

# AGRICULTURAL GUIDE

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Insects

## Fly control in and around the home

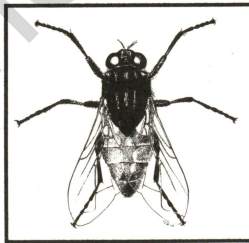
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Several species of flies may be encountered around the home. The more common of these include the house fly, various blow flies and various flesh flies. These flies are important household pests, not only because of the nuisance of their flying, buzzing, and general annoyance, but also because they are potential carriers of diseases such as food poisoning, diarrhea, dysentery, and typhoid fever.

### Biology

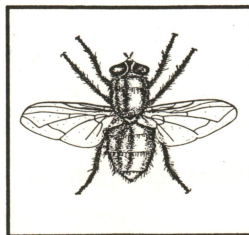
#### House Fly

The house fly (*Musca domestica*) lays her eggs on wet, decaying organic matter such as wet garbage, animal manure, or rotting plant debris. These eggs hatch into creamy white maggots that feed in the waste and in turn change into pupae from which new adult flies emerge. It takes only about two weeks for the house fly to complete a life cycle. This is usually the most common fly found as a pest around homes.



#### Blow Flies

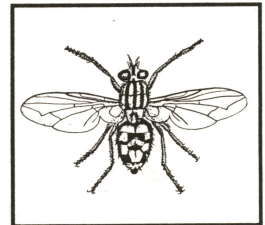
Blow flies belong to the family *Calliphoridae*. The female lays her eggs on the carcasses of dead animals, decaying meat, or garbage that contains meat scraps. The resulting maggots then develop where the eggs were deposited. A few species develop in the tissue of living animals and are often known as "screwworms". Adult flies are shiny, metallic colors



of green, blue or black. Blow flies often enter the house in warm weather, and tend to fly for a considerable time without landing.

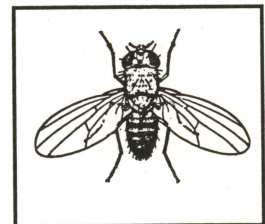
#### Flesh Flies

Flesh flies belong to the family *Sarcophagidae*. They are rather similar to blow flies in both larval and adult habits. Adult flesh flies are generally grayish in color with black stripes running the length of the top surface of the thorax (just behind the head). Most flesh flies in the home are attracted to odors of decay.



#### Fruit Flies

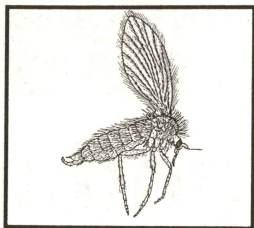
Tiny fruit flies, also known as pomace flies or vinegar flies, are present outdoors during warm weather. These flies, which belong to the genus *Drosophila*, may also be pests around the house. Fruit flies breed in overripe and rotting fruits and vegetables, or other wet, decaying plant material. They are able to complete a life cycle in 10-12 days. Fruit flies are a particular household problem during the fall when they enter houses to escape cooler outside temperatures.



#### Moth Flies

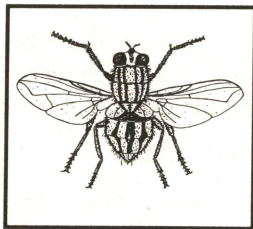
Moth flies belong to the family *Psychodidae*. Most of those species that appear in homes develop as larvae in the wet, gelatinous material that accumu-

lates in drains. This is why they are also known as drain flies, filter flies, or sewage flies. They are tiny flies with the body and wings densely covered with hair. The wings are held somewhat rooflike above the body. They are at times annoying in homes, appearing rather mysteriously in the vicinity of sinks, lavatories or other drains. Great numbers may develop in the filter beds of sewage treatment plants and then migrate short distances to invade houses. Most moth flies are small enough to go through normal fly screening.



### Face Fly

The face fly (*Musca autumnalis*), which looks very much like the house fly, lays eggs on fresh cattle manure. Larvae feed in the manure, then leave it to pupate. Like the house fly, a life cycle takes about two weeks. Unlike the house fly, face flies stay with cattle in the pastures during the warm months. It is only in the fall of the year that they migrate to homes in which to pass the winter.



