A Small Fly Causing Large Complications
By Danielle Wolfe

The horse bot fly, also known as Gasterophilus, is found worldwide making it an important parasite for horse owners to know about. Fortunately, Gasterophilus is often asymptomatic but that doesn't mean it shouldn't be treated. Not only are these flies bothersome to the horse, they can also cause major gastrointestinal problems such as gastritis, stomatitis, and colic. Disease can be eliminated with a simple preventative strategy that can save a horse owner money and stress and most importantly improve a horse's quality of life.

What to look for:

There is a large range of clinical presentations of horses affected by Gasterophilus. Bot fly eggs can be seen on a horse's limbs as a single hair typically near the cannon bone as seen in figure 1. Bot fly infestations can cause skin irritation and infections, sore mouth, and general itchiness near affected areas. Gastrointestinal signs are less common and include decreased appetite, weight loss, gastric ulcers, and colic. Larvae attached to the stomach lining consume nutrients that are beneficial for the host. Complications from large numbers of larvae in the stomach has been reported such as stomach rupture, blockages, esophageal paralysis, and anemia. Some horses may not show any clinical signs with severe infestations even though there is damage occurring internally. The most common things to look for include excessive salivation, head shaking, and chewing problems. Owners can look into their horse's mouth to check for any larvae in between teeth if their horse will tolerate it.

Figure 1: Bot Fly Eggs
https://www.aroundthewatertrough.com/blog-world-class-grooming/tis-the-season-for-bots

Life cycle:

Female bot flies lay around 150-1,000 eggs on a horse that attach near the tip of the hair. The larvae are stimulated to emerge from the egg when the horse licks or bites at them, or when they are grooming other horses. The larvae enter the horse's mouth and burrow in the tongue and cheek tissue. After a month or so the larvae molt and migrate to the stomach where they attach to the lining in the non-glandular region. They remain here for 8 to 10 months.

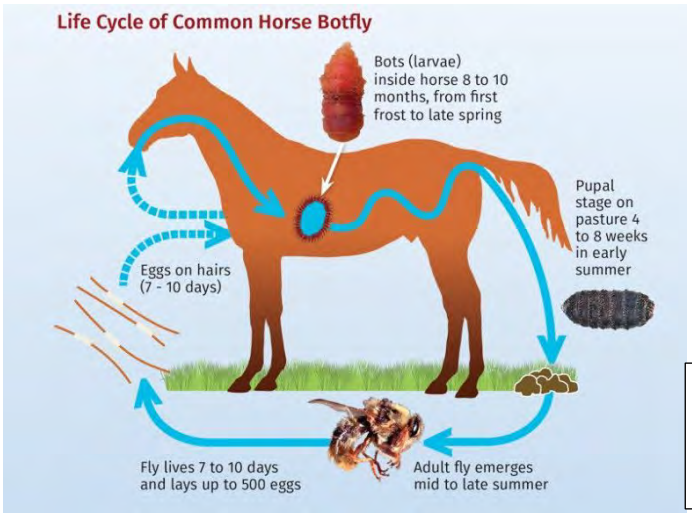

Figure 2: Bot Fly Life Cycle
https://www.fly-off.co.uk/do-you-know-why-bot-eggs-are-more-than-just-an-annoyance.html

They finally detach and migrate through the remaining GI tract where they are eventually passed in feces. The larvae burrow into the soil and remain for a few more months and later emerge to begin the cycle over again.

Treatment:

In order to keep the fly population low, it is incredibly important to keep the horse's environment as clean as possible by removing feces and transporting them away in a timely manner. This will prevent the larvae from completing their life cycle. Additionally, the drug ivermectin should be given once in the summer and once in the fall to kill the larvae. This drug is effective at killing larvae in the horse's mouth and stomach and is also very safe for the animal. Talk with your veterinarian to determine the correct dosage for your horse.

In conclusion, it is important to remain diligent with preventative measures in order to protect horses from Gasterophilus. Many people are led to believe that parasites don't survive through the winter, however since the life cycle of the bot fly is so long, the cold weather will not kill the larval stages inside of the horse. Gasterophilus is common in horses across the world but can be controlled through timely feces removal and two ivermectin doses timed appropriately. This disease can affect any horse, from pasture pets to competitive race horses as well as other equids such as mules and donkeys. Fortunately horse bot flies have rarely been found to cause disease humans or other species. As a safety precaution, people should avoid rubbing their eyes after handling a horse. Although this parasite is rarely the cause of death in horses, it is an uncomfortable process which decreases the quality of life for affected animals and should be treated.

Danielle Wolfe is one of three recipients of the 2020 Ride & Tie scholarship award, presented annually to a deserving veterinary student(s). Danielle is a fourth-year veterinary student at Cornell University with an interest in small animal medicine. She was born and raised in Rochester NY and completed her undergraduate degree at Binghamton University. Most of her time with horses has been spent in a veterinary setting, as she has been a large animal surgery technician for the past three years.

References

Gasterophilus spp Infection in Horses By Martin K. Nielsen, By, Nielsen, M., & Last full review/revision Dec 2019 | Content last modified Dec 2019. (n.d.). Gasterophilus spp Infection in Horses - Digestive System. Retrieved January 10, 2021, from https://www.merckvetmanual.com/digestive-system/gastrointestinal-parasites-of-horses/gasterophilus-spp-infection-in-horses

"Horse Bot Fly." *Horse Bot Fly - Gasterophilus Intestinalis (DeGeer)*, University of Florida. entnemdept.ufl.edu/creatures/livestock/horse_bot_fly.htm.

Townsend, L. (n.d.). Horse Bots. University of Kentucky. https://entomology.ca.uky.edu/ef504