

# LifeGard<sup>®</sup>WG

## BIOLOGICAL PLANT ACTIVATOR

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



CAN BE USED IN ORGANIC PRODUCTION



**ACTIVE INGREDIENT:**

*Bacillus mycooides* isolate J\* ..... 40.0%

**OTHER INGREDIENTS:** ..... 60.0%

**TOTAL** ..... 100.0%

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

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

Refer to inside of label booklet for additional precautionary information and Directions for Use including First Aid and Storage and Disposal.

**MANUFACTURED BY:**

Certis USA LLC  
9145 Guilford Road, Suite 175  
Columbia, MD 21046



**EPA Reg. No. 70051-119**

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

**Lot Number:**

**Net Weight:**

**ESL20240221  
Ver20240304**

This is a Specimen Label. It may not reflect the most-recent approved label for use in your state. Always refer to the label on the product packaging for approved use instructions. Please contact your Certis sales representative for more information.

<b>FIRST AID</b>	
<b>If inhaled:</b>	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
<b>If in eyes:</b>	Hold eye open and rinse slowly and gently with water for 15 to 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.
<b>HOTLINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For non-emergency information on this product, call 1-800-255-3924 (Chemtel). For information on this product (including general health concerns or pesticide incidents), call the National Pesticide Information Center (NPIC) at 1-800-858-7378, Monday through Friday, 8:00 AM to 12:00 PM Pacific Time (NPIC Website: <a href="http://www.npic.orst.edu">www.npic.orst.edu</a> ). For emergencies, call your local poison control center at 1-800-222-1222.	

## **PRECAUTIONARY STATEMENTS**

### **HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**Caution.** Harmful if inhaled. Causes moderate eye irritation. Avoid breathing dust or spray mist. Avoid contact with eyes or clothing. 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 (PPE)**

Applicators and other handlers must wear a long-sleeved shirt and long pants, socks, shoes, waterproof gloves, and protective eyewear. Mixers/loaders and applicators must wear a minimum of a NIOSH-approved particulate filtering facepiece respirator with any R or P filter; OR a NIOSH-approved elastomeric particulate respirator with any R or P filter; OR a NIOSH-approved powered air-purifying respirator with an HE filter. 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 Section 170.607(d-f), the handler PPE requirements may be reduced or modified as specified in the WPS.

IMPORTANT: When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

## 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 washwater or rinsate.

## DIRECTIONS FOR USE

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 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) 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.

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
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

## BIOLOGICAL ACTIVITY

This product 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. BmJ 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. This product should be tank mixed with other registered products with curative activity if disease is present at the time of application. This product 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.

#### **Mixing procedures:**

This product is a wettable granular (WG) formulation that must be mixed with water and applied as a foliar spray. Mix the specified amount of product 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:**

This product 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.

This product 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:* This product 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 product in sufficient volume of water to provide uniform coverage.

*Aerial applications:* This product 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:* This product can be applied to the crop canopy through overhead sprinkler systems by injecting the specified rate (see table 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 this product through sprinkler irrigation systems. **Do not apply this product 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 this product 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 product is approximately  $\frac{3}{4}$  cup.

The amount of product applied per acre will depend on the finished spray volume (gallons per acre or GPA) required to adequately cover the crop. Lower volume ( $\leq 20$  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 ( $\geq 50$  GPA) if using ground spray equipment.

**Do not apply less than 1 ounce or more than 4.5 ounces of this product per acre.**

**Rate Table:** This table can be used to determine the amount of product required for different spray volumes to attain the same concentration as 4.5 oz/100 gallons:

