

## Insect pests of cattle and their management

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### Abstract

Pests are more than a nuisance to livestock, they can potentially drive your profits down as pest irritation can lead to stress that can affect reproduction, weight gain and overall stock health. The productivity of affected animals is impaired and the utility of farm animals is reduced resulting in huge aggregate yearly losses. The insect pests of cattle are mostly members of Dipterans (Flies). The first line of defense in fighting flies is a waste management program. Break the fly cycle by removing fly breeding materials (manure, wet grain, spilled silage, moist hay, etc.) on a weekly basis. Use sticky fly ribbons and baited traps to attract and catch flies. When using chemicals around your facility pay special attention to any chemical treatment.

### Introduction

Harm to livestock or pets may come from painful biting and itching due to inflammation at the biting site or to allergic reactions that cause scratching. Intense scratching may produce loss of hair, wool or feathers as well as skin wounds that can be infected with bacteria or other microorganisms, or attract other parasites. Blood loss due to heavy infestations may also cause anemia and negatively affect livestock performance. Uncontrolled screw worms and blow fly larvae may literally devour their prays from the outside within days. Other myiasis caused by warble and bot flies may occasionally damage essential organs or just debilitate the host's organism. Such harm often leads to substantial economic losses in livestock production. The annual loss of national wealth of India due to insects and arachnids attacking domesticated animals has been reported to approximately four hundred crores of rupees.

In the 1980's, the USDA estimated the annual losses in the US to the livestock industry due to biting flies to be about 500 million US\$, those from lice about

40 million US\$ and those caused by other various insects about 300 million USD. Economic loss due to ticks in Brazil was recently estimated to be more than 2 billion US\$.

#### *Horse fly: Stabanus striatus (Tabanidae: Diptera)*

Strong fliers, prominent eyes, eyes contiguous in males, 10 to 25 males, 10-25 mm long. Females bite and feed on the blood (day time feeder), resulting in low milk production, males feed on the flower nectar. Mechanical transmitter of anthrax, telermia and anaplsmosis. Breeds in marshy places. Eggs laid on masses 100 to 1000 are glued to the overhanging surface of aquatic vegetation; they hatch in a week. Larvae occur in moist condition. Whitish in colour with a tracheal siphon; larval period lasts a few months to one year. Life cycle is completed in 70 days to 2 years.

#### *Stable Fly: Stomoxys Calcitrans (Muscidae:Diptera)*

Similar to house house flies in appearance. Both male and female are vicious biters and blood sucking.

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They usually feed on the legs during the day time, causing irritation and weakness, loss of blood, secondary infection, 10-20% reduction in milk production. Breed in pills of moist fermenting straw, grass and other materials in cattle shed, lays white, sausage shaped eggs in batches 500 to 600. life cycle completed in 20-60 days.

*Cattle Fly: Hippobosca maculate (Hippoboscidae: Diptera)*

Flat leathery with strong pre-tarsal claws with which they cling mostly to the sides of the neck and suck the blood. Larviparous (never lays eggs) mature larva drops to the soil and the adult emerges from the puparia in a week.

*Blow Fly or Bot/Bottle fly: Chillophora, Lucilia spp. (Calliphoridae: Diptera)*

Metallic blue or green coloured fly. Larva attack open wounds of cattle, feed on the decaying tissues. Also bore into the flesh, causing cutaneous myiasis and other complications. Also helpful in cleaning the wounds of dead tissues.

*Ox Warble Fly: Hypoderma spp (Osteridae: Diptera)*

Makes the hide (Sin of the animal). lays six or more rows of eggs on the host hair 800 eggs which lay in 2-3 days. Maggots penetrate the skin and move to the esophageal wall and then reach the back of the animal where they form tumor like swellings or warbles. Skin of the warble is perforated for respiration and also for the emergence of full grown larvae that fall to the ground for pupation. Total life cycle is one year.

*Sand Flies: Phlebotomus sp. (Psychodidae: Diptera)*

Small moth like flies known as punkies: body and wings covered with coarse hairs and scales. Breeds in wet or aquatic habitats, in decaying organic matter. Source annoyance and irritation. Vector of kala azar, leishmaniasis and pappataci fever.

*Biting Midges, Culicoides Spp. (Ceratopognidae: Diptera)*

Small gnat like-blood sucking flies, antennae plumose in males and pilose in females. Mouth parts adopted for biting. Vector of blue tongue virus in sheep. Larvae or terrestrial breeding in organic matter.

*Eye Fly: Siphunculina sp (Chloropidae: Diptera)*

Tiny, shiny black flies seen clustered on hanging stringer in the shed hover in front of the eyes and feed

on the secretions from the eyes.

*House Fly: Musca spp (Muscidae: Diptera)*

Breeds in decaying materials like dung and night soil. Lays about 200 eggs in her life cycle. Eggs hatch within hours. Pupation occurs in damp compact soil. Carriers of many cattle diseases.

*Ticks: Boophilus Annulatus (Acari: Ixodidae)*

It causes inflammation and swelling at the biting site. Causes blood loss, produces wounds. Transmits anaplasmosis, bovine plasmosis and talarmaia.

*Mosquitos: Culex sp (Culicidae: Diptera)*

Causes painful bites. Loss of weight and decrease milk production.

*Management Practices*

- Eliminate or reduce the breeding sites by removing all manure, wet straw and decaying plant materials once a week to break the breeding cycle of flies.
- Use traps and attractants like Octenol.
- Use disinfecting tools and other instruments
- Chase out of insects with water infusion of lime and tobacco.
- Mechanically remove larvae and pupae
- Use chemical insecticides like Fenthion and Dichlorvas as residual sprays. Permethrin can be used as a premise spray to control flies.
- Methoprene is a feed additive larvicide.
- Use self treatment methods like dust bags (Malathion) and backrubbers to control flies on cattle in pastures.



Horsefly



Cattle fly



Blow fly



Ox Warble fly



House fly



Sand fly



Eye fly



Stable fly

## References

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