

# Colorado Coalition for School IPM Newsletter

January 2018

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## CCSIPM Spotlight: School District IPM for Microorganisms

### IPM for Microorganisms: Cleaning, Disinfecting, and Sanitizing

By Dawn H. Gouge (public health entomologist, Department of Entomology), Natalie Brassill (water quality assistant in Extension, Maricopa Ag Center) and Channah Rock (environmental microbiologist, Department of Soil, Water and Environmental Science)

2017-2018 Flu Season is Particularly Bad. In many states the current flu season started earlier than usual, and the onset of flu season in November invariably led to increased transmission of infections during travel, and seasonal gatherings. Public health officials monitoring the number of flu related hospitalizations and outpatient visits have reported higher than normal case counts, and this could well



Influenza virus viewed using a microscope

indicate a severe flu season is in full swing. To date, widespread flu activity has been reported in 46 States according to the Centers for Disease Control and Prevention (CDC). In 26 states, flu activity has been classified as “high” (see weekly CDC influenza maps <https://www.cdc.gov/flu/weekly/usmap.htm>).

Influenza is a highly contagious viral infection that causes the rapid onset of symptoms. The symptoms may start mildly, but often increase in severity very rapidly, sometimes in a matter of hours. People who have the flu often feel some or all of these symptoms:

Fever (not everyone with flu will have a fever)

- Chills
- Cough
- Sore throat
- Runny or stuffy nose
- Muscle or body aches
- Headaches
- Fatigue (tiredness)
- Some people may have vomiting and diarrhea, though this is more common in children than adults.

Any person experiencing chest pain or breathing complications should seek immediate medical assistance.

Pneumonia-like symptoms include serious congestion, chest pain, difficulty breathing, fever of 102oF or higher, and/or coughing that produces pus. Pneumonia in very young children or in adults older than 65 is cause for concern, and severe symptoms in a person of any age may become life-threatening and result in death if left untreated. Bronchitis, sinus and ear infections are other common complications resulting from the flu virus.

The flu can also exacerbate (make worse) chronic health problems like asthma and chronic obstructive pulmonary disease (COPD).

Across North America there are a number of influenza virus (strains) causing illness, but the strain most commonly causing individuals to seek medical attention currently is influenza A H3N2. The H3N2 virus affects seniors and young children to a greater extent, and symptoms tend to be more severe compared to other influenza A or B strains.

In attempts to reduce the spread of the flu virus and other pathogens (microorganisms that cause disease) caregivers often reach for disinfectant wipes in homes, classrooms, and childcare centers, but may not realize that disinfectant wipes are registered pesticides as they are designed to kill, or inactivate microbes. Disinfectant products can be used in homes, schools, childcare facilities, and medical centers safely and effectively, but there are a few things everyone should know:

1. Always follow label directions. The “Directions for Use” are specific, and the product may not work if you don’t follow them. Most products require application, leaving to stand for a set amount of time, and rinsing completely with water to remove disinfectant residues.
2. Many disinfectants require the use of protective gloves when using.
3. Dirt, food debris, and litter can reduce the effectiveness of the disinfectant, and should be removed prior to the use of the disinfectant with a wet or dry cloth.
4. Many products can be harmful when touched or inhaled. Certain ingredients pose particular problems for asthmatics and individuals with compromised lung function. These products should be used in a well ventilated area or with the use of proper Personal Protective Equipment (PPE) such as a respirator.
5. Whether disinfectants are used in medical, home settings, or elsewhere, they may not be used on surfaces that come in contact with food until residual disinfectant is removed. It is advised to review the label for use on food contact surfaces.

It is inappropriate to ask children to clean surfaces with disinfectant wipes.

Children are not legally allowed to handle many disinfectant wipes and use statements on a label is legally binding. Many labels clearly state

“KEEP OUT OF REACH OF CHILDREN”.

