

# EQUINE INTERNAL PARASITES

Internal parasites, or worms, are silent thieves and killers. They can cause extensive internal damage without you even realizing that your horses are heavily infected. 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.

## **TYPES OF INTERNAL PARASITES**

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

- Large strongyles (bloodworms/redworms)
- Small strongyles
- Roundworms (ascarids)
- Tapeworms
- Lungworms
- Pinworms
- Threadworms
- Bots



Probably the most important in terms of health risk are the first four: large and 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 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.

### **Large strongyles**

Large strongyles, as larvae, penetrate the lining of the bowel and migrate along the blood vessels that supply the intestines. Even small numbers of these larvae can cause extensive damage and possibly death. Infection with large strongyles 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. Fortunately, large strongyles can be effectively controlled by most available dewormers for horses.

### **Small strongyles**

Small strongyles have become a group of major importance. Unlike the large strongyles, 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 lifecycle. 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. Colic and diarrhea are common in heavily infected horses. These parasites also cause weight loss, slowed growth in young horses, poor coat condition and lethargy, or lack of energy. While lighter infections are not obvious, it is common for a horse's general health and performance to improve after treatment for these parasites.

### **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 lifecycle. Large infections can lead to damage to the liver or lungs due to migration of these larval forms.

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 3 months of age) 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.

### **Tapeworms**

Until recently, tapeworms weren't considered to be a significant problem in horses. We now know that tapeworms can cause colic, ranging from mild cramping to severity requiring surgical treatment. The tapeworm lifecycle involves a tiny mite as an intermediate host, and horses are at risk of developing tapeworm infection when they eat this mite in grass, hay or grain.

Until recently, no equine dewormer was approved for use against tapeworms. Praziquantel has been demonstrated to be highly effective against tapeworms. Several pharmaceutical companies have developed combination products that offer a complete antiparasitic spectrum of activity. Horses should be dewormed for tapeworms annually.

### ***Other internal parasites***

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. 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. Since ivermectin has become such an easy deworming medication to obtain, bots are rarely found in properly dewormed horses.

### ***SIGNS OF PARASