



Photograph courtesy of David Cappaert, Michigan State University

# Fungus Gnats

Diptera: Sciaridae



# Potential Concerns Associated with Fungus Gnats

- Nuisance problems with adults in vicinity of infested plants
- Some root feeding by larvae
  - Wounding may allow colonization of roots by rot rotting fungi



**Adult fungus gnats**





**Fungus gnats  
on sticky card**

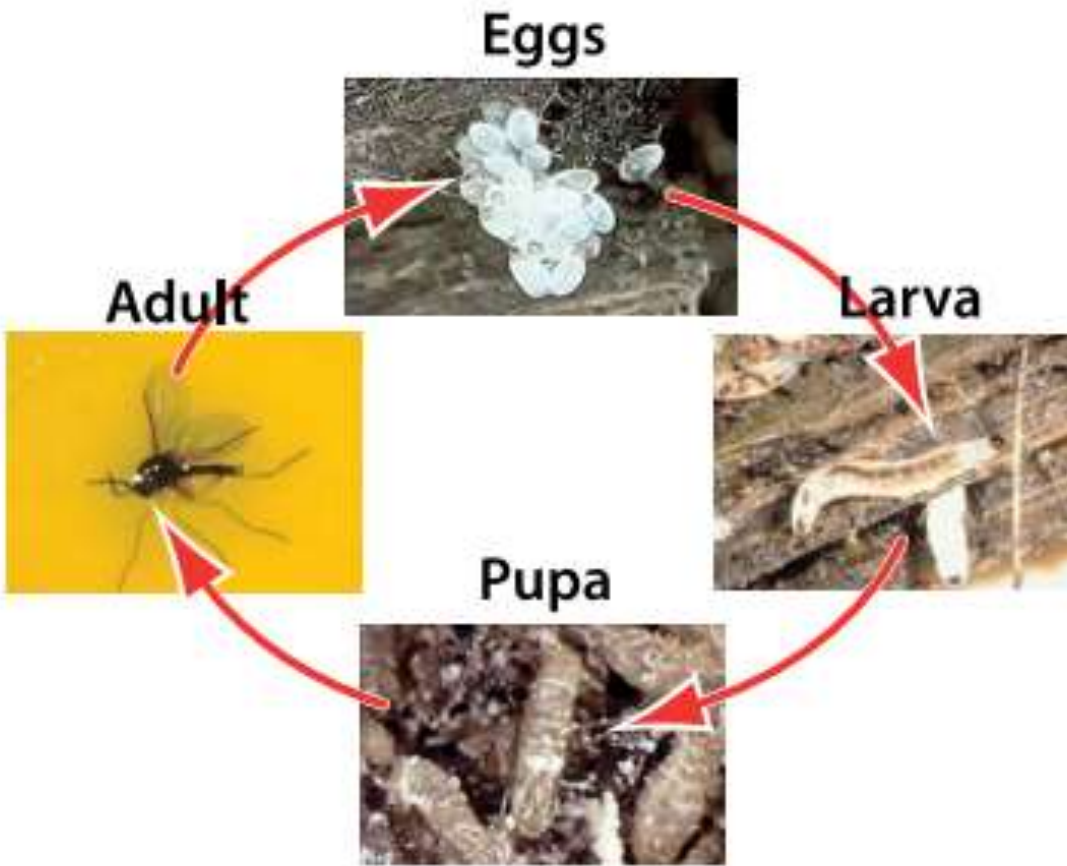


Figure 1. Fungus gnat life cycle

# Fungus gnat life cycle

Figure credit: Raymond Cloyd, Kansas State University



**Adult fungus gnats usually live for only 4-5 days. Females lay eggs in soil cracks along surface.**





**Fungus gnat larvae  
require 3-4 weeks or more  
before being full grown.  
They primarily eat fungi  
and decaying plant  
matter.**



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# Fungus gnat larvae on a potato slice







Springtails

# **Fungus Gnat – Cultural Controls**

- **Reduce watering frequency**
- **Eliminate sources of decaying vegetation**

# Fungus Gnats

## Biological Controls (Larvae)

- Soil predator mite (*Stratiolaelaps scimitus*)
- Entomopathogenic nematodes (*Steinernema feltiae*)
- *Bacillus thuringiensis* var. *israelensis*

# Fungus Gnats

## Biological Controls (Larvae)

- Soil predator mite, *Stratiolaelaps scimitus* (= *Hypoaspis miles*)



# *Bacillus thuringiensis*

- Derived from a widely distributed soil bacterium
- Active ingredient a toxic protein crystal that destroys cells of the midgut
- Used as a stomach poison



# Several strains are present, each with specific activity

- *kurstaki*, *aizawi* strains (leaf feeding Lepidoptera larvae)
- *tenebrionis* strain (leaf beetles)
- *israelensis* strain (mosquito, gnat, black fly larvae)



