

# LIFEGARD™ WG

 BIOLOGICAL PLANT ACTIVATOR

To Reduce Occurrence and Severity of Plant Disease on Listed Crops Grown Outdoors or Grown Under Cover in Greenhouses, Shadehouses, or Other Cover

 CAN BE USED IN ORGANIC PRODUCTION



ACTIVE INGREDIENT:

<i>Bacillus mycoides</i> isolate J* .....	40%
OTHER INGREDIENTS:.....	60%
TOTAL .....	100%

\* Equivalent to a minimum of 30 billion ( $3 \times 10^{10}$ ) viable spores/g.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

See attached booklet for additional precautionary statements and directions for use.

**MANUFACTURED BY:**

Certis USA, L.L.C.  
9145 Guilford Road, Suite 175  
Columbia, MD 21046

**EPA Reg. No. 70051-119  
EPA Est. No. 70051-CA-001**



Net Contents: 1 pound (454 grams)  
Expiration Date:  
Lot Number:

## FIRST AID

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

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

Have the product container or label with you when calling a poison control center, doctor, or going for treatment. [Hot Line Number: 1-800-255-3924.]

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

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

### Personal Protective Equipment

Applicators and other handlers must wear long-sleeved shirt and long pants, socks, shoes, chemical-resistant gloves, protective eyewear and use a NIOSH approved particulate respirator with any N, R, or P filter with NIOSH approval number prefix TC-84A; or a NIOSH approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. (Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.)

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

### User Safety Recommendations

Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should 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.

### Engineering controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the 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.

### 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 or rinse water.

### BIOLOGICAL ACTIVITY

LifeGard™ WG contains a biological disease control agent (Bacillus mycoides isolate J, or BmJ) that reduces the occurrence and severity of plant disease by triggering the plant's natural defense mechanisms against pathogens. LifeGard™ WG itself has no direct effect on plant pathogens, but preventative applications (before infection or appearance of disease symptoms) can reduce the incidence and severity of subsequent disease. LifeGard™ WG should be tank mixed with other registered products with curative activity if disease is present at the time of application. LifeGard™ WG is most effective when used in combination or alternation with fungicides having other modes of action, registered for the control of labeled diseases, which may themselves be rendered more effective due to the elevated state of plant resistance to pathogens.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product inconsistent with these use directions. These use directions must be in the possession of the user at the time of pesticide application. 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.

### 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 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 over long-sleeved shirt and long pants
- Chemical-resistant gloves
- Chemical-resistant footwear plus socks
- Protective eyewear

Notify workers of the application by oral warning and by posting warning signs at entrances to treated areas.

### Mixing procedures:

LifeGard™ WG is a wettable granular (WG) formulation which must be mixed with water and applied as a foliar spray. Mix the recommended amount of LifeGard™ WG in clean water with sufficient agitation to maintain a uniform suspension in the spray or mixing tank.

Prepare only the amount of spray mix that is required for the immediate operation. Do not allow the mixture to stand overnight in the spray tank.

### Application timing:

LifeGard™ WG should be applied preventatively, before disease is observed in the field. Initial triggering of plant defense response occurs within minutes of application, but 3 – 5 days are required to attain maximum level of protection, which lasts up to 18 days after application.

Apply to healthy, actively growing plants. Do not apply to plants that are stressed due to drought, excessive moisture, excessively hot or cold temperatures, herbicide injury, or other environmental stress.

LifeGard™ WG is exempt from the requirement for residue tolerance and can be applied up to the day of harvest. **Preharvest Interval (PHI) = 0 days.**

### Application method:

Ground applications: LifeGard™ WG can be applied in most commonly-used ground application equipment, such as tractor-mounted boom, airblast, high clearance, backpack, and other pressurized sprayers; hose-end or hand-held sprayers; and foggers or mist blowers. Apply in sufficient volume of water to provide uniform coverage.

Aerial applications: LifeGard™ WG can be applied by fixed or rotary winged aircraft in a minimum of 5 gallons of water per acre. Standard precautions should be taken to minimize spray drift.

