

Fungus Gnats & Shore Flies

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Fungus gnats (*Bradysia impatiens* & *B. coprophila*) belong to the insect order Diptera which contains the flies, gnats, mosquitoes, and midges. These insects only have one pair of wings and undergo complete metamorphosis. Fungus gnats are considered a cosmetic problem in most situations but larvae feeding on plant roots may also cause them to be associated with root rots. The adults are weak fliers and are often seen at rest on the potting media.

Shore flies (*Scatella stagnalis*) are another nuisance insect that's often confused with fungus gnats in the greenhouse. Unlike fungus gnats, they feed on algae and are a problem in greenhouses with standing water on or beneath the benches.

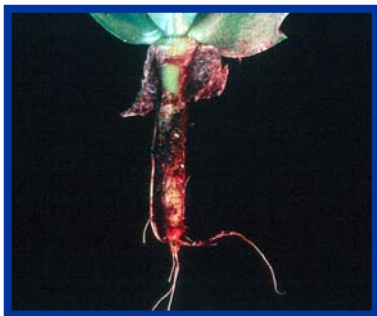


Appearance

Adult fungus gnats are dark brown or black, delicate flies that are 3/16 inch long and resemble mosquitoes. The larvae are slender maggots that reach 1/4 inch when fully grown. The larvae are whitish or translucent with a black head capsule.

Shore flies are more robust than the delicate fungus gnats. They actually resemble fruit flies with their short antennae. Unlike fungus

gnats, shore flies are very strong fliers. Close inspection of their wings will reveal 5 light spots on dark wings. Larvae are opaque and lack the distinct head capsule present on fungus gnat larvae. Both the larvae and pupae have a pair of breathing tubes on their hind end.



Symptoms and Effects

Fungus gnat larvae feed on decaying organic matter, fungi, and algae in the soil. If populations reach high levels, they may damage roots by feeding on the root hairs or tunneling into the roots themselves. Most damage is to seedlings and cuttings that have not produced callus tissue however they may also damage larger plants of susceptible species (begonias, carnations, geraniums, poinsettias). The wounds produced by the larvae provide an entry site for pathogenic fungi, in particular, root rots. Adults can reduce the aesthetic appearance of plants by leaving

fecal droppings (flyspeck) on plants and pots.

Since shore flies are primarily a nuisance in the greenhouse, the only "damage" is the flyspeck that will tarnish the aesthetic appearance of the crop.



Life Cycle

There are several generations of fungus gnats per year. Adult females lay 2-30 eggs in clusters on the surface of moist media. The larvae go through 4 instars over the course of 1-2 weeks before pupating in the soil. Pupation lasts about a week after which the next generation of gnats emerge.

Shore fly eggs are scattered on algae or moist soil. The eggs hatch in 2-3 days and the larvae feed on algae, bacteria, and yeast just beneath the soil surface for about a week before entering the pupal stage.

Scouting Suggestions

Monitor fungus gnat adults with a yellow sticky trap placed horizontally at the crop canopy. Shore flies are more attracted to blue stick traps. Use 10 traps per 1000 ft². To monitor larvae in the soil, place potato disks on the soil surface and recheck in 3-4 days. If there are larvae in the container they will come to the surface to feed on the potato and can easily be counted. Replace the potato disks every two weeks. Ten potato disks per 10,000 ft² of production area are recommended.

Control

Non-Chemical

Eliminate breeding areas such as infested growing media and plant debris. Avoid over watering plants to reduce the amount of algae growing in the containers. Excess fertilizer will also promote algae growth. If you consistently have problems with fungus gnats and shore flies, you may want to reconsider your potting media and choose something that has less organic matter.

For information on biological control, refer to NCR publication 581 "Biological Control of Insects and Other Pests of Greenhouse Crops".

Chemical

There are several insecticides available for control of fungus gnats and shore flies. Refer to UWEX publication A3744 "Insect Pest Management for Greenhouses" for a complete listing of available products. There are several insect growth regulators and *Bacillus thuringiensis israeliensis* that may be used to control fungus gnats without disrupting any natural enemies that may be present. These include cyromazine, diflubenzuron, and fenoxycarb. Apply as a drench to the containers. Care should be taken to avoid root pruning with some formulations of insecticidal drenches.

For pesticide recommendations: See UW-Extension Bulletin A3744 or contact your County Extension Agent.

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