### Cluster Fly

The cluster fly (*Pollenia rudis*) is a little larger than the house fly and face fly. It is rather sluggish in movement and is marked by short, curly, golden-colored hairs on the thorax. The eggs of cluster flies are laid in the soil and the larvae that hatch from these eggs develop as parasites inside earthworms. The adults emerge in late summer and early fall and seek protected places to spend the winter. Often, as with face flies, this site is a house. During warm days in winter and early spring they and face flies come out of their hiding place and appear in windows, particularly on the south side of the house, and buzz about the house.



## Prevention

### Sanitation

Cleanliness is the first line of defense against house flies, blow flies, flesh flies and fruit flies. This means proper management of garbage, wastes, animal manure, and dead animals.

Garbage cans should have tight-fitting lids. Wet

garbage should be wrapped in old newspaper or the like and then tied in plastic garbage bags before being placed in the garbage can. Clean cans whenever waste clings to the inside.

Animal manure and other wet wastes should be spread to dry or be buried. Dead animals should be removed, incinerated, or buried. Overripe fruits and vegetables should be removed from the garden to prevent fruit fly development.

Moth flies which develop in drains may be eliminated by the vigorous use of a long-stemmed brush accompanied by a strong detergent and/or disinfectant such as Drano.

### Barriers

Regardless of how well potential fly breeding sites are managed, some adult flies will be present in warm weather. Good, close fitting screens are essential to keep them out of the home. Fourteen to sixteen mesh (strands per inch) screens are desirable. Even the best screens will not keep out fruit flies and some moth flies.

Face flies and cluster flies, for unknown reasons, seem to prefer certain buildings and may even prefer certain rooms within a building. These favored areas require special attention to make them as fly-proof as possible.

All doors, windows, ventilators, and louvers should be tightly screened. All cracks should be sealed with caulk.

## Control

### Outside the Home

Residual (long-lasting) sprays are useful for killing house flies outside the home. Treat areas such as outer house walls, under porches, garages, breezeways, doghouses, and similar fly resting places. Spray treated surfaces to the point of runoff.

Cover or remove picnic tables, benches, chairs, etc. before spraying. Pets should be removed from the area before spraying and not allowed to return until spray is dry. Insecticides recommended for residual outdoor sprays are listed in Table 1.

To help prevent face flies and cluster flies from entering your house, apply one of the insecticides listed in Table 1 as a residual to the south and west outside walls. That's where flies tend to congregate before entering.

Ready-to-use baits such as Golden Malrin, etc. can be used if placed outside near doors and other areas where flies congregate. DO NOT use where children or pets may contact the bait.

### Inside the Home

The fly swatter is an effective way to control a few individual flies inside the home. For larger numbers

Table 1. Residual sprays for outdoor fly control.

Insecticide	Finished Spray Concentration	Remarks
chlorpyrifos (Dursban)	0.5%	Readily available in small package concentrate form
cyfluthrin (Tempo)	.05%	Available only for use by PCO's*
cypermethrin (Demon, Cynoff)	0.1%	Available only for use by PCO's
dimethoate (Cygon)	1.0%	
fenthion (Baytex)	1.0%	
permethrin	0.1%	Some house flies show resistance. If control fails, use one of the other listed insecticides.
propoxur (Bagon)	1.0%	A 1% ready-to-use spray available to the general public. Concentrate available only for use by PCO's.

\*PCO's = Professional Pest Control Operators

of house flies, blow flies, flesh flies, moth flies, and fruit flies, the best method is a space-type spray (aerosol) containing pyrethrins plus piperonyl butoxide or one of the pyrethroid insecticides. These materials give quick knockdown and kill flies that move about in the spray but they have no lasting effect. Repeat applications as needed.

This technique is also effective against face and cluster flies that fly about the house in the late winter and early spring. Aerosol sprays designed for indoor fly control are available in most stores.

Face flies and cluster flies hibernate in attics, wall voids, and other often-inaccessible places. When these flies are accessible, treat their nesting surfaces with a spray containing 0.5% chlorpyrifos (Dursban), 0.5% diazinon, or 3% malathion. Resin strips containing 20% dichlorvos may be hung in attics, closets, and storerooms where there is little or no air movement. Use one 10-inch strip for each 1,000 cubic feet of space. These strips are effective up to about three months, but only where they are placed in the same "chamber" as the flies.

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