



# FactSheet

**Extension**

## Ohio State University Extension Fact Sheet

### Entomology

1991 Kenny Road, Columbus, OH 43210-1000

## Domestic Flies

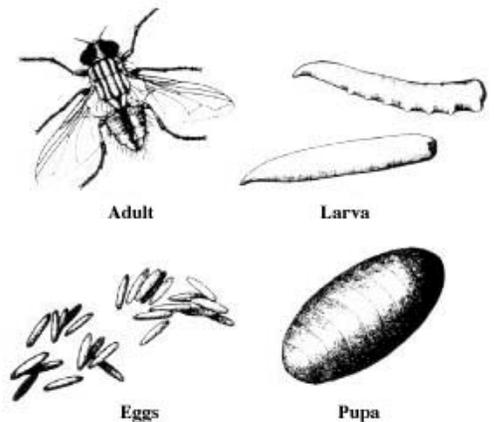
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William F. Lyon

Domestic flies, often called "Filth Flies," are not only a nuisance by their presence, but are important from a human and animal health standpoint. House flies may spread diseases such as conjunctivitis, poliomyelitis, typhoid fever, tuberculosis, anthrax, leprosy, cholera, diarrhea and dysentery. They may serve as intermediate hosts for parasitic tapeworms on poultry or parasitic roundworms on horses. Certain larvae of blow flies, bottle flies, screwworm flies and flesh flies may feed on dead as well as living tissue of mammals, causing blood poisoning and even death, especially in sheep. Stable flies bite painfully, sucking blood from humans and animals. False stable flies do not bite, but spread certain diseases, whereas the little house fly hovers in mid-air in the middle of rooms.

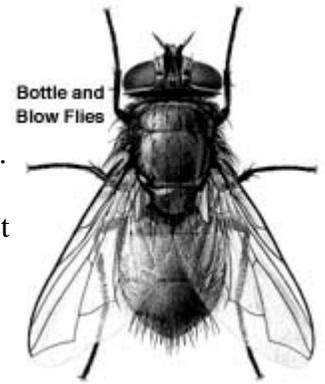
### House Fly

Adults are about 1/6 to 1/4 inch long with reddish-brown eyes. Females are usually larger than males and have wider spacing between the eyes. They have two membranous wings; sponging or non-biting mouthparts; a dull gray body; and four narrow, black-lengthwise stripes on the thorax. Each female, during her three to four weeks of life, lays five to six batches of 75 to 100 small, white, oval eggs, largely in scattered garbage, that hatch in 12 to 24 hours into creamy white larvae. Larvae grow and pupate in four to seven days, and the last larval skin, which is hard and dark brown, is called a puparium. This stage lasts seven days, and can be the overwintering stage. The life cycle from egg to adult may be from 8 to 12 days in warm weather. A pair of flies beginning operation in April, if all were to live, would result in 191,010,000,000,000,000 (191 quintillion 10 quadrillion) flies by August. Allowing 1/8 cubic inch to a fly, this number would cover the earth 47 feet deep. Luckily, predators, parasites and other factors reduce fly populations. When feeding, house flies regurgitate some of their stomach contents on the food, which dissolves it. Then they suck it back into their stomach. They leave fecal deposits where they have walked. While walking and feeding on garbage, fecal material and food, flies may transfer disease organisms from both inside and outside their bodies. The flight range is from 2 to 20 miles.



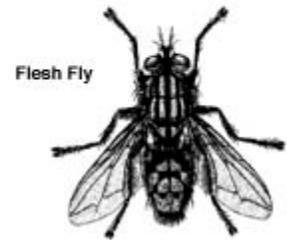
## Bottle and Blow Flies

Blow flies, sometimes known as green or blue bottle flies, are larger than common house flies. Some are characterized by metallic colors such as black (*Phormia*), blue (*Calliphora*) and green or copper (*Phaenicia*). Adults make a loud, droning buzz. Females lay eggs primarily on confined garbage. These flies are often attracted to dead animals, animal wounds, and feces-caked hair or wool on pets and farm animals. During warm autumn days, adults may gather on door and window screens and later enter homes for overwintering. Larvae are commonly found in garbage wastes and pet droppings. Larval development is completed in less than a week for green or copper blow flies and 10 to 20 days for black or blue blow flies. Larvae of screwworm flies may infest living flesh, especially at wound sites. Green bottle flies are seen on dog feces. The flight range is 3 to 10 miles.



