

Internal Parasites: Strategies for Effective Parasite Control

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Internal parasites, or worms, can be silent thieves and killers. They can cause extensive internal damage without you even realizing your animals are heavily infected. The effects of internal parasites on a horse range from a dull haircoat and unthriftiness to colic and death. Internal parasites lower the horse's resistance to infection, rob the horse of valuable nutrients, and in some cases, cause permanent damage to the internal organs.

In terms of management priorities, establishing an effective parasite control program is probably second only to supplying the horse with clean, plentiful water and high-quality feed. It's that important!

TYPES OF INTERNAL PARASITES

There are more than 150 species of internal parasites that can infect horses. The most common and troublesome are the following:

- Small strongyles (cyathostomins)
- Roundworms (ascarids)
- Tapeworms
- Large strongyles (bloodworms or redworms)
- Pinworms
- Bots
- Threadworms

Probably the most important, in terms of health risk, are the first three: small strongyles, roundworms, and tapeworms.

The lifecycle of most internal parasites involves eggs, larvae (immature worms), and adults (mature worms). Eggs or larvae are deposited onto the ground in the manure of an infected horse. They are swallowed while the horse is grazing, and the larvae mature into adults within the horse's digestive tract (stomach or

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intestines). With some species of parasite, the larvae migrate out of the intestine, into other tissues or organs, before returning to the intestine and maturing into egg-laying adults.

Small Strongyles

Small strongyles are of major importance. Small strongyle larvae do not penetrate the intestinal wall or migrate through the tissues. Instead, they burrow into the lining of the intestine and remain dormant, or "encysted" (enclosed in a cyst-like structure), for several months before completing their life cycle. During this time, the larvae are resistant to most dewormers.

Small strongyle larvae can cause severe damage to the lining of the intestine, especially when large numbers of larvae emerge from the encysted stage all at once. Adult small strongyle females are very prolific and their eggs comprise over 95 percent of those found in fecal egg counts of horses. The large majority of horses tolerate small strongyles without showing signs of disease or discomfort. Colic and diarrhea can occur in heavily infected horses. These parasites can also cause weight loss, slowed growth in young horses, poor coat condition and lethargy or lack of energy. The early and late larval stages (before and after they burrow into the lining of the intestine) and the adult parasites used to be to several dewormers. However, dewormer resistance to several of these is an increasing problem in these parasites. But currently there are only two types of dewormer that are marketed for treatment of the encysted larval stage—the stage that causes the most damage - and resistance has been documented to one of these. Ask your veterinarian which products are currently most effective.

Roundworms

Roundworms, or ascarids, are most often a problem in young horses (especially foals, weanlings and yearlings). Adult roundworms are several inches long and almost the width of a pencil; in large numbers they can cause blockage (or impaction) of the intestine. In addition, roundworm larvae migrate through the internal organs until they reach the lungs. They are then coughed up and swallowed back into the digestive tract to complete their life cycle.

Virtually all foals become infected with roundworms, and very few of them ever develop symptoms of disease. However, large infections can lead blockage of the small intestine of foals and young horses, leading to a painful and life-threatening colic. Roundworm infection in young horses can cause coughing, poor body

condition and growth, rough coat, pot belly and colic. Colic is most likely in older foals (over 1 year old) that are heavily parasitized with roundworms when dewormed for the first time. By this stage, the roundworms can have matured into

adults that could cause an impaction. In this situation, it is a good idea to have your veterinarian deworm the foal or recommend a deworming plan for the foal. Resistance to many of the dewormers has become a big problem in controlling ascarid infections in foals.

Tapeworms

Like with the other parasites mentioned here, the large majority of horses harbor tapeworm infections without showing any signs of disease or discomfort. However, tapeworms can cause colic, ranging from mild cramping to severe colic that requires surgical treatment. The tapeworm life cycle involves a tiny pasture mite as an intermediate host, and horses are at a risk of developing tapeworm infection when they eat this mite in the grass.

Praziquantel has been demonstrated to be highly effective against tapeworms and is available in several dewormer products. Pyrantel pamoate given in a double dose is effective as well. Most horses should be dewormed for tapeworms annually.

Consult your veterinarian for advice on the best product to use for your situation.

Other Internal Parasites

Large strongyles (bloodworms) have become extremely rare in managed horses because they are effectively controlled by most available dewormers. Infection with these parasites can cause unthriftiness, weight loss, poor growth in young horses, anemia (low numbers of red blood cells) and colic. In most cases, colic caused by these parasites is relatively mild, but severe infections can result in loss of blood supply to a portion of the intestine, leading to severe and potentially fatal colic.

Pinworms lay their eggs on the skin around the horse's anus. The irritation they cause makes the horse repeatedly rub its tail.

Threadworms are mostly a problem in young foals, in which they can cause diarrhea.