Volume of water (GPA):	$\leq 20$	25	30	35	40	45	50	55	60	65	70	75	80	85	90	100
Rate in dry oz/ Acre:	1 oz	1 $\frac{1}{4}$ oz	1 $\frac{1}{3}$ oz	1 $\frac{1}{2}$ oz	1 $\frac{3}{4}$ oz	2 oz	2 $\frac{1}{4}$ oz	2 $\frac{1}{2}$ oz	2 $\frac{2}{3}$ oz	3 oz	3 $\frac{1}{4}$ oz	3 $\frac{1}{3}$ oz	3 $\frac{1}{2}$ oz	3 $\frac{3}{4}$ oz	4 oz	4 $\frac{1}{2}$ oz
Approx. dry measure:	2 $\frac{1}{2}$ tbsp	3 tbsp	3 $\frac{1}{2}$ tbsp	$\frac{1}{4}$ cup	5 tbsp	$\frac{1}{3}$ cup	6 tbsp	6 $\frac{1}{2}$ tbsp	7 tbsp	$\frac{1}{2}$ cup	9 tbsp		10 tbsp	$\frac{2}{3}$ cup	$\frac{3}{4}$ cup	

<b>Berry and Small Fruit – Caneberries; Bushberries; Small Fruit, Vine Climbing; Low Growing (Crop Subgroups 13-07A, 13-07B, 13-07D, 13-07G*):</b> Blackberry; loganberry; raspberry, red and black; wild raspberry; aronia berry; blueberry, highbush; blueberry, lowbush; buffalo currant; Chilean guava; cranberry, currant, black; currant, red; elderberry; European barberry; gooseberry; Amur river grape; grape; kiwifruit, fuzzy; kiwifruit, hardy; maypop; schisandra berry; honeysuckle, edible; huckleberry; jostaberry; Juneberry (Saskatoon berry); lingonberry; native currant; salal; sea buckthorn; bearberry; bilberry; cloudberry; muntries; partridgeberry; strawberry; cultivars, varieties, and/or hybrids of these.	
Target disease/pathogen (bacteria & fungi)	Additional information
<i>Except Grape</i>	
Powdery mildew ( <i>Podosphaera macularis</i> ) ( <i>Podosphaera aphanis</i> ) Botrytis ( <i>Botrytis cinerea</i> ) Mummyberry ( <i>Monilinia vaccinia-corymbosi</i> ) Cranberry fruit rot	Begin as a preventative spray. Repeat every 7-14 days as part of a rotational program with fungicides labeled for this use.

<b>Berry and Small Fruit – Caneberries; Bushberries; Small Fruit, Vine Climbing; Low Growing (Crop Subgroups 13-07A, 13-07B, 13-07D, 13-07G*):</b>	
Blackberry; loganberry; raspberry, red and black; wild raspberry; aronia berry; blueberry, highbush; blueberry, lowbush; buffalo currant; Chilean guava; cranberry, currant, black; currant, red; elderberry; European barberry; gooseberry; Amur river grape; grape; kiwifruit, fuzzy; kiwifruit, hardy; maypop; schisandra berry; honeysuckle, edible; huckleberry; jostaberry; Juneberry (Saskatoon berry); lingonberry; native currant; salal; sea buckthorn; bearberry; bilberry; cloudberry; muntries; partridgeberry; strawberry; cultivars, varieties, and/or hybrids of these.	
<b>Target disease/pathogen (bacteria &amp; fungi)</b>	<b>Additional information</b>
<b>Grape</b>	
Downy mildew ( <i>Plasmopara viticola</i> )	Make first 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. Applications can be made up to and including the day of harvest if necessary to maintain disease control.
Powdery mildew ( <i>Uncinula necator</i> ) Phomopsis ( <i>Phomopsis viticola</i> ) Black rot ( <i>Guignardia bidwellii</i> )	Begin as a preventative spray. Repeat every 7-14 days as part of a rotational program with fungicides labeled for this use.

\* Not for use in California.

<b>Brassica Head and Stem Vegetables (Crop Group 5-16):</b>	
Broccoli; Brussels sprouts; cabbage; cabbage (Chinese, napa); cauliflower; cultivars, varieties and/or hybrids of these (including those grown for seed production).	
<b>Target disease/pathogen (bacteria &amp; fungi)</b>	<b>Additional information</b>
Downy mildew ( <i>Peronospora</i> & <i>Halyoperonospora</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. <i>For all of the above:</i> Repeat applications at 7-14 day intervals as needed to prevent or reduce disease infection.

