



**2022 Greenhouse Pest Message, February 18, 2022**  
**Leanne Pundt, Extension Educator, UConn Extension**

**Inspecting incoming plugs** as they arrive and before they are moved into production areas is one of the most important ways to **prevent** pest problems. Consider their overall health and quality. Look for insects and signs of their damage, aphids, thrips, fungus gnats, spider mites, and broad mites.

**Aphids** – look for aphids along plant stems, the tips of new growth and the underside of leaves. New growth may be distorted.

**Thrips** – tap new growth over a sheet of white paper to look for thrips adults and larvae. Distorted new growth and white scarring may be seen.

**Fungus gnats**- look for damaged root tips. Adults are not strong fliers and may be seen running along the media surface.

**Two-spotted spider mites**- look on the underside of leaves, especially along the midvein, for spider mites and their empty eggshells. Stippling or light flecking may be seen on the leaves.



*Figure 1: Signs of thrips damage on Ipomoea (distorted growth and white scarring). Thrips larvae were found with a closer look. Foxglove aphid nymphs can also be found on this variety and are easily overlooked. Photo by L. Pundt*

**Broad mites**- look for signs of their damage: leaf edges curl downward, bronzing on underside of the leaves, hardened, distorted, or twisted growth. Because broad mites are so small, you need to use a dissecting microscope to look for their characteristic eggs.

Look for foliar diseases or damaged tissue that may be more prone to Botrytis.



*Figure 2: Incoming plugs with signs of Botrytis. Photo by L. Pundt*

**Root health** – roots should be white with vigorous growth, branching and root hairs. Brown, decayed roots are signs of either a root rot disease or root death due to overwatering or high salts.



*Figure 3: White, branching healthy roots on the left and brown, discolored roots on the right. Photos by L. Pundt*

For more: Scouting for Key Insect and Mite Pests on Key Plants  
<https://uconn.sharepoint.com/sites/CAHNRExtension/Shared%20Documents/IPM/Greenhouse/2019keypestkeyplantsscoutingbpperennials.pdf>

If you are releasing BCA's, ask your plant supplier what pesticides have been applied. This is also a good idea to help plan your rotations among chemical classes, especially for highly resistant spider mites or thrips.

### **Applying Beneficial Nematodes**

Now is also a good time to apply preventive drenches of beneficial nematodes *Steinernema feltiae* (Nemashield, Nemasys) for fungus gnat larvae and thrips pupae in the growing media.

For best results, apply nematodes immediately after receiving them. If you must store the nematodes, store them in a dedicated refrigerator at 38-42°F. Avoid placing them in a small refrigerator where they may freeze. Check the expiration date on the package for the length of time they can be stored or contact your supplier.

**Check nematode viability before application.** Place a small amount of the product in a small clear container or petri dish. Add 1 or 2 drops of room temperature water. Wait a few minutes and look for actively moving nematodes. They have a slight J curvature at the end of their bodies. Use a black background and a hand lens or field microscope to observe the nematodes. Dead nematodes will be straight and still.

Treat as soon as possible (2 to 3 days) after sticking cuttings, planting plugs, or starting seeds. Some growers apply the nematodes to the media directly before sticking cuttings to ensure that nematodes reach the media.

- Apply as a media drench or sprench to target the fungus gnat larvae.
- Media temperatures should be above 50° with optimum media temperatures between 60-70°F. (Use a soil thermometer to monitor temperatures).
- Water the growing media the day before application. (Nematodes need moisture for movement.
- Apply in the evening or at dusk or on a cloudy, overcast day. (Nematodes are very sensitive to ultra-violet light and desiccation).
- Repeated applications are often needed. Make the first application at planting and then repeat **every two weeks**.

- Recent research at Cornell University seen that nematodes may persist in the growing mix and remain effective for more than four to six weeks after a single drench application, if sub-irrigation is used, so that the nematodes aren't washed or leached out of the containers, as might be the case with overhead watering.

Best Practices for Biocontrols, Part 4 Beneficial Nematodes

<https://www.growertalks.com/Article/?articleid=25217>

Beneficial Nematodes: An Easy Way to Begin Using Biological Controls in the Greenhouse

<https://uconn.sharepoint.com/sites/CAHNRExtension/Shared%20Documents/IPM/Greenhouse/2019beneficialnematodesfactsheetfinal.pdf>

Using Beneficial Nematodes to Manage Pests in Greenhouse- UMass Extension video <https://www.youtube.com/watch?v=Y67yhIIQdLU>

Nematodes are compatible with several different pesticides; however, they are generally not compatible with organophosphates, carbamates, nematicides, and hydrogen dioxide. Do not mix nematodes with your fertilizer solution.

For more: Nemasys (*S. feltiae*) Beneficial Nematodes Chemical Compatibility Guide from BASF

<https://betterplants.basf.us/content/dam/cxm/agriculture/better-plants/united-states/english/products/nemasys-beneficial-nematodes/nemasys-chemical-compatibility-guide.pdf>

See the most recent edition of the New England Greenhouse Floriculture Guide for more in insect and disease management online at:

<https://greenhouseguide.cahnrc.uconn.edu/>

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

Disclaimer for Fact Sheets:

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.