So how can caregivers and facility managers maintain a healthy indoor environment, and limit the spread of the flu virus? Flu viruses spread from person to person mainly by droplets made when people with flu cough, sneeze, or talk. Less often, a person might get the flu by touching a contaminated surface or object then touching their own mouth, eyes, or nose. Most healthy adults may be able to infect other people beginning 1 day before symptoms develop and up to 7 days after becoming sick. Children may pass the virus for longer than 7 days. Symptoms start 1 to 4 days after the flu virus enters the body.



To minimize flu:

- Stay home when you are sick. If possible, stay home from work, school, and errands when you are sick. You will help prevent others from catching your illness. Avoid close contact with people who are sick or who have chronic illnesses. Teachers and workplace managers, please accommodate students and workers keeping up with schoolwork and work projects from home as much as possible.

- If you are ill cover your nose and mouth with a tissue when you cough, sneeze or talk. Throw the tissue away immediately after use and wash your hands with soap and water. If a tissue is



not available, cover your mouth and nose with your sleeve, or the crook of your elbow. This has been named the “vampire sneeze”, and catches on well with young children. If you cover

your mouth and nose with your hands, wash them immediately.

- If you are responsible for managing an indoor environment having boxes of tissues on-hand can be very helpful.

- Wash your hands often with soap and water, especially after you cough or sneeze. Give children the opportunity to wash their hands and encourage children to wash their hands effectively: 1) Rinse hands and arms up to the elbows, 2. Apply soap and lather for at least 20 seconds (sing the Happy Birthday song twice) cleaning hands, arms, and fingernails, 3. Dry with a paper towel. NEVER have children use disinfectant wipes as hand sanitizer wipes, these are two very different things.
- Hand washing with ordinary soap and water is the most effective way to remove pathogens (germs causing illness). But often it's simply impractical and alcohol-based hand sanitizers are effective in preventing the spread of the seasonal flu, colds and other viral- and bacterial-based pathogens.
- Avoid touching your eyes, nose, or mouth. Encourage children to avoid touching their own or others' faces.
- Clean and disinfect surfaces or objects. This is a job for adults, who can accurately use products correctly following all the steps necessary as provided on the label.
- Wearing surgical masks does help. Studies have shown that family members caring for dependents with flu reduced their risk of getting the virus by 70% when they washed their hands often, and wore surgical masks.

### Citations

National Pesticide Information Center <http://npic.orst.edu/health/readlabel.html>

Washington State University <https://schoolipm.wsu.edu/microorganisms/>

## Colorado Coalition for School IPM Agency Partner Spotlight: Colorado Step Up Asthma Program

### Creating Asthma Friendly Schools in Colorado: The Colorado Step Up Asthma Program

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The fact that asthma is a significant health issue for nearly one of every 10 children in the United States makes it a major concern in the classroom as well as the clinic. It is the cause of 36,000 school absences each day and has the potential to negatively impact school performance and academic achievement. Moreover, morbidity and mortality rates are disproportionately higher among urban and minority children, many of whom already face educational disadvantages.

Beyond the increased emergency department visits and hospitalizations associated with asthma is the heightened risk of premature death: *185 children die annually from asthma-related complications*. The Colorado Step Up Asthma Program led by Children's Hospital Colorado in partnership with Denver Metro school districts, the Region 8 EPA and other community partners is answering a need to provide a circle of support for children with asthma and thus reduce asthma morbidity and achieve better outcomes.

### The Colorado Step Up Asthma Program

The seeds of today's Step Up program were planted a decade ago when Stanley J. Szeffler, MD, Director of the Pediatric Asthma Research Program at Children's Colorado, partnered with Denver Public Schools (DPS) to identify high-risk students. The program identified schools most severely impacted by asthma with students at risk of health disparity due to race/ethnicity factors and high rates of poverty. DPS is committed to being a full participant, contributor, and driver because of their recognition of the importance of asthma in the school setting. They are committed to the success of all students and know the outcome first hand of poor asthma control. The leadership in the Department of Nursing & Student Health Services, Donna Shocks, RN, MSN, provided immense insight and guidance for addressing school asthma management while adhering to policies and regulations. She established buy-in from key leaders in the district including the superintendent, department of technology, department of risk management and the facility director.