Chemigation: LifeGard™ WG can be applied to the crop canopy through overhead sprinkler systems by injecting the recommended rate (see below) at the very end of the irrigation period. Injection should occur only within the minimum time required to ensure complete flushing of the product from the system and onto the crop canopy. Keep supply tank agitated during application. See "Chemigation Instructions" below for additional information about application of LIFEWARD™ WG through sprinkler irrigation systems. **Do not apply LifeGard™ WG through any other type of irrigation system.**

**FOR PROTECTION AGAINST DISEASE CAUSED BY FUNGI, OOMYCETES, OR BACTERIA IN CROPS GROWN OUTDOORS OR IN GREENHOUSES, SHADE-HOUSES, OR OTHER COVER:**

**Application rate:** Apply LifeGard™ WG at a concentration of **4.5 ounces (128 grams) per 100 gallons of water**. If using dry measure rather than weight, the volume of 4.5 ounces of LifeGard™ WG is approximately ¾ cup.

The amount of LifeGard™ WG applied per acre will depend on the spray volume (gallons per acre or GPA) required to adequately cover the crop. Lower volume (≤ 20 GPA) may be sufficient for uniform coverage of newly emerged or transplanted annual crops, or smaller crops such as leaf lettuce or spinach. Mature annual crops and those with large canopies (including trees) may require higher volumes (≥ 50 GPA) if using ground spray equipment.

**Do not apply less than 1 ounce of LifeGard™ WG per acre.**

**Maximum application rate: 4.5 oz per acre.**

**Rate Table:** This table can be used to determine the amount of LifeGard™ WG required for different spray volumes:

Volume of water (GPA):	≤ 20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	100
Rate in dry oz/ Acre:	1 oz	1¼ oz	1⅓ oz	1½ oz	1¾ oz	2 oz	2¼ oz	2½ oz	2⅔ oz	3 oz	3¼ oz	3⅓ oz	3½ oz	3¾ oz	4 oz	4½ oz
Approx. dry measure:	2½ tbsp	3 tbsp	3½ tbsp	¼ cup	5 tbsp	⅓ cup	6 tbsp	6½ tbsp	7 tbsp	½ cup		9 tbsp		10 tbsp	⅔ cup	¾ cup

Crop	Target disease/pathogen (bacteria & fungi)	Additional information
<b>Almond</b>	Alternaria leaf spot ( <i>Alternaria alternata</i> )	Begin applications before first symptoms appear, when environmental conditions (such as leaf wetness) favor infection. Consult your State Extension Service for advice on disease monitoring and timing of applications for Alternaria management. Apply in sufficient water to achieve complete coverage of the tree canopy.
<b>Citrus:</b> Orange, Lemon, Lime, Grapefruit, Tangelo, Tangerine (Mandarin), Pummelo	Citrus canker ( <i>Xanthomonas axonopodis</i> pv. <i>citri</i> and <i>Xanthomonas axonopodis</i> pv. <i>aurantifolii</i> )	To reduce infection of new foliage, apply at spring flush, before symptoms appear. Subsequent applications should be made at 2-4 week intervals, preferably in an alternating program with copper or other fungicides labeled for this use.
<b>Cole crops:</b> Broccoli, Brussels sprouts, Cabbage, Cauliflower, Kohlrabi, and other Brassica vegetables (including those grown for seed production).	Downy mildew <i>Peronospora</i> ( <i>Hyaloperonospora</i> ) species	<i>For direct seeded crops:</i> Apply any time following emergence of first true leaf. <i>For transplants:</i> Begin applications immediately before or after transplanting. Transplants may be treated in the greenhouse or nursery prior to transplanting in the field. <i>For seed crops:</i> Begin applications at first sign of flowering. For all of the above, repeat at 7 – 14 day intervals as needed to prevent or reduce disease infection.

