

House Fly Biology

Musca domestica is considered to be the number one hygiene pest in livestock production and is distributed worldwide. It is associated with animal feces, but has also adapted to feed on other waste materials. Houseflies have a complete metamorphosis with up to 12 generations per annum in temperate conditions, and females can lay up to 500 eggs.



Complete metamorphosis

Damage and Medical Importance

House flies live in close association with humans and can be important vectors of diarrhoeal diseases by taking up microorganisms at their breeding and feeding sites, e.g. animal and human excreta, and domestic rubbish. Such diseases can cause child death and blindness. House flies have been demonstrated to carry more than 100 different pathogenic agents such as viruses, bacteria and fungi. House flies can develop in large numbers resulting in annoyance and indirect damage in livestock production and dairy housing systems which in turn causes contamination of agricultural and farming products, and impacts meat and milk production.

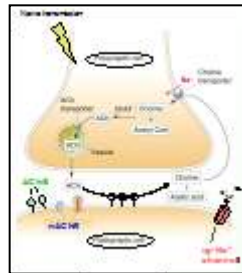


Economic Thresholds

Economic thresholds for determining when to control house flies depends on the area, i.e. in food production areas tolerance is low whereas in livestock or poultry production some house flies are inevitable.



Insecticides and Mode of Action Classes



Application methods

- Residual treatment (RT)
3 Modes of action
- Space treatment (ST)
2 Modes of action
- Larviciding (L)
3 Modes of action
- Baits (B)
4 Modes of action

Biochemical mode of action of chemical classes of WHO-recommended insecticides for the control of house fly adults and larvae, their IRAC classification group (IRAC) and application methods.

Chemical class	Mode of action (IRAC Group)	Appl.
Carbamates	Acetylcholinesterase (1A)	RT, B
Organophosphates	Acetylcholinesterase (1B)	RT, ST, B
Pyrethroids	Sodium channel (3A)	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

Insecticide Resistance & Management



Management

Although resistance in house flies is widespread, different application methods (e.g. baits and larviciding) using different modes of action classes rather than insecticides from within the same IRAC mode of action group should be used in a rotational strategy to control the problem and delay the rapid development of resistance.

Resistance issues

House flies have developed resistance to virtually every insecticide used against them. Resistance is widespread and is considered to be a global problem particularly against neurotoxic insecticides used for adult control. A lower level of resistance has been reported against insect growth regulators.



Further Reading



Additional information on control measures against house flies is available in the displayed WHO brochure on pesticide application.

