

US ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES PROGRAMS
REGISTRATION DIVISION (TS-767)
WASHINGTON, DC 20460

EPA REGISTRATION NO.

DATE OF ISSUANCE
SEP 02 1993

66296-1

TERM OF ISSUANCE

CONDITIONAL

NAME OF PESTICIDE PRODUCT

HEM-H Bt Biological Insecticide
Flowable Concentrate

NOTICE OF PESTICIDE: REGISTRATION
 REREGISTRATION

(Under the Federal Insecticide, Fungicide,
and Rodenticide Act, as amended)

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Lim Laboratories, Inc.
409 E. Main Street
Richmond, VA 23219

NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A) provided that you:

1. Submit/cite all data required for get registration /reregistration of your product under FIFRA section 3(c)(5) or 4(a) when the Agency requires all registrants of similar products to submit such data.

2. Make the following labeling changes listed before you release the product for shipment:

a). Modify the ingredients statement to read as follows.

ACTIVE INGREDIENT:

Bacillus thuringiensis subspecies kurstaki
Potency of 1600 International Units
per milligram* 0.3%

INERT INGREDIENTS: 99.7%

TOTAL 100.0%

*Equivalent to 6.4 Billion International Units per Gallon.

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

ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL

See p 2 + 3

DATE

9-2-93

- b) Add the phrase "EPA Registration No. 66296-1."
- c) Place the actual EPA Establishment Number of where this product is produced on the label.
- d) Modify the point size of the signal word **CAUTION** and the **KEEP OUT OF REACH OF CHILDREN** statement to conform with 40 CFR 156.10(h).
- e) Delete the brackets surrounding the signal word **CAUTION**.
- f) Under your heading **STATEMENTS OF PRACTICAL TREATMENT** on the front panel add the following statements.

If on skin: Wash with plenty of soap and water. Get medical attention.

If inhaled: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

If in Eyes: Flush eyes with plenty of water. Call a physician if irritation persists.
- g) Under your precautionary statements heading add the following text, "Harmful if inhaled or absorbed through skin. Causes moderate eye irritation. Avoid breathing dust (vapor or spray mist). Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash contaminated clothing before reuse."
- h) Modify the statement "Unless specifically specified, do not apply this product through any type of irrigation system." with "Do not apply this product through any type of irrigation system."
- i) Delete the word "specific" before the phrase "for the control of lepidopterous larvae."
- j) Delete the statements "In no event, shall Lim be liable for any incidental or consequential damages resulting from the use of HEM-H Bt including damage to crops or other property, personal injury, business interruption, or loss of profits. Buyer's sole remedy is the exchange and replacement of the product at no charge."

3. Since your manufacturing process, MRID No. 424278-02, lists ferric hydroxide as an unintentional byproduct produced during formulation, you must list this ingredient on your Confidential Statement of Formula (CSF) as an impurity and certify that it is present in your product at less than 0.1%. Submit a revised CSF before you release your product for shipment. Any formulated product containing more than 0.1% ferric hydroxide cannot be released into commerce since this compound is not cleared for food use under 40 CFR 180.1001.

4. Submit within 15 months actual storage stability data performed as described in the 1988 Bacillus thuringiensis Registration Standard. Indicate any observed corrosive activity on plastic and metal containers.

5. Submit five (5) copies of your final printed labeling before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

Note that this acceptance of your product does not relieve you of your obligation to comply with the Worker Protection Standard. If any of your products are covered by this standard, you are required to submit, and receive the Agency's approval by April 21, 1994, a revised label reflecting the required label statements of 40 CFR 156, published in the FEDERAL REGISTER on August 21, 1992 (57FR 38102). Further guidance will be issued. According to 40 CFR 156, subpart K: "No product to which this subpart applies shall be distributed or sold without amended labeling by any registrant after April 21, 1994. Please call 1-800-777-2185 if you have any labeling questions regarding the Worker Protection Standard.

