



Horse Care

by HEATHER SMITH THOMAS

Most internal parasites of horses are worms, but bots are fly larvae. This parasite spends most of its life fastened to the inside of the horse's stomach, causing irritation as well as robbing nutrients from the horse. Bot larvae occasionally perforate the stomach wall, which may lead to fatal complications.

The adult bot fly is brown, hairy and about the size of a small bee. The flies live only a few days, for the sole purpose of mating and laying eggs. The female hovers around horses, preparing to deposit eggs. The flies are most prevalent in summer and fall. In northern climates, the bot season may be short with flies hatching out in August and September—until the first hard frosts. In southern areas, adult flies may be present year-round.

There are three species in the U.S. *Gasterophilus intestinalis* is most common, laying eggs on horses' legs and flanks. The female lays 150 to 500 yellow eggs, one to a hair, living seven to ten days. As they hover and lay eggs, flies startle and annoy horses.

Eggs from this fly must incubate for one to two weeks before the larvae are ready to hatch; eggs hatch only if the horse licks or bites that part of his body. Moisture, warmth and friction from licking stimulates the eggs to hatch into tiny, spiny larvae. The egg remains in place on the hair but the larvae emerges and enters the mouth, where it burrows into the tissue. The empty egg capsules are small and flat instead of plump.

After three or four weeks in the mouth, the larvae molt and detach from the mouth to be swallowed. Migrating to the horse's stomach, they attach to the lining to feed and grow for eight to ten months. If large numbers attach near the stomach's outlet, they may obstruct food passage.



Battling Bots

The next spring or summer, they detach from the stomach, migrating through the intestines and changing to the pupal stage, passing out with manure. They burrow into the ground for three to five weeks. After maturing into adult flies, they emerge from the ground and the cycle begins again.

G. nasalis lays yellow eggs along the horse's lower jaw. As the flies dart around the head to lay eggs up under the jaw, the horse will jerk its head up or strike out with a front foot in an effort to keep the fly away. Horses may run wildly in an attempt to get away from the fly. Horses in groups will bunch together, rubbing their chins on each other's backs.

Eggs under the jaw are deposited up in the hair and are less easy to see than eggs on the legs and flanks. Once attached to the hair, they incubate for four to six days before hatching, and need no external stimulation. The larvae crawl into the horse's mouth and burrow into the gum tissue. After about a month, they follow the same cycle as *G. intestinalis*.

G. haemorrhoidalis lays black eggs on hairs near the horse's lips. They hatch by themselves in two to four days before penetrating the inner lip membrane in front of the incisors. They follow the same path as their relatives, after five to six weeks in the mouth.

Both larvae cause stomach inflammation. A heavy load of bots may cause indigestion, mild colic, unthriftiness and lack of appetite. Large numbers in the gums may create pus pockets and irritation in the horse's mouth.

All eggs should be removed from the horse as soon as they are observed. Yellow eggs on the legs, shoulders and flanks are easily seen and picked off with your fingers, trimmed off with scissors or a safety razor, or scraped off with sandpaper. Washing will not remove them. Eggs under the jaw are harder to see and remove because they are deep in the hair. Smearing petroleum jelly along the bottom of the jaw will kill the eggs by sealing off their air supply and suffocating the developing larvae.

Ivermectin is the most effective dewormer for bots. It paralyzes them wherever they are in the body, not just in the stomach. Unable to move, they cannot eat and soon die. Treatment should begin about one month after the first eggs are laid, and at two-month intervals throughout the fly season, until winter. In northern climates with a short season, bots can be effectively controlled with a treatment after killing frosts in the fall (no more flies to lay more eggs) and another treatment in early spring to kill any in the stomach that might have been missed—before they pass out of the horse to pupate in the ground. 🐾