



Greenhouse Pest Message, July 25, 2024
Leanne Pundt, UConn Extension

Incoming poinsettias

Whitefly pressure seems to be low. Some issues with unhealthy roots and poor root development on incoming rooted plugs.

Managing [fungus gnat larvae](#) is critical for the first month of production to insure white, healthy roots. Beneficial nematodes are widely used for fungus gnat larvae.



Figure 1 & 2: Fungus gnat larvae are feeding on this poinsettia leaf (on left) and damage to young root tips on incoming rooted poinsettia plug (on right). Photos by L. Pundt

I have received a few questions regarding the effect of temperatures on beneficial nematodes during the summer months. Hot temperatures can be more of a problem than cold temperatures when using beneficial nematodes.

Steinernema feltiae (Nemasys, Entonem, NemaShield) cannot tolerate 95F for longer than four hours in the spray tank or in the growing mix.

Steinernema carpocapsae (Millenium) can survive temperatures up to 113F, but only for one hour. Millenium is used for shore fly larvae.

In general, *S. carpocapsae* is the most heat tolerant species followed by *Heterorhabditis bacteriophora*, and then *S. feltiae*. Without high temperature exposure, *S. feltiae* caused higher infection of fungus gnat larvae than *S. carpocapsae* did, so growers may want to rely on *S. feltiae* unless soil temperatures surpass 4 h at 95 F or if they reach 104F for any duration, in which case *H. bacteriophora* or *S. carpocapsae* may be more effective.

From: Effects of High Temperature Exposure on the Survival and Infectivity of Commercially Available Entomopathogenic Nematodes by Anna Giesmann. MS Thesis, Cornell University. <https://ecommons.cornell.edu/handle/1813/70112>

In warmer weather, some growers may use an ice pack to keep the water temperatures cooler. The longer the beneficial nematodes are kept before spraying and the warmer the tank water, the more quickly their energy reserves are used up. Weaker nematodes are less robust during and after application and are less able to search for and infect a susceptible host.

When the beneficial nematodes have been stored in a refrigerator, allow them to warm up to room temperature before mixing with warmer water to avoid heat shock. Remove them from the refrigerator and allow about 30 minutes for them to warm up. Pre-wet growing media before application, so it's easier for the nematodes to move through the growing media.

Hoses that have been laying in sunlight could contain very hot water, so run water through the hose until cooler water flows thru the hoses.

Beneficial Nematodes: An Easy Way to Begin Using Biological Controls in the Greenhouse <https://ipm-cahnr.media.uconn.edu/wp-content/uploads/sites/3216/2024/07/beneficialnematodes.pdf>

Best Practices for Biocontrols, Part 4. Beneficial Nematodes. By John Sanderson, Suzanne Wainwright-Evans and Ronald Valentin
<https://www.growertalks.com/Article/?articleid=25217>

If you are using fungicide drenches against Pythium on poinsettia, check nematode compatibility with fungicides:

BASF Nemasys Beneficial Nematodes Chemical Compatibility Guide
<https://betterplants.basf.us/content/dam/cxm/agriculture/better-plants/united-states/english/products/nemasys-beneficial-nematodes/nemasys-chemical-compatibility-guide.pdf>

Mention of particular materials is for educational purposes only and is not to be interpreted as an endorsement, nor is criticism implied of any materials not mentioned.

Funding provided by USDA NIFA CPPM grant 2021-70006-35582

Disclaimer

The information in this document is for educational purposes only. The recommendations contained are based on the best available knowledge at the time of publication. Any reference to commercial products, trade or brand names is for information only, and no endorsement or approval is intended. UConn Extension does not guarantee or warrant the standard of any product referenced or imply approval of the product to the exclusion of others which also may be available. The University of Connecticut, UConn Extension, College of Agriculture, Health and Natural Resources is an equal opportunity program provider and employer.