Controlling Flies In and Around the Home

FACT SHEET 18-036-1218

Introduction: *While most flies are merely nuisance pests, some are of public health importance because they mechanically transmit diseases. House flies, blow flies, and face flies develop in manure and garbage and are commonly contaminated with disease-causing bacteria, including those associated with food poisoning. Diseases transmitted by flies include dysentery, cholera, typhus, salmonella, and staphylococcus.*

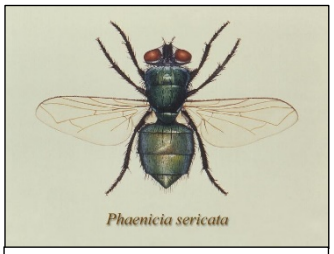
Fly life stages: eggs (center), larvae (upper left), pupa (lower left), and adults (right) (Clemson University).

Description and Life Cycle: Adult flies lay eggs on food, which hatch into pale and legless immatures, also called larvae or maggots. Once fully grown, the maggots leave their food to find a place to pupate. Flies use the pupal stage to transform from maggot to adult fly. Many flies complete development (egg-larva-pupa-adult) in as little as 7 to 14 days, and produce numerous generations during a typical season. Some flies deposit already-hatched maggots on their hosts or food sources. Flies are mostly a nuisance during the warm season and cluster flies and face flies may overwinter indoors. House flies, little house flies, dump flies, and blow flies breed in food waste (garbage) and/or animal feces. These flies are generally referred to as "filth flies."

Common Flies Found In and Around the Home

House fly illustration (CDC PHIL).

House fly (*Musca domestica*): House flies larvae commonly develop in or near man-made sources of food and can be found in garbage, animal waste, spoiled fruits and vegetables, and spilled animal feed. The adult flies feed on a wide range of liquid waste, but can eat solid foods such as sugar by regurgitating or "throwing up" on them to liquefy them first. Flies also defecate and shed hairs when they land on surfaces. Because of this habit, house flies can pose serious health threats by mechanically transmitting disease organisms. ***Control:*** A multipronged approach, called Integrated Pest Management (IPM), is the key in preventing and controlling flies. IPM for flies include sanitation practices that remove breeding areas. Remove or cover garbage and clean up spilled animal feed and manure. Screen windows and keep doors closed to prevent flies from entering buildings. Sticky strips or "fly paper" are effective for house flies because they land on vertical surfaces to rest. While insecticides can be used for fly control, they should only be used after employing other control strategies first. Insecticides do not usually provide the same long-term fly control as pest-proofing and good sanitation practices.



Blow fly illustration (CDC PHIL).

Blow fly (*Calliphoridae*): Blow flies found in and around homes are metallic gray, blue, or black. Common species include the black blow fly (*Phormia regina*) and numerous bluebottle flies (*Calliphora* species). Normally these flies breed outdoors, but during the cool season, they seek out sheltered areas, which often include buildings. These flies are scavengers and commonly breed in carrion and pet waste. Large numbers of blow flies within a home may indicate the presence of a dead animal, usually a mouse or squirrel that has died behind the walls or in a ceiling void. ***Control:*** Implement IPM techniques: tightly seal garbage containers and remove animal manure from around the home. Screen windows in summer and use fly paper or fly traps as an additional control measure.

Face fly photo (Scott T. Smith).

Face fly (*Musca autumnalis*): The face fly is a robust fly that closely resembles the house fly. It is more likely to be a problem in rural areas, particularly in homes near pastures or where cattle are kept. The face fly is a non-biting fly that feeds on animal nasal, oral, and eye secretions; nectar; and fresh dung. The face fly uses jagged spines to scrape the outer tissue (conjunctivae) of the eye to make the animal to produce tears, which the fly feeds on. This feeding can transmit pinkeye from animal to animal. Adult female face flies typically cluster around the host animal's eyes, mouth, and nose, causing extreme annoyance. ***Control:*** Seal homes in late summer before flies enter to overwinter. Limit sources of cattle manure in pastures, particularly in late summer. Insecticide treatment on exterior walls around doors and windows can further limit fly movement into homes during late summer. Insecticides can also be applied to livestock to reduce adult face flies on the animals themselves.

