

in order to prevent egg laying and conserve the heat of fermentation. Entry of adult flies into buildings can be prevented by 1.18 mm-mesh fly-screens (which can easily be removed for cleaning), air curtains, bead screens or self-closing doors equipped with rubber flaps.

### **Physical Control Using Maggot Traps**

Maggot traps take advantage of the fact that larvae need to migrate from breeding sites to cooler surroundings in order to pupate. A simple trap consists of a concrete platform, on which manure or refuse is stored, surrounded by a water-filled moat in which migrating larvae are trapped, and eventually die.

### **Insecticides**

In order to obtain the best results, insecticidal control measures should be integrated with good habitat modification (IPM).

### **Management of Little House Flies**

Eliminating the breeding site is the preferred method of controlling *Fannia*. Piles of moist, decaying grass clippings are ideal developmental sites, as are accumulations of moist manure. *Fannia* are not attracted to the same fly baits or traps that are used to trap common houseflies (*M. domestica*) and are ubiquitous insects, with a flight range of at least 5 miles. Little house fly's are highly active during the day, and rest on walls or other surfaces during hours of darkness.

Lesser houseflies (*F. canicularis*) are frequently encountered in, or around aviaries. The Lesser housefly is more tolerant of cool conditions than the Common house-fly. Fly-tape is unsightly, but effective in controlling hovering males. This species survives the winter mainly in the form of pupae, although, as

with the Common housefly, adults remain active and reproduce throughout the year in warm conditions.

### **DISEASE**

Flies liquefy food by regurgitating digestive juices and their stomach contents on to the food substance. This 'liquid' is then drawn up by the suctorial mouthparts and in so doing the insects pick up pathogenic organisms, which may collect on their bodies to be transferred on contact with other surfaces or survive passage through the gut to be deposited as fly spots. Fly spotting, produced when the insect feeds or defecates, results in rejection of contaminated farm produce, for example eggs, at point of sale. Furthermore, flies are frequently the subject of complaints to vector control, causing major problems where infestations over-spill from breeding sites such as rubbish piles, compost, aviaries and animal houses.

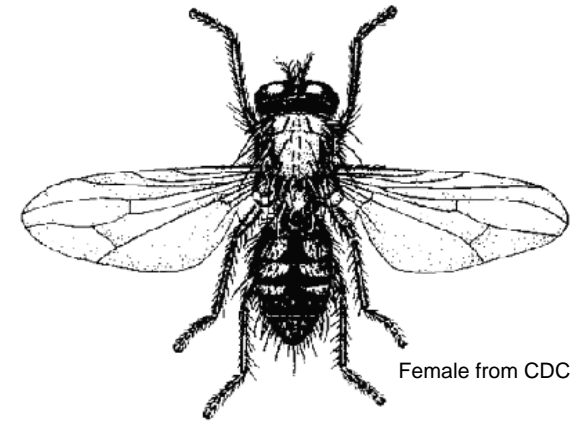
The Lesser housefly makes longer flights and spends less time resting than the Common housefly. Females of the species tend to remain near the breeding sites and only the males migrate. For these reasons *F. canicularis* is less prone to transmit disease than *M. domestica*, but large populations and similar feeding habits mean that this insect, too, has a considerable potential to act as a vector of disease. It has occasionally been implicated as a vector of intestinal or urinary myiasis.



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# **LITTLE HOUSE FLY**

(Lesser House Fly)



Female from CDC

### **Identification and Habitat**

While little house flies (*Fannia* spp.) are found throughout the United States, populations of two species thrive in the particular climatic conditions of California. Both *Fannia canicularis* and *Fannia femoralis* can be abundant during the cooler months in California and are considered winter pest flies.

Adults are approximately one-half to two-thirds the size of the house fly, *Musca domestica*, and they lack its distinctive thoracic markings. *Fannia* at rest hold their wings more over the back than *Musca*, creating a narrower V-shape to the wing outline. Flying clusters of male *Fannia* typically form in areas with still air and shelter from sunlight; these milling groups maintain a position 5 or 6 feet above the ground.

