

((Container Label))

Low Volume
Aqueous Concentrate

Foray 48BA

For Use On Agricultural Crops, Forests, Woodlands, Ornamental and Other Treed Areas

COMMERCIAL

READ THE LABEL AND BROCHURE BEFORE USING
KEEP OUT OF REACH OF CHILDREN
POTENTIAL SENSITIZER

GUARANTEE:

Bacillus thuringiensis subspecies *kurstaki*, Strain HD-1.

Potency: 10,600 International Units per mg, equivalent to 12.7 Billion International Units (BIU) per litre. Warning, contains the allergen sulfites. □

REGISTRATION NO. 24978 PEST CONTROL PRODUCTS ACT

Net Contents:

Registrant:
Valent BIOSCIENCES Corporation
870 Technology Way
Libertyville, IL 6004
U.S.A.

Canadian Agent:
Valent BioSciences Canada, Ltd.
40 King Street West, Suite 2100
Toronto, Ontario M5H 3C2 CANADA

Lot No.

Best Before:

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 cleanup/repair activities. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

FIRST AID:

IF SWALLOWED:

Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

IF ON SKIN/CLOTHING:

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice. Take off contaminated clothing.

IF INHALED: 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.

IF IN EYES: 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 centre or doctor for treatment advice.

GENERAL: Seek medical attention immediately if irritation or signs of toxicity occur and persist or are severe. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION:

Treat symptomatically.

STORAGE:

Store at temperatures below 25°C. Store container upright and keep tightly closed when not in use. After extended storage, vigorously shake or stir contents to assure a uniform suspension. This product should be used prior to the best before date indicated on this label.

DISPOSAL:

Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

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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.

NOTICE TO USER:

This pest 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 this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

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GENERAL DIRECTIONS FOR USE:

Foray 48BA contains the spores and insecticidal crystals of a naturally occurring strain of *Bacillus thuringiensis* sub-species *kurstaki*.

Foray 48BA is highly specific to some lepidopteran larvae. It is a stomach poison only and therefore must be ingested by the larvae to be effective. After ingestion of a sufficient dose, feeding ceases and death will follow in 2-5 days.

In general, larvae should be treated when they are newly hatched and actively feeding. Young larvae (early instars) are most susceptible to the effects of *Bacillus thuringiensis* sub-species *kurstaki* and less damage will have been caused by larval feeding. Thorough spray coverage with well-distributed deposits of Foray

48BA is necessary to assure that the feeding larvae ingest a toxic dose.

Foray 48BA is a water based formulation which may be applied diluted with clean water. Dilute with minimal quantities of water required to improve deposit. Do not use petroleum-based solvents. Foray 48BA does not settle out rapidly, so continual agitation is not recommended and should be avoided. Use diluted mixture of Foray 48BA within 72 hours of mixing and recirculate mixture before loading and/or application.

Even though Foray 48BA deposits are relatively resistant to wash-off, avoid application when significant rainfall is imminent.

For early morning applications, foliage should not be wet with dew to the point of runoff.

FORESTRY, WOODLAND AND ORNAMENTAL USE:

Consult with recognized forest pest control authority or Valent BioSciences Corporation representative regarding appropriate timing and method of application. The timing and number of applications required for effective control will depend upon foliage development and larval activity. For effective control, applications should coincide with sufficient foliage development (shoot elongation or leaf expansion) to ensure maximum spray deposit. To the extent possible, apply treatments after egg hatch has been completed to assure that the maximum number of larvae are present during the treatment period. If Foray 48BA is applied to later larval instars and/or extremely high larval populations, use the higher label rates and/or additional applications.

To control eastern spruce budworm, treat prior to 5th instar larval development and when bud flush/shoot development is sufficient to allow good deposit on emerging needles. For consistently acceptable control of western spruce budworm, higher rates and volumes of spray may be required to achieve deposits in mountainous terrain.

Treat against gypsy moth when larvae are 2nd and 3rd instar and when leaf expansion is 40-50%; when egg hatch is extended, 2 or more applications, 7-10 days apart may be required.

For best control of eastern hemlock looper, apply when larvae are young (early instars) before extensive damage occurs and/or when a majority of buds flushed or shed bud caps. Repeat applications at intervals to maintain control, usually 3-14 days depending on larval growth and weather. If control is sought with a single spray, wait until egg hatch is essentially complete.

To control Whitemarked Tussock Moth in conifers, apply first at peak second instar, then make a second application 2-5 days later.

GROUND APPLICATION:

With ground equipment, provide thorough coverage while minimizing runoff. Dilute Foray 48BA only to provide sufficient volume for thorough coverage.

