



OPEN

For Control of Lepidopterans

Biological Insecticide

Control of Lepidopteran pests in fruits, vegetables and other high-value field crops

Active Ingredient: GS-omega/kappa-Hctx-Hv1a.....	2.0%
Other Ingredients:	98.0%
TOTAL:	<u>100.0%</u>

KEEP OUT OF REACH OF CHILDREN CAUTION

See back panel for Precautionary Statements, First Aid, and Storage and Disposal

FIRST AID

If in eyes	<ul style="list-style-type: none"> • 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.
If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • 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 1-800-535-5053 for emergency medical treatment information.

Produced for:
Vestaron Corporation
4717 Campus Drive
Kalamazoo, MI 49008
vestaron.com

Made in Italy
EPA Reg. No 88847-6
EPA Est No 33967-NJ-001
Batch No:

NET CONTENTS: 1 GALLON (128 FL OZ)

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals - CAUTION. Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wear protective eyewear and waterproof gloves. 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:

- long-sleeved shirt and long pants
- waterproof gloves
- shoes plus socks
- protective eyewear

Follow the manufacturer's instructions for cleaning / maintaining PPE. If no instructions are available, use detergent and hot water for washables. 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.
- 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:

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. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation. 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.

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. Do not enter or allow workers to enter the treated greenhouse or enclosed space until the ventilation requirements in 40 CFR 170.405(b)(3) have been met and the Restricted Entry Interval (REI) of 4 hours has expired. Until then, only handlers wearing the appropriate personal protective equipment can enter the greenhouse or enclosed space.

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

Product Information: Tank mix with *Bacillus thuringiensis* products (Bts) to enhance control.

SPEAR-LEP is a biological insecticide containing the active ingredient GS-omega/kappa-Hxtx-Hv1a for use on ornamental plants, and edible crops against Lepidopteron pests. SPEAR-LEP functions primarily as a central nervous system inhibitor of target pests infesting labeled crops. In tank mixes with EPA-registered *Bacillus thuringiensis* products (Bts), SPEAR-LEP is mixed with water and applied as a foliar spray with ground or aerial equipment equipped for conventional insecticide spraying.

SPEAR-LEP tank mixes with Bts can be used in either the field or greenhouse.

Use Instructions: Thorough coverage of infested plant parts is necessary. SPEAR-LEP does not have systemic activity. For some crops, directed drop nozzles by ground machine are required.

Under heavy pest populations shorten the spray interval.

Repeat applications at 3-10 day intervals depending upon plant growth rate, pest activity, and other factors.

For hard-to-wet crops, consider using a spreader/sticker or an adjuvant that has been approved for targeted crop use to enhance the adhesion of SPEAR-LEP to the crop. Examples of appropriate spreader/stickers or adjuvants are: 1) vegetable oils, 2) crop oils, 3) alcohol ethoxylates and 4) non-ionic.

SPEAR-LEP has been evaluated for phytotoxicity on a variety of crops under various normal growing conditions. However, testing all crop varieties, in all mixtures and combinations is not feasible. Prior to treating entire crop, test a small portion of the crop for sensitivity.

GROUND AND AERIAL APPLICATIONS

USE RESTRICTION: Do not apply more than 6 pints SPEAR-LEP per acre per year.

Apply SPEAR-LEP tank mixes in ground and aerial equipment with quantities of water sufficient to provide thorough coverage of infested plant parts. The amount of water needed per acre will depend upon crop development, weather, application equipment, and local experience.

Do not spray when wind speed favors drift beyond the area intended for use.

Avoiding spray drift is the responsibility of the applicator.

Do not apply this product through any type of irrigation.

Mixing directions:

Important – Do not add SPEAR-LEP to the mix tank before introducing the desired amount of water. Add water to the mix tank. Start the mechanical or hydraulic agitation to provide moderate circulation before adding SPEAR-LEP. Add the desired volume of SPEAR-LEP to the mix tank and continue circulation. Do not use more water to improve coverage. **Maintain circulation while loading and spraying.** Do not mix more SPEAR-LEP than can be used in 24 hours.

Spray volume:

For conventional air and ground applications, use minimum 5 gallons and maximum 25-50 gallons of total spray volume per acre in water based sprays.

