The Horn Fly (*Haematobia irritans*)

James A. Hawkins, DVM, PhD

A Parasite Profile

**Introduction**
The horn fly (*Haematobia irritans*) is a common pest of cattle. This parasite is distributed throughout much of the tropical and temperate areas of the Northern Hemisphere. In the United States, it was first found in Camden, New Jersey and has since spread to cover the entire country.

**Biology and Life Cycle**

**Adult** - Adults are about 1/2 the size of house flies. They have piercing, sucking mouthparts and both sexes feed on blood and tissue fluids. They feed only on cattle, except for some activity on horses that are pastured with cattle. They spend most of their adult life on cattle and feed multiple (24 to 38) times a day. The only time they leave the host is to lay eggs and/or to move to another host animal. They are weak flyers, but may be carried great distances by high winds. Females lay eggs only in fresh bovine dung.

**Egg** - Females will lay 20 to 25 eggs at a time in small clusters in cattle dung. Up to 400 eggs may be deposited by a single female in her lifetime. Eggs will hatch in 10 to 24 hours.

**Larvae** - Larvae feed on microorganisms (bacteria and fungi) in the manure. They develop through 3 larval stages (instars) in 3 to 8 days. The 3rd instar larvae will crawl to the edge of the dung pat or surrounding area to pupate.

**Pupae** - The pupal stage will last a minimum of 6 to 8 days. If ambient temperatures become too low, pupal development will become prolonged. This period of dormancy or lack of development is called diapause. In much of the United States, horn flies overwinter as diapausing pupae. Adult flies emerge from the pupae and continue the life cycle. The entire cycle from adult to adult may take as little as 9 or 10 days.

**Epidemiology**

When ambient temperatures increase sufficiently in the spring, horn flies emerge from their pupae and begin to feed. This may begin as early as March in the South or as late as May or early June in the North.
As many as 12 to 14 generations may be completed prior to winter in the South. Six to nine generations per year would be completed in the North. Diapause may begin as early as late August in the North and as early as September or October in the South. In the extreme southern parts of the United States (i.e., Florida, southern Louisiana and Texas), pupal development may be delayed due to colder weather in winter, but true diapause does not occur. Horn flies will continue to reproduce all year.

Horn flies spend most of their adult life on the host, but readily transfer from animal to animal. It is not uncommon for flies to migrate from one farm to an adjoining farm in fairly large numbers. An estimated 5% to 20% of an existing population may be recent arrivals from adjacent areas due to this migration.

In the southern United States, horn fly populations rise in the spring and early summer to reach peak numbers in May or June. Horn fly numbers drop in mid-summer because hot temperatures reduce the survival of both adult and larval stages. Fly numbers begin to rise again in August and reach peak numbers in September or October. The onset of freezing temperatures will cause a marked drop in the fly population.

In the northern United States, horn fly populations begin to rise in May or June. There may or may not be a slight drop in population numbers due to increasing temperatures in the summer. Fly numbers continue to rise throughout the season until cold weather arrives. Fly numbers usually drop markedly by September or October.

Pathology
Horn flies cause irritation due to their feeding activity. This causes an interference with normal grazing efficiency, leading to decreased weight gain and/or weight loss, and decreased milk production of up to 20% in dairy cows. The number of horn flies per animal that is necessary to cause economic damage to the animal has been estimated to be from 50 to 200 flies per side (the economic threshold). Annual losses have been estimated to be approximately $700 million in the United States. Horn flies are not known to be significant vectors of any important disease in cattle.

Application of IVOMEC® (ivermectin) Pour-On is a convenient way to effectively control horn flies for up to 28 days after treatment, in addition to providing broad-spectrum internal and external parasite control.

Bibliography

