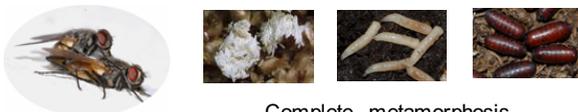


House Fly Biology

Musca domestica is considered to be the number one hygiene pest and is distributed worldwide. It is associated with animal faeces, but has also adapted to feed on other waste materials. House flies have a complete metamorphosis with up to 12 generations per year in temperate regions. A female fly can lay between 300 and 500 eggs during her life.



Complete metamorphosis

Damage and Medical Importance

House flies live in close association with humans and can be important vectors of a number of diseases, picking up pathogens at their breeding and feeding sites, e.g. animal and human excrement, and domestic rubbish. Such diseases can cause child death and blindness. House flies have been demonstrated to carry more than 100 different pathogens such as viruses, bacteria, fungi and parasitic worm eggs. They can develop in large numbers resulting in annoyance to livestock with a subsequent reduction in yield in meat, dairy and egg production. They can also cause post production food spoilage. However, in the wider environment, house flies play an important role breaking down and recycling organic waste.

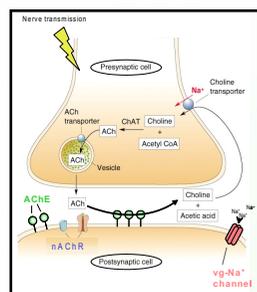


Economic Thresholds

Economic thresholds for house fly control are situation dependent, i.e. in food production tolerance is very low, whereas in livestock or poultry production a low number of flies may be accepted.



Insecticides Mode of Action Classes



Application methods

- Residual treatment (RT)
- Space treatment (ST)
- Larviciding (L)
- Feed-through (FT)
- Baits (B)

Chemical class	Mode of action (IRAC Group)	Appl.
Carbamates	Acetylcholinesterase (1A)	RT, B
Organophosphates	Acetylcholinesterase (1B)	RT, ST, B
Pyrethroids	Sodium channel (3)	RT, ST
Neonicotinoids	Acetylcholine receptor (4A)	B
Spinosyns	Acetylcholine receptor (5)	B
Pyriproxyfen	JH mimics (7C)	L
Benzoylureas	Chitin biosynthesis (15)	L
Cyromazine	Moulting disruption (17)	L, FT
Diamides	Ryanodine receptor (28)	B

Insecticides from different IRAC MoA classes should be used in rotation as part of an integrated resistance management programme. Adulticides and larvicides from the same MoA class should not be used contemporaneously.

Insecticide Resistance Management



Although resistance in house flies is wide-spread, an integrated approach that includes both cultural techniques, along with the use of adulticides and larvicides from different IRAC MoA classes, should be used in a rotational strategy to maintain the fly population below economic thresholds, whilst delaying development of insecticide resistance.

House flies' great fecundity and rapid lifecycle, along with almost constant exposure to insecticides in some settings, has led to significant insecticide resistance issues. Many fly populations are resistant to one or more adulticide, and lower level resistance is often present to larvicides. Highlighting the need to include insecticide resistance management in all fly control programmes



Further Reading



Additional information on control measures against house flies is available in the WHO brochure: Pesticides and their application.