Tank mixing:

Do not combine SPEAR-LEP in the spray tank with other pesticides, surfactants, adjuvants, or fertilizers if there has been no previous experience or use of the combination to show it is physically compatible, effective, or non-injurious under your use conditions. Follow the most restrictive of the labeling limitations and precautions of all products used in mixtures.

SPEAR-LEP is not compatible with strong oxidizers, such as chlorine, which can degrade the product. Chlorine level typically found in potable water supplies should not present a problem with SPEAR-LEP performance.

Preharvest interval – agricultural use:

SPEAR-LEP can be applied up to and including the day of harvest.

Integrated Pest Management (IPM):

SPEAR-LEP is an important tool in sound insect management whenever insecticide use is necessary. Apply SPEAR-LEP alone or in combination and / or rotation with chemical insecticides. This will result in reduced susceptibility to insect damage and overall reduction in the use of chemical insecticides. Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.

AERIAL DRIFT REDUCTION ADVISORY INFORMATION

GENERAL: Avoiding spray drift at the application site is the responsibility of the applicator. The Interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. Where states have more stringent regulations, they should be observed. Note: This section is advisory in nature and does not supersede the mandatory label requirements.

BOOM WIDTH: For aerial applications, the boom width must not exceed 75% of the wingspan or 90% of the rotary blade. Use upwind swath displacement and apply only when wind speed is 3-10 mph as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground or crop canopy.

APPLICATION HEIGHT: Do not make application at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT: When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

WIND: Drift potential is lowest between wind speeds of 2 - 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE INVERSIONS: Do not apply during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

SENSITIVE AREAS: The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas). Do not allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks and recreation areas, non-target crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals.

APPLICATION RATES FOR SPEAR-LEAF + BACILLUS THURINGIENSIS IN A TANK MIX ON THE FOLLOWING CROPS:

Pre-harvest Interval (PHI) = 0 days

I. Vegetable and Cole Crops

Crop	Insect Pest	Application Rate (Pint/acre)
Vegetable, root and tuber (Group 1) Such as: Beets, Carrot, Horseradish, Radish, Potato, Sweet Potato, Turnip and Turnip Greens, Sugar beets	Diamondback Moth • Imported Cabbageworm • Green cloverworm • Hornworms • Cutworms • Loopers • Webworms • Saltmarsh caterpillar • Omnivorous Leafroller • Armyworm • European Corn borer • Alfalfa caterpillar	1.0-2.0
Vegetable, bulb (Group 3) Such as: Garlic, Leek, Onions, Shallots	Saltmarsh caterpillar • Omnivorous Leafroller • Cutworms • Loopers • Webworms • Hornworms • Leek Moth • Imported Cabbageworm • Green Cloverworm • Loopers • Armyworm • Diamondback Moth • European Corn borer • <i>Helicoverpa zea</i> • <i>Heliothis virescens</i>	1.0-2.0
Vegetable, brassica leafy (Group 5) Such as: Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Collards, Kohlrabi	Hornworms • Webworms • Loopers • Cutworms • Saltmarsh caterpillar • Omnivorous leafroller • Diamondback moth • Imported Cabbageworm • Green cloverworm • Armyworm • European corn borer	1.0-2.0
Vegetable, legume (Group 6) Such as: Lentils, Peas, Beans, Soybeans	Diamondback moth • Looper • Hornworms • Podworms • Imported cabbageworm • Green cloverworm • Saltmarsh caterpillar • Soybean loopers • Velvetbean caterpillar • Armyworm • European corn borer • Cutworm	1.0-2.0
Vegetable, fruiting (Group 8) Such as: Eggplant, Peppers, Tomatoes	Imported Cabbage Worm • Diamondback moth • Green cloverworm • Hornworms • Variegated Cutworm • Saltmarsh caterpillar • Loopers • Tomato fruitworm (<i>Helicoverpa zea</i>) • Cutworms • Webworms • Omnivorous Leafroller • Armyworm • Pinworm • European corn borer	1.0-2.0
Vegetable, cucurbit (Group 9) Such as: Cucumbers, Melons, Pumpkins, Squash, Watermelon	Diamondback moth • Imported Cabbageworm • Green Cloverworm • Loopers • Saltmarsh caterpillar • Melonworm • Pickleworm • Rindworm complex • Armyworm • European corn borer • Hornworms	1.0-2.0

