

Group 11 Insecticide

Thuricide 48LV
BIOLOGICAL INSECTICIDE
RESTRICTED
AQUEOUS CONCENTRATE FOR AERIAL OR GROUND APPLICATION

READ THE LABEL BEFORE USING

GUARANTEE:

Bacillus thuringiensis subspecies *kurstaki* strain SA 12 12,000 IU per mg*

*Equivalent to 12.7 Billion International Units per litre.

KEEP OUT OF REACH OF CHILDREN

Potential Sensitizer

Store out of direct sunlight at temperatures between 0° C and 25°.

Protect from freezing

REGISTRATION NO.: 17980
PEST CONTROL PRODUCTS ACT

LOT NO.

NET CONTENTS: 189.25 L

DATE OF MANUFACTURE:

Use within 6 months of date of manufacture

Registrant:

Valent BioSciences LLC
1910 Innovation Way, Suite 100
Libertyville, Illinois 60048
USA 1-800-323-9597

Canadian Agent:

Valent Canada, Inc.
201-230 Hanlon Creek Blvd
Guelph, Ontario N1C 0A1

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN

May cause sensitization. Avoid contact with skin, eyes or clothing. Wear a long sleeved shirt, long pants, waterproof gloves when handling, mixing/loading or applying the product and during all clean-up/repair activities. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

FIRST AID

IF ON SKIN: Wash with plenty of soap and water.

IF IN EYES: IMMEDIATELY flush eyes with plenty of clean water. Get medical attention if irritation occurs and persists.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION Treat symptomatically.

RESISTANCE MANAGEMENT STATEMENT

For resistance management, please note that THURICIDE 48 LV contains a Group 11 insecticide. Any insect population may contain individuals naturally resistant to THURICIDE 48 LV and other Group 11 insecticides. The resistant individuals may dominate the insect population if this group of insecticides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but are specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance management strategies should be followed.

To delay insecticide resistance:

- Where possible, rotate the use of THURICIDE 48 LV with other Group 11 insecticides with different groups that control the same pests in a field.
- Use tank mixtures with insecticides from a different group when such use is permitted.
- Insecticide use should be based on an IPM program that includes scouting, record keeping, and considers cultural, biological and other chemical control practices.
- Monitor treated pest populations for resistance development.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance contact a Valent BioSciences representative at 1-800-323-9597 or at www.valentbiosciences.com to assist in determining the cause of reduced performance.

GENERAL DIRECTIONS FOR USE:

THURICIDE 48 LV can be applied either alone or as a spray mix diluted with water. If diluting with water, pour the recommended amount of THURICIDE 48 LV into the required volume of water in the spray tank. Agitate as necessary to maintain suspension. Do not allow diluted sprays to remain in the tank for more than 24 hours. Use only the amount of water necessary to ensure uniform deposit. Use the higher recommended rates against heavy worm infestations. The higher rate also generally provides more consistent results when weather conditions are less than optimum. THURICIDE 48 LV is formulated to provide desirable coverage and stickability on leaf surfaces. Additional adjuvants are not required. Do not add any materials not specified on the label to the product spray mixture.

NOTICE TO USER

NATURE OF RESTRICTION

This control product is to be used only in accordance with the directions on this label. It is an offense under the *Pest Control Products Act* to use a control product under unsafe conditions. Contact local pesticide regulatory authorities about use permits, which may be required.

RESTRICTED USES

FORESTS, WOODLANDS AND RESIDENTIAL AREAS

Aerial Application:

Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.

Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for

aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

Use Precautions:

Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in the *Basic Knowledge Requirements for Pesticide Education in Canada: Applicator Core and Aerial Module*, developed by CAPCO. Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified buffer zones should be observed.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Do not apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. Do not spray when wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

Operator Precautions:

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

Product Specific Precautions:

Read and understand the entire label before opening this product. If you have questions, call the distributor at 1-800-323-9597 or obtain technical advice from your provincial agricultural representative. Application of this specific product must meet and/or conform to the following:

Volume: Apply the recommended rate in a minimum spray volume of 1.0 litre per hectare.

