

MASTER LABEL

grubHALT!  
Biological Insecticide Granule

Live Organism

Natural Active Ingredient\*

DOMESTIC

Controls Listed Beetle Grubs in Turf and Ornamentals

READ THE LABEL BEFORE USING  
KEEP OUT OF REACH OF CHILDREN

ACTIVE INGREDIENT: *Bacillus thuringiensis* subsp. *galleriae* strain SDS-502 –  $1 \times 10^9$   
CFU/g

REGISTRATION NO.: 33316 PEST CONTROL PRODUCTS ACT

CAUTION SKIN IRRITANT  
POTENTIAL SENSITIZER

NET CONTENTS: 500 g- 10 kg

Date of Manufacture

Phyllom BioProducts Corporation  
484 Lake Park Avenue #23  
Oakland, CA 94610  
(650) 322-5000  
info@phyllom.com

*\*If used inappropriately, any pest control product, including those with natural ingredients, may have health, safety or environmental risks: use this product only in accordance with label instructions.*

## **PRODUCT USE INFORMATION**

**grubHALT!** is a beetle specific biological insecticide. When applied at label rates, it is active against grubs (larvae) of the annual bluegrass weevil, Asiatic garden beetle, black turfgrass ataenius, European chafer, green June beetle, Japanese beetle, May or June beetles, northern masked chafer, oriental beetle and southern masked chafer.

Rainfall or watering causes the active ingredient of **grubHALT!**, *Bacillus thuringiensis* (*Bt*) subspecies *galleriae* strain SDS-502, to be released from the granule. Once released, *Bt* subspecies *galleriae* strain SDS-502 is carried into the soil and root zone of turf and ornamentals. In the soil, **grubHALT!** will control beetle grubs upon ingestion of *Bt* subspecies *galleriae* strain SDS-502. Mortality varies with grub size (larval instar), species, and dose of active ingredient consumed.

## **DIRECTIONS FOR USE**

**grubHALT!** is for control of listed beetle grubs and to prevent their damage to residential lawns and ornamental landscape plants.

DO NOT apply to any body of water.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

Avoid application of this product when winds are gusty.

## **APPLICATION TO TURF GRASS**

**Sites of Application:** **grubHALT!** can be used for applications to residential lawns.

**grubHALT!** is not known to be phytotoxic to any turf grass species.

**Application Methods:** Apply **grubHALT!** as a broadcast application to turf grass for control of listed beetle grubs and to prevent their damage to turf grasses. With calibrated granular equipment, uniformly broadcast **grubHALT!** over the area being treated. Maintain adequate soil moisture before and after application for optimum control of insect pests and healthy turf grass growth. Excessively wet or dry conditions may impact the performance of **grubHALT!** against beetle grubs. **grubHALT!** must move to the site of infestation, such as in the root zone of the host plant.

Watering of about 1.25 cm or moderate rainfall shortly after application improves performance for all applications by moving **grubHALT!** into the root zone where the grubs feed. Do not mow the turf until the treated area has been irrigated or moderate rainfall has occurred so that granules are not removed from the treated area.

**Spreader Settings for grubHALT!:** Spreader settings are influenced by factors such as speed, equipment wear, and condition of spreader, but mainly by the type or brand of spreader. Use the adjustment chart provided with the kind of spreader used as a guide to establish accurate calibration of your spreader and to properly apply **grubHALT!** at label rates. Spreaders may also be calibrated by collecting deposited granules on a plastic sheet and comparing the amount of **grubHALT!** applied on a given area with spreader adjustment settings.

**Application Timing: grubHALT!** is effective when applied at label rates (see table directly below) to control the listed beetle grubs and prevent their damage to turf. Apply **grubHALT!** when target insect pests are present. For optimum control, apply **grubHALT!** from adult flight through egg hatch of the primary insect pest species being targeted. For specific information about developmental stages of the target insect pest, associated damage, and action thresholds to properly time applications, consult with local horticultural specialists.

<b>Insect Pests</b>	<b>Application Timing of grubHALT! to Turf Grass</b>	<b>Application Rate of grubHALT! to Turf Grass</b>
<p><b>Larvae (grubs) of:</b>            Asiatic garden beetle            Black turfgrass            ataenius            European chafer            Green June beetle            Japanese beetle            May or June beetles            Northern masked            chafer            Oriental beetle            Southern masked            chafer</p>	<p>Apply when the insect pest species being targeted are present.             For optimum control, apply from adult flight to egg hatch of the primary insect pest species being targeted.             Additional applications may be made no earlier than 7 days after the preceding application as long as the annual maximum of 3.36 kg of <b>grubHALT!</b> per 100 square metres is not exceeded..</p>	<p>Apply 1.12 kg to 1.68 kg of <b>grubHALT!</b> per 100 square metres of turf grass.             Do not apply more than 3.36 kg of <b>grubHALT!</b> per 100 square metres of turf grass per year.</p>
<p>Annual bluegrass weevil larvae</p>	<p>For annual bluegrass weevil, target applications when or soon after larvae emerge from stems.</p>	

**Note:** For turf grass with heavy thatch (more than 2 cm), use the higher rates within the specified rate range.

**APPLICATION TO LANDSCAPE ORNAMENTAL PLANTS**

**Sites of Application:** **grubHALT!** can be used for applications to landscape ornamental

planted areas.