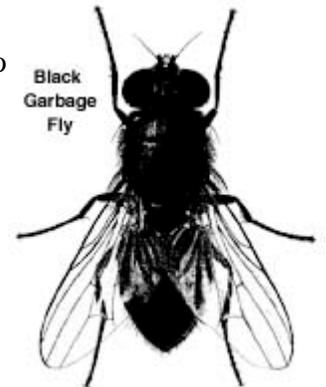
## Flesh Fly

Adults resemble overgrown house flies with three stripes on the thorax and a checkerboard pattern on their abdomen. Females deposit living maggots rather than eggs in decaying flesh of dead animals and excrement, especially dog stools. The life cycle is about eight days.



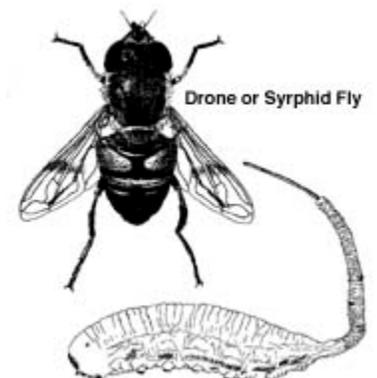
## Black Garbage Fly

Adults are shiny black and about 2/3 the size of a house fly. Their life cycle is similar to the house fly. They may become abundant in piles of poultry and dairy cattle manure. The larvae are "beneficial" by preying on other fly larvae, especially the house fly. However, excessive numbers of adults may become annoying.



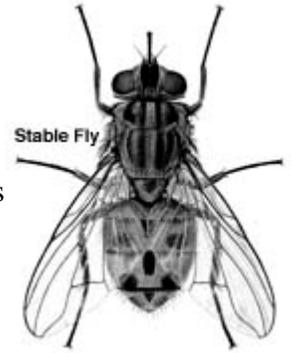
## Drone Fly or Syrphid Fly

Adults are clothed in dense, short, yellow hairs giving the appearance of a large honey bee. Larvae, known as "Rattailed Maggots," develop in polluted water. The life cycle from egg to adult is about 30 days in the summer with the larval stages lasting about 18 days and the pupal stage about 10 days.



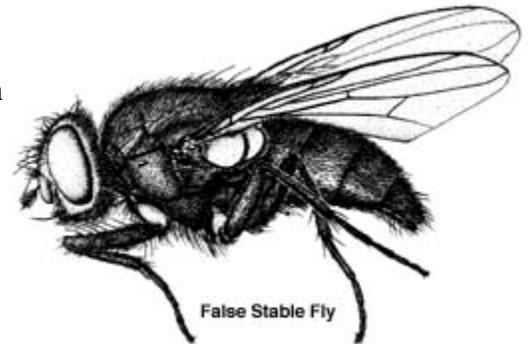
## Stable Fly

Adults resemble house flies except for the slender, pointed, sharp beak used to pierce skin and suck blood. Bites are painful. These flies may transmit anthrax and possibly infantile paralysis, leprosy, surra and swamp fever. Normally an outdoor fly, it attacks any warmblooded animal from rats to humans. Females lay four to five batches of eggs, each containing 100 to 150 eggs, in rotting straw; stable manure; moist, spilled feed; piles of lawn clippings; and piles of dead weeds washed along streams. The life cycle is about three weeks; both males and females suck blood.



## False Stable Fly

Adults are similar to house flies, slightly larger and have a red mark on the back. They have sponging mouthparts, with females depositing eggs in animal manure, human excrement, tainted meals and decaying organic matter. Eggs develop into larvae that require 15 to 25 days to mature. Adults can transmit filth-related diseases.



## Little House Fly

Adults are similar to house flies except they are smaller - 1/8 to 3/16 inch long. They have sponging mouthparts and feed on liquids. Male flies are usually seen in homes, where they hover in the middle of rooms. Females lay eggs in semiliquid organic matter such as animal and human excrement. The life cycle requires about 24 days.



## Control Measures

In order to successfully control flies, one must first collect fly specimens and have them correctly identified. Proper identification will aid in determining the fly biology and potential breeding sites. Collect several specimens and submit to your local Ohio State University Extension office located in each of Ohio's 88 counties. Also, the C. Wayne Ellett Plant & Pest Diagnostic Clinic on the OSU campus charges a fee for specimen identification.

A community educational program plus the services of a licensed pest control applicator are needed in neighborhoods with widespread fly problems.

## **Preventative**

Sanitation is the most effective and important step in controlling flies. All outside trash areas must be kept clean. Garbage should be drained and wrapped in plastic bags before being placed in trash receptacles or dumpsters outdoors. By placing garbage in bags, odors will be reduced, therefore attracting fewer egg-laying flies. (Reduce attractive odors by routinely scraping out and thoroughly cleaning food residues from garbage containers.)