Females typically spend most of their time feeding and laying eggs near the larval development site. The immature stages are adapted to tolerate a wide moisture range in the larval development substrate. Egg laying and larval development frequently occur in animal wastes, but various moist organic materials can serve as suitable substrates. Larvae of *Fannia spp.* are brown in color and spiny. Backyard compost heaps and decomposing piles of grass clippings can produce large numbers of *Fannia*.

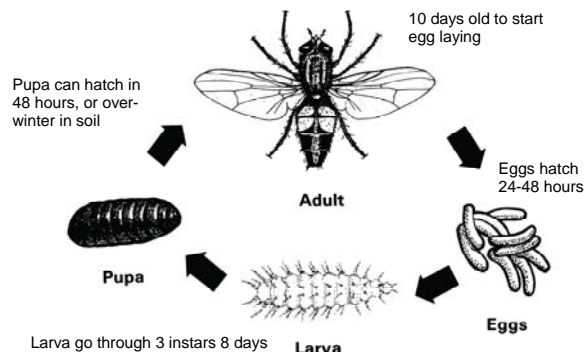
## DAMAGE

Little house flies are more reluctant to enter homes than are houseflies; instead, they tend to congregate in outdoor areas such as patios, entryways, and garages. Their habit of hovering at face height makes them annoying, though they move readily out of the way when approached. They seldom land and are not considered a significant disease vector.

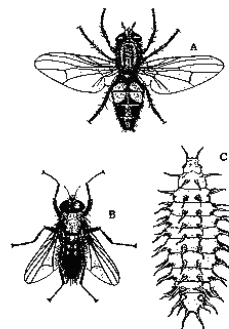
Strong air currents tend to disperse the male aggregations. As temperatures decline, they seek cover in buildings or protective vegetation. As temperatures rise in late spring and early summer, populations of *Fannia* diminish. In some parts of California *Fannia* are the main pest flies from November to June, with *Musca domestica* assuming major pest status between June and November.

## LIFE-CYCLE

Lesser houseflies are prolific breeders in poultry manure, but will also breed in other moist decaying matter. Egg-laying commences when the mated female is 10 days old. The eggs are banana-shaped, 1 mm in length and bear a pair of longitudinal



**Lesser House Fly Life Cycle**  
(temperature dependant)



Lesser House Fly. A, Female. B, Male. C, Larva.

ridges which assist flotation in a liquid medium. The flattened, legless, grey-brown maggots hatch within 24-48 hours. Hairy protuberances on their dorsal surface are thought to aid progression and floating in a semi-liquid medium. The newly hatched larvae frequently wander for a time before burrowing into a suitable food source. Larval development requires a minimum period of 8 days, during which time the larva passes through 3 stages, eventually attaining a length of 6-mm. Eggs hatch after 1 to 4 days. Each larval instar lasts 3 to 5 days. Pupae leave the semi-liquid or liquid substrate for somewhat drier places to pupate.

Mating and oviposition take place 48 and 96 hours after emergence. The period from egg to egg is from 22 to 27 days. Breeding is continuous in warm climates. *Fannia spp.* over winter as pupae, usually 5 to 8 cm below the soil surface.

## CONTROL

Flies have rapid, prolific breeding habits and high mobility. In order to break the life-cycle, control measures should be directed against larval and adult flies.

### Hygiene/Management

*Satisfactory hygiene is necessary to limit potential breeding sites and food sources.*

**Domestic refuse:** this must be stored in well sealed bins, for early removal to disposal sites. High-risk material should be sealed in bags wherever possible. Refuse piles should be covered with earth, to a depth of at least 230 mm (9 inches), and then compacted. This will minimize larval emergence and promote fermentation temperatures at which larvae cannot survive.

**Farm manure:** manure should be kept as dry as possible, especially in poultry houses, where leaking water feeders can provide ideal, moist breeding conditions. The Biothermic method of storing dung involves compacting manure into a cuboid stack, a method particularly suited to horse manure. This form of storage promotes uniform, persistent fermentation throughout the dung, which is lethal to larvae. Taraulins can also be used to cover heaps,