Collaborative effort produced the four-component program now in place:

#### 1. Assessment and monitoring

- Validated survey tools to monitor asthma control
- Close monitoring of students with severe asthma by the school nurse
- Asthma "check up" visits with an asthma counselor 3-4 times per year
- Feedback to families and healthcare providers



**2. Asthma education and self-management training**

- *Open Airways for Schools* – grades 3-5
- *Kickin’ Asthma* – grades 6-8

**3. Care coordination**

- Linking access to care
- Referrals to address social determinants of health
- Communication among the school nurse, step up team, family and health care provider

**4. Support of “asthma-friendly” school environment**

- EPA tools for school – Indoor Air Quality Management Program
- Tailored approach to eliminating environmental triggers in the home environment
- Professional development for school nurses through a technical assistance program
- Asthma education for faculty, staff, and teachers

**Improving indoor air quality:**

While, case identification, care coordination and standardized school-centered asthma management are critical to the success of the program, the direct benefits through these measures are mainly limited to children with asthma participating in the program. However, through the environmental component of this partnership, the benefits of improved indoor air quality has the potential to reach thousands of students, teachers, staff and visitors each year.

Children spend up to a 1/3 of their day at school and are at risk for coming into contact with multiple asthma triggers. The cornerstone of our trigger reduction program is through adoption of the EPA, Tools for Schools Quality Indoor Air Management program. Denver Public School District partnered with the local EPA office to improve indoor environment in Denver schools, including an extensive integrated pest management program that has significantly reduced the use of pesticides in schools. Under the DPS Integrated Pest Management program, the use of rodenticides for the management of mice has been reduced by 75%, and pests complaints in schools reduced by as much as 90%. In addition, only low-risk human exposure pesticides are used in Denver’s schools.

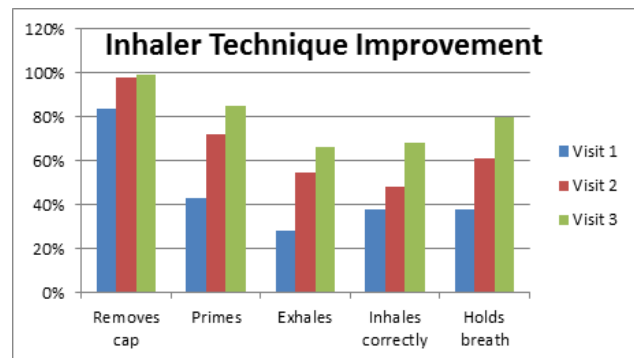
This program has not only successfully eliminated asthma triggers caused by cockroach and mice; but

also reduced exposure to potentially harmful chemicals for over 92,000 DPS students including nearly 11,000 who have asthma. By ensuring a healthier learning environment in the schools, DPS is creating an environment that fosters academic achievement. When children who suffer from asthma are able to enter an environment where they can function without encountering asthma triggers in the buildings, absentee rates drop, and those children are not left to fall behind in their education due to missed school days.

**Program outcomes:**

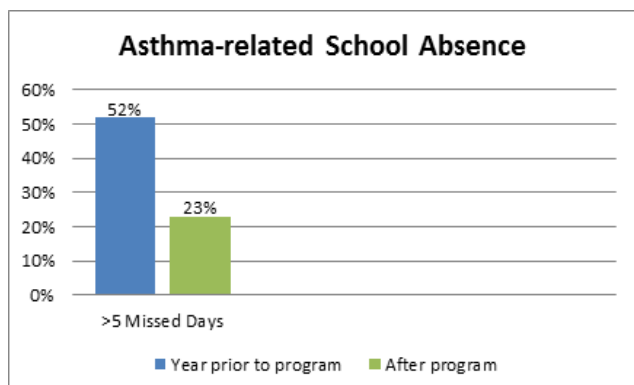
Results for the 2016-2017 school year reflect significant gains in self-management outcomes:

- Correct MDI/Spacer technique improved from 2.30 to 3.99 (scale of 0-5) (*Figure 2* below)
- Asthma knowledge scores improved from a mean score of 72% at entry to 87% after intervention



**Clinical outcomes included:**

- 31% decrease in emergency department/urgent care visits (44% to 12%)
- 8% decrease in hospitalizations for asthma (12% to 4%)
- 29% decrease in asthma-related school absences >5 days (52% to 23%)



**What's next:**

The Step Up Asthma Program has demonstrated success over the past 12 years and has expanded to 4 new school districts. In addition to Denver Public Schools the program is being implemented in Aurora, Brighton, Englewood and Sheridan schools. We look forward to working with students, families, educators, school nurses and facility management in these new districts.

**For more information, contact:** [Melanie.Gleason@childrenscolorado.org](mailto:Melanie.Gleason@childrenscolorado.org) or (720) 777-4128

Supported by the Cancer, Cardiovascular, and Chronic Pulmonary Disease Grants Program

## Featured Pest of the Month: Cluster Flies, Fruit Flies, and Fungus Gnats

**Cluster Flies**

Scientific Name: *Pollenia* spp.

Order: Diptera (True Flies) Family: Calliphoridae (Blow Flies)

**Identification and Descriptive Features:** Cluster flies are slightly larger than house flies and a dull grayish-brown. Irregular light patches may be present on the abdomen. The feature that is most useful for distinguishing cluster flies from other blow flies are crinkly golden hairs on the thorax. (Note: These hairs readily rub off and may be largely absent in poorly handled samples.)

**Distribution in Colorado:** Potentially statewide where suitable species of earthworms are present. This is the most common fly found in

buildings during the cool season. Problems with adults entering homes tend to be most severe in higher elevation communities.

**Life History and Habits:** Cluster flies develop as parasites of certain species of earthworms. Many species develop on *Eisenia rosae* (Savigny), an introduced European earthworm that is now widely found in irrigated lawns and moist soil along waterways. The primary species of cluster fly known from Colorado, *Pollenia pediculata* (Macquart),



Figure 2. Cluster fly.

has been poorly studied but its biology is presumed to be similar to other *Pollenia* species.

The adults emerge from winter dormancy in mid-Spring and lay eggs singly in soil cracks. Upon hatch the larvae migrate

into the soil seeking an earthworm host; when located the tiny maggot penetrates the body wall of the earthworm and then continues its development as an internal parasite. They become full-grown in about 2-3 weeks then pupate. Adults subsequently emerge to produce a second generation and as many as 4 generation may be completed during the growing season.

As day length shortens and soils cool, adults at the end of the growing season seek sheltered areas for overwintering. Buildings provide many cluster flies the crevices and cavities that make good overwintering sites. During late summer and early fall cluster flies will increasingly be seen resting on sun-warm walls of buildings and, if entry points are available, will later move behind walls. When abundant cluster flies may aggregate in loose clusters in a wall void or other overwintering site, leading to the name "cluster fly". Concentrations are largest in upper floors of buildings where they can become very abundant on occasion.

For the cool season cluster flies remain in a dormant state, ceasing reproduction and moving little. However, during warm periods some may become active and incidentally enter living areas. They then may be seen flying lazily around rooms for awhile and most subsequently die indoors. If increased numbers of cluster flies are observed in a building during winter this does not indicate indoor breeding but instead results from previously dormant flies behind walls becoming active.

**Related Species:** Some other blow flies,



Figure 1. Cluster fly.