Bots don't usually cause major health problems, although they can damage the lining of the stomach where they attach. They may also cause small areas of ulceration in the mouth, where the larvae burrow into the tissues for a time after the eggs are taken into the mouth.

Lungworms cause chronic coughing in horses, ponies, and mules. Donkeys are the natural host of this parasite, so typically they don't show any obvious signs of infection.

SIGNS OF PARASITISM

Contrary to popular belief, horses can have large numbers of internal parasites while still appearing to be relatively healthy. But in some individuals, especially young horses, parasites can take a visible toll. Common signs of parasitism include the following:

- Dull, rough haircoat
- Lethargy (decreased energy) or depression
- Decreased stamina
- Unthriftiness or loss of condition
- Slowed growth in young horses
- Pot belly (especially in young horses)
- Colic
- Diarrhea

FECAL EGG COUNTS

One of the most useful tools in a parasite control program is the fecal egg count—microscopic examination of fresh manure for parasite eggs. This simple test allows the veterinarian to determine which parasites are present and whether the infection is light, moderate, or heavy. This information is important in developing a deworming program for your horse or farm. Furthermore, egg counts are very important in monitoring the effectiveness of the program, where samples are analyzed both before and after deworming a group of horses.

Fecal egg count involves collecting two or three fresh manure balls from the horse to be tested and sending the manure sample to a veterinary laboratory. Results are expressed as eggs per gram (epg) of manure. A fecal egg count of less than 200 epg suggests a light parasite load. Horses with high fecal egg counts of 500-1000 epg suggest the interval between deworming is too long.

It is important to note that a negative fecal examination does not mean the horse is free of internal parasites. Some types of parasites produce eggs intermittently. Larvae do not produce eggs at all, and may be present in large numbers in a horse

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with a fecal egg count of zero. And tapeworm eggs may be missed with routine fecal egg count techniques. The results are most useful when several horses on a farm are tested on the same day. This information gives the veterinarian and farm manager a good idea of the level of parasitism on the property.

DEWORMERS

There are several different dewormers, or anthelmintics, currently available. No deworming product is 100 percent effective in ridding every horse of all internal parasites. However, it is not necessary for a product to kill every worm in order to improve the horse's health, minimize the risk of serious disease, improve feed efficiency, and reduce pasture contamination with parasite eggs and larvae. As mentioned above, resistance has developed against several of these dewormers in both small strongyle and roundworm parasites. It is therefore of utmost importance to routinely test the effectiveness of a given dewormer on every horse establishment.

Methods of Administration

There are three main ways of administering dewormers:

- Oral paste syringe
- Feed additive (powder, liquid, or pellets)
- Nasogastric (stomach) tube

All three methods are effective, provided the proper dose is given at the right time, the horse receives the full dose, and resistance has not developed in the parasites being targeted. The dose must be calculated based on the horse's body weight. Weight tapes are an accurate enough way of estimating a horse's body weight for this purpose.

Deworming pastes and feed additives are convenient and easy to administer. However, some horses find them unpalatable and spit them out or refuse to eat them. So be sure that all of the dose you've given is actually consumed by the horse.

Tube deworming is a highly effective means of ensuring that the horse receives the proper dose because the dewormer is delivered directly into the horse's stomach. However, with the range of dewormers now available, it is seldom necessary for a veterinarian to deworm a horse by this method.

There is no single deworming program that suits all horses and all situations. The ideal program for your horse(s) depends on number and ages of the horses on your farm, pasture management and your geographic location. It is best to have your regular veterinarian help you devise an appropriate deworming program for your horse or farm.

Monitoring

Having your veterinarian perform fecal egg counts to determine the amount of egg shedding that your horse has is important. This information will help ensure that the dewormers that are being used are effective and also help determine the frequency of deworming necessary to keep your horse healthy. The outlay of time and money will be well worth it.

A COMPLETE MANAGEMENT PROGRAM

Chemical control using dewormers is just one part of a complete parasite control plan. As parasites are primarily transferred through manure, good management is essential. Some of the procedures listed below can be helpful in reducing parasite burdens:

- Keep the number of horses per acre to a minimum to prevent overgrazing and reduce pasture contamination with parasite eggs and larvae
- Pick up and dispose of manure regularly (at least twice a week during the warmer seasons, even in dirt or sand yards)
- Do not spread manure on fields to be grazed by horses; instead, compost it in a pile away from the pasture before spreading it out
- Mow and harrow pastures periodically to break up manure piles and expose parasite larvae to the elements (larvae can survive freezing, but they cannot tolerate extreme heat and drying for very long)
- Consider rotating pastures by allowing sheep or cattle to graze them, thereby interrupting the life cycles of equine parasites
- Use a feeder for hay and grain rather than feeding on the ground
- Remove bot eggs regularly from the horse's haircoat (flea combs work well in some instances)
- Consult your veterinarian to set up an effective deworming program for your horse(s) and monitor its effectiveness.

For more information, contact your veterinarian.

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