



Summer filth flies

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Several species of flies can be found in and around homes in Minnesota during the summer months. These medium-sized flies are attracted to human and animal waste and decaying garbage. Because of these habits, they are capable of transmitting filth-related diseases such as diarrhea and dysentery.

All flies belong to the insect order Diptera, meaning "two-winged." Most other adult insects have four wings. Flies have four life stages: egg, larva, pupa and adult. Eggs are laid in a variety of decaying organic material, and hatch into pale, legless maggots. When development is complete, the maggots wander from the larval development site in search of a dry place to pupate. The pupa is the immobile stage characterized by a hard, dark brown "shell." The adult flies may emerge in as little as seven to fourteen days.



Photo: Jennifer Hinton
House fly (about three times actual size)

House fly, *Musca domestica*

Distributed throughout the world, the house fly is one of the most common of all insects. Adults are dull, medium-gray flies, 1/6- to 1/4- inch long with four dark stripes on the thorax. They have sponging, non-biting mouthparts for sucking up liquified foods.

Female house flies live for three or four weeks and lay batches of 75 to 100 small, white, oval eggs, usually in garbage, but also in manure and decaying vegetation. House flies are strong fliers, and can fly up to 20 miles, although they are found primarily within two miles of the larval food site. When feeding, house flies regurgitate liquid from the stomach to dissolve food, then use their sponging mouthparts to suck it up. They leave fecal spots, or "specks," where they have walked, and in this way may transfer disease organisms to humans and animals. In rural areas, house flies can be a nuisance when they gather on the outside walls of homes and buildings on summer evenings.

Blow fly, family *Calliphoridae*

Blow flies are sometimes known as blue or green bottle flies. They generally range from 1/4- to 1/2-inch long, and are characterized by metallic blue-, green- or copper-colored bodies. In urban areas they are sometimes more abundant than house flies. Females lay eggs on



Photo: Jeff Hahn
Blow fly (about three times actual size)

garbage containing meat scraps, as well as on dead animals and animal wounds. They may also deposit eggs onto feces-caked hair or wool on pets and other domestic animals.

Blow fly larvae (maggots) develop rapidly in warm weather, and maggots often reach their full size on the second or third day after hatching. The entire life cycle usually requires between 10 and 25 days. If an animal or bird has died indoors and is hidden in a chimney, wall void or ceiling, a sudden population of adult blow flies may be seen a number of days later. As maggots mature, they move away from the carcass to pupate.

Maggots occasionally pass through spaces in the wall or ceiling, for example around a light fixture, and drop to the floor. This is a temporary situation, and will end when all food is consumed. This may take up to a week for a small animal such as a squirrel. Adult flies may become a nuisance in the fall, when they may enter homes to overwinter. On warm winter days, they may become active inside, but do not reproduce.

Little house fly, *Fannia canicularis*

The adults of the little house fly are similar to house flies, but they are smaller, from 1/8- to 3/16-inch long, and have more slender abdomens. When at rest, they hold their wings together over their backs. Like the house fly, they have sponging mouthparts. Adult females commonly lay eggs in animal and human excrement, and on decaying organic matter, including dead insects and animals. The life cycle requires four weeks or less. Males often seek shade indoors, where they may hover in rooms for long periods. Little house flies may be a nuisance up to two miles from the breeding site.

Stable fly, *Stomoxys calcitrans*

Stable flies resemble house flies but have "checkerboard" markings on the abdomen and bayonet-like mouthparts used to pierce skin and suck blood. They are about 1/4-inch long, and are sometimes called "biting house flies." Both sexes can inflict a painful bite, feeding on the blood of warm-blooded animals including humans, horses and cattle. Dogs kept in kennels outdoors may be bitten severely, especially on legs and ear tips. Stable flies are able to bite through clothing, and particularly attack the ankles. They are strong fliers, and may fly long distances for a blood meal.

Female stable flies can lay 400 or more eggs during their lifetime, in decaying organic matter such as soiled animal bedding or rotting grass clippings. The entire life cycle may take from 17 to 50 days, depending on food supply and weather conditions. In the United States, stable flies are important in causing economic losses in feeder cattle.

False stable fly, *Muscina stabulans*

False stable flies do not bite, but have sponging mouthparts. They are similar to house flies, but are about 3/8-inch long and have a dull reddish mark on the back. Females lay eggs in tainted foods, excrement, the dead bodies of insects, snails and vertebrates, and are sometimes parasitic on nestling birds. The life cycle may take five to six weeks.

Filth fly control

Prevention

Sanitation is the most important and effective measure in controlling filth flies. Plastic bags containing garbage should be tied tightly before being placed in receptacles or dumpsters to reduce attractive odors. Routinely clean garbage containers to remove food debris and further reduce odors. Use garbage cans with tightly fitting lids, and place the cans as far away as possible from the home.

Remove all potential larval food materials such as animal manure, rotting mulch, lawn clippings, and animal or bird carcasses. If animals or birds become trapped behind walls or in places that are difficult to access inside the home, removal is not always possible, and the only practical solution is to let flies complete their life cycle and go away on their own. Compost piles, if not properly maintained, may also produce large numbers of filth flies. If this is the case, eliminate the compost pile or cover it with black plastic sheeting, which will trap heat and reduce fly survival.

Use close-fitting 14- to 16-mesh screens on doors and windows to exclude flies from homes. Once inside, a simple flyswatter is effective against small numbers of flies. Sticky flypaper rolls can be used to trap flies and are available at most hardware stores. Hang flypaper out of reach of children and pets.

Insecticides

Insecticides may be used as a supplement to sanitation and exclusion. Although they are not effective in long term control, they can be used to temporarily reduce fly numbers. Treat outdoor surfaces in areas of high fly activity, especially around doors, windows, garbage cans and dog houses with a residual spray of an EPA-approved insecticide such as permethrin or bifenthrin. Be sure that the product is labeled for the site you intend to treat.

CAUTION: Read all label directions carefully before buying insecticides and again before applying them. Information on the label should be used as the final authority.

In some instances, hiring a licensed pest control operator to treat heavy infestations of flies may be the best approach. Certain insecticides, such as cyfluthrin (Tempo) and cypermethrin (Demon, Cynoff), are available only to pest control operators. Spot-treat large numbers of flies indoors with an aerosol labeled for flying insects, for example, pyrethrins or tetramethrin. Remember, this is a short-term solution, and will not solve an ongoing problem.