

# THE FLY LADY

Your Commercial Fly Fighter



0439 375 944

## House Flies, Blow Flies & Fermentation Flies

Flies belong to the Order Diptera and are recognised by having a single pair of wings attached to the second or middle segment of the thorax, the second pair of wings having been modified into 'halteres' - knobbed organs which act as gyroscopic stabilizers during flight.

It is helpful to divide flies into three broad groups – houseflies, blowflies and fermentation flies - for the purpose of considering their management. Sometimes collectively referred to as the 'filth flies' because of their attraction to rotting biological material and animal faeces – these three groups are particularly important pests wherever food is manufactured, prepared, served or consumed.

### Houseflies

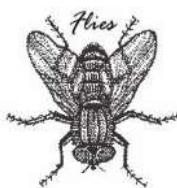
The common housefly *Musca domestica*, has achieved a special prominence because of its ability to adapt to and cause havoc within the human environment. In addition, most of the significant health and pest management issues relating to the filth flies are exemplified in this species.

#### Biology & habitat

In nature, houseflies have an important role in aiding the breakdown of plant material. Housefly adults prefer to breed in warm moist decaying vegetable material, as can be found in animal or human manure, compost heaps and human refuse.

Adults are principally nectar and 'wet-waste' feeders and need a protein food component to mate and develop eggs. Liquid feeding is facilitated by a specially adapted sponge-like proboscis and liquids ingested in previous feeds are regurgitated to assist the process. Feeding is a constant activity in warm conditions and the highly mobile and inquisitive flies may visit several separate feeding sites in the space of a few minutes, guided by their extremely sensitive odour receptors.

Copulation occurs only once per female which then oviposits (lays eggs) principally in decaying vegetable material where larvae feed then pupate nearby in soil or dry vegetable matter.



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Adult flies often are attracted to the general vicinity of premises by an abundant food source such as flowering plants or refuse and then are attracted inside by other odours and favourable conditions (eg. moderate temperature, high humidity). They are extremely well equipped with sensory receptors to facilitate this.

Like most flies, houseflies have excellent vision, colour preferences (for reflected light, yellow is preferred over green or blue) and are photopositive to (instinctively move towards) the ultraviolet end of the light spectrum from light sources.

Houseflies are found in virtually every human habitat. Abundance is controlled largely by climatic and microclimatic conditions, hygiene and sanitation practices and availability of food. In warm climates adult flies are free ranging throughout the year and populations continuous. Where winters are cold, overwintering may occur or populations may be 'closeted' (eg. restricted to within warm locations like animal rearing facilities).

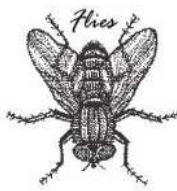
## Blowflies

The term 'blow' refers to the tendency of this group to oviposit (lay eggs) or larviposit (lay live larvae) on human food. Common Australian urban blowfly pest species include; Calliphora, Chrysomya, Lucilia and species belonging to the family Sarcophagidae - very large blowflies (sometimes called flesh flies) with 'checkerboard' patterns on their abdomens and which deposit live larvae directly on food.

### Biology & habitat

In nature, blowflies have an important role in aiding the breakdown of animal tissue. Blowflies share most of the features of their biology with the houseflies but there are some important differences. For example:

- All blowflies prefer a protein-rich breeding medium (eg. animal droppings, animal food, food waste, meat, dead and even live animals). Maggots found in exposed meat or animal carcasses are almost always from blowfly species. Presence of Sarcophagid adults typically indicates the presence nearby, of a dead animal;



- A few species of blowflies – notably Sarcophagid species and Calliphora augur - larviposit (lay live larvae rather than eggs) – a particular problem for food preparation businesses.

The incidence of blowflies mirrors that of houseflies except that abundance is determined by the availability of animal material. This may take the form of exposed human protein food, food waste, or dead animals – even very small ones like garden snails or other insects.

## Fermentation Flies

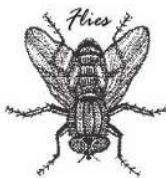
'Fermentation Flies' is a term commonly used to describe a diverse assortment of small flies from a number of different families which have one common feature - they all breed in wet organic materials, typically decaying food or food residue of either animal or vegetable origin. In nature, Fermentation Flies aid in the breakdown of animal and vegetable matter, particularly where such materials have already begun to decompose.

Families falling within this description include for example: vinegar flies (Drosophilidae); moth flies (Psychodidae); some species of fruit flies (Tephritidae) and occasionally, scuttle flies (Phoridae) or small dung flies (Sphaeroceridae).

**Vinegar flies** (sometimes also called 'ferment flies') – Family Drosophilidae, are tiny flies found both inside and outdoors, mostly associated with decaying fruit or vegetation. The adults typically are brown or yellow in colour. They oviposit directly into the fermenting matter in which the larvae feed, frequently pupating in any dry site nearby.

**Moth flies** – eg. Psychoda alternata - are so called because of their hairy, moth-like appearance. The adults are not prolific feeders but frequently lay their eggs in and around drains and sewers, where the resulting larvae develop through to pupation. These flies commonly are found in food preparation areas in moderate to large numbers and bathrooms in smaller numbers.

**Fruit flies** – Family Tephritidae, are mostly colourful flies with a very distinct separation of head and thorax. Typically the female has a prominent ovipositor which she uses to 'strike' (oviposit in) ripening fruit. The developing larvae eat and hence spoil the fruit causing significant damage to some crops, before pupating in the soil.



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## Biology & habitat

Female Fermentation Flies lay their eggs and the larvae feed in wet, decaying food material ('sludge'). After feeding, the larvae find a drier site in which to pupate and they emerge as adults with a typical life cycle of between 8 and 15 days.

Fermentation Flies will breed in almost any place that even small amounts of wet organic waste accumulate and remain undisturbed due to the absence of cleaning activities.

Fermentation Flies are found in virtually every human habitat. Abundance is controlled largely by hygiene, sanitation and waste disposal practices which control the availability of their food.

**Information from : A Code of Practice: For Pest Management in the Food Industry in Australia & New Zealand. 1st Edition August 2011**