How EN's Work?

Entomopathogenic (Insect Killing) Nematodes – EN's

Once applied, the nematodes follow the carbon dioxide gradient released by the insect and then infest.

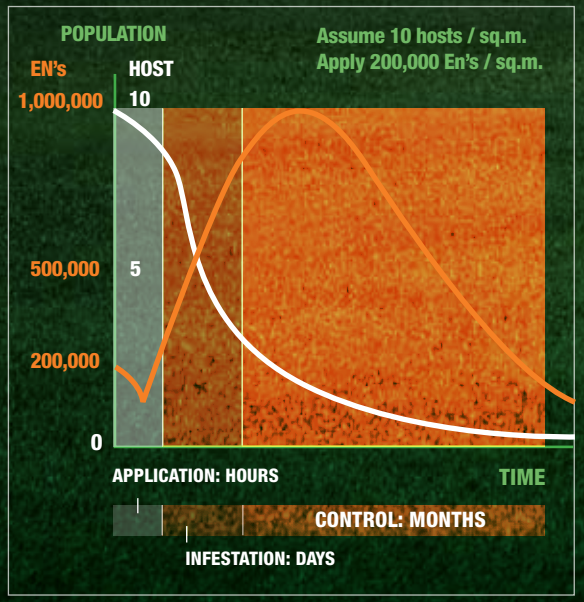
Inside the insect they release their symbiotic bacteria. It kills the host and breaks down its tissue into food.

The EN's reproduce every 10-14 days and as many as 100 will break out of a fungus gnat larvae, seeking new targets.

This is not the end of their work! The EN's reproduce inside the insect and as it decomposes, a new generation of the vigorous infective juveniles move out into the compost in search of further prey.

The nematodes are naturally occurring and mass reared so pose no threat to humans and eventually revert back to natural numbers.

The graph shows nematodes applied at 200,000 per m2 and the expediential increase to well over 1,000,000 per m2 once the cadavers begin to release circa 100,000 nematodes each in the case of large insect larvae.



Handling & Application Guide

Handling

Your supply of ENs was packed fresh at our facility. The product should be used immediately; however with care, this product may be stored for a limited period. Store flat and unopened in a refrigerator at between 4ºC and 8ºC for up to three weeks. The product must not be stored at less than 4ºC for ANY period.

Application

- Check that the growing media temperature exceeds 12ºC.
- Ensure spray equipment has been rinsed and that all filters have been removed.
- Ensure that media is moist.
- Fill application equipment with tepid with water (between 10ºC and 25ºC) and allow 15-20minutes for the nematodes to re-hydrate.
- Apply evenly to the pre-moistened soil, ensuring that the suspension is agitated or stirred at 5 minute intervals, as the nematodes will settle to the bottom of the vessel.
- For best results, lightly irrigate after application to help flush the nematodes into the upper layers of the media.
- Ensure that all concentrate is used within one hour of mixing.

Either apply as a spray drench using a sprayer on a low pressure and cover the surface of the media, or, apply with a watering can.

- Maintain moist soil conditions for at least 7 days after application.
- For smaller areas apply a third of the pack at a time every 7-10 days to ensure no product is wasted. (Product cannot be applied too frequently or at too higher rate).

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GNATNEM BIOLOGICAL SOLUTION FOR FUNGUS GNAT

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EN's

- Safe for operators
- Seek out prey
- Combat's chemical resistance
- Nil withholding period
- Non - polluting
- Nil re - entry considerations

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What are Fungus Gnats?

Glasshouse Sciarids are today recognised as an extremely damaging pest in protected crops. The adult flies, although short-lived, can carry fungal spores from plant to plant, and thus spread root diseases such as Pythium, Phytophthora and Chalara in crops. Either destroying plants or reducing yields.

Fungus Gnat Adult

Fungus Gnat Larvae

What are EN's?

EN is short for Entomopathogenic Nematode. They are tiny microscopic worms, barely visible to the naked eye. As the name suggests they are insect killing (entomopathogenic). They are natural predators of the fungus gnat.

They were first identified by DR Robin Bedding (CSIRO Entomology), and developed over a 30 year period and have proven to be the safest and most effective way of controlling fungus gnat. Naturally occurring and mass reared, they are safe to use and will not harm humans or the environment.

How are EN's applied?

EN's are supplied in a cellulose-based carrier and can be applied with any equipment traditionally used for spray applications. Always remove filters finer than 0.5mm (500µm). They can be applied with boom sprays, fertigation proportioners or simple click on, hose end sprayers. Suspend every 5 minutes where agitation doesn't exist as they will settle.

How often will I need to apply EN's?

The key to success is the application of routine and preventative treatments. This way, sciarid populations are not allowed to build up, and consequent crop damage is prevented. Monthly as a preventative is ideal!

When should EN's be applied?

Compost should be treated as soon as possible after sowing seed or inserting cuttings. Many crops are susceptible to sciarid damage during the first six weeks and a single GNATNEM treatment is often sufficient. For very slow growing crops, it may be desirable to reapply GNATNEM at regular intervals to maintain protection. If GNATNEM treatment is delayed until sciarids are well established in the crop, it will be two to three weeks before the number of adult flies are noticeably reduced.

Will other chemicals affect the results I get with EN's?

EN's are very resistant to most chemicals as they are protected as infective juveniles by a sheath.
The sheath is left behind when they enter the insect. Even chemicals that have shown an effect when tank mixed, have only had a transient effect if placed in contact for a short period of time.

SCIENTIFIC NAME & TARGET PESTS	
Heterorhabditis zealandica	**Scarab Control** Argentine Scarab African Black Beetle, Argentine Stem Weevil, Red-headed Cockchafer, Black-headed Cockchafer **Weevil Control** Black Vine weevil soil temps over 15C only, Bill Bug
Steinernema carpocapsae	**Army Worm/ Cut Worm**, Caterpillars are motile so a Re application may be necessary **Termite Control**, Re applications may be necessary. **Flea Control**, Re applications may be necessary. Larvae control only.
Heterorhabditis bacteriophora	**Black Vine Weevil,** Soil temps over 12C only.
Steinernema feltiae	**Fungus gnat,** control in Horticulture, Nurseries, Mushroom Growers, University Research Facilities, Dept of Ag, AQIS, DPI'S, Hydroponic Systems.
Beddingia siricidicola	**Sirex Wasp,** control for Forestry.
Rhabditidae necromena	**Portuguese Millipede** Control. Produced for www.bugcentral.com.au