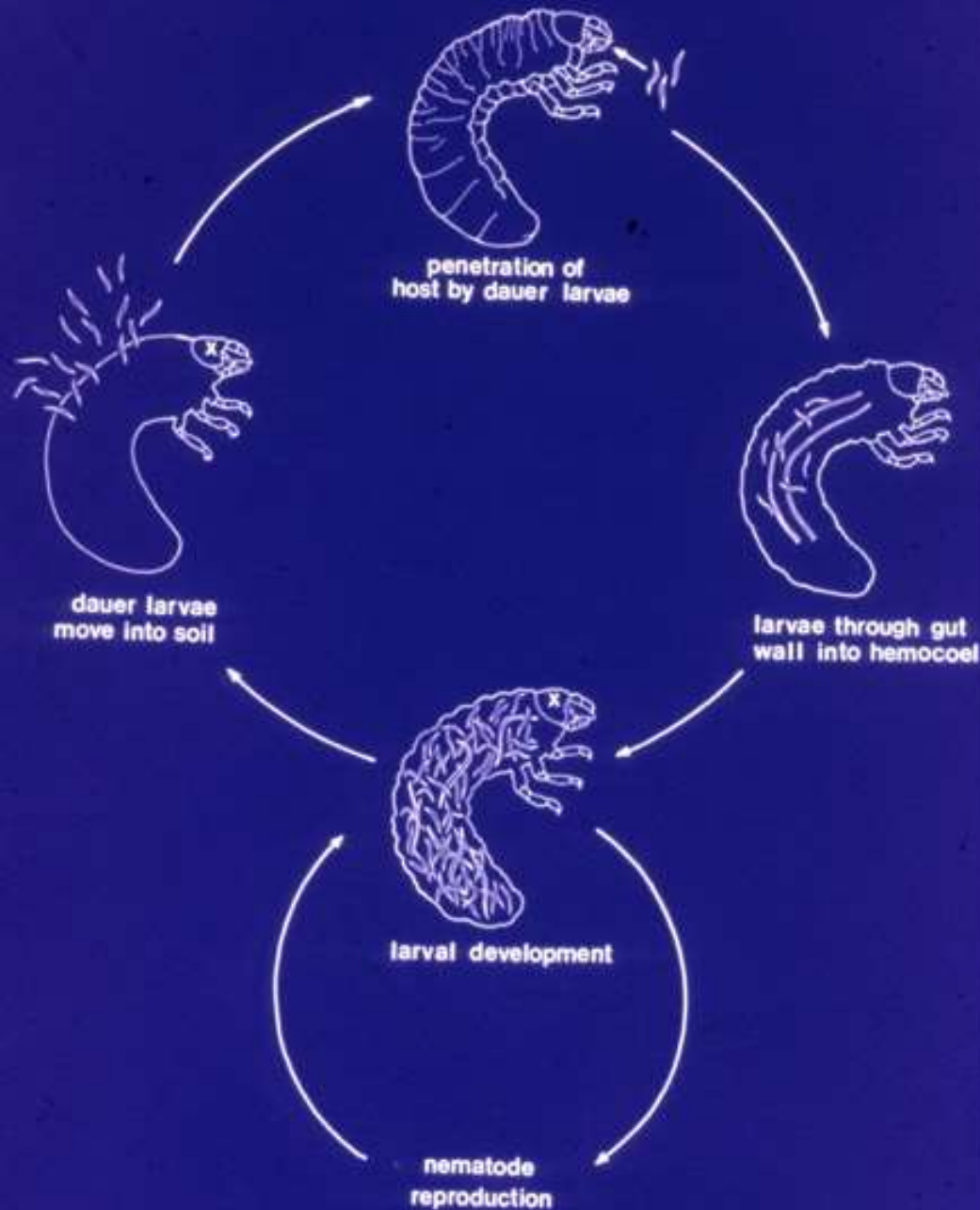
# *Bacillus thuringiensis israelensis* strain



Can be used as a soil drench to suppress populations of fungus gnat larvae

# Insect Parasitic Nematodes

*Steinernema feltiae* is a species of nematode that can be used to control soil dwelling fly larvae







# Steinernema feltiae

Used as a soil drench for control of fungus gnat larvae



# Fungus Gnats

## Chemical Controls (Larvae)

- Imidacloprid
- Neem products *with azadirachtin* (Ornazin, Azatin, Bio-Neem)

# This is the go-to publication on fungus gnats – done with Kansas State University

Colorado State University  
Extension



## Fungus Gnats as Houseplant and Indoor Pests

Fact Sheet No. 5.584

Insect Series | Home and Garden



by W.S. Cranshaw and R.A. Cloyd\*

Fungus gnats (*Bradysia* species) – also known as dark-winged fungus gnats, are small, mosquito-like insects often found in homes and offices, usually in the vicinity of houseplants. They are considered a nuisance when present in noticeable numbers, but the adults are harmless insects that do not bite. Fungus gnat larvae develop in the growing medium of houseplants and are considered minor pests of houseplants.

Adults are 1/8 inch long, delicate, black flies with long legs and antennae. There is a distinct “Y-shaped” pattern on the forewings. The larvae are worm-like and translucent, with a black head capsule, and live in the growing medium of houseplants.



Figure 1: Fungus gnat adult.

to 75 F) the life cycle (egg to adult) may be completed in three to four weeks (Figure 1) with continuous reproduction occurring year-round on indoor plants. Fungus gnat adults do not bite but may drink water

### Quick Facts

- Fungus gnats are small, delicate bodied flies that commonly develop in the growing medium of houseplants.
- Larvae of fungus gnats feed on algae, fungi and plant roots in growing medium. Adults do not bite or feed.
- Fungus gnats can be controlled by allowing the growing medium to dry between watering.

# **Small Flies Incidentally Associated with Growing Plants**

- **Fungus gnats (Family  
Sciaridae)**
- **Shore flies (Family Ephydriidae)**
- **Drain flies (Family  
Psychodidae)**