Application Rates for THURICIDE® 48 LV:

THURICIDE 48 LV should be applied undiluted by aerial application equipment. Dilute with minimal quantities of water only when required to improve deposit. Best results can be expected when THURICIDE 48 LV is applied to dry foliage with calibrated aircraft capable of obtaining droplet sizes below 300 microns and

preferably in the range of 50-150 microns. If dilution is necessary fill the mix tank or plane hopper with the desired quantity of water. Start the mechanical or hydraulic agitation to provide moderate circulation before adding THURICIDE 48 LV. Add the recommended rate of THURICIDE 48 LV to the tank or plane hopper and agitate until uniformly suspended. Do not mix more THURICIDE 48 LV than can be used within a 24 hour period. If using undiluted product, continual mixing is not necessary and should be avoided. Thorough coverage is essential when using THURICIDE 48 LV. Federal or Provincial officials may recommend inclusion of either an oil or water soluble dye for purposes of recording spray deposit.

Forestry Use: Ground/Aerial application for sites greater than 500 ha.

Woodlands Use: Aerial application for sites 500 ha or less.

Residential Use: Aerial applications for treatment of residential and industrial areas and municipal recreational areas (including parks, parklands, vacant lots, shelter belts and rights-of way under municipal jurisdiction) by fixed wing or rotary wing (helicopter) aircraft. Consult regional office of Transport Canada regarding air regulations for forestry, urban or residential applications.

Dose Rates for Aerial Application

Pest	BIU's Per Hectare	Litres Per Hectare
Bagworm	20-30	1.60-2.40
Elm Spanworm	20-30	1.60-2.40
Fall Spanworm	20-30	1.60-2.40
Gypsy Moth*	30-50	2.40-4.00
Spring & Fall Cankerworm	12-20	1.00-1.60
Eastern Spruce Budworm**	20-30	1.60-2.40
Western Spruce Budworm**	30-40	2.40-3.10
Jack Pine Budworm**	20-30	1.60-2.40
Forest Tent Caterpillar	12-20	1.00-1.60

*For gypsy moth, treat when larvae are in 2nd and 3rd instar and leaf expansion reaches 40-50%. When egg hatch is extended or if reinfestation occurs, 2 or more applications, 7-10 days apart, may be required.

**For control of spruce and jack pine budworms, if larval densities are high, repeat spray 3-5 days later. Apply soon after the fir or jack pine buds have opened, at peak 4th instar. For spruce budworm, if the forest stand contains a significant number of spruce in addition to fir, a second application may be necessary after the spruce buds have opened.

Ground Application: Use adequate water to obtain good foliar coverage. Wet foliage thoroughly but not to the point of excessive run-off. Apply the recommended per hectare rates of THURICIDE 48 LV with the following suggested amounts of water: 1000 litres with high gallonage hydraulic sprayers, 100 litres with mist blowers.

Pest	Crop	BIU's Per Hectare	Litres Per Hectare
Bagworm	Ornamental, Shade Trees,	20-30	1.60-2.40
Elm Spanworm	Balsam fir and	20-30	1.60-2.40
Fall Spanworm	Spruce in Christmas	20-30	1.60-2.40
Gypsy Moth*	Tree Plantations,	30-50	2.40-4.00
Spring & Fall Cankerworm	Tree nurseries, Farm woodlots	12-20	1.00-1.60
Eastern Spruce Budworm**	Municipal parks,	20-30	1.60-2.40
Western Spruce Budworm**	Rights of way,	30-40	2.40-3.10
Jack Pine Budworm**	Cottage and urban areas	20-30	1.60-2.40
Forest Tent Caterpillar		12-20	1.00-1.60

STORAGE

Store out of direct sunlight at temperatures between 0° C and 25° C. Cooler storage temperatures are preferred. Keep container tightly closed. Store container upright and keep tightly closed when not in use. After extended storage, shake or stir contents to assure a uniform suspension. Use product within 6 months of date of manufacture.

DISPOSAL

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instruction for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL, FIRE OR POISONING
CALL 1-800-255-3924.

THURICIDE® 48 LV is a registered trademark of Certis USA

NOTICE TO BUYER:

Seller's guarantee shall be limited to the terms set out on the label and, subject thereto, the buyer assumes the risk to persons or property arising from the use or handling of this product and accepts the product on that condition.