Crop	Target disease/pathogen (bacteria & fungi)	Additional information
<b>Cucurbits:</b> Cucumbers, Gourds (all types), Melons (Cantaloupe, Muskmelon, Honeydew, Crenshaws, and all other Melons), Squash (all types), Watermelon	Anthracnose <i>Colletotrichum lagenarium</i> <i>Colletotrichum orbiculare</i> (= <i>Glomerella cingulata</i> var. <i>orbiculare</i> ) Powdery mildew <i>Sphaerotheca fuliginea</i> (= <i>Podosphaera xanthii</i> ) <i>Erysiphe cichoracearum</i> (= <i>Golovinomyces cichoracearum</i> ) Downy mildew <i>Pseudoperonospora cubensis</i> Gummy stem blight ( <i>Didymella bryoniae</i> )	For direct seeded crops: Apply any time following emergence of first true leaf. For transplants: Begin applications immediately before or after transplanting. Transplants may be treated in the greenhouse or nursery prior to transplanting in the field. Repeat at 7 – 14 day intervals as needed to prevent or reduce disease infection.
<b>Fruiting vegetables:</b> Tomato, Peppers (all types), Eggplant, Tomatillo, Okra	Bacterial leaf spot ( <i>Xanthomonas</i> species) Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>tomato</i> ) Early blight ( <i>Alternaria solani</i> ) Gray mold ( <i>Botrytis cinerea</i> ) Late blight ( <i>Phytophthora infestans</i> )	For direct seeded crops: Apply any time following emergence of first true leaf. For transplants: Begin applications immediately before or after transplanting. Transplants may be treated in the greenhouse or nursery prior to transplanting in the field. For bacterial leaf spot, early blight and late blight: Repeat applications at 7-day intervals. For bacterial speck: Repeat applications at 7-14 day intervals. Use the 7-day interval under high disease pressure.
<b>Grapes</b>	Downy mildew ( <i>Plasmopara viticola</i> )	Make first LifeGard™ WG applications 2 – 3 weeks before bloom. Repeat applications at 7-21 day intervals as part of a rotational program with fungicides labeled for this use. Continue applications until 2-4 weeks after fruit set. LifeGard™ WG applications can be made up to and including the day of harvest if necessary to maintain disease control.
<b>Lettuce</b> Head and leaf varieties (including baby leaf and Spring mix)	Downy mildew ( <i>Bremia lactucae</i> ) Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Begin applications at first true leaf or after thinning. Make preventative applications every 7-14 days as needed to maintain control.
<b>Legume Vegetables:</b> Succulent or Dried Beans, Peas, Lentils, Chickpeas (Garbanzo), Soybeans	White Mold ( <i>Sclerotinia sclerotiorum</i> and <i>Sclerotinia trifolium</i> )	Apply in an alternating or tank mix program with labeled fungicides as part of a disease management program. Mix only with fungicides having label instructions that do not prohibit such mixtures.

Crop	Target disease/pathogen (bacteria & fungi)	Additional information
<b>Pecan</b>	Pecan scab ( <i>Cladosporium caryigenum</i> )	Apply in sufficient water to attain good coverage of the tree canopy.
<b>Pome fruit:</b> Apple, Pear, Quince, Loquat, Crabapple	Fire blight ( <i>Erwinia amylovora</i> )	Begin applications when green tissue is present, prior to infection period. If no prebloom applications have been made, then combine LifeGard™ WG applications with other standard bloom sprays targeting fire blight.
<b>Potatoes</b> (for consumption or processing) See separate section below for seed potatoes.	Early blight ( <i>Alternaria solani</i> ) Late blight ( <i>Phytophthora infestans</i> ) White mold ( <i>Sclerotinia sclerotiorum</i> )	Apply in an alternating or tank mix program with labeled fungicides as part of a disease management program. Mix only with fungicides having label instructions that do not prohibit such mixtures.
<b>Spinach</b>	Downy mildew ( <i>Peronospora species</i> ) Leaf spots ( <i>Cladosporium</i> and <i>Stemphylium spp.</i> )	Begin applications at first true leaf or after thinning. Make preventative applications every 7-14 days as needed to maintain control.
<b>Sugarbeet</b>	Cercospora leaf spot ( <i>Cercospora beticola</i> )	Apply at 14 day intervals in rotation with fungicides labeled for this use, as part of a resistance management strategy.