Use garbage cans with tight fitting lids lined inside with plastic bags. Locate the garbage cans or trash receptacles as far away from the house or building as possible to reduce nuisance flies nearby. Dispose of garbage at least twice weekly at a regular landfill, by incineration or burying in the soil, if local health regulations permit.

Eliminate all potential breeding materials such as rotting straw or mulch, manure, garbage and animal excrement. Avoid damp pet foods left outdoors for several days. Eliminate carcasses of dead animals and birds. Any potential breeding material should be spread out thinly in the field and allowed to dry to prevent fly development.

Dispose of piles of old, wet, lawn clippings, leaves, manure stacks, old wet hay or straw bales and other such debris. Waste piles can be covered with black plastic which will heat the organic matter, destroying fly development.

Use adequate screens of 10 mesh on windows and doors to prevent fly entry or 18 mesh to exclude mosquito-size flies. Screen doors should open outward and have fitted springs for tight closing. A double set of doors is best where adult fly populations are heavy. If doors are opened constantly, use an air stream with a velocity of 1,600 feet per minute or more.

Bead curtains are an alternative to screens in areas of heavy traffic. Beads should be oval with each string's beads offset from the next string so that the beads fit into each other's contours, eliminating gaps. Beads have been used in the past to brush flies off people and pets.

Drain wet, low areas by using clean gravel and other fill. Eliminate any standing surface water through proper surface grade and tiling if needed.

It is best and cheapest economically to replace a 100 watt mercury vapor light (ultra violet energy) with a 50 watt high pressure sodium vapor light or dichrom yellow non-insect attractant light. Place lights away from potential points of fly entry.

At picnics and cookouts, keep foods covered and protected from flies until eaten. Remove fermenting overripe fruits from the ground. Flies may move several miles within a day or two, often originating from unsanitary sites.

A simple fly swatter or folded newspaper is effective indoors against a few individual flies (thin wire stems and natural fiber head swatters are superior to the plastic ones).

Rolls of sticky flypaper are available from most hardware stores. Use on back porches, garages and storage sheds where aesthetics are not of primary importance.

Electric light traps are available commercially to capture specimens for identification, reduce some adult fly populations and monitor the effectiveness of control programs. Some traps use bait to attract and capture flies.

## **Insecticides**

Total reliance on insecticide applications in and around the house often results in failure to produce long-term control results. Constant effort must be made to eliminate and dry out potential fly breeding sites. At times, insecticides may be helpful in reducing heavy nuisance fly populations.

Treat outdoor surfaces where flies rest, especially around doors, windows, screens, garbage cans and trash piles with a residual spray of an Environmental Protection Agency (EPA) approved, labelled insecticide such as chlorpyrifos, permethrin or other synthetic pyrethroids.

Indoors, use space sprays or aerosols containing synergized pyrethrins or synthetic pyrethroids labelled for flies in the home.

## **Labelled Insecticides**

There are many insecticide formulations labelled for fly control. Some are labelled for general use (homeowners) while others are restricted use (licensed pesticide applicators only).

General Use insecticides include:

- diatomaceous earth (Answer)
- diatomaceous earth + pyrethrins (Organic Plus)
- diazinon (Knox Out 2FM)
- esfenvalerate (Conquer)
- propoxur (Baygon)
- pyrethrins (Exciter, Kicker, Microcare, Pyrenone, Pyrethrum, Synerol, Uld, X-Clude)
- resmethrin (Vectrin)

Note: Some formulations of chlorpyrifos (Duration, Dursban, Empire) and permethrin (Astro, Dragnet, Ectiban, Flee, Permanone, Prelude, Torpedo) are restricted use.

Restricted Use insecticides include:

- cyfluthrin (Optem, Tempo)
- cypermethrin (Cynoff, Cyper-Active, Demon, Vikor)
- deltamethrin (Suspend)
- lambdacyhalothrin (Commodore)
- tralomethrin (Saga)

Note: Some formulations of methomyl (Flytek) are labelled for outdoor use only while chlorpyrifos + pyrethrins (Dual Use) and methoxychlor (Marlate) are labelled for animal quarters use only.

Remember: Before using any insecticide, always read and follow label directions and safety precautions (the label is the law).

Again in some cases, heavy fly populations are best controlled by a licensed pesticide applicator or professional pest control firm. Homeowners often do not have the experience, availability of certain insecticides and equipment needed to perform the control job effectively on certain fly species.

For further information: Contact your county's office of Ohio State University Extension located in each of Ohio's 88 counties for the most recent, up-to-date fly control literature and advice regarding your situation.

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All educational programs conducted by Ohio State University Extension are available to clientele on a nondiscriminatory basis without regard to race, color, creed, religion, sexual orientation, national origin, gender, age, disability or Vietnam-era veteran status.

Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension.

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