Sincerely,



Phil Hutton
Product Manager 18
Insecticide-Rodenticide Branch
Registration Division (H7505C)

Enclosures

LIM LABORATORIES, INC.
HEM-H Bt
 BIOLOGICAL INSECTICIDE
 FLOWABLE CONCENTRATE
 For Control of Insect Pests of Vegetables,
 Fruit and Field Crops

ACTIVE INGREDIENT:

Bacillus thuringiensis variety kurstaki
 Potency of 3,150 International Units
 per milligram 0.6%

INERT INGREDIENTS: 99.4%

TOTAL 100.00%

*Equivalent to 12 Billion International Units per Gallon

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

<p>KEEP OUT OF REACH OF CHILDREN</p> <p>[C A U T I O N]</p> <p>STATEMENTS OF PRACTICAL TREATMENT</p>	<p>ACCEPTED with COMMENTS in EPA Letter Dated</p> <p style="font-size: 2em; font-weight: bold;">SEP 02 1993</p> <p>Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. <u>66256-1</u></p>
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Lim Laboratories, Inc.
 Crop Protection & Pest Control Products
 409 E. Main Street
 Richmond, VA 23219

EPA REGISTRATION No.
 EPA ESTABLISHMENT No.
 NET CONTENTS 1 quart, 1 gallon, 2 gallons, 5 gallons,
 55 gallons

PRECAUTIONARY STATEMENTS:
HAZARDS TO HUMANS & DOMESTIC ANIMALS
CAUTION

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.

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

HEM-H Bt is a biological insecticide specific for the control of lepidopterous larvae (see Recommended Application Rates section).

HEM-H Bt may be applied for control of any labeled pest in both field and greenhouse uses.

HEM-H Bt attacks the larval gut and must be ingested by the insect to be effective.

MIXING

Always mix **HEM-H Bt** thoroughly before use by shaking or stirring. If using spray adjuvants, add the recommended amounts of the adjuvants to 3/4 volume of the required spray before filling tank. Mix thoroughly. Then add the recommended amount of **HEM-H Bt**. Be sure to maintain agitation. Finally, add the balance of water and agitate until mixed. Be sure to maintain agitation while loading and spraying to prevent the formulation from settling.

When possible, apply earling morning or evening in calm air conditions.

Do not allow dilute sprays to remain in the tank for more than 12 hours. Loss of activity of **HEM-H Bt** may result.

GROUND APPLICATION

Unless otherwise stated, use recommended amount of **HEM-H Bt** in a minimum of 20 gallons of water per acre depending on type of crop and requirements of state regulations.

AERIAL APPLICATION

Use recommended amount of **HEM-H Bt** in at least 5 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.

GENERAL USE INSTRUCTIONS

For most consistent control apply at first sign of newly hatched worms (1st and 2nd instar larvae).

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

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

The pH of the spray solution should be held within a range of 5.2 to 6.8. Use a buffering agent when spray water has a pH exceeding 7.5.

For application on hard-to-wet crops such as cole crops or under heavy dew or rainy conditions, a spreader/sticker approved for use on growing crops should be added to the tank mix to improve coverage and weathering properties.

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RECOMMENDED APPLICATION RATES

VEGETABLE CROPS

CROP	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Artichokes	Artichoke Plume Moth	2	Apply in a minimum of 100 gal. of water per acre with a spray interval of 10 days or less
	Armyworm	2	
	Loopers	2	
Asparagus	Armyworm	1-2	Repeat as necessary to maintain control
Beans (Green, Lima, Mung)			
Broccoli	Diamondback Moth	1	
Brussel Sprouts	Green Cloverworm	1/2-1	
Cabbage	Hornworms	1/2-1	
Cardoon			
Carrots	Imported		
Cauliflower	Cabbageworm	1/2-1	
Celeriac	Loopers	3/4-1 1/2	
Celery			
Chick Peas			
Chinese Broccoli			
Chinese Cabbage	Salt Marsh	1-2	
Collards	Caterpillar		
Cucumbers			
Dry Bulb Onions			
Eggplants	European Corn	1-2	
Garlic	Borer		
Green Onions			
Greens (Dandelion, Turnip, Mustard, Beet, China)			
Herbs (Basil), Cilantro, Dill, Oregano, Thyme, etc.)			
Horseradish			
Kale			
Kohl Rabi			
Leeks			
Lettuce (Endive, Romaine, Head Lettuce, Escarole Butter Crunch, Leaf, etc.)			

