

NemaShield® HB

Biological Control for White Grubs, Cutworms, Leatherjackets

Control root feeding grubs and larvae with an application of NemaShield HB. The beneficial nematodes, *Heterorhabditis bacteriophora*, will actively seek out the grubs and larvae to colonize them. Feeding subsides and the "host" will die with a few days.

NemaShield HB Benefits

- Exempt from EPA regulations; 0-hour REI
- Fast, effective biological control
- Easy and safe to apply

NemaShield HB Targets

White Grubs

- Japanese Beetle (*Popillia japonica*)
- Northern Masked Chafer (*Cyclocephala borealis*)
- Southern Masked Chafer (*Cyclocephala lurida*)
- May/June Beetles (*Phyllophaga spp.*)

Cutworms

- Black Cutworm (*Agrotis ipsilon*)
- Bronzed Cutworm (*Nephelodes minians*)
- Variegated Cutworm (*Peridroma saucia*)

Leatherjackets/ European Crane Fly
(*Tipula oleracea* and *Tipula paludosa*)

Mode of Action

- The nematodes in NemaShield HB actively search for insect larvae and enter through natural openings.
- As the nematodes feed on the host body, they excrete a specific bacteria which is toxic to larvae.
- The bacteria multiply very rapidly and convert the host tissue into products that the nematodes use as a food source.
- Larvae die within a few days, host turns orange-red to red-brown.
- Next generation of nematodes leave the old host and actively seek out new ones.



Sizes: 50 Million and 500 Million
Count Packets



Japanese beetle larvae infected with *H. bacteriophora*. Photo Credit: Eugene Fuzy.



BioWorks®

How You Grow Matters™

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NemaShield® HB

Pre-Application

- Scout for early detection.
- Adequate soil moisture must be present and maintained for 2 weeks to aid nematode mobility.
- Soil temperature of 50-80°F (74°F optimum) is necessary for nematode activity.
- DO NOT FREEZE. Unopened products are to be refrigerated and used prior to the expiration date on the container. Expiration date on the box is month/day/year format (mm/dd/yy).
- To avoid blockages, all screens should be removed and the spray nozzle opening should be at least 1mm (1,000 microns).
- Maximum sprayer pressure is 150 psi.
- Nematodes are very sensitive to UV light. DO NOT apply in direct sunlight; apply on a cloudy day or late in the afternoon.

Application

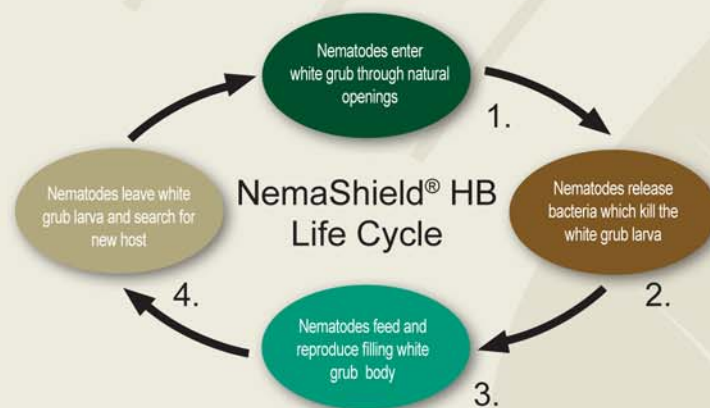
- Prepare and apply out of direct sunlight.
- Empty contents of package into a bucket containing about 1 gallon of cool (60°-75°F) water, then stir.
- Let the entire solution soak for 5 minutes. Stir again thoroughly, then transfer the contents into the spray tank and fill to desired level.
- To avoid blockages, all screens should be removed and the spray nozzle opening should be at least 1 mm (1,000 microns).
- Maximum sprayer pressure is 150 psi.
- Continuous agitation is necessary to prevent the nematodes from settling out.
- Evenly spread the solution over the ground area to be treated.
- Moderately water-in after application to move the nematodes off the foliage and into the ground. Avoid washing the nematodes through the soil.
- Keep the soil moist (not saturated) for the following 2 weeks.

Package Size & Application Rate Recommendations

- 50 million package of nematodes treats up to 2,000 sq. ft. under low to moderate infestation (500 million package size also available).
- 1 billion nematodes per acre recommended under low to moderate infestation.
- 2 billion nematodes per acre recommended under moderate to higher infestations.

Compatibility

- Not compatible with many organophosphates or carbamates.



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