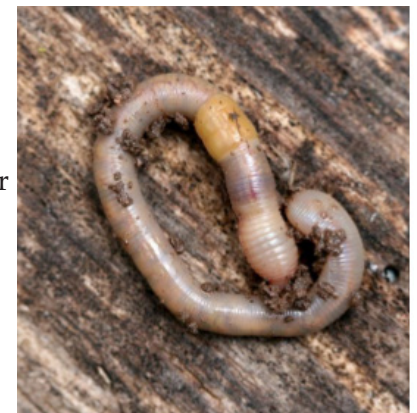


Figure 3. *Eisenia rosae*, an earthworm host of cluster flies.



notably in the genus *Calliphora*, also will winter indoors as an adult.

**Management of Cluster Flies in Buildings:** There are a few basic principles in cluster fly management, although it is very difficult to totally prevent building entrance by some flies. Most important is to caulk and otherwise seal all exterior openings on a building prior to when the flies begin to seek winter shelter. In most areas this should probably be done by early September and particular attention should be given to sealing sites on sun-exposed sides and upper stories where cluster flies are most likely to enter.

Insecticides have been used with some success to further prevent cluster fly entry. These can be applied as sprays targeted to cracks/crevices on the building exterior in late summer. Various pyrethroids (e.g., permethrin, bifenthrin, lambda-cyhalothrin, cyfluthrin) labeled for exterior application may be useful for this purpose. Desiccant dusts (e.g., diatomaceous earth, silica aerogels) blown into wall voids may also kill flies behind walls and reduce subsequent accidental movements into living areas.



Figure 1. Small fruit fly.

## Fruit Flies

Scientific Name: *Drosophila* spp.

Order: Diptera (True Flies) Family: Drosophilidae (Small Fruit Flies, Vinegar Flies, Pomace Flies)

**Identification and Descriptive Features:** Small fruit flies are small flies, approximately 3 mm (1/8) long. They are stout bodied and with a tan-colored head and thorax. The abdomen is darker, often with bands. Most have bright red eyes.



Figure 2. Small fruit fly larvae developing in fermenting banana.

**Distribution in Colorado:** Various *Drosophila* species can be found statewide and several European species are now widely established throughout North America. [Present confirmed species in Colorado

include *Drosophila melanogaster* Meigen, *D. buskii* Coquillett, and *D. funebris* (F.).] They can become extremely abundant around sources of fermenting vegetable matter and sometimes breed indoors when suitable foods are present.

**Life History and Habits:** Larvae of small fruit flies feed on yeasts and other microorganisms that are associated with fermenting fruit, vegetables, other plant matter and animal manure. (Material decayed by the action of fungi or bacteria are not attractive.) Plant ooze produced from infections of trees are also commonly colonized. Indoors, small fruit flies sometimes develop large numbers in association overripe fruit or residues remaining in discarded containers of soft drinks or beer.

Eggs may be laid directly on the food or around the edges and hatch within 1-2 days. The larvae feed on the surface. They are tiny legless maggots and have extended spiracles at the tip of the abdomen that allow them to acquire oxygen while feeding in semi-liquids. The larval life can be completed in about 5-6 days at summer temperatures. They then crawl away to pupate in a somewhat drier site. The entire life cycle can be completed in 8 days at 85°F.

**Related Species:** Although poorly collected within the state, several other genera of small fruit flies are also known or suspected of being present within the state, including *Chymomyza*, *Clastopterymyia*, *Scaptomyza*, and *Mycodrosophila*.



Figure 3. Small fruit fly pupae in overripe banana.

**Other Small Indoor Flies:** Several other small flies are sometimes found within the home. Most similar in general size and body shape are phorid flies (Phoridae family), sometimes known as drain flies. These feed on decaying organic matter and most often develop high indoor populations in association with plumbing leaks. In close inspection their strongly arched prothorax and two dark, heavy veins along the fore edge of the wings can distinguish phorid flies.

Moth flies (Psychodidae family) also may be found indoors and similarly are associated with plumbing, developing on the bacterial gel that sometimes coats the interior of pipes. Their distinctive wings, held roof-like over the body and covered with fine hairs

are characteristic of the moth flies. Fungus gnats also may occur indoors and are associated with the potting soil of houseplants. Control of Small Fruit Flies in the Home: Infestations of small fruit flies in buildings almost invariably originate from breeding sources that should be identified and eliminated. Overripe fruit is a typical breeding site. Fruit flies may also breed in the residue remaining from incompletely washed soft drink and beer containers, on spilled material around garbage containers and incompletely sealed compost containers.