RECOMMENDED APPLICATION RATES

VEGETABLE CROPS

CROP	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
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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

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RECOMMENDED APPLICATION RATES

FRUIT, NUT, & VINE CROPS

CROP	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS		
Apples and Pears	Fruittree Leafroller	1-2	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.		
	Gypsy Moth Redbanded Leafroller	1-2			
	Tufted Apple Budmoth	1-2			
	Variegated Leafroller	1-2			
	Omnivorous Leafroller	1-2			
	Tent Caterpillar	1-2		Apply when caterpillars are actively feeding. (2nd-4th) instars).	
	Avocados	Loopers		2	Apply as necessary to maintain control.
		Orange Tortrix		1-2	
Omnivorous Leafroller		1-2	Begin treatment as soon as possible after hatching and before larvae are protected by leaf folds.		
Amorbia		2	Suppression only.		
Bananas	Banana Skipper	1-2	Hawaii only. Use calibrated ground equipment with adequate water to apply to point of runoff.		
Citrus	Citrus Cutworm Fruittree Leafroller	1-2	Use 50-600 gallons of water per acre when using ground equipment and 10 gallons of water minimum per acre by air.		
	Orangedog	1/2-1			
	Amorbia	2		Suppression only.	

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RECOMMENDED APPLICATION RATES

FRUIT, NUT, & VINE CROPS

CROP	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Blueberries	Blueberry	1-2	Apply by ground equipment only. Begin treatment as soon as possible after hatching. For leafrollers, apply before larvae are protected by leaf folds.
Caneberries	Leafroller		
Currants	Cherry Fluitworm	1/2-1	
Kiwi	Fruittree		
	Leadroller		
	Gypsy Moth	1-2	
	Green Fruitworm	1/2-1	
	Loopers	3/4-1 1/2	
	Orange Tortrix	1-2	
	Omnivorous		
	Leafroller	1-2	
Grapes	Grape Leaffolder	1-2	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.
	Grapeleaf		
	Skeletonizers	1-2	
	Omnivorous		
	Leafroller	1-2	
	Orange Tortrix	1-2	
	Saltmarsh		
	Caterpillar	1-2	
Almonds	Fall Webworm	1-2	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 to 4th instar).
Apricots	Filbert Webworm	1-2	
Cherries	Omnivorous		
Filberts	Leafroller	1-2	
Nectarines	Citrus Cutworm	1-2	
Peaches	Redhumped	1-2	
Pecans	Caterpillar	1-2	
Persimmons	Tent Caterpillar	1-2	
Plums			
Ponegranate			
Prunes			
Walnuts			
Melons (Also see Vegetables)	Rindworm Complex	1-2	Apply at first sign of hitch before larvae enter fruit. Repeat as necessary to maintain control.

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RECOMMENDED APPLICATION RATES

FRUIT, NUT, & VINE CROPS

CROP	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Strawberries	Armyworm	2	Apply as necessary maintain control. 20 gallons water minimum /acre when using ground equipment and 5 gallons water minimum per acre by aircraft.
	Gypsy Moth	1-2	
	Looper	3/4-1 1/2	
	Roughskinned	1-2	
	Cutworm	1-2	

RECOMMENDED APPLICATION RATES

FIELD CROPS

CROP	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Alfalfa (Hay and Seed)	Alfalfa Caterpillar	1/2-1	Under conditions of rapid plant growth rapidly increasing armyworm populations (10 worms or greater per 180 degree sweep) use the highest rate. Against heterogenous worm populations, where 4th and 5th instars are present, and continuous egg laying, applications may provide variable control.
Sudan Grass	Armyworm	1 1/2-2	
Hay Crops & Other Forage Crops	Loopers	1-1 1/2	
Small Grains	Armyworm	1 1/2-2	Apply as necessary to maintain control.
Hops	Loopers	3/4-1 1/2	Apply as necessary to maintain control
	Omnivorous Leaftier	1-2	
	Spotted Cutworm	1-2	Begin treatment as soon as possible after hatching and before larvae are protected by leaf folds.
	Oblique Banded Leafroller	1-2	

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RECOMMENDED APPLICATION RATES

FIELD CROPS

CROP	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Canola	Armyworm	1-2	Apply as necessary to maintain control.
	Diamondback Moth	1	
Field Corn Pop Corn Seed Corm	Armyworm	1 1/2-2	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. Aids in control.
	Southwestern Corn Borer	2	
	European Corn Borer	2	
Jojoba	Looper (Anacamptodes spp.)	1-2	Apply in minimum 50 gal. of water per acre by ground equipment or a minimum of 10 gal. of water by aerial equipment. Thorough coverage foliage is essential and dictates the minimum spray volumes necessary.

