

Internal Parasites and Your Horse: A Cause for Concern

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Internal parasites or worms are a constant concern for equine owners. Parasites can cause illness, digestive upset and damage, and colic episodes. By knowing more about internal parasites, what damage they can cause and how to control them, a horse owner will be better prepared to manage these parasites.

All horses have some level of internal parasites present in their system. The horse picks up parasites from its environment and through other horses' manure. These parasites develop from the larvae stage to adult stage inside the horse while robbing the horse of nutrients and damaging the digestive tract lining and other parts of the body. The following information will provide horse owners with information about equine parasites and their management.

Large and Small Strongyles

Strongyles are found in horses of all ages and are potentially the most damaging of all parasites. The larvae of large strongyles (*Strongylus Vulgaris*) migrate through various parts of the body. They will burrow into the walls of the arteries that are the primary blood supplier to the small and large intestine. This migration can result in the formation of blood clots, disrupting the blood flow to the intestines. Small strongyles (Figure 1) attach to the large intestine wall causing diarrhea, loss of appetite, and colic. The small strongyles are showing resistance to Benzimidazole (Panacur) and

Pyrimidine (Pyrantel Pamoate) dewormers and have developed the ability to become encysted or encased, which protects them from most dewormers. Quest is effective against the encysted larvae as well as using a double dose of Panacur for 5 days.

Pin Worms

Pin worms are found in horses of all ages. Horses ingest eggs from feed or water contaminated with manure, or by licking walls or fences. The larvae mature in the horse's intestines, then as adults, the females move to the rectum and deposit sticky eggs around the anal area. The damage caused by pinworms is external due to intense itching and scratching of the tail area and loss of tail hair. A broad spectrum of dewormers will work on this parasite.



Figure 1. Small strongyles in manure after deworming.

Ascarids (Round Worms)

These internal parasites are mainly a problem in young horses under a year of age. The round worms (Figure 2) cause poor growth, rough hair coat, pot belly, chronic respiratory problems and sometimes death. Most of their damage is caused by their migration to the liver and lungs. In the gut, the round worms compete for nutrients and suck blood, growing 12 to 15 inches in length. Some classes of dewormers are showing signs of ascarid resistance including Ivermectin, (pyrimidine) Pyrantel Pamoate and Moxidectin in some areas of the country.



Figure 2. Round worms (Ascarids) from young horses that were not properly dewormed.

Bots

The adult bot fly lays eggs (Figure 3) on the horse's legs, chest, throatlatch or chin areas. Some hatch without stimulation by the horse but others hatch due to licking. The larvae burrow into the horse's mouth tissue causing ulcers. After about 3 weeks they emerge and move to the stomach (Figure 4) and small intestine where they suck blood, causing inflammation and ulceration of the lining.



Figure 3. Yellow spots on legs are Bot eggs deposited by Bot fly.

Bot flies lay their eggs in the fall so control should be addressed by removing the eggs on the horse's body and deworming with a boticide (Ivermectin, Quest) after the first hard frost.

Tapeworms

Tapeworm eggs are ingested by mites that are, in turn, ingested by the horse while grazing or eating hay. They travel to the ileocecal junction (the area where the small intestine and cecum meet). High numbers can cause colic. These parasites are less of a problem in dry areas of the country. Zimectrin Gold and Quest Plus contain praziquantel, which kills tapeworms.

Deworming Management

To keep parasite counts low, it is important to have a routine management program. Location, age, number of horses housed together, and the amount of land available to the horses will play a part in determining how often to deworm. Several horses housed in a small area may require deworming every 8 weeks as re-infestation is more likely. Few horses housed on many acres may allow for deworming less frequently.

Making fecal exams a part of an equine parasite control program can help determine the types and number of parasites present. Owners can take fresh samples of manure to their local veterinarian to run the fecal exam and provide feedback. This information can assist owners and veterinarians in making smart decisions about how often to deworm and with what product. Using dewormers only when needed and in proper amount can help prevent resistance to deworming products. For a fact sheet on fecal exams, go to extension.usu.edu/equine.

Strongid C is a dewormer that kills the larval stage of internal parasites. This dewormer is given daily and is the only dewormer that kills the larval stage. This program includes giving an Ivermectin product on the day the horse goes on Strongid C and every 6 months after. Ivermectin is given to kill bots and



Figure 4. Bot larvae in the horse's digestive tract.

any adult parasites in the digestive tract, which Strongid C is not effective against. There is concern that daily dewormers will contribute to resistance problems (Mendell, 2006).

Your veterinarian can recommend a deworming program appropriate for your horse or facility. Some veterinarians recommend monitoring fecal egg counts of horses and only deworming as needed. Some horses will naturally carry a heavier parasite load than others and the veterinarian may want to target those particular horses. This is called selective deworming. Some programs schedule a change of product with each deworming. It is important to change class of dewormers and not just product name. This is called rotational deworming. Rotational deworming has been shown not to significantly slow resistance; however, it can mask the effects of using an ineffective drug if it is rotated with an effective one. The table (Table 1) included with this fact sheet shows some classes of dewormers, product names and parasites affected.

Facility Care

As mentioned above, housing many horses together can increase the risk of parasite infestation. Large numbers of horses at a facility increases the amount of management needed to keep the parasite numbers down. Horse areas (stalls or pens) should have the manure, which harbors expelled parasite larvae, removed daily. Hay should be fed in containers off of the ground to reduce the possibility of horses ingesting larvae from the manure (West, 2009). Horses should be rotated among pastures so that pastures are grazed for a specific amount of time then rested. This allows the first pasture to be dragged, breaking up manure and exposing the larvae to the sun, which kills them. When manure is removed from stalls or pens, it should be piled and composted before spreading onto pastures. Composting kills parasites and makes the material lighter and more suitable for spreading by breaking it down into more useable nutrients for plants.

Deworming Process

It is important to deworm according to the horse's weight. One tube of dewormer may only cover 1,000 lbs, which may not completely cover one horse's weight. This can lead to parasite resistance to the product. The horse should be weighed either by scale or weight tape to determine a more

accurate weight than by looking at the horse and guessing. Of course, a scale is the most accurate, but weight tapes are very useful, as well. Most weight tapes can be off by about 10 percent so it is beneficial to add additional pounds to the weight tape weight to make sure the actual weight is covered. Paste dewormers today have a very large safety margin, so giving a horse more than it needs does not cause complications. To prepare the horse for deworming, desensitize the horse around its mouth by handling the muzzle area and placing a finger or empty syringe in and out of the mouth multiple times. (See Figure 5.)

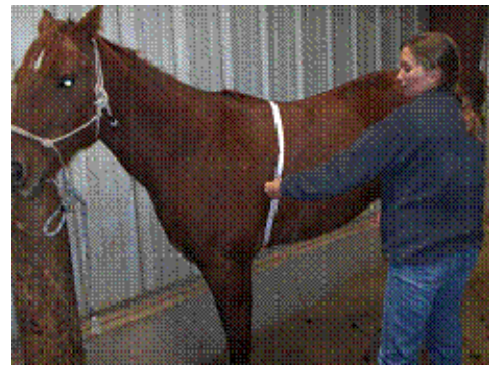


Figure 5. Weight tapes are used to get an estimate of the horse's weight for medications and de-worming. Some tapes go behind the elbow and over the top of the withers, while others, like this one, go behind the elbow and withers. Reading instructions for proper use is important.

If a new horse arrives on the property without any previous management history, it is advisable to be cautious with the first deworming. If the horse is heavily infested with parasites, deworming with a very broad and effective dewormer; i.e., an Ivermectin product, could cause an extensive kill, causing digestive blockage and colic (Sellnow, 2003). It is sometimes better to give a less effective or less broad dewormer such as a Benzimidazole or Pyrimidine product to avoid digestive concerns. Recording the weight, product and amount given each time is part of a good management system.

Summary

There are a variety of internal parasites that can harm the horse. Maintaining a regular deworming program is important to a healthy horse. Including a veterinarian in the discussion can assist owners with developing the most appropriate schedule. Making sure to weigh each horse and deworm for its appropriate weight is important. Learning more

about internal parasites and how to control them can help your horse live a longer, healthier life.

Sellnow, L. No more hitchhikers, Thehorse.com, June 01, 2003, article 4405.

West, C. AAEP2008: Deworming—to rotate or not to rotate? Thehorse.com, March 01, 2009, article13695.

References

Mendell, C. Drug resistance from daily dewormers, Thehorse.com, April 01, 2006, article 6717.

Table 1.

Class of Dewormer	Product Names	Parasite Information
Ivermectin	Equalan, Equimectrin, Zimectrin, Rotectin-1	Does not kill encysted strongyles or tapeworms; resistance concerns with ascarids.
Ivermectin + praziquantel	Zimecterin Gold	Same as Ivermectin, plus kills tapeworms.
Benzimidazoles	Panacur	Does not kill bots or tapeworms, resistance concern with strongyles.
	Safeguard	Does not kill bots or tapeworms..
	Equivet-Tz	Does not kill bots or tapeworms.
	Anthelcide EQ, Equi-cide, Benzelmin	Do not kill bots or tapeworms.
Phenylquanidine	Cutter	Does not kill bots or tapeworms.
Moxidectin	Quest	Not tapeworms, does kills encysted strongyles; resistance concerns with ascarids.
Moxidectin + praziquantel	Quest Plus	Same as Moxidectin plus kills tapeworms.
Pyrimidines	Strongid P, Rotectin-2, Pyrantel Pamoate	Not effective against bots, double dose effective against tapeworms; resistance concerns with small strongyles and ascarids.
	Strongid C, Strongid C 2X	Kills larval stage only, need to include Ivermectin twice a year.

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