Figure 4. A simple trap for small fruit flies, baited with vinegar

All such areas should be treated to deny further breeding, by discarding, washing, or better sealing areas to exclude flies. If this done thoroughly the number of flies should be seen to decline within a few days and the infestation can end when all remaining adult flies die, a period of about 2 weeks.

Small fruit flies can also be readily trapped. Vinegar, beer, or mashed fruit (banana, peaches) can be highly attractive and the flies can be directed into a simple trap with a funnel entrance (Figure 4).

## Fungus Gnats

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.

## Life History and Habits

Fungus gnat larvae usually are located in the top 2 to 3 inches of the growing medium, depending on moisture level. They primarily feed on fungi, algae and decaying plant matter. However, the larvae will feed on plant roots and leaves resting on the growing medium surface. Larvae develop rapidly and are fully grown in two to three weeks. They then pupate in or on the growing medium.

Adults emerge about one week later. Fungus gnat adults are weak fliers, typically flying in short, erratic patterns. In homes, they usually are seen in the



near vicinity of an infested houseplant. However, adult flies may disperse short distances and often accumulate around window frames.

Figure 1: Fungus gnat adult.

During their seven to 10-day life span, females may lay up to 200 eggs into the cracks and crevices of growing media. Moistgrowing media containing high amounts of peat moss are particularly attractive to adult females. At typical room temperatures (65 F 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 residing on plant leaves and/or on the surface of growing media.

Nuisance problems with fungus gnat adults tend to be most noticeable during late fall and winter. There are several factors that may account for this seasonal peak. First, houseplants maintained outdoors during summer will commonly be colonized by fungus gnats and when these plants are brought indoors, populations may subsequently increase in response to the warmer temperatures encountered in homes. Second, fungus gnats may be more noticeable during cooler weather, when people spend more time indoors, thus increasing the likelihood that fungus

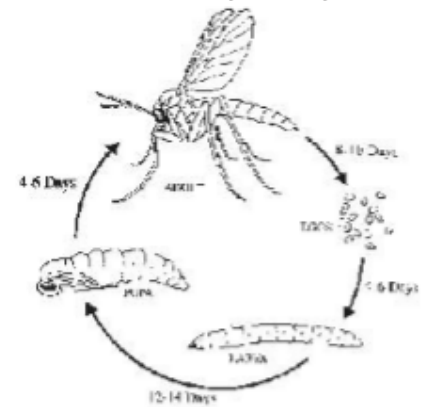


Figure 2: Fungus gnat life cycle



gnat populations will be highly noticed.

However, the primary reason why fungus gnats are abundant in homes is related to changes in moisture levels associated with the growing media of houseplants. Fungus gnat adults are highly attracted to moistgrowing media. Furthermore, as the growing medium ages or degrades it tends to retain more moisture, which will also attract fungus gnat adults. In addition, decreased day length and cooler temperatures slow plant growth and water usage. If watering practices are not altered, particularly during fall and winter, the growing medium will remain moist, which improves conditions for fungus gnat development.

### Management

The most important strategy to minimize fungus gnat problems associated with houseplants is to allow the growing medium to dry between watering, especially the top 1 to 2 inches. The drygrowing medium will decrease survival of any eggs laid and/or larvae that hatch from the eggs as well as reduce the attractiveness of the growing medium to egg-laying adult females. In addition, it is recommended to re-pot every so often, particularly when the growing medium has “broken down” and is retaining too much moisture. Furthermore, be sure to remove any containers with an abundance of decaying plant matter such as decayed bulbs and roots, which provide an excellent food source for fungus gnat larvae.