For mist blower applications, add the recommended volume of Foray 48BA to water, at a mix ratio ranging from 1:20 to 1:50. Do not exceed 150 litres/hectare total mixture. For high volume hydraulic sprayers, add the recommended volume of Foray 48BA to water at a mix ratio from 1:50 to 1:500. Do not exceed 1500 litres/hectare total mixture.

RESTRICTED USES: FORESTS, WOODLANDS AND RESIDENTIAL AREAS

NOTICE TO USER: This control product is to be 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.

NATURE OF RESTRICTION: This product is to be used only in the manner authorized. Consult local pesticide regulatory authorities about use permits which may be required.

FORESTRY USE: Ground/Aerial Application for sites greater than 500 ha.

WOODLANDS USE: Aerial Application for sites 500 ha. or less.

RESIDENTIAL USE: Aerial Application.

Consult local Transport Canada office regarding air regulations for urban and/or forestry applications. Foray 48BA may be used for aerial application in urban areas for treatment of residential areas and municipal recreational areas (including parks, parkland, vacant lots, shelter belts, and right of way under municipal jurisdiction).

Undiluted applications are recommended for most labelled pests, however, Foray 48BA may be diluted with water and applied at the rates indicated in the dose rates table. Total volume of spray material to be applied per hectare depends upon target pest, target foliage, weather, spray equipment and droplet size. Recommended droplet size spectra are from 30-80 microns for coniferous foliage and 50-150 microns for broadleaf foliage.

DOSE RATES: AERIAL AND GROUND APPLICATION¹

FORESTS, WOODLANDS, ORNAMENTALS AND OTHER TREED AREAS

Target Insect	RATE (Liters/hectare)	DOSE (BIU/hectare)
Eastern Spruce Budworm	1.6-2.4	20-30
Western Spruce Budworm	2.4-3.1	30-40
Gypsy Moth	2.4-4.0	30-50
Jackpine Budworm	1.6-2.4	20-30
Forest Tent Caterpillar	1.0-1.6	12-20
Spring & Fall Cankerworm	1.0-1.6	12-20
Eastern Hemlock Looper	2.4-3.2	30-40
Satin Moth	4.0	50
Whitemarked Tussock Moth	4.0	50

¹ See Restricted Uses for aerial application to forests, woodlands and residential areas, and ground application to forests.

AGRICULTURAL USES

ORCHARD CROPS: Foray 48BA should be applied when trees are in full bloom and at petal fall. Apply the label rates of Foray 48BA in sufficient volume of water to achieve thorough coverage and good deposit throughout the orchard canopy. With ground equipment, provide thorough coverage while minimizing runoff. Dilute Foray 48BA only to provide sufficient volume for thorough coverage. Sticker spreaders are not needed when using Foray 48BA. In a conventional orchard apply in approximately 600 litres/ hectare of water with an air blast sprayer. For high volume sprayers, add the recommended volume of Foray 48BA to water at a mix ratio ranging from 1:50 to 1:500. Do not exceed 1500 litres/hectare total mixture.

For spindle plantings and dwarf trees, volume and application equipment must be adjusted accordingly. Consult an appropriate orchard pest management guide for further details regarding Tree Row Volume (TRV) applications.

RASPBERRY: Apply in a maximum of 600 litres water/hectare; begin application at prebloom and bloom at first signs of larval infestation.

GREENHOUSES: Foray 48BA is most active against young larvae of the cabbage looper. Apply at the first signs of larval infestations. Repeat applications as necessary to maintain control of young larvae. The exact timing and number of applications will depend on foliage development and larval activity, (including extent of egg hatch, stage of larval development and population pressure).

CROP/SITE	PEST	RATE	DOSE/COMMENTS
Apples and Pears	Early season leaf-rollers (oblique-banded, three-lined, fruit-tree and European)	2.8-4.0 Litres/hectare	36-50 BUI/hectare
Blueberry	Whitemarked Tussock Moth	50 BIU/ha (4L product/ha)	Make two applications. Apply first at peak of second instar development. Make second application 2-5 days later. Use aerial, ground or mist blower application.
Raspberry	Early season oblique-banded leaf-roller	1.4-2.8 Litres/hectare	18-36 BIU/hectare
Greenhouse (peppers, lettuce cucumbers and tomatoes)	Cabbage looper	0.6-1.8 L/ha (60-180 mL/1000 sq.m)	Apply using a high volume spray. Apply at 10 day intervals when looper first appear. Use in 500-1000 L water/ha.

Ornamental Urban Trees	Whitemarked Tussock Moth	50 BIU/ha (4L product/ha)	Apply a maximum of two (2) applications per year. Make first application when Whitemarked tussock moth is in the second larval stage of development. Make second application 2-5 days later.
			Use ground application (mist blower or hydraulic sprayer) only.

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