

15.12 MOSQUITO

Scientific Name: a) *Culex* spp.

Family: Culicidae

Sub-order: Nematocera

Order: Diptera

Status: Most important and prevalent pest.

Distribution: No house free from its population. They inhabit almost all parts of the world except Polar Regions and commonly breed in marshy lands, near filthy stagnant ponds, cesspools, dump cellars, and standing rain or canal water.

Food: Feeds on the blood of human being, cattle, buffalo and other animals at night being nocturnal in habit.

DESCRIPTION OF STAGES

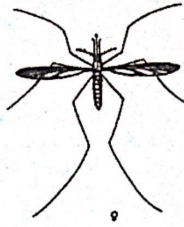
- Adult:** Common species are dull, brownish insects. The abdomen is dark brown and has creamy-white bands at the base of each segment. Females possess 3 jointed short palps. Abdomen is covered with scales. In resting posture proboscis and abdomen form obtuse angle, while abdomen remains more or less parallel with surface.
- Egg:** The eggs are laid in raft-like masses comprising of several hundred eggs. Incubation period is 2 to 3 days. Eggs are elongated in shape.
- Larva:** The larvae are aquatic with hind spiracles present at the end of a tail like tube or siphon projecting from the 8th abdominal segment. Larva hangs down at an angle with only the tip of the siphon in the surface film. The larval skeleton is shed 4 times before the pupal stage appears.
- Pupa:** The pupae have 2 short respiratory tubes on the thorax. They take no feed but can swim in water. Respiratory trumpets are more cylindrical.

Scientific Name: b) *Anopheles* spp.
Family: Culicidae
Sub-order: Nematocera
Order: Diptera

Status: Most important and prevalent pest.
Distribution: No house free from its population.

DESCRIPTION OF STAGES

- Adult:** Common species are brown or dark brown with uniformly dark legs. Female is with palps as long as proboscis. There are no scales on the abdomen. In resting posture proboscis and abdomen remain in a line, but form an angle with the surface.
- Egg:** The eggs are laid singly. Incubation period is 2 to 3 days.
- Larva:** The larvae are aquatic with hind spiracles present on the body surface especially on 8th abdominal segment. Larva is with-held horizontally beneath water film by float hair, etc. The larval skeleton is shed 4 times before the pupal stage appears.
- Pupa:** The pupae have 2 short respiratory tubes on the thorax and take no food but can swim in water. Respiratory trumpets are conical.



Anopheles spp.
(Culicidae: Diptera)

LIFE HISTORY

The life cycle of mosquito species varies depending upon the climatic conditions. Some of them over-winter as larvae or adult. In warmer and comparatively damp conditions breeding takes place all the year. Incubation period of eggs is usually 2 to 3 days. The larvae are aquatic. The larval stage varies from 2 days to 2 weeks during which 4 moultings takes place. The pupae are also aquatic and very active. The pupal stage is very short, lasting for 2 to 3 days after which an adult crawls out of the pupal shell and flies away. Several generations may be produced in a year. Normally life cycle of a mosquito is completed in 10 to 16 days or in several weeks.

DAMAGE

1. Various species of *Anopheles* mosquitoes are known as malarial mosquitoes as they transmit the malarial parasite, *Plasmodium* spp. from man to man. It is the female that bites and acts as vector of malaria because the mouth parts of male are atrophied. Until the recent world wide malaria eradication programme, malaria was considered as one of the greatest scourges of mankind.
2. *Culex* is a domestic mosquito and causes irritating lesions after biting while certain species also transmit filaria, yellow fever, dengue fever and Japanese encephalitis. The most common species in our country, *Culex quinquefasciatus* being principal hosts of *Wuchereria bancrofti* transmits filaria in urban areas.
3. *Mansonia* spp. are intermediate hosts of *Burgia malayia* and spread filaria in rural areas.
4. *Aedes aegypti*, *A. albopictus* etc. are responsible for the transmission of dengue fever, yellow fever and various types of encephalitis.

NON-CHEMICAL CONTROL

1. Efforts should be made to drain stagnant waters. Otherwise treat with 0.025 % malathion emulsion or use kerosene oil in standing water ponds to reduce its population.
2. Remove grasses and weeds around the houses and treat with 1 % malathion weekly during the season of activity.

3. Screening of the houses with wire-gauze doors, use of mosquito nets or repellents such as various brands of citronella oil and creams can protect human beings from transmission of malaria and other diseases.

CHEMICAL CONTROL

1. The use of dichlorvos (Vapona/Thunder) or aerosol sprays is quite effective in giving a complete control of mosquitoes when applied in the evening during summer season.
2. Pyrethroids (such as permethrin and cypermethrin) in 0.1 to 0.5% concentrations as dust, mats/coils and aerosol sprays are effective for the control of this household pest.