

Ent-307 Insect pests of household, man and animals

Tsetse Fly

Glossina pallidipes (Glossinidae: Diptera)

Tsetse fly, also called tik-tik fly,

Occur only in Africa and transmit sleeping sickness (African trypanosomiasis) in humans and a similar disease called nagana in domestic animals.

They readily feed on the blood of humans, domestic animals, and wild game.

Occur in woodlands,

Both sexes suck blood almost daily,

Some species active in the morning, whereas others are more active at midday.

Characteristic features

Piercing proboscis - puncturing skin.

Arista on each antenna bears one row of long, branched hairs on its upper edge

Morphology

6 to 16 mm (0.2 to 0.6 inch) in length.

yellowish brown to dark brown,

gray thorax that often has dark markings. The abdomen may be banded (stripes of diff color).

Life cycle

When adequately fed, female will produce one larva about every 9 or 10 days throughout her life.

Without a sufficient blood meal, however, the female fly will produce a small, underdeveloped, and nonviable larva.

Tsetse flies are larviparous—the larva hatches from an egg within the female—and the young develop singly within the female's uterus, feeding on a nutrient fluid secreted by paired milk glands on her uterine wall.

3 stages of larvae - 9 days.

Larva is deposited on the ground, where it burrows into the soil and pupates

Adults emerge after several weeks.

Male Adults may live two to three weeks, while females can live for one to four months.

Taxonomic group

3 groups:

1-Fusca, or forest, group (subgenus *Austenina*);

2-Morsitans, or savanna, group (subgenus *Glossina*);

3-Palpalis, or riverine, group (subgenus *Nemorhina*).

Medically important species - morsitans and palpalis groups.

G. palpalis is the chief carrier of the parasite *Trypanosoma brucei* , - sleeping sickness throughout western and central Africa.

G. morsitans is the chief carrier of *T. brucei*, which causes sleeping sickness and nagana in the highlands of eastern Africa.

History

Historically, the widespread presence of the tsetse fly inhibited human settlement and agriculture in large areas of sub-Saharan Africa.

In the 20th century, efforts to control tsetse flies were implemented

By the mid-1960s, however, human African trypanosomiasis was largely under control.

In the early 21st century, reemergence in some areas, annual new cases of the disease in Africa reached all-time lows.

Control

The most-effective control measures for tsetse flies have been environmental ones:

Destruction of the wild game upon which the flies feed,

Clearing of woodlands, and periodic burning to prevent the growth of brush.

Trapping of flies,

Control by natural parasites,

Spraying or other application of insecticides usually reduce fly populations in a locality but have difficulty eliminating them altogether.

Introduction of large numbers of sterilized male tsetse flies - gamma radiation in laboratory facilities - flies sterile but does not interfere with their ability to mate. mating females produce no offspring

Sleeping sickness,

Also called African trypanosomiasis,

Sleeping sickness is characterized by two stages of illness.

1st- infected persons typically experience fever, headache, muscle and joint pain

2nd- Develops within several weeks or within one to two years - involvement of the brain and spinal cord, accompanied by personality changes, sleep disturbances

Nagana,

Occurring chiefly in cattle and horses

Signs of infection include fever, anemia, and swelling of tissues.

Discharge from eyes and nose.

First the hindlegs and then other parts of the body become paralyzed.