



HOUSE FLIES

Musca domestica

House flies are not the neatest of insects. They visit such places as dumps, sewers, and garbage heaps. They feed on fecal matter, discharges from wounds and sores, sputum, and all sorts of moist decaying matter such as spoiled fish, eggs and meat.

ECONOMIC IMPORTANCE

House flies are strongly suspected of transmitting at least 65 diseases to humans, including typhoid fever, dysentery, cholera, poliomyelitis, yaws, anthrax, tularemia, leprosy and tuberculosis. Flies regurgitate and excrete wherever they come to rest and thereby mechanically transmit disease organisms.

BIOLOGY

House flies can be easily identified by the four dark, longitudinal stripes on top of the thorax, or middle body region (Fig. 1). They vary in length from 1/8-1/4 of an inch. Their mouth parts are adapted for sponging up liquids; they cannot bite. These flies can only ingest liquid food. They feed on attractive solid food by regurgitating saliva on it. The saliva liquifies the solid material which is then sponged up with the proboscis. They require water since they are continually salivating and voiding liquids. Fly specks seen on many surfaces visited by house flies are the excreted wastes.

The eggs are deposited in decaying matter such as grass clippings, garbage, human and animal excrement. Horse manure is the preferred breeding medium. About 100-150 eggs are deposited by each female on appropriate food. Eggs may hatch in 7 1/2 hours when temperatures are high (about 99°F), or it may take two days if the temperature is only 59°F. Eggs hatch into worm-like creatures called maggots (Fig. 1). Maggots lack definite heads, eyes, antennae or legs. Their bodies are pointed at their front end and gradually widen at the rear. They feed on the material in which they find themselves. There are three larval molts. Mature larvae stop feeding and burrow for protection in drier surrounding areas, where they pupate. The pupa is a chestnut brown, oval object within which the larva changes into an adult house fly. Adults mate within one to two days after emerging from their pupal cases. The life cycle, from egg to adult, may take as little as one week, but normally requires three weeks for completion. House flies normally live about 2 1/2 weeks during the summer, but they can, at lower temperatures, survive up to three months. Some overwinter outdoors in protected locations, or in crevices

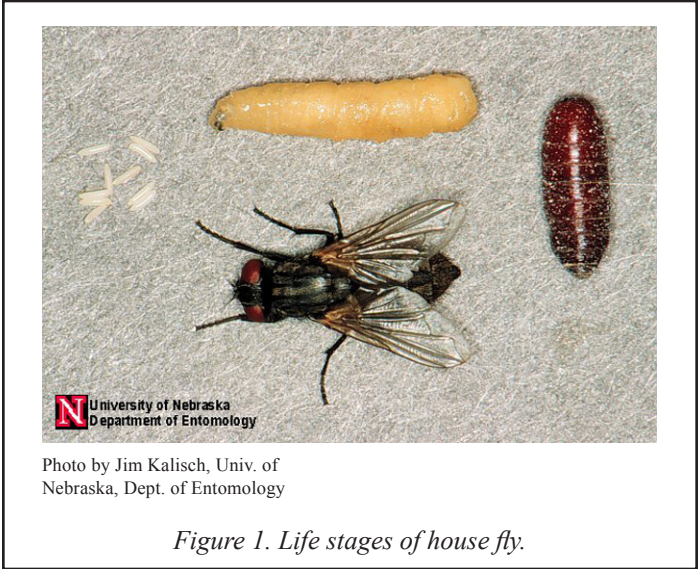


Photo by Jim Kalisch, Univ. of Nebraska, Dept. of Entomology

Figure 1. Life stages of house fly.

in buildings. Flies normally stay within 1/2-2 miles of their point of origin, but have been known to travel as far as 20 miles to find food and ovipositional sites.

MANAGEMENT

There are four basic principles of pest management important in controlling house flies: sanitation, exclusion, non-chemical measures, and chemical methods. These are listed in order of lasting effectiveness.

Sanitation - Flies cannot breed in large numbers if their food sources are limited. Do not allow such materials as manure, garbage, grass clippings, weed piles or other decaying organic matter to accumulate. Keep trash cans clean and tightly covered. Be careful not to wash garbage cans where the rinse water might drain into the soil; flies can breed in soil full of organic matter. Dry out maggoty garbage or dispose of it in fly proof containers or landfills.

Exclusion - Flies can be kept outside of homes by the use of window and door screens. Make sure screens are tight-fitting without holes. Keep doors closed with no openings at the top or bottom. There should be no openings around water or gas pipes or electrical conduits that feed into the building. Caulk or plug any openings. Ventilation holes can be a way for flies to enter a building. Ventilation is important to maintaining adequate air circulation within the building, but screening must be used to exclude flies.

Non-chemical Measures - The use of such devices as ultraviolet light traps, sticky fly traps, fly swatters, baited fly traps, etc. can eliminate many flies from inside a home. A fly swatter is an economical control method for the occasional fly.

Chemical Control - Exterior applications of insecticides may offer some relief from infestations where the task of completely sealing the exterior is difficult or impossible. Applications should consist of a synthetic pyrethroid (i.e. deltamethrin, cyfluthrin, lambda-cyhalothrin, cypermethrin, sumithrin or tralomethrin) and should be applied by a licensed pest control operator when flies begin to appear. Unfortunately, because insecticides are broken down by sunlight, the residual effect of the material will be greatly decreased and may not kill flies much beyond several days or a week. If flies are numerous inside your home, you can use a space spray (aerosol) labeled for flying insects. Most space sprays contain pyrethrins for quick knockdown. Aerosols give temporary relief, however. If you have many flies inside, you would be wise to find out why they are there and take steps to relieve the problem through sanitation and exclusion.

WARNING

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

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