Japan. Formulated in the U.S. with imported and domestic materials.

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