RECOMMENDED APPLICATION RATES

FIELD CROPS

CROP	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Dry Beans and Peas	Armyworms Green	1-2	Apply as necessary to maintain control.
Lentils	Cloverworm	1/2-1	
Mint			
Peanuts	Loopers	3/4-1 1/2	
Rice	Salt Marsh	1-2	
Safflower	Caterpillar		
Soybeans	Velvetbean	1/2-1	
Sugar Beets	Caterpillar		
Sunflower	Heliothis spp. Cutworm	2 1-2	Suppression only
Tobacco	Looper Tobacco Hornworm Tobacco Budworm	3/4-1 1/2 1/2-1 2	Apply as necessary to maintain control. Suppression only

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RECOMMENDED APPLICATION RATES

COTTON - Except Arizona and California

TIMING	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Early	Bollworm Tobacco Budworm	1-2	For early season management of <u>Heliothis</u> species. Initiate applications when 50% of plants are at pinhead square cotton stage, independent of <u>Heliothis</u> egg and larval counts, or at 1st egg lay, whichever occurs earlier. Continue applications on 5-day spray interval.

RECOMMENDED APPLICATION RATES

COTTON

TIMING	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Early and Mid-Season	Armyworm	2	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, HEM-H Bt 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 HEM-H BT may not provide adequate control.
	Cotton Leaf Perforator	1-2	
	Cotton Leafworm	1-2	
	Loopers	1-2	
	Saltmarsh Caterpillar	1-2	
	Bollworm	1-2	For the suppression of light to moderate infestations, apply at first sign of egg laying or newly hatched worms (1st instar larvae).
	Tobacco Budworm	1-2	

RECOMMENDED APPLICATION RATES

SHADE TREES, ORNAMENTALS (Including Roses)

PESTS	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Spring and Fall Cankerworm Elm Spanworm Test Caterpillar Gypsy	1/2-1 1/2-1 1/2-1 1-2	Apply when leaf expansion reaches 40% to 50% as infestation warrants.
Spruce Budworm	1-2	If eggs hatch over a long period of time, or if reinfestation occurs, spray about 14 days after first applications. Apply when most larvae are 3rd-4th instar. Also consider the opening of the bud cap to ensure foliage exposure.
Jackpine Budworm Douglas Fir Tussock Moth Bagworm California Oak Moth Western Tussock Moth Fruit Tree Leafroller Mimosa Webworm Redhumped Caterpillar Fall Webworm Armyworm	1/2-1 1/2-1 1/2-1 1/2-1 1/2-1 1/2-1 1/2-1 1/4-3/4 1/4-1/2 2	Apply after eggs have hatched and early instar larvae are feeding on exposed foliage.
<u>TURF AND GRASS SEED PRODUCTION</u>		
Tropical Sodwebworm Armyworm Sodwebworm	2 2 2	Repeat as necessary throughout season to maintain control.

S T O R A G E A N D
D I S P O S A L

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 temperature above 90° F may impair effectiveness.

DISPOSAL

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL

Glass Containers: Triple rinse container. Then dispose of in a sanitary landfill or by other approved State and local procedures.

Metal Containers: Triple rinse container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

Plastic Containers: Triple rinse container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

WARRANTY

Lim warrants that its **HEM-H Bt** contains the ingredients listed on this label. Lim makes no other warranties, expressed or implied. Including without limitation, any warranty of merchantability or fitness for a particular purpose. In no event, shall Lim be liable for any incidental or consequential damages resulting from the use of **HEM-H Bt** including damage to crops or other property, personal injury, business interruption, or loss of profits. Buyer's sole remedy is the exchange and replacement of the product at no charge.