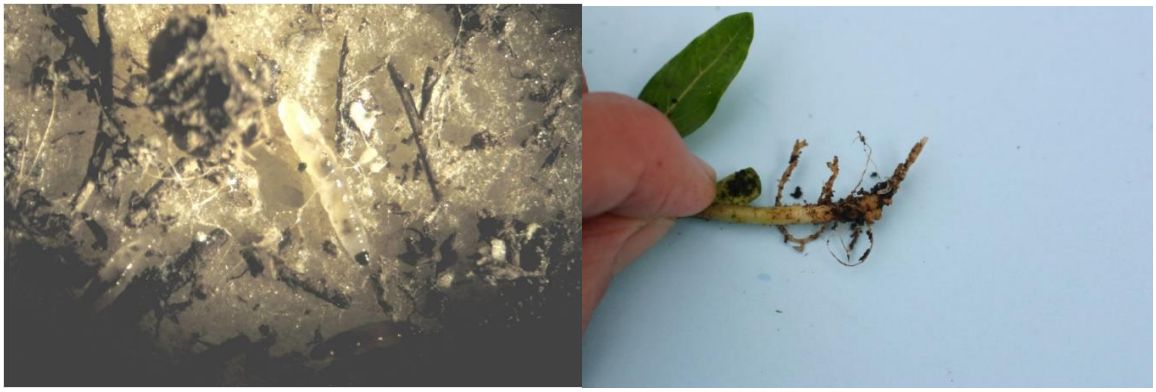
Greenhouse Pest Message, February 9, 2023
Leanne Pundt, UConn Extension

Propagation Houses are Starting Up

Monitor for **fungus gnats.** With the warm winter (or non-winter), I have been starting to see **aphids.** Aphids may be moving from overwintering pet plants or weeds to young plugs or cuttings or they may be coming in on incoming plant material.

Fungus gnats are a common pest in the moist environment of propagation houses. Fungus gnat larvae feed upon young cuttings and plugs, causing root injury and death. They may also help spread soil borne pathogens such as *Phytophthora, Pythium* and *Thielaviopsi*s. Adults can also carry airborne fungal spores such as *Botrytis* on their bodies.



Figures 1 & 2: Close-ups of black headed fungus gnat larvae and their feeding damage. Photos by L. Pundt

The fungus gnat's life cycle from egg to adult may be completed in as little as three to four weeks depending on the temperature. Eggs are laid in cracks and crevices in the media surface. Fungus gnat larvae feed and develop for about two weeks at 72°F.

Use yellow sticky cards placed horizontally or close to the media surface to monitor for fungus gnat adults.

Shore flies and their damage may be seen on young plugs especially if when their food source, algae, is present.

*Figures 3 & 4: Adult fungus gnats on sticky card **(on left)**. Note Y-shaped vein at the edge of the wing. Adult shore fly (on right). Note five whitish spots on their wings. Photos by L. Pundt*

Beneficial nematodes

Many growers have been successfully using beneficial nematodes for many years. Beneficial nematodes (*Steinernema feltiae*) are easy to use and tend to work as well as conventional pesticides against fungus gnat larvae if certain precautions are followed. With no REI, you can continue to work in propagation houses during the busy spring season. Millenium (*Steinernema carpocapsae*) helps suppress shore flies.

Beneficial nematodes may come in different formulations and packaging, some are mixed into hydrogels and others into powder. Often, they come in trays or bags, but some suppliers sell smaller quantities on sponges.

Preventative applications to moist soils work best. Optimum temperatures are between 60-75F. Several consecutive applications are needed depending upon pest pressure and rates used. Consult with your supplier for a recommended program.

Tips for Their Use

- Apply nematodes with a sprayer or injector (remove screens and filters) during cloudy, overcast days or in the evening as they are very sensitive to UV light and desiccation.)
- If using an injector, set the dilution to 1:100. Remove all filters or screens (50 mesh or finer) in any spray lines so that the nematodes can pass through unimpeded and undamaged.
- If using a sprayer, spray pressure should be kept below 300 psi.
- Although nematodes are applied in water, they are not aquatic animals, so adequate aeration of the nematode suspension during application is important. Use a small battery powered submersible pump to keep the solution agitated. The small pump will also keep them from settling on the bottom.

- Use clean, cool water that does not contain fertilizers.
- Nematodes can be applied thru an irrigation system, however, there is better distribution with boom sprayers than with drip or sprinkler systems.

Check to make sure they are alive before and after application. Healthy nematodes will have a slight "J "curl, dead nematodes will be straight and still.

Soil dwelling predatory mites (*Stratiolaelaps scimitus)*, the rove beetle (*Dalotia coriaria)* are compatible with beneficial nematodes. The growing medium should be moist before applying these biological control agents.

Insect growth regulators, and microbials, may also be applied to the growing media to manage fungus gnat larvae. Repeat applications may be needed.

Consult the latest edition the **New England Greenhouse Floriculture Guide** for more specific guidelines. Available online at: https://greenhouseguide.cahnr.uconn.edu/ For information on ordering a print copy see: https://www.negreenhouse.org/

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