

2020-08-25
Sub.No. 2020-3528

Foray® WG
Biological Insecticide
Water Dispersible Granule

COMMERCIAL

GUARANTEE:

Bacillus thuringiensis, subsp. *kurstaki*, strain ABTS-351,
fermentation solids, spores, and insecticidal toxins*76.2%

*Potency: 64,000 Cabbage Looper Units (CLU)/mg of product

The percent active ingredient does not indicate product performance and potency measurements are not federally standardized.

REGISTRATION NO. 30026
PEST CONTROL PRODUCTS ACT

POTENTIAL SENSITIZER
CAUTION EYE IRRITANT
READ THE LABEL BEFORE USING

Lot No.
Net Contents:

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

CAUTION EYE IRRITANT

Avoid contact with skin, eyes, and clothing. Avoid breathing dust/spray mist. Wear a long sleeved shirt, long pants, waterproof gloves, shoes and socks, eye goggles and NIOSH-approved respirator with any N-95, R-95, or P-95 filter for biological products when handling, mixing/loading or applying the product and during all clean-up/repair activities. When applicators use close systems (e.g. enclosed cabs) the personal protective equipment requirements may be reduced or modified. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

FIRST AID	
If on skin or clothing	Rinse skin immediately with plenty of water. Remove contaminated clothing and wash separately before reuse. If irritation occurs and persists or is severe, seek medical attention.
If in eyes	Hold eye open and rinse slowly and gently with water. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. If irritation occurs and persists or is severe, seek medical attention.
If inhaled	Move person to fresh air, apply respiration if needed and seek medical attention.
If swallowed	Rinse mouth and throat with copious amounts of water. DO NOT induce vomiting. Promptly contact a physician or poison control centre. DO NOT give anything by mouth to an unconscious person.
General	Seek medical attention if irritation or signs of toxicity occur and persist or is severe. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION:

Treat symptomatically.

STORAGE

In order to ensure microbial purity and potency, Foray WG should be stored in the original container at temperatures below 25°C and used within 24 months of the date of manufacture.

DISPOSAL:

Nonrefillable container. Do not reuse or refill this container.

Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for

10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling, if available or puncture and dispose of the container in a sanitary landfill, or by other procedures approved by provincial and local authorities.

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.

GENERAL DIRECTIONS FOR USE:

DO NOT apply this product through any type of irrigation system.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes. As this pesticide is not registered for control of pests in aquatic systems, DO NOT use to control aquatic pests.

DO NOT allow spray mixture to stand in the tank for more than 18 hours. Recirculate mixture before loading and/or application.

Foray WG contains the spores and insecticidal crystals of a naturally occurring strain of *Bacillus thuringiensis* subspecies *kurstaki*.

Foray WG 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. Young larvae (early instars) are most susceptible to the effects of *Bacillus thuringiensis* subspecies *kurstaki* and less damage will have been caused by larval feeding. Larvae must be feeding actively when treatments are made since ingestion is necessary for effective results. The direct target for application is the foliage, buds, and flowers (objects of larval feeding). Thorough spray coverage with well-distributed deposits of Foray WG is necessary to assure that the feeding larvae ingest a toxic dose.

Foray WG is a water dispersal granule formulation which may be diluted when applied with enough clean water to ensure uniform deposition. Dilute with minimal quantities of water only when required to improve spray deposit. Do not use petroleum-based solvents. Use the diluted mixture of Foray WG within 12 hours of mixing and recirculate the mixture prior to loading and/or application.

Even though Foray WG spray deposit is 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.

Consult with recognized forest pest control authority or Valent BioSciences LLC representative regarding appropriate timing and method of application. The timing and number of applications required for control will depend upon foliage development and larval activity. 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 is present during the treatment period. If Foray WG is applied to later larval instars and/or extremely high larval populations, use the higher label rates and/or additional applications.

GROUND APPLICATION:

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

For mist blower applications, add the recommended amount of Foray WG to enough water not exceed 150 litres/hectare total mixture.

For high volume hydraulic sprayers, add the recommended amount of Foray WG to enough water not exceed 1500 litres/hectare total mixture.

AERIAL APPLICATION INSTRUCTIONS:

Apply only by fixed-wing or rotary aircraft equipment that 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. 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 by using appropriate marking devices and/or electronic guidance equipment.

Use Precautions:

Apply only when meteorological conditions at the treatment site allow for complete and even coverage. Apply only when meteorological conditions are in compliance with local and /or provincial authorities.