<b>Bulb Vegetables – Onion, Bulb (Crop Group 3; Subgroup 3-07A):</b>	
Daylily, bulb; fritillaria, bulb; garlic, bulb; garlic, great-headed, bulb; garlic, serpent, bulb; lily, bulb; onion, bulb; onion, Chinese, bulb; onion, dry bulb; onion, fresh; onion, green; onion, pearl; onion, potato, bulb; shallot, bulb; onion, welsh; cultivars, varieties, and/or hybrids of these.	
<b>Target disease/pathogen (bacteria &amp; fungi)</b>	<b>Additional information</b>
Bacterial bulb rot (species complex)	Apply starting after emergence or transplanting on a 7-14 day schedule. Apply in an alternating or tank mix program with labeled bactericides such as copper as part of a disease management program.

<b>Cereal Grains (Crop Group 15-22*):</b>	
<p>Amaranth, grain; amaranth, purple; baby corn; barley; buckwheat; buckwheat, tartary; canarygrass, annual; Cañihua; chia; corn, field; corn, sweet; cram cram; fonio, black; fonio, white; grain sorghum; huauzontle grain; Inca wheat; Job's tears; millet, barnyard; millet, finger; millet, foxtail; millet, little; millet, pearl; millet, proso; oat; oat, Abyssinian; oat, common; oat, naked; oat, sand; popcorn; prince's feather; psyllium; psyllium, blond; quinoa; rice; rice, African; rye; teff; teosinte; triticale; wheat; wheat, club; wheat, common; wheat, durum; wheat, einkorn; wheat, emmer; wheat, macha; wheat, oriental; wheat, Persian; wheat, Polish; wheat, poulard; wheat, shot; wheat, spelt; wheat, timopheevi; wheat, vavilovi; wheat, wild einkorn; wheat, wild emmer; wheatgrass, intermediate; wild rice; wild rice, eastern; cultivars, varieties, and hybrids of these commodities.</p>	
<b>Target disease/pathogen (bacteria &amp; fungi)</b>	<b>Additional information</b>
Rust ( <i>Puccinia triticina</i> )	4.5 oz/100 gal.

\* Not for use in California.

<b>Citrus Fruits (Crop Group 10-10):</b>	
<p>Australian desert lime; Australian finger-lime; Australian round lime; Brown River finger lime; calamondin; citron; citrus hybrids; grapefruit; Japanese summer grapefruit; kumquat; lemon; lime; Mediterranean mandarin; mount white lime; New Guinea wild lime; orange, sour; orange, sweet; pummelo; Russell River lime; satsuma mandarin; sweet lime; tachibana orange; Tahiti lime; tangelo; tangerine (mandarin); tangor; trifoliate orange; uniq fruit; cultivars, varieties, and/or hybrids of these.</p>	
<b>Target disease/pathogen (bacteria &amp; fungi)</b>	<b>Additional information</b>
Citrus canker ( <i>Xanthomonas axonopodis</i> pv. <i>citri</i> and <i>Xanthomonas axonopodis</i> pv. <i>aurantifolii</i> )	<p>To reduce infection of new foliage, apply at spring flush, before symptoms appear.</p> <p>Make subsequent applications at 2-4 week intervals, preferably in an alternating program with copper or other products labeled for this use.</p>

**Cucurbit Vegetables (Crop Group 9):**

Chayote (fruit); Chinese waxgourd (Chinese preserving melon); citron melon; cucumber; gherkin; gourds (edible, all types); *Momordica* spp. (includes balsam apple, balsam pear, bittermelon, Chinese cucumber); muskmelon (hybrids and/or cultivars of *Cucumis melo* including true cantaloupe, cantaloupe, casaba, Crenshaw melon, golden pershaw melon honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, snake melon); pumpkin; squash, summer (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini); squash, winter (includes butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash); watermelon (including hybrids and/or varieties of *Citrullus lanatus*)