**grubHALT!** is not known to be phytotoxic to any ornamental species.

**Application Methods:** Apply **grubHALT!** as a broadcast application to soil for control of listed beetle grubs and to prevent damage to ornamental plant roots. With calibrated granular equipment, uniformly broadcast **grubHALT!** over the soil in the area being treated. Use the adjustment chart provided with the kind of spreader used as a guide to establish accurate calibration of your spreader and to properly apply **grubHALT!** at label rates. Maintain adequate soil moisture before and after application for optimum control of insect pests and healthy ornamental plant growth. Excessively wet or dry conditions may impact the performance of **grubHALT!** against beetle grubs.

**grubHALT!** must move to the site of infestation, such as in the root zone of the host plant. Sprinkler irrigation of about 1.25 cm or moderate rainfall shortly after application improves performance for all applications by moving **grubHALT!** into the root zone where the grubs feed.

**Application Timing:** **grubHALT!** is effective when applied at label rates (see table directly below) to control the listed beetle grubs and prevent their damage to ornamental plants. Apply **grubHALT!** in April and early May to control overwintering larvae and late July to early August to control newly hatched larvae. For optimum control, apply **grubHALT!** from peak adult flight through peak egg hatch of the primary insect pest species being targeted. For specific information about developmental stages of the target insect pest, associated damage, and action thresholds to properly time applications, consult with local horticultural specialists.

<b>Insect Pests</b>	<b>Application Timing of grubHALT! to Landscape Ornamental Plants</b>	<b>Application Rate of grubHALT! to Landscape Ornamental Plants</b>
<b>Larvae (grubs) of:</b> Asiatic garden beetle European chafer Green June beetle Japanese beetle May or June beetles Northern masked chafer Oriental beetle Southern masked chafer	Apply when the insect pest species being targeted are present.  For optimum control, apply from adult flight to egg hatch of the primary insect pest species being targeted.  Additional applications may be made no earlier than 7 days after the preceding application as long as the annual maximum of 3.36 kg of <b>grubHALT!</b> per 100 square metres is not exceeded.	Apply 1.12 kg to 1.68 kg of <b>grubHALT!</b> per 100 square metres of ornamental plants.  Do not apply more than 3.36 kg of <b>grubHALT!</b> per 100 square metres on landscape ornamental plants per year.

**Application Rates:** grubHALT! is to be applied to turf and ornamentals at the rate ranges on the label. The product is to be irrigated into the soil profile to perform well and to prevent point of contact of product with people, pets and beneficial surface insects such as bees. The low rate can be used at the time, typically late summer or early fall, when newly hatched grub larvae are feeding on the roots of turfgrass and ornamentals. The high rate is to be used if the following is observed in turfgrass: 1). wilted grass blades, followed by brown turf patches or 2). spongy, damaged turf that lifts easily off the soil with possibly the presence of grubs underneath or 3). the presence of secondary foraging damage to the turfgrass or ornamentals by various birds and animals such as crows, skunks, moles, pigs and raccoons which may damage turf and ornamentals in search for grubs.

[marketing copy]

[1.4 kg covers up to 125 m<sup>2</sup> (1,345 sq. ft.)  
 3.08 kg covers up to 275 m<sup>2</sup> (2,960 sq. ft.)  
 5.88 kg covers up to 525 m<sup>2</sup> (5,651 sq. ft.)]

**PRECAUTIONS:** KEEP OUT OF REACH OF CHILDREN. May cause sensitization. May irritate the skin. Avoid contact with skin or clothing. Avoid inhaling/breathing dust. Wash

thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse. Do not re-enter or allow re-entry into treated areas for 4 hours or until dusts have settled.

If used inappropriately, any pest control product, including those with natural ingredients, may have health, safety or environmental risks: use this product only in accordance with label instructions.

#### ENVIRONMENTAL PRECAUTIONS:

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

#### 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 OR 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.

**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. Call a poison control centre or doctor for treatment advice.

**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.

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

**TOXICOLOGICAL INFORMATION:** Treat symptomatically.

**STORAGE:** Keep in original container during storage. Store product in a cool, dry, well-ventilated place. Keep away from direct sunlight, fire or open flame, or other source of heat. Store at temperatures between 4–25°C. Close opened packages tightly. This product should be used within 17 months from the date of manufacture.

To prevent contamination store this product away from food or feed.

**DISPOSAL:** DO NOT reuse the empty containers. Dispose in household garbage. Unused or partially used products should be disposed at provincially or municipally designated hazardous waste disposal sites.