

Certis USA

**JAVELIN® WG**

For Control of Insect Pests of Vegetables, Fruit and Field Crops

Active Ingredient:

*Bacillus thuringiensis*, subspecies *kurstaki*

Potency of 52,863 Spodoptera Units (at least 60 million viable spores)

per milligram\* ..... 7.5%

Inert Ingredients: ..... 92.5%

TOTAL ..... 100.0%

Potency units should not be used to adjust use rates beyond those specified in the Directions for Use section.

\*Equivalent to 24.0 billion Spodoptera units per pound (17.0 billion International Units per pound).

EPA Reg. No. 70051-66

EPA Est. No. 70051-CA-001

**KEEP OUT OF REACH OF CHILDREN****CAUTION**

See additional precautionary statements.

**DIRECTIONS FOR USE:** IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING.**PRECAUTIONARY STATEMENTS****HAZARDS TO HUMANS AND DOMESTIC ANIMALS****CAUTION**

Harmful if inhaled or absorbed through the skin. Avoid breathing vapors or spray mist. Prolonged or frequently repeated skin contact may cause an allergic reaction in some individuals. Avoid contact with skin, eyes or clothing. Discontinue use if reaction occurs. In case of contact immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.

**STATEMENT OF PRACTICAL TREATMENT**

**If on Skin:** Wash with plenty of soap and water. Get medical attention if irritation persists.

**If in Eyes:** Immediately flush eyes with plenty of water. Get medical attention if irritation persists.

**Personal Protective Equipment:**

Applicators and other handlers must wear:

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

Follow 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.

**Engineering Controls Statements:**

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.

**User Safety Recommendations:**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 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.

**ENVIRONMENTAL HAZARDS**

Do not contaminate water when disposing of equipment washwaters.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

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), 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 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.

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

**NOTICE:** Read "Limitation of Warranty and Limitation of Liability" on the container or in this Directions for Use section before buying or using. If terms are not acceptable, return at once, unopened.

Unless specifically stated, do not apply this product through any type of irrigation system.

JAVELIN® WG is a biological insecticide for the control of lepidopterous larvae (see Recommended Application Rates section).

JAVELIN WG attacks the larval gut and must be ingested by the insect to be effective.

JAVELIN WG may be applied up to and on the day of harvest.

**GENERAL USE INSTRUCTIONS**

For most consistent control, apply at first sign of newly hatched worms (1st and 2nd instar larvae). Instructions for specific crops are located in the ADDITIONAL INSTRUCTION sections under RECOMMENDED APPLICATION RATES.

Reapply as necessary under a pest management program that includes close scouting.

If rapid knockdown of heavy worm or non-lepidopterous populations is necessary, include an effective contact insecticide in combination with JAVELIN WG.

For heavy worm infestations, use the higher JAVELIN WG rate. During situations of dense foliage and/or rapid growth, increasing water carrier volumes will provide better crop coverage and improve JAVELIN WG performance.

Tank mix recommendations are for use only in states where the tank mix product and application site are registered. Read and follow all label directions for use for other pesticides used as tank mix partners with JAVELIN WG for specific rate recommendations, application timing, and precautions.

**Mixing**

Fill spray or mixing tank  $\frac{3}{4}$  full. Turn on agitation and pour JAVELIN WG into water while maintaining continuous agitation. Add other spray material (if any) and add balance of water. Agitate as necessary to maintain suspension. Do not allow diluted sprays to remain in the tank for more than 48 hours. JAVELIN WG is formulated to provide desirable coverage and adherence to leaf surfaces. Additional adjuvants, spreaders, or stickers may be added to improve product performance, especially under heavy dew or rainy conditions. Combinations with commonly used insecticides, fungicides, or other spray tank adjuvants are generally not deleterious to JAVELIN WG if the mix is used promptly. Before mixing in the spray tank, it is advisable to test physical compatibility by mixing all components in a small container in proportionate quantities.

**Ground Application**

Unless otherwise stated, use recommended amount of JAVELIN WG in a minimum of 20 gallons of water per acre depending on type of crop and requirements of state regulations. If lower volumes are used, proper application equipment must be used to insure adequate coverage. Thorough and uniform crop coverage is required for adequate insect control.

**Aerial Application**

Use recommended amount of JAVELIN WG in at least 3 gallons of water per acre. Applications at higher water volumes have demonstrated improved control of targeted pests. Apply early morning or evening when air is calm.

**INSECTS CONTROLLED**

When used as directed, JAVELIN WG will control the following insects.

Common Name	Scientific Name
Alfalfa caterpillar	<i>Colias eurytheme</i> (Boisduval)
Almond Moth	<i>Cadra cautella</i> (Walker)
Armyworm	<i>Pseudaletia unipuncta</i> (Haworth)
Artichoke plume moth	<i>Platyptilla carduidactyla</i> (Riley)
Bagworm	<i>Thyridopteryx ephemeraeformis</i> (Haworth)
Banana skipper	<i>Erionota thrax</i> (Haworth)
Bertha armyworm	<i>Mamestra configurata</i>
Blueberry leafrollers	various
Blueberry spanworm	<i>Itame argillacearia</i> (Pack.)
Bollworm	<i>Helicoverpa zea</i> (Boddie)
California oak moth	<i>Phryganidia californica</i> (Packard)
Cherry fruitworm	<i>Grapholita packardii</i> (Zeller)
Citrus cutworm	<i>Xylomyges curialis</i>
Codling moth	<i>Cydia pomonella</i> (Linnaeus)
Cotton leafperforator	<i>Bucculatrix thurberiella</i> (Busck)
Cotton leafworm	<i>Alabama argillacea</i> (Hubner)
Cutworm	various, family Noctuidae
Diamondback moth	<i>Plutella xylostella</i> (Linnaeus)

Common Name	Scientific Name
Douglas-fir tussock moth	<i>Orgyia pseudotsugata</i> (McDunnough)
Elm spanworm	<i>Ennomos subsignaria</i> (Hubner)
European corn borer	<i>Ostrinia nubilalis</i> (Hubner)
Fall cankerworm	<i>Alsophila pometaria</i> (Harris)
Fall webworm	<i>Hyphantria cunea</i> (Drury)
Filbert webworm	<i>Melissopus latiferreanus</i> (Walsingham)
Fruitree leafroller	<i>Archips argyrospila</i> (Walker)
Grape leafroller	<i>Desmia funeralis</i> (Hubner)
Grapeleaf skeletonizer	<i>Harrisina americana</i> (Guerin)
Green cloverworm	<i>Plathypena scabra</i> (Fabricius)
Green fruitworm	<i>Lithophane antennata</i> (Walker)
Gypsy moth	<i>Lymantria dispar</i> (Linnaeus)
Helicoverpa spp.	<i>Helicoverpa</i> spp.
Heliothis spp.	<i>Heliothis</i> spp.
Hornworms	<i>Manduca</i> spp.
Imported cabbageworm	<i>Pieris rapae</i> (Linnaeus)
Jack pine budworm	<i>Choristoneura pinus</i> (Freeman)
Loopers	various
Mimosa webworm	<i>Homadaula anisocentra</i> (Meyri)
Navel orangeworm	<i>Amyelois transitella</i> (Walker)
Obliquebanded leafroller	<i>Choristoneura rosaceana</i> (Harris)
Omnivorous leafroller	<i>Platynota stultana</i>
Omnivorous leaftier	<i>Cnephasia longana</i> (Haworth)
Orange tortrix	<i>Argyrotaenia citrana</i> (Fernald)
Orangedog	<i>Papilio cresphontes</i> (Cramer)
Oriental fruit moth	<i>Grapholita molesta</i> (Busck)
Pandemis leafroller	<i>Pandemis pyrusana</i>
Peach twig borer	<i>Anarsia lineatella</i> (Zeller)
Pecan nut casebearer	<i>Acrobasis nuxvorella</i> (Neunzig)
Redbanded leafroller	<i>Argyrotaenia velutinana</i> (Walker)
Redhumped caterpillar	<i>Schizura concinna</i> (J.E. Smith)
Rindworm complex	various
Roughskinned cutworm	<i>Aethis mindara</i> (Barnes & McDunnough)
Saltmarsh caterpillar	<i>Estigmene acrea</i> (Drury)
Sod webworm	<i>Crambus mutabilis</i>
Southwestern corn borer	<i>Diatraea grandiosella</i> (Dyar)
Spotted cutworm	<i>Xestia</i> spp.
Spring cankerworm	<i>Paleacrita vernata</i> (Peck)
Spruce budworm	<i>Choristoneura fumiferana</i> (Clemens)
Tent caterpillar	various, family Lasiocamidae
Tobacco budworm	<i>Helicoverpa virescens</i> (Fabricius)
Tobacco hornworm	<i>Manduca sexta</i> (Linnaeus)
Tomato pinworm	<i>Keiferia lycopersicella</i> (Walsingham)
Tropical sod webworm	<i>Herpetogramma phaeopteralis</i> (Guenee)
Tufted apple bud moth	<i>Platynota idaeusalis</i> (Walker)
Variiegated leafroller	<i>Platynota flavedana</i> (Clemens)
Velvetbean caterpillar	<i>Anticarsia gemmatilis</i> (Hubner)
Western tussock moth	<i>Orgyia vetusta</i> (Boisduval)

#### RATE SELECTION CONSIDERATIONS

Rate recommendations are typically given as a range:

**Lower rate ranges** may be desired when tank mixing with contact insecticides labeled for worm control or under conditions of light worm infestations or when uniformly small worms are present.

**Medium rate ranges** may be desired when multiple worm life stages are present, continuous egg hatches are occurring or young or light armyworm infestations exist.

**Upper rate ranges** may be desired for heavy worm infestations, mature (larger) worms or for moderate to heavy infestations of armyworm, bollworm, or other difficult to control worm species.

Unless otherwise stated, use recommended amount of JAVELIN WG in a minimum of 20 gallons of water per acre depending on type of crop and requirement of state regulations. Lower volumes may be used, but proper application equipment must be used to insure adequate coverage. Thorough and uniform crop coverage is required for adequate insect control.

#### RECOMMENDED APPLICATION RATES

Crops	Lbs./Acre
<b>VEGETABLE CROPS</b>	
<b>Artichokes</b> ADDITIONAL INSTRUCTIONS: Apply in a minimum of 100 gal. of water per acre with a spray interval of 10 days or less. Apply 1 lb/A in combination with ASANA® XL, AMBUSH®, or SUPRACIDE® aerially to aid in resistance management of the artichoke plume moth. Use and follow all label directions of the tank mix partner regarding application, timing, gallonage, and schedules.	0.50-1.25
<b>Crops</b>	<b>Lbs./Acre</b>
<b>Asparagus, Beans (Green, Lima, Mung), Broccoli, Broccoli Raab (Rapini), Brussels Sprouts, Cabbage, Cardoon, Carrots, Cauliflower, Celeriac, Celery, Chick Peas, Chinese Broccoli, Chinese Cabbage, Collards, Cucumbers, Dry Bulb Onions, Eggplants, Garlic, Green Onions, Greens (Dandelion, Turnip, Mustard, Beet, China), Herbs (Basil, Cilantro, Dill, Oregano, Thyme, etc.), Horseradish, Kale, Kohl Rabi, Leeks, Lettuce</b>	0.12-1.50

Crops	Lbs./Acre
<b>(Endive, Romaine, Head Lettuce, Escarole, Butter Crunch, Leaf, etc.), Melons (Cantaloupe, Crenshaw, Honeydew, Muskmelon, Watermelon, etc.), Okra, Onions, Parsley, Parsnips, Peas, Peppers, Potatoes, Pumpkins, Radishes, Rutabaga, Salsify, Spinach, Squash (Summer and Winter), Sweet Corn, Sweet Potatoes, Swiss Chard, Table Beets, Tomatoes, Turnip Root, Watercress, Yams</b> ADDITIONAL INSTRUCTIONS: Apply as necessary to maintain control.	

Crops	Lbs./Acre
<b>FIELD CROPS</b>	
<b>Alfalfa (Hay and Seed), Sudan Grass, Hay Crops &amp; Other Forage Crops</b> ADDITIONAL INSTRUCTIONS: Under conditions of rapid plant growth and rapidly increasing armyworm populations (10 worms or greater per 180' sweep) use the highest rate. Against heterogenous worm populations, where 4th and 5th instars are present, and continuous egg laying is occurring, applications may provide variable control. Under these conditions, the addition of a contact insecticide in combination with JAVELIN WG is recommended. The addition of a spreader sticker to JAVELIN WG may provide improved performance.	0.25-1.50
<b>Canola and Evening Primrose</b> ADDITIONAL INSTRUCTIONS: Apply as necessary to maintain control.	0.12-1.50
<b>Dry Beans and Peas, Lentils, Mint, Peanuts, Rice, Safflower, Soybeans, Sugar Beets, Sunflower, Sorghum</b> ADDITIONAL INSTRUCTIONS: Apply as necessary to maintain control.	0.25-1.50
<b>Field Corn, Pop Corn, Seed Corn</b> ADDITIONAL INSTRUCTIONS: Make initial application when economically damaging populations exist. Repeat as necessary to maintain control. Applications must be made to early instars prior to entering the ear or plant.	0.50-1.50
<b>Hops</b> ADDITIONAL INSTRUCTIONS: Apply as necessary to maintain control. Begin treatment as soon as possible after hatching and before larvae are protected by leaf folds.	0.25-1.00
<b>Jojoba</b> ADDITIONAL INSTRUCTIONS: Apply in a minimum of 50 gallons of water per acre by ground equipment or a minimum of 10 gallons of water by aerial equipment. Thorough coverage of foliage is essential and dictates the minimum spray volumes necessary.	0.50-1.00
<b>Small Grains</b> ADDITIONAL INSTRUCTIONS: Apply as necessary to maintain control.	1.00-1.50
<b>Tobacco</b> ADDITIONAL INSTRUCTIONS: Apply as necessary to maintain control.	0.12-1.25
<b>Cotton</b> <b>Including Arizona and California</b> Early and Mid-Season ADDITIONAL INSTRUCTIONS: Repeat as necessary throughout season to maintain control. If egg laying frequency indicates future moderate to heavy worm populations, time application spray to coincide with the 2nd instar larvae. During periods of high temperatures, worms will progress through 1st and 3rd instars very rapidly and early application timing is necessary for control. To be effective, JAVELIN WG spray must be deposited at the larval feeding site. When plant cover is dense and worms are feeding in the lower 2/3 portion of the plant, aerial application of JAVELIN WG may not provide adequate control. For the suppression of light to moderate infestations, apply at first sign of egg-laying or newly-hatched worms (1st instar larvae).	0.50-1.50
<b>Except Arizona and California</b> Early ADDITIONAL INSTRUCTIONS: For early season management of <i>Helicoverpa</i> and <i>Heliothis</i> species. Initiate applications when 50% of plants are at pinhead square cotton stage, independent of <i>Helicoverpa</i> and <i>Heliothis</i> egg and larval counts, or at 1st egg lay, whichever occurs earlier. Continue applications on 5-day spray interval up to synthetic pyrethroid spray window. For added control of <i>Helicoverpa</i> and <i>Heliothis</i> , tank mixing of JAVELIN WG with a labeled ovicide, such as, methomyl (0.125 lb. a.i./acre), profenofos (0.25 lb. a.i./acre), or thiodicarb (0.125-.025 lb. a.i./acre) is recommended.	0.25-1.25

Crops	Lbs./Acre
Read and follow all directions for use, precautions and restrictions on tank mix product labels.	
<b>FRUIT, NUT &amp; VINE CROPS</b> <b>Apples and Pears</b> ADDITIONAL INSTRUCTIONS: Apply when newly hatched larvae appear and before leaves are rolled. Continue applying as a part of the normal cover spray program until pest is adequately controlled. Apply when caterpillars are actively feeding (2nd-4th instars).	0.50-4.00
<b>Avocados</b> ADDITIONAL INSTRUCTIONS: Apply as necessary to maintain control. Begin treatment as soon as possible after hatching and before larvae are protected by leaf folds. (Amorbia [Mexican leafroller] is suppressed only.)	0.50-1.25
<b>Bananas</b> ADDITIONAL INSTRUCTIONS: Hawaii only. Use calibrated ground equipment with adequate water to apply to point of runoff.	0.50-1.00
<b>Citrus</b> ADDITIONAL INSTRUCTIONS: Use 50-600 gallons of water per acre when using ground equipment and 10 gallons of water minimum per acre by air. (Amorbia [Mexican leafroller] is suppressed only.)	0.25-1.50
<b>Blueberries, Caneberries, Currants, Kiwi</b> ADDITIONAL INSTRUCTIONS: Apply by ground or aerial equipment using enough water to provide adequate coverage. Begin treatment as soon as possible after hatching. For leafrollers, apply before larvae are protected by leaf folds.	0.25-1.00
<b>Grapes</b> ADDITIONAL INSTRUCTIONS: Apply by ground equipment in up to 200 gallons total spray per acre to obtain thorough coverage of leaf surfaces. Start treating as soon as possible after hatching and before larvae are protected by leaf folds.	0.50-1.25
<b>Almonds, Apricots, Cherries, Filberts, Nectarines, Peaches, Pecans, Persimmons, Plums, Pomegranates, Prunes, Walnuts</b> ADDITIONAL INSTRUCTIONS: For leafrollers, start treating as soon as possible after hatching and before larvae are protected by leaf folds. Apply when caterpillars are actively feeding (2nd-4th instar). Application timing is very important for good casebearer suppression. Consult your local university or extension agent for information concerning specific modeling, that predicts egg lay, typical application dates, and scouting techniques for your area. JAVELIN WG must be present at egg hatch for best control. Make application when the majority of eggs are in the pink stage. For best control make two applications 7 days apart. If only one application is made, a minimum of 1 lb. should be applied.	0.25-4.00
<b>Melons (Also see vegetables)</b> ADDITIONAL INSTRUCTIONS: Apply at first sign of hatch before larvae enter fruit. Repeat as necessary to maintain control.	0.50-0.75
<b>Strawberries</b> ADDITIONAL INSTRUCTIONS: Apply as necessary to maintain control. Use 20 gallons water minimum per acre when using ground equipment and 5 gallons water minimum per acre by aircraft. In a tank mix with contact insecticides, rates as low as 1/2 lb. of JAVELIN WG may be used for the control of armyworm.	0.25-1.50
<b>SHADE TREES AND ORNAMENTALS (Including Roses)</b> ADDITIONAL INSTRUCTIONS: Apply when leaf expansion reaches 40% to 50% as infestation warrants. If eggs hatch over a long period of time, or if reinfestation occurs, spray about 14 days after first application. Apply when most larvae are 3rd-4th instar. Also consider the opening of the bud cap to ensure foliage exposure. Apply after eggs have hatched and early instar larvae are feeding on exposed foliage.	0.12-1.25
<b>TURF AND GRASS SEED PRODUCTION</b> ADDITIONAL INSTRUCTIONS: Repeat as necessary throughout season to maintain control.	1.00
<b>STORED SOYBEANS, GRAINS (Indian Meal Moth, Almond Moth)</b> ADDITIONAL INSTRUCTIONS: To control and prevent Indian Meal Moth and Almond Moth infestations of stored soybeans and grains, prepare a spray mixture which includes 1 gallon of water for every 1.5 oz. by weight of JAVELIN WG. The spray mixture may be applied either by treating	

Crops	Lbs./Acre
the top 4 inches of grain as it is being augered into storage (applying 0.6 pint of mixture per bushel in the grain stream), or by treating the surface of grain after it is in the bin. The Table below can be used as a guide in determining the total amount of JAVELIN WG needed according to bin diameter or the number of bushels to be treated.	

Bin Diameter (ft.)	Surface Area (sq. ft.)	Bushels (to 4 in. depth)	JAVELIN WG Rate (by weight)	
			<b>Grams</b>	
			<b>oz.</b>	
8	50	13	21	0.75
12	113	30	50	1.75
16	201	53	85	3.00
20	314	84	120	4.25
24	452	120	185	6.50
28	615	163	255	9.00
32	804	214	326	11.50

To insure thorough coverage when making applications to the grain surface after it is in the bin, apply spray mixture in three (3) applications. Mix the grain with a scoop or rake to a depth of four (4) inches after each application.

Stored grain may be treated anytime, but for best results, treat grain at the time it is placed into storage or shortly thereafter, or in the early spring prior to egg-laying. Full season control is normally experienced. Re-treat only if reinfestation occurs.

For the protection of bagged grain, apply spray mixture to entire grain mass, and mix thoroughly prior to bagging. JAVELIN WG at 6 oz. by weight per 10 gallons of water will treat approximately 100 bushels.

Treated grain may be used at any time after treatment.

#### Flowers and Ornamentals

JAVELIN WG may also be used on flowers and ornamentals outdoors and in the greenhouse at a rate of 0.25-1.50 lbs. per 100 gallons of water for control of listed insects on this label.

#### Guide for Small Spray Volume Mixing

Rate Lbs./A	Conversion Rate* Teaspoons/Gallon
1/4	1/2
1/2	1
1	2

\*Assumes Application to spray runoff.

#### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

##### Storage

Store in original container in a cool, dry place inaccessible to children and pets and away from heat and direct sunlight. Protect from freezing. Storage at temperatures above 90°F may impair effectiveness.

##### Pesticide Disposal

Pesticide, spray mixture, or rinse water that cannot be used according to label instruction must be disposed of according to Federal, State, or Local procedures.

##### Container Disposal

Completely empty container into application equipment. Triple rinse or equivalent. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

#### LIMITATION OF WARRANTY AND LIMITATION OF LIABILITY

Thermo Trilogy Corp. 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 insect 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. 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 THE FITNESS OR MERCHANTABILITY IS MADE.

#### REGISTERED TRADEMARKS

Ambush® is a registered trademark of ICI Group Companies.

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