Target disease/pathogen (bacteria & fungi)	Additional information
<p>Anthracnose (<i>Colletotrichum lagenarium</i> <i>Colletotrichum orbiculare</i> (=<i>Glomerella cingulata</i> var. <i>orbiculare</i>))</p> <p>Powdery mildew (<i>Sphaerotheca fuliginea</i> (=<i>Podosphaera xanthii</i>)) (<i>Erysiphe cichoracearum</i> (=<i>Golovinomyces cichoracearum</i>))</p> <p>Downy mildew (<i>Peronospora</i> species)</p> <p>Gummy stem blight (<i>Didymella bryoniae</i>)</p> <p><i>Alternaria</i> leaf spot (<i>Alternaria cucumerina</i>)</p> <p>Target spot* (<i>Corynespora cassicola</i>)</p>	<p><i>For direct seeded crops:</i> Apply any time following emergence of first true leaf.</p> <p><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.</p> <p>For all of the above, repeat applications at 7-14 day intervals as needed to prevent or reduce disease infection.</p>

\* Not for use in California.



<b>Fruiting Vegetables (Crop Group 8-10):</b>	
African eggplant; bush tomato; bell pepper; cocona; currant tomato; eggplant; garden huckleberry; goji berry; groundcherry; martynia; naranjilla; okra; pea eggplant; pepino; non-bell pepper; roselle; scarlet eggplant; sunberry; tomatillo; tomato; tree tomato; cultivars, varieties, and/or hybrids of these	
<b>Target disease/pathogen (bacteria &amp; fungi)</b>	<b>Additional information</b>
Bacterial leaf spot ( <i>Xanthomonas</i> species)	<p><i>For direct seeded crops:</i> Apply any time following emergence of first true leaf.</p> <p><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.</p> <p><i>For bacterial leaf spot, early blight, gray mold, and late blight:</i> Repeat applications at 7 day intervals.</p> <p><i>For bacterial speck:</i> Repeat applications at 7-14 day intervals. Use the 7 day interval under high disease pressure.</p>
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> )	

<b>Hops*</b>	
<b>Target disease/pathogen (bacteria &amp; fungi)</b>	<b>Additional information</b>
Downy mildew ( <i>Peronospora</i> species)	Repeat applications at 7-14 day intervals.
Halo Blight ( <i>Diaporthe humulicola</i> )	
Powdery Mildew ( <i>Podosphaera macularis</i> )	

\* Not for use in California.

Hemp	
Target disease/pathogen (bacteria & fungi)	Additional information
Anthracnose <i>(Colletotrichum spp.)</i> Brown blight <i>(Alternaria alternata)</i> Brown leaf spot and stem canker <i>(Ascochyta spp.)</i> Gray mold <i>(Botrytis cinerea)</i> Hemp leaf spot <i>(Bipolaris spp.)</i> Powdery mildew <i>(Leveillula,</i> <i>Podosphaera, Sphaerotheca</i> <i>spp.)</i> White leaf spot <i>(Phomopsis ganjae)</i> Yellow leaf spot <i>(Septoria spp.)</i> Olive leaf spot <i>(Cercospora cannabis)</i> Stemphylium leaf and stem spot <i>(Stemphylium botryosum)</i> Bacterial blight <i>(Pseudomonas cannabina)</i> Xanthomonas leaf spot <i>(Xanthomonas campestris)</i>	<p><i>For disease control:</i> Apply at first appearance of leaves or just after transplant and repeat at 3-14 day intervals as needed, in sufficient water to obtain thorough coverage of foliage. Tank mix or rotate with other registered fungicides for improved control.</p>

