GRUB PATROL

Chafer Grub Killer

Proven to be the most effective nematode for Chafer Grubs

Due to new legislation the use of beneficial nematodes for insect control has increased in recent years. With many control products being taken away from lawn care operators they are being forced to seek out alternative products. Nematodes are the most effective bio-control product left for us in Ontario for Chafer and sod webworm.

> **"Nematodes are the most effective bio-control product left for us in Ontario."**

Nematodes are an all natural living organism and harmless to humans and pets. These microscopic organisms occur naturally in the soil. The life cycle of nematodes consists of eggs, four larval stages and the adults. The third larval stage of the nematode is when they are most effective at controlling targeted insects. They search out susceptible hosts and enter them through the mouth, anus or breathing holes.

Once inside the host is infected with a symbiotic bacteria which causes death to the host within 24-48 hours. Reproduction inside the dead insect releases a new generation of nematodes which disperse in search of further pray.

Grub Patrol is manufactured by Becker Underwood, the world's largest manufacturer of beneficial nematodes. Becker Underwood's Heterorhabditis bacteriophora (Hb) are a patented nematode and are the most effective strain in Canada for chafer grubs (see reference study). At high rates (1.5 billion per acre) there was a 70 – 80% control of chafer as long as conditions were ideal. Together with good cultural practices this is usually enough control to prevent damage from the grubs and secondary damage from wildlife.

Steinernema Carpocapsae are a patented nematode which are the only nematodes found to be effective in Canada for sod web worm.

CHAFER GRUBS

HOW TO USE GRUB PATROL (HB NEMATODES) FOR CHAFER GRUBS:

- Apply to moist lawns during August to end of September when most grubs are in the 1st and 2nd instar. This is when the grub larvae are active and temperatures are between 12 – 25 degrees celcius.
- Best to apply in a light rain, however, watering before and after application is also effective. Avoid direct sunlight. Make sure the lawn does not dry out for at least two weeks after application.
- Do not apply too late in the year as the grubs move further down in the soil and become inactive when the temperatures drop.
- Soil temperatures must be above 12 degrees celcius and the grubs must be near the soil surface. Mix with Soil Life for best results. The nematodes seek out the grubs and attack them by entering natural body openings where they release a bacteria that stops the grub from feeding, and quickly kills it.

MIXING: Stir nematodes into a bucket of water and slowly add to tank water with pump running, leave pump running all day at an idle to oxygenate tank. Remove all screens from sprayer system. Use of cone shaped nozzles is preferable to fan shaped. Mixture should be used within 2-4 hours.

RATES: 1- 1.5 billion – / acre (22 mil/100 m2)

SODWEB WORM

HOW TO USE (STEINERNEMA) FOR SODWEB WORM

- Apply to moist lawns during August to early October 2 weeks after peak flights. This is when the grub larvae are active and temperatures are between 12 – 20 degrees celcius.
- Best to apply in a light rain, however, watering before and after application is also effective. Avoid direct sunlight. Make sure the lawn does not dry out for at least two weeks after application.
- Do not apply too late in the year. Soil temperatures must be above 12 degrees celcius. Mix with Soil Life for best results.

MIXING: Stir nematodes into a bucket of water and slowly add to tank water with pump running, leave pump running all day at an idle to oxygenate tank. Remove all screens from sprayer system. Use of cone shaped nozzles is preferable to fan shaped. Mixture should be used within 2-4 hours.

RATES: 1-2 billion per acre (22 mil /100 m2)

ACTIVE INGREDIENTS:
Insect parasitic nematodes 90%
Other: Inert carrier 10%
Each tray contains a minimum of 250 million nematodes. Four trays (1 billion nematodes) will cover 1 acre.

DO NOT APPLY WITH PESTICIDES.
Nematodes are sold in packages of 250 million. Organisms are impregnated on polymer particles which dissolve in water. Packages must be kept refrigerated until used

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REFERENCE STUDY:
" Feasibility of Using Non-Chemical Methods for control of the European Chafer (Thizotrogus majalis) in Turfgrass" … Carolyn Teasdale, Shannon Buckshaw and Deborah Henderson.
www. Canadanursery.com/Storage/9/485_2003-04-Chafer.pdf.

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