Insecticides may be necessary if fungus gnat problems persist

several weeks after watering practices have been adjusted. Direct treatments at the adults or larvae; however, different approaches are used against each life stage. Typically, when fungus gnat populations are excessive, repeat applications are required to deal with adults. Apply insecticides to the growing medium surface since this where new adults will emerge.

The most effective treatments are those that are persistent; killing adults for up to three days. A number of pyrethroid-based insecticides, with extended persistence, are available for use on houseplants including those containing the following active ingredients: bifenthrin, cyfluthrin, permethrin,

and lambda-cyhalothrin. Short-persisting contact insecticides such as those containing pyrethrins, soaps, oils, and neem, do not provide sufficient long-term control of fungus gnat adults and require repeat applications at short intervals (couple of days) to exhibit effects.

The larvae in the growing medium will not be directly affected by any insecticides applied to kill adults. An alternative approach to deal with fungus gnat adults, particularly when populations are abundant, is to strategically place yellow sticky cards (sold as Gnat Stix) underneath the plant canopy or on the edge of containers.

The adults are attracted to yellow and will be captured on the sticky cards. This may be helpful in mass-trapping adult females, thus reducing the number of larvae in the next generation.



Figure 4: Fungus gnat larvae on potato slice.

Larvae may be killed by the microbial insecticide *Bacillus thuringiensis* subsp. *israelensis* (Bti) when applied as a drench to the growing medium. However, formulations of Bti sold for fungus gnat control generally are unavailable through retail outlets. The Bti product marketed as Gnatrol is used in commercial greenhouses and large interior environments.

The systemic insecticide imidacloprid will also kill fungus gnat larvae when applied to the growing medium. This active ingredient is available in a number of houseplant insecticide formulations as granules, slow-release “spikes”, and in combination sprays with a pyrethroidbased insecticide.

A biological control option for control of fungus gnat larvae is applications of certain insect parasitic (or entomopathogenic) nematodes as a drench to the growing medium. Insect parasitic nematodes are microscopic roundworms that enter fungus gnat larvae through natural openings such as the mouth, anus and breathing pores (see CSU Extension Fact Sheet 5.573, Insect Parasitic Nematodes). The nematodes emit a bacterium that digests the internal contents of the larvae. Fungus gnat larvae die within three to four days. The nematode species *Steinernema feltiae* is particularly effective against fungus gnat larvae.



Figure 3: Fungus gnat on sticky card.



An effective means of detecting the presence of fungus gnat larvae is to insert 1/4 inch slices or wedges of potato into the growing medium. Larvae will migrate to the potato and start feeding within a few days. The potato slices should be turned over to look for larvae present on the underside.

\*W. Cranshaw, Colorado State University Extension entomology specialist and professor, bioagricultural sciences and pest management; R. A. Cloyd, Kansas State University associate professor and Extension ornamental entomology/integrated pest management, entomology. 4/2009

**Current Pests:  
What Are You Seeing?**

**Arapahoe, Douglas, & Elbert Counties**

Fungus gnats: Adults commonly are observed around windows and around the soil of potted plants where they originate.

Indian meal moth: Adult moths emerge from stored foods and can be seen flying around homes.

Carpet beetles: Some adults may emerge and be found in homes.

Boxelder bugs, cluster flies: Overwintered adults become active in and around homes.

Firewood insects: Bark beetles and wood borers emerge from stored wood in homes

**Denver Metro Area**

Fungus gnats: Adults commonly are observed around windows and around the soil of potted plants where they originate.

Carpet beetles: Some adults may emerge and be found in homes.

Boxelder bugs, cluster flies: Overwintered adults become active in and around homes.

Winged termites: Winged reproductive stages begin to emerge and swarm.

Firewood insects: Bark beetles and wood borers emerge from stored wood in homes

Ants: Field ants forage in homes for sweet materials.

Clover mites: On very warm days in February clover mites may become active on lawns and sides of buildings.