**Leafy Vegetables- Leafy Greens (Crop Group 4-16; Subgroup 4-16A):**

Amaranth, Chinese; amaranth, leafy; arugula; aster, Indian; blackjack; broccoli, Chinese; broccoli raab; cabbage, abyssinian; cabbage, Chinese, bok choy; cabbage, seakale; cat's whiskers; cham-chwi; cham-na-mul; chervil, fresh leaves; chipilin; chrysanthemum, garland; cilantro, fresh leaves; collards; corn salad; cosmos; cress, garden and upland; dandelion, leaves; dang-gwi, leaves; dillweed; dock, sorrel; dol-nam-mul; ebolo; endive; escarole; fameflower; feather cockscomb; Good King Henry; Hanover salad; huauzontle; jute, leaves; kale; lettuce, bitter; lettuce, head; lettuce, leaf; orach; parsley, fresh leaves; plantain, buckhorn; primrose, English; purslane, garden; purslane, winter; radicchio, red chicory; radish, leaves; rape greens; rocket, wild; shepard's purse; spinach; spinach, Malabar; spinach, New Zealand; spinach, tanier; Swiss chard; turnip greens; violet, Chinese, leaves; watercress; cultivars, varieties, and hybrids of these commodities

Target disease/pathogen (bacteria & fungi)	Additional information
Black rot* ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> ) Downy mildew ( <i>Bremia lactucae</i> ) ( <i>Peronospora</i> species) Powdery mildew ( <i>Erysiphe cichoracearum</i> ) Leaf spots ( <i>Cladosporium</i> and <i>Stemphylium</i> spp.) White rust ( <i>Albugo occidentalis</i> )	<p><i>For control of black rot, downy mildew, powdery mildew, leaf spot, and white rust:</i> Begin applications at first true leaf or after thinning. Make preventative applications every 7-14 days as needed to maintain control.</p> <p><i>For control of Stemphylium leaf spot (Stemphylium botryosum f. sp. spinacia) in spinach:</i> Start applications at least 3 days prior to an anticipated infection event, or at first true leaf. Repeat applications at 3-7 day intervals as needed to reduce disease infection. Rotate or mix with other fungicides if disease pressure is high.</p>

\* Not for use in California.

**Legume Vegetables (Succulent or Dried) (Crop Group 6-22):**

African yam bean, dry seed; American potato bean, dry seed; Bean (*Lupinus* spp.), succulent shelled (including, but not limited to Andean lupin, blue lupin, grain lupin, sweet lupin, white lupin, white sweet lupin, and yellow lupin); Bean (*Lupinus* spp.), dry seed (including, but not limited to Andean lupin, blue lupin, grain lupin, sweet lupin, white lupin, white sweet lupin, and yellow lupin); Bean (*Phaseolus* spp.), edible podded (including, but not limited to French bean, garden bean, green bean, kidney bean, navy bean, scarlet runner bean, snap bean, and wax bean); Bean (*Phaseolus* spp.), succulent shelled (including, but not limited to lima bean, scarlet runner bean, and wax bean); Bean (*Phaseolus* spp.), dry seed (including, but not limited to black bean, cranberry bean, dry bean, field bean, French bean, garden bean, great northern bean, green bean, kidney bean, lima bean, navy bean, pink bean, pinto bean, red bean, scarlet runner bean, tepary bean, and yellow bean); Bean (*Vigna* spp.), edible podded (including, but not limited to asparagus bean, catjang bean, Chinese longbean, cowpea, moth bean, mung bean, rice bean, urd bean, and yardlong bean); Bean (*Vigna* spp.), succulent shelled (including, but not limited to blackeyed pea, catjang bean, cowpea, crowder pea, moth bean, and southern pea); Bean (*Vigna* spp.), dry seed (including, but not limited to adzuki bean, asparagus bean, blackeyed pea, catjang bean, Chinese longbean, cowpea, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, and yardlong bean); Broad bean (fava bean), succulent shelled; Broad bean (fava bean), dry seed; Chickpea (garbanzo), edible podded; Chickpea (garbanzo), succulent shelled; Chickpea (garbanzo), dry seed; Goa bean, edible podded (asparagus pea and winged bean); Goa bean, succulent shelled (asparagus pea and winged bean); Goa bean, dry seed (asparagus pea and winged bean); Grass pea, edible podded; Grass pea, dry seed; Guar bean, edible podded; Guar bean, dry seed; Horse gram, dry seed; Jackbean, edible podded; Jackbean, succulent shelled; Jackbean, dry seed; Lablab bean (hyacinth bean), edible podded; Lablab bean (hyacinth bean), succulent shelled; Lablab bean (hyacinth bean), dry seed; Lentil, edible podded; Lentil, succulent shelled; Lentil, dry seed; Morama bean, dry seed; Pea (*Pisum* spp.), edible podded (including, but not limited to dwarf pea, green pea, snap pea, snow pea, and sugar snap pea); Pea (*Pisum* spp.), succulent shelled (including, but not limited to English pea, garden pea, and green pea); Pea (*Pisum* spp.), dry seed (including, but not limited to dry pea, field pea, garden pea, yellow pea, wrinkled pea, marrowfat pea, and green pea); Pigeon pea, edible podded; Pigeon pea, succulent shelled; Pigeon pea, dry seed; Soybean, seed; Sword bean, edible podded; Sword bean, dry seed; Vegetable soybean, edible podded (edamame); Vegetable soybean, succulent shelled (edamame); Velvetbean, edible podded; Velvetbean, succulent shelled; Velvetbean, dry seed; Winged pea, edible podded; Winged pea, dry seed; cultivars, varieties, and/or hybrids of these commodities.

