



Cooperative Extension Service  
Institute of Food and Agricultural Sciences

## Biology and Control of Horse Bots<sup>1</sup>

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Horse bots (Figure 1) are bot fly larvae which are internal parasites of horses. The horse bot larvae develop in the stomach of horses causing symptoms ranging from stomach ulcers to esophageal paralysis.

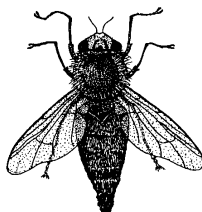


**Figure 1.**  
Horse bot.

Once inside the horse's mouth the larvae burrow into the mucous linings of the mouth and tongue and remain there for 3-4 weeks. From the mouth, the larvae pass to the stomach and intestine where the 2nd and 3rd instar larvae remain attached with no change in position until the following summer.

### Biology

The adult bot fly (Figure 2) is a bee-like fly about 1/2 to 3/4 inch in length. Bot flies are covered with black and yellow hairs and do not feed as adults. In Florida adult bot flies may be active throughout the year; although they are more abundant from late spring to early winter (August-September).



**Figure 2.** Bot fly.

When fully mature, the 3rd stage larvae detach from the stomach and pass through the intestines and are passed in the droppings. When they reach the soil, they burrow under the surface of the soil, pupate and remain there for 1-2 months. The fly emerges in late summer or fall. Only one generation is completed per year.

### Seasonal Abundance

In South Florida, adult bot flies have been found to be active year-round. In Central and North Florida adults are found from late spring to early winter. Highest populations of adults are recorded from August through September.

Female bot flies lay from 150-1,000 yellowish eggs. The eggs are firmly glued to the hairs of the forelegs, belly, flanks, shoulders, and other parts of the body of the horse. Egg laying principally occurs on the inside knees of the animal where the horse can easily reach them with its tongue. The eggs are ready to hatch 7-10 days after oviposition, and will hatch only if the horse licks or bites the area where they have been glued. It is believed that the sudden increase in temperature from the tongue stimulates the young maggots to hatch.

Larval populations sampled in horses in October and November ranged from 1-184 larvae per stomach in Central and North Florida. The horse bot is an abundant parasite throughout Florida.

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## Symptoms

A few bots will cause little damage; however increasing populations cause gastrointestinal disturbances. Infestations can produce symptoms varying from mild to severe, such as: irritation of stomach membranes; ulceration of stomach; peritonitis; perforated ulcers; colic; mechanical blockage of stomach resulting in stomach rupture; esophageal paralysis; and squamous cell tumors. In addition to the previous pathogenicity the first stage larvae migrating in the tongue and gums have been shown to cause pus pockets in the mouth. The larvae developing in the stomach have also been shown to cause severe anemia.

Cases have also been reported of horse bots in man. The 1st stage larvae have been found migrating in the skin of man (cutaneous myiasis) and horse bots have also been reported in the stomach of man.

## Control

Effective control of horse bots requires breaking the life cycle of the fly. Insecticides are labeled for external treatment in a warm water wash after eggs

have been laid but before hatching. For external insecticide treatment, a warm water wash (110°-120°F) should be rubbed or sponged on areas infested with eggs. The larvae will hatch and die from contact with the insecticide. Treatments should be applied weekly during peak oviposition periods (August-September). Care should be taken to protect hands from insecticide and larvae with synthetic rubber gloves during the wash. Grooming may aid in removal of eggs but effectiveness of control is questionable.

For internal treatment of horse bots, consult a veterinarian. Insecticides are labeled as liquids, bolus, and feed additives for horse bot control. Internal medications will usually control 2nd stage but may not control 3rd stage larvae. Most effective treatment should be applied 1 month after first sighting of eggs to control 2nd stage larvae. Materials which control both 2nd and 3rd stage larvae should be applied in the fall of the year. Carbon disulfide is effective but may cause gastritis with sloughing of stomach mucosa. Dichlorvos is effective but may not be readily eaten as a feed additive. Refer to Veterinary Medicine Fact Sheet #2 for additional information on internal treatment.