**Eastern Plains Counties**

Fungus gnats: Adults commonly are observed around windows and around the soil of potted plants where they originate.

Carpet beetles: Some adults may emerge and be found in homes.

Boxelder bugs, cluster flies: Overwintered adults become active in and around homes.

Winged termites: Winged reproductive stages begin to emerge and swarm.

Firewood insects: Bark beetles and wood borers emerge from stored wood in homes

Ants: Field ants forage in homes for sweet materials.

**El Paso & Teller Counties**

Fungus gnats: Adults commonly are observed around windows and around the soil of potted plants where they originate.

Indian meal moth: Adult moths emerge from stored foods and can be seen flying around homes.

Carpet beetles: Some adults may emerge and be found in homes.

Boxelder bugs, cluster flies: Overwintered adults become active in and around homes.

Firewood insects: Bark beetles and wood borers emerge from stored wood in homes

**High Country Counties**

Fungus gnats: Adults commonly are observed around windows and around the soil of potted plants where they originate.

Indian meal moth: Adult moths emerge from stored foods and can be seen flying around homes.

Carpet beetles: Some adults may emerge and be found in homes.

Boxelder bugs, cluster flies: Overwintered adults become active in and around homes.

Firewood insects: Bark beetles and wood borers emerge from stored wood in homes

**Northern Front Range**

Fungus gnats: Adults commonly are observed around windows and around the soil of potted plants where they originate.

Indian meal moth: Adult moths emerge from stored

foods and can be seen flying around homes.

Carpet beetles: Some adults may emerge and be found in homes.

Conifer seed bugs, Boxelder bugs, cluster flies: Overwintered adults become active in and around homes.

Firewood insects: Bark beetles and wood borers emerge from stored wood in homes

Clover mites: Migrations of mites from lawns into buildings may begin at this time, during warm days

Ants: Field ants forage in homes for sweet materials.

### **Pueblo & Fremont Counties**

Fungus gnats: Adults commonly are observed around windows and around the soil of potted plants where they originate.

Carpet beetles: Some adults may emerge and be found in homes.

Boxelder bugs, cluster flies: Overwintered adults become active in and around homes.

Winged termites: Winged reproductive stages begin to emerge and swarm.

Firewood insects: Bark beetles and wood borers emerge from stored wood in homes

Ants: Field ants forage in homes for sweet materials.

### **Southwestern Counties**

Fungus gnats: Adults commonly are observed around windows and around the soil of potted plants where they originate.

Indian meal moth: Adult moths emerge from stored foods and can be seen flying around homes.

Carpet beetles: Some adults may emerge and be found in homes.

Conifer seed bugs, Boxelder bugs, cluster flies: Overwintered adults become active in and around homes.

Firewood insects: Bark beetles and wood borers emerge from stored wood in homes

Swallow Bugs: Overwintered swallow bugs start to become active in anticipation of returning migrant birds - and bite humans.

Clover mites: Migrations of mites from lawns into buildings may begin at this time, during warm days

### **Tri-River Counties**

Fungus gnats: Adults commonly are observed around windows and around the soil of potted plants where they originate.

Carpet beetles: Some adults may emerge and be found in homes.

Boxelder bugs, cluster flies, root weevils, lacewings:

Overwintered adults become active in and around homes.

Winged termites: Winged reproductive stages begin to emerge and swarm.

Indian meal moth: Although infestations may persist year-round, presence of moths often declines in homes at this time.

Firewood insects: Bark beetles and wood borers emerge from stored wood in homes

Ants: Field ants (Formica species) may forage in homes for sweet materials.

Source: <http://bspm.agsci.colostate.edu/outreach-button/insect-information/> (Yard/Garden Insect Calendars)

## **Daycare and School Poison Safety**

A recently released article from the Poison Control Centers( AAPCC) and National Pesticide Information Center (NPIC) offers a few simple steps to help prevent poisonings at daycare and school.

Full Article available at: <http://www.aapcc.org/prevention/daycare-school-poison-safety/>



## Credits

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