Target disease/pathogen (bacteria & fungi)	Additional information
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.

**Peanuts\***

Target disease/pathogen (bacteria & fungi)	Additional information
Late leaf spot ( <i>Cercosporidium personatum</i> )  Southern blight ( <i>Sclerotium rolfsii</i> )	Start applications at least 5 days prior to an anticipated infection event. Repeat applications at 7-21 day intervals as needed to reduce disease infection. Rotate or mix with other fungicides if disease pressure is high.

\* Not for use in California.

<b>Pome Fruits (Crop Group 11-10):</b> Apple; azarole; crabapple; loquat; mayhaw; medlar; pears (including Asian); quinces (including Chinese, Japanese); tejocote; cultivars, varieties and/or hybrids of these.	
<b>Target disease/pathogen (bacteria &amp; fungi)</b>	<b>Additional information</b>
Fire blight ( <i>Erwinia amylovora</i> )	<i>For fire blight control:</i> Begin applications when green tissue is present, prior to infection period.  If no pre-bloom applications have been made, then combine applications with other standard bloom sprays targeting fire blight.
Flyspeck ( <i>Zygophiala jamaicensis</i> ) Glomorella leaf spot, bitter rot ( <i>Colletotrichum gloeosporioides</i> species complex) Sooty blotch disease complex*	<i>For summer disease control:</i> Apply starting at petal fall through the cover sprays on a 10-14 day schedule.  Apply in an alternating or tank-mix program with labeled fungicides as part of a disease management program
Powdery mildew ( <i>Podosphaera leucotricha</i> )  Cedar apple rust ( <i>Gymnosporangium juniperi- virginianae</i> )  Apple scab ( <i>Venturia inaequalis</i> )	Apply starting at petal fall through cover sprays on a 7-14 day schedule.  Apply in an alternating or tank-mix program with labeled fungicides as part of a disease management program.

<b>Root and Tuber Vegetables- Tuberous and Corm Vegetables (Crop Group 1; Subgroups 1C, 1D):</b> Arracacha; arrowroot; artichoke, Chinese; artichoke, Jerusalem; beet, garden (table); canna, edible; carrots; cassava, bitter and sweet; chayote (root); chufa; dasheen (taro); ginger; leren; potato; sugar beet; sweet potato; tanier; turmeric; yam bean; yam, true	
<b>Target disease/pathogen (bacteria &amp; fungi)</b>	<b>Additional information</b>
<i>Alternaria</i> leaf blight ( <i>Alternaria dauci</i> )  Cercospora leaf spot ( <i>Cercospora beticola</i> )	Begin applications soon after plant emergence and before disease develops. Repeat at 7-14 day intervals as long as conditions favor disease development. For sugar beets, use in rotation with fungicides labeled for this use, as part of a resistance management strategy.
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>Stalk, Stem, and Leaf Petiole Vegetables (Crop Group 22B):</b> Cardoon; celery; celery, Chinese; fuki; rhubarb; udo; zuiki; cultivars, varieties, and hybrids of these commodities	
<b>Target disease/pathogen (bacteria &amp; fungi)</b>	<b>Additional information</b>
Downy mildew ( <i>Bremia lactucae</i> ) ( <i>Peronospora</i> species) Powdery mildew ( <i>Erysiphe cichoracearum</i> ) Leaf spots ( <i>Cladosporium</i> and <i>Stemphylium</i> spp.) White rust ( <i>Albugo occidentalis</i> )	Begin applications at first true leaf or after thinning. Make preventative applications every 7-14 days as needed to maintain control.
Early blight* ( <i>Alternaria solani</i> ) Bacterial blight* ( <i>Pseudomonas cichorii</i> ) Late blight* ( <i>Phytophthora infestans</i> )	Begin applications soon after plant emergence and before disease develops. Repeat at 7-14 day intervals as long as conditions favor disease development.