**TO REDUCE INFECTION BY POTATO VIRUS Y (PVY) IN POTATOES GROWN FOR SEED:**

Mix the recommended amount (listed below) of LifeGard™ WG in clean water with sufficient agitation to maintain a uniform suspension in the spray or mixing tank.

Apply as a foliar spray in sufficient water to provide thorough and uniform coverage of the crop canopy. Make the first application 60-65 days after planting. Repeat application at 14 day intervals as long as aphid vectors are present and conditions are favorable to infection. LifeGard™ WG may be applied up to five (5) times per crop cycle.

LifeGard™ WG may be tank mixed or applied in rotation with chemical fungicides and insecticides used as part of standard pest management practices. Best results may occur when LifeGard™ WG is used in conjunction with a “no gap” insecticide program for control of aphid vectors of PVY. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures. Do not tank mix LifeGard™ WG with petroleum-based (paraffinic) oils used for aphid control.

**Ground application rate:** Apply 2 oz (60 grams) of LifeGard™ WG in 15 to 20 gallons of water per acre.

**Aerial application rate:** Apply 1 oz (30 grams) of LifeGard™ WG in 5 gallons of water per acre.

**TO REDUCE INFECTION BY TOBACCO MOSAIC VIRUS (TMV) AND CUCUMBER MOSAIC VIRUS (CMV) IN TOMATOES GROWN OUTDOORS OR IN GREENHOUSES, SHADEHOUSES, OR OTHER COVER:**

Mix LifeGard™ WG at a rate of **4.5 ounces (128 grams) per 100 gallons of water** with sufficient agitation to maintain a uniform suspension in the spray or mixing tank. The table above can be used to determine the amount of LifeGard™ WG required for different spray volumes

Apply as a foliar spray in sufficient water to provide thorough and uniform coverage of the crop canopy.

*For direct seeded tomatoes:* Apply any time following emergence of first true leaf.

*For transplants:* Begin applications immediately before or after transplanting. Transplants may be treated in the greenhouse or nursery prior to transplanting in the field.

## STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Do not contaminate water by cleaning equipment or disposal of waste.

**Pesticide Storage:** Store in a dry area inaccessible to children. Store in original container only. Keep container closed when not in use. Store at temperatures below 77°F (25°C). The product should be used within six months from the date of manufacture.

**Pesticide Disposal:** To avoid wastes, use all material in this container by application according to label directions. Wastes resulting from the use of this product may be disposed of onsite or at an approved waste disposal facility.

**Container Handling:** Non-refillable container. Do not reuse or refill this container. Completely empty bag into application equipment, then offer for recycling if available, or dispose of empty bag in a sanitary landfill, by incineration, or if allowed by state and local authorities, by burning. If burned stay out of smoke.

## WARRANTY

Certis USA LLC. warrants that the material contained herein conforms to the description on the label and is reasonably fit for the purposes referred to in the directions for use. Timing and method of application, weather, watering practices, nature of soil, the disease problem, condition of the crop, incompatibility with other chemicals not specifically recommended and other influencing factors in the use of this product are beyond the control of the seller. To the extent consistent with applicable law, buyer assumes all risks of use, storage or handling of this material not in strict accordance with directions given herein. NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY IS MADE.

## CHEMIGATION INSTRUCTIONS

### **General information:**

Apply this product only through overhead sprinkler irrigation systems (including impact or micro-sprinklers, overhead boom, or solid set, including mist-type systems), or with hand-held calibrated irrigation equipment (such as a hand-held wand with injector). Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

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.

“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 regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

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.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection.

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.

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.

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.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and injector system and flush with clean water before use. Failure to provide a clean tank, free of scale or residues may reduce effectiveness of this product.

**Sprinkler chemigation:**

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 backflow.
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 (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Dilute the product in water following the label mixing directions. It may be premixed in a supply tank with water, fertilizer or other appropriate tank-mixed agricultural chemicals. Agitation is necessary. Application should be continuous in sufficient water to apply the recommended rate evenly to the entire treated area.
8. Do not apply when wind speed favors drift beyond the area intended for treatment.