Operator Precautions:

DO NOT allow the pilot to mix product to be loaded onto the aircraft. However, loading of premixed product with a closed system is permitted. It is desirable that the pilot has communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear the personal protective equipment described in the PRECAUTIONS section of this label. When handlers/loaders use closed systems to load product onto the aircraft, the handler requirement for a NIOSH- approved respirator with any N-95, R-95, or P-95 filter for biological products may be waived. When reduced personal protective equipment is worn, the respirator/mask must be immediately available for use in an emergency such as a spill or equipment breakdown.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing must be washed before reuse. Decontaminate aircraft cockpit and vehicle cabs if contamination occurs.

Product Precautions:

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

RESTRICTED USES: FORESTS, WOODLANDS AND RESIDENTIAL WOODED AREAS

NOTICE TO USER: This pest control product is to be used only in accordance with the directions on the label. It is an offence 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.

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 the local Transport Canada office regarding air regulations for aerial applications in urban and/or forestry applications. This product may be used for aerial application in urban areas for treatment of residential areas and municipal recreation areas (including parks, parkland, vacant lots, shelterbelts and rights of way under municipal jurisdiction).

Foray WG Biological Insecticide Water Dispersible Granule should be diluted with water and applied at the rates indicated in the dose rate 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 APPLICATION ¹

Target Insect	Rate kg product/ hectare*	Dose CLU/hectare	Application Directions
Eastern Spruce Budworm	0.24 – 0.47 ²	15 – 30	Treat prior to 5 th instar larval development and when bud flush/shoot development is sufficient to allow good spray deposit on emerging needles. Up to two applications per year may be required.
Western Spruce Budworm	0.47 – 0.63	30 – 40	Higher rates and volumes of spray may be required to achieve satisfactory deposit in mountainous terrain. Up to two applications per year may be required.
Gypsy Moth	0.47 – 0.78	30 – 50	Treat when larvae are in 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.

Target Insect	Rate kg product/hectare*	Dose CLU/hectare	Application Direction
Jackpine Budworm	0.31 – 0.94	20 – 60	If 2 applications are required, repeat at 3 – 14 day interval. Use the high rate for very large larval populations.
Eastern Hemlock Looper	0.47 – 0.63	30 – 40	Apply when larvae are young (early instars) before extensive damage occurs and/or when a majority of buds have flushed or shed bud caps. Make either 2 applications at a low rate or 1 application at a high rate. If 2 applications are required, repeat applications at 3-14 day interval. For a single application apply after 100% egg hatch.
Whitemarked Tussock Moth	0.47 – 0.78	30 – 50	Make the first application at late egg emergence and follow up with a second application 5-7 days later.
Forest Tent Caterpillar	0.19 – 0.31 ²	12 – 20	Apply Foray WG when larvae are approximately 1.3 cm in length and when leaves of deciduous trees are approximately 50 % expanded; if necessary repeat application in 7 - 10 days.
Eastern Blackheaded Budworm	0.47 – 0.94	30 - 60	Make either 2 applications at the low rate or 1 application at the high rate. For 2 applications make the first application at the late egg hatch stage and follow up with a second application 3-7 days later. For a single application , apply after 100% egg hatch

* For dilution use minimum of 4 litre of water per kg of product.

¹ See the RESTRICTED USES section of this label for aerial application to forests, woodlands and residential areas, and ground application to forests.

² For control of Forest tent caterpillar or Eastern spruce budworm at lower rates and volumes (less than or equal (less than 1 litre/hectare; 20 BIU/ha), foray WG must be applied using enhanced atomization in order to ensure generation of sufficient spray droplets for impingement on conifer foliage (balsam fir, black spruce). This requires use of Micronaire AU4000 atomizers with appropriate flow rate (2 L/min/head or less) and blade angle settings to ensure a minimum rotation of 9000 rpm.

RESISTANCE MANAGEMENT RECOMMENDATIONS:

For resistance management, please note that FORAY WG contains a Group 11 insecticide. Any insect population may contain individuals naturally resistant to FORAY WG 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 FORAY WG or 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.
- 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.
- **Monitor:** Monitor efficacy of FORAY WG and other Group 11 insecticides used against the targeted pest(s) and record other factors that may influence insecticide performance and/or pest development.
- **Reporting:** If a Group 11 target site insecticide, such as FORAY WG, appears to be less or no longer effective against a pest that it previously controlled or suppressed, contact a Valent BioSciences LLC representative at 1-800-323-9597 or at www.valentbiosciences.com to assist in determining the cause of reduced performance.

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