\* Not for use in California.

<b>Tobacco</b> (including burley, binder, flue-cured, and dark)	
<b>Target disease/pathogen (bacteria &amp; fungi)</b>	<b>Additional information</b>
Blue mold ( <i>Peronospora tabacinum</i> )	Make preventive applications on a 7-14 day schedule whenever conditions favor disease development.

<b>Tree Nuts (Crop Group 14-12):</b> African nut-tree; almond; beechnut; Brazil nut; Brazilian pine; bunya; bur oak; butternut; Cajou nut; candlenut; cashew; chestnut; chinquapin; coconut; coquito nut; dika nut; ginkgo; Guiana chestnut; hazelnut (filbert); heartnut; hickory nut; Japanese horse-chestnut; macadamia nut; mongongo nut; monkey-pot; monkey puzzle nut; Okari nut; Pachira nut; peach palm nut; pecan; pequi; Pili nut; pine nut; pistachio; Sapucaia nut; tropical almond; walnut, black; walnut, English; yellowhorn; cultivars, varieties, and/or hybrids of these	
<b>Target disease/pathogen (bacteria &amp; fungi)</b>	<b>Additional information</b>
<i>Alternaria</i> 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 <i>Alternaria</i> management.  Apply in sufficient water to achieve complete coverage of the tree canopy.
Pecan scab ( <i>Cladosporium caryigenum</i> )	Apply in sufficient water to attain good coverage of the tree canopy.

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

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

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

Make the first application within 60-65 days after planting. Repeat application at 14 day intervals as long as aphid vectors are present, and conditions are favorable for infection. This product may be applied up to five (5) times per crop cycle.

This product may be tank mixed or applied in rotation with chemical fungicides and insecticides used as part of standard pest management practices. Do not mix with antibiotics, PAA, or peroxides.

Best results may occur when this product 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. This product can be tank mixed with petroleum-based (paraffinic) oils used for aphid control, up to a maximum concentration of 2% oil (by volume) in the final spray mix. Effectiveness of this product may be reduced at oil concentrations higher than 2%.

**Ground application rate:** Apply 2 oz (60 grams) of product in 15 to 30 gallons of water per acre.

**Aerial application rate:** Apply 1 oz (30 grams) of product 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 product 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. Refer to the **Rate Table** in the **FUNGI, OOMYCETES, OR BACTERIA** section to determine the amount of product required for different spray volumes.

Apply product 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.

**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).

**Pesticide Disposal:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**Container Handling:** Nonrefillable 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 or 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 accordance with directions given herein. NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY IS MADE.



## **CHEMIGATION INSTRUCTIONS**

### **Precautions:**

Apply this product only through overhead sprinkler irrigation systems (including impact or microsprinklers, 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 chemigation:**

“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.

1. 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.
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 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 or, in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
5. 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.

6. Do not apply when wind speed favors drift beyond the area intended for treatment.
7. 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.
8. 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 specified rate evenly to the entire treated area.

### **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 that 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 specified rate evenly to the entire treated area.
8. Do not apply when wind speed favors drift beyond the area intended for treatment.