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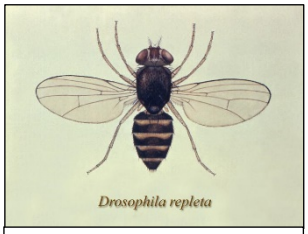
Cluster flies (*Pollenia rudis* and *P. pseudorudis*): Cluster flies are the most common fly found in homes during the fall and winter, and can become a serious nuisance. These flies tend to concentrate on the upper stories of buildings on the south and west sides, and emerge when the house warms up. This moderately size, dark gray fly is identified by the presence of golden hairs on the thorax. Cluster fly larvae are parasites of earthworms on which they feed. ***Control:*** Seal the home (particularly upper stories of south and west sides) before flies enter in the fall. Exterior treatment of house walls with effective insecticides can further limit entrance.

Cluster fly photo (Colorado State University).

Moth fly photo (Colorado State University).

Moth flies (*Psychodidae* species): Moth flies, sometimes called "drain flies" or "filter flies," are occasional problems in homes, and are most often seen in and around sink, bathtub, and floor drains. This small, dark gray fly superficially resemble a tiny moth. The larvae feed on the sludge of organic matter that often builds up inside continuously wet pipes. ***Control:*** Correct plumbing problems that promote favorable fly breeding conditions. Use a drain cleaner formulated to remove built-up organic matter and thoroughly scrub drain pipes and covers with a brush.

Fruit flies (*Drosophila* species): Fruit flies are small (~1/8"), light brown to black flies with bright red or black eyes. The larvae develop on overripe fruit and other organic material, which may include unemptied trash cans, spilled juice and condiments, and even the food that builds up in garbage disposals. Fruit flies are the most common in the fall, when they come into homes on field-ripened produce, and become a major pest. ***Control:*** Remove food sources. Throw away overripe fruit, clean up spills, cover trash cans, regularly empty the garbage, and refrigerate or cover fruit. Use homemade traps using cider vinegar, red wine, or mashed banana to attract adult flies. If using vinegar or wine, mix in a little dish soap, which breaks the surface tension and causes the flies to sink. Commercial traps based on the same principles are also available from many hardware stores.



Fruit fly illustration (CDC PHIL).

Fungus gnat photo (Bill Keim).

Fungus gnats (*Bradysia* species): Fungus gnats are small, dark flies most often found collecting around windows during fall and winter. Fungus gnats can be found indoors infesting house plant potting mixes or hopping across the soil surface. They cause little-to-no damage to the plants, but can be a nuisance to homeowners. ***Control:*** Fungus gnat larvae feed on fungus growing in moist potting soil and on decomposing plants. Water house plants less frequently and allow the soil to dry out to limit fungal development. Discard rotting bulbs and dead parts of house plants. If reducing the frequency of watering does not help, there are also a number of insecticides approved for fungus gnat control in house plant soil.

Little house fly (*Fannia* species): Little house flies also known as lesser house flies (*Fannia* species) are smaller than house and face flies, but look similar. Indoors, they fly for long periods and rarely rest. Large numbers of little house flies are most often associated with raising poultry and livestock. ***Control:*** Limit breeding sources around the home, such as decaying vegetable materials and manure. Keep windows and doors closed or use screens.

Little house fly photo (David Sheltar, OSU).

Stable fly photo (Bradley A. Mullens).

Stable Fly (*Stomoxys calcitrans*): Also called the "biting fly," it attacks people living near livestock or livestock facilities. Stable flies have a bayonet-like mouthpart protruding from the front of the head and look superficially like the house fly without the four dark stripes down the thorax. Stable flies develop primarily in livestock manure, but may also grow in piles of moist, decaying plant material (e.g., grass clippings, hay, silage), especially when this material is mixed with animal manure and urine. Stable flies can develop in backyard compost piles and cause problems for an entire neighborhood. Stable flies prefer to feed on blood from the legs and lower body of cattle, horses, and other large animals (including humans). ***Control***: Eliminate breeding sites. Remove or incorporate moist grass clippings into compost piles. Prevent compost piles from becoming breeding sites by periodically turning the pile, which promotes internal and rapid decomposition of the organic matter within the pile.

Refrences:

Colorado State University Extension, Flies in the Home (Fact Sheet No. 5.502)
http://extension.colostate.edu/topic-areas/insects/flies-in-the-home-5-502/
Purdue Uniersity Extension Entomology, Household and Structural, Fly Control Around the Home
https://extension.entm.purdue.edu/publications/E-7/E-7.html