II. Other Vegetables

Crop	Insect Pest	Application Rate (Pint/acre)
Artichokes	Artichoke Plume moth • Armyworm • Loopers	1.0-2.0
Asparagus	Armyworm • Diamondback moth • Green cloverworm • Imported cabbageworm • Loopers	1.0-2.0
Malagna	Armyworm • Saltmarsh caterpillar	1.0-2.0
Watercress	Loopers • Diamondback moth • Armyworm • Green cloverworm • Imported Cabbageworm • Saltmarsh caterpillar • European corn borer	1.0-2.0

III. Field Crops

Crop	Insect Pest	Application Rate (Pint/acre)
Alfalfa (Hay and seed), Hay and Other Forage Crops	Alfalfa Caterpillar loopers • European Skipper (Essex skipper) • Loopers • Armyworm	1.0-2.0
Cotton	Loopers • Cotton leaf perforator • Cotton leafworm • Saltmarsh caterpillar • Armyworm • Cotton Bollworm • Tobacco Budworm	1.0-2.0
Canola/rapeseed	Diamondback moth • Loopers • Armyworm • <i>Heliothis virescens</i> • <i>Helicoverpa zea</i>	1.0-2.0
Corn such as: Field, Sweet, Popcorn	Armyworm • European corn borer (whorl stage only) • Southwestern corn borer	1.0-2.0
Hops	Armyworm • Loopers • Omnivorous Leafhopper • Spotted cutworm • Oblique Banded Leafroller	1.0-2.0
Safflower	Armyworm • Loopers • Saltmarsh caterpillar	1.0-2.0
Sorghum	Headworm	1.0-2.0
Sunflowers	Headmoth • Loopers	1.0-2.0
Small Grains	Armyworm • Loopers	1.0-2.0
Rice	Armyworm • Loopers • Saltmarsh caterpillar • Green cloverworm • Velvetbean caterpillar • <i>Helicoverpa zea</i> • <i>Heliothis virescens</i>	1.0-2.0
Peanuts	Green cloverworm • Loopers • Velvetbean caterpillar • Podworms • <i>Helicoverpa zea</i> • <i>Heliothis virescens</i>	1.0-2.0
Jujube	Loopers (<i>Anacamptodes</i> spp.)	1.0-2.0

IV. Herbs, Spices and Mints

Crop	Insect Pest	Application Rate (Pint/acre)
Basil Dill Oregano Thyme Peppermint	Loopers • Diamondback moth • Green cloverworm • Imported Cabbageworm • Armyworm • European corn borer • Saltmarsh caterpillar	1.0-2.0

V. Fruits and Nut

Crop	Insect Pest	Application Rate (Pint/acre)
Small Fruits and Berries such as: Blackberries, Blueberries, Currants, Grapes, Raspberries, Strawberries, Cranberries	Gypsy Moth • Blueberry leafroller • Loopers • Fruittree leafroller • Grape berry moth • Oblique Banded Leafroller • Achema Sphinx Moth (hornworm) • Green and Brown Spanworm • Bagworms • White marked Tussock Moth • Armyworm • Tobacco budworm • Cherry Fruitworm • Green Fruitworm • Grape Leafroller • Grapeleaf Skeletonizer • Omnivorous Leafroller • Orange Tortix • Saltmarsh Caterpillar • Grape Leaf folder • Roughskinned cutworm	1.0-2.0
Lowbush blueberries	Blueberry spanworm (<i>Itame argillacearia</i>) • Chainspotted Geometer (<i>Cingilia catenaria</i>) • Rannoch Looper (<i>Itame brunneata</i>)	1.0-2.0
Highbush blueberries	Cranberry Fruitworm • Cherry Fruitworm	1.0-2.0
Pome and Stone fruits such as: Apples, Pears, Quince, Prunes, Apricots, Cherries, Nectarine, Peaches, Plums, Prunes Nut Trees such as: Almonds, Filbert, Chestnuts, Walnuts, Pecans	Pandemis Leafroller • European grapevine moth (crymax) • Hickory shuckworm • Citrus cutworm • Navel Oranageworm • Redhumped Caterpillar • Tent Caterpillar • Omnivorous leafroller • Tortix Moth • Peach twig borer • Fruittree leafroller • Gypsy moth • Tufted Apple Budmoth • Fall Webworm • Variegated leafroller • Redbanded Leafroller • Walnut Caterpillar • Coding moth • Cutworms • Filbert Leafroller • Oblique Banded Leafroller • Cankerworms • Fruitworms • Winter moth (Apples only)	1.0-2.0
Citrus	Orangedog • Fruittree Leafroller • Citrus Cutworm • Amorbia	1.0-2.0
Bananas	Banana skipper	1.0-2.0
Tropical Fruits	Hornworms • Leafrollers • Loopers • Omnivorous Looper	1.0-2.0
Kiwi	Omnivorous Leafroller	1.0-2.0
Pineapple	Gummos-Batrachedra commosae (Hodges) • Thecia-Thecia basilides (Geyr)	1.0-2.0
Avocados	Loopers • Orange tortrix • Omnivorous Loopers • Omnivorous leafroller • Spanworm • Amorbia • Cutworms	1.0-2.0
Persimmons, Pomegranate	Fall Webworm • Filbert Webworm • Omnivorous Leafroller • Redhumped Caterpillar • Tent Caterpillar • Citrus Cutworm	1.0-2.0

