



“Bots” – Just What Are They?

By Alex Urban, DVM

Most horse owners have at least heard of bots in passing, if not found eggs present on their horse. Stomach bots, as they are commonly called, are actually the larvae of the *Gastrophilus* species of fly. The most common equine bot species is *Gastrophilus intestinalis*. The adult fly lays its eggs on the hair shaft of the horse, often on the legs, shoulder, mane, or face. These eggs are yellow-white and attached well to the hair. A horse becomes infested when the eggs hatch from licking and larvae make their way into the mouth of the horse, usually when the animal itches its face on affected areas. For a short period of time, the larvae mature on the gums and tongue before migrating to the stomach, where they attach to the mucosa with hooked mouth parts. After 7-11 months attached to the stomach wall, the bots are passed in the feces during warm weather, where they pupate and eventually develop into adult flies, ready to complete the cycle all over again.

The presence of bots is often assumed based on presence of eggs on the hair coat. Certain diagnosis is made either by presence in the stomach during gastroscopy or on necropsy. Occasionally, different stages of the *G. intestinalis* lifecycle may be seen in the feces after deworming with a macrolide anthelmintic (discussed below). These stages can be identified as bots by the characteristic spines around each segment of the body. The adult bot fly is distinguished from other flies by its hairy body and pale-yellow to brown coloring; some say it resembles a less rotund honey bee. Rather than landing on the hair for extended periods of time to deposit eggs, the fly hovers, then darts to deposit one egg at a time on a hair shaft. These adult flies generally live about 2 weeks, depositing a total of 150-500 eggs during that lifespan.



Figure 1. Bot larvae (note spines on each body segment) present in feces.



Figure 2. Bot eggs present in mane.

Most horses tend to tolerate a small to moderate burden of bots well, but large infestations may cause anemia, gastric ulceration, or aggravate ulceration present due to other factors. On very rare occasion, severe bot infestation has been associated with stomach rupture, though a relationship has not been definitively established. In addition, during the time period when larvae are inhabiting the mouth, some horses may experience oral irritation (causing them to itch or rub on objects) and/or ulceration. Ivermectin and moxidectin are both effective macrolide anthelmintic drugs in the treatment of *G. intestinalis*, though ivermectin is the treatment of choice. Egg removal can be accomplished by picking

them off one by one if there are only a few, or by utilizing a special bot egg knife, sandpaper, or a synthetic stone grooming block if there are many eggs. Effective use of fly repellents can decrease the presence of eggs on your animal in the first place. Examples include: fly spray, fly mask, fly sheet, well-mucked stalls, effective manure removal and disposal, fans in the barn aisle, and barn misters containing fly repellent. Another strategy is to encourage natural fly predators, such as birds, to live near your barn with bird houses.

Contact Brandon Equine Medical Center at 813-643-7177 or email info@brandonequine.com with any questions regarding this topic.

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