VI. Flowers, Bedding plants and Ornamentals

Crop	Insect Pest	Application Rate (Pint/acre)
Ornamentals, Flowers, Bedding plants	Armyworm • White marked Tussock Moth • Azalea Moth • Diamondback moth • Elo moth (Hornworm) • Io Moth • Loopers • Oleander Moth • Omnivorous Leafroller • Omnivorous Looper • Tobacco Budworm	1.0-2.0

VII. Greenhouse and Outdoor Nursery Crops

Crop	Insect Pest	Application Rate (Pint/acre)
Ornamental plants, Flowers, Brassicas, Fruiting groups, Vegetable groups, Herbs and Spices, Leafy vegetables	Tomato hornworm • Omnivorous Leafroller • <i>Duponchelia forvealis</i> • <i>Opogona sacchari</i> • Armyworm • <i>Helicoverpa zea</i> • <i>Heliothis virescens</i> • Loopers	1.0-2.0

VIII. Forest, Shade Trees, ornamentals, shrubs and sugar maple trees

Crop	Insect Pest	Application Rate (Pint/acre)
Forest, Shade trees, Ornamentals, Shrubs, Sugar Maple Trees, Ornamental Fruit, Nut and Citrus trees	Gypsy moth • Bagworm • Jackpine Budworm • Fall Spanworm • Elm Spanworm • Eastern Spruce Budworm • Eastern and Western Hamlock • Western Spruce Budworm • Spruce Budworm • Brownail moth • Douglas fir tussock moth • Coneworm • Buck moth • Satin Moth • Tussock Moths • Pine butterfly • Loopers • Orangestriped oakworm • Blackheaded budworm • Saddled prominent • Saddleback caterpillar • Leafrollers • Tortrix Moth • Mimosa webworm • Tent Caterpillar • Forest tent Caterpillar • Greenstriped mapleworm • Redhumped Caterpillar • Spring and Fall Cankerworm • California Oakworm • Fall Webworm • Eastern Tent Caterpillar • Oakmoth larvae	1.0-2.0

WARRANTY DISCLAIMER

TO THE EXTENT PERMITTED BY APPLICABLE LAW, VESTARON CORPORATION MAKES NO WARRANTY, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE CONCERNING USE OF THE PRODUCT.



For Control of Lepidopterans

Biological Insecticide

Active Ingredient: GS-omega/kappa-Hxtx-Hv 1a 2.0%
Other Ingredients: 98.0%
TOTAL: 100.0%

KEEP OUT OF REACH OF CHILDREN
CAUTION

See attached booklet for additional Precautionary Statements,
Directions for Use, and Warranty Disclaimer

FIRST AID

Table with 2 columns: Category (If in eyes, If on skin or clothing) and Description of first aid steps.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals - CAUTION. Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wear protective eyewear and waterproof gloves.

STORAGE AND DISPOSAL

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

Table with 2 columns: Category (Pesticide Storage, Pesticide Disposal, Container Handling) and Description of storage and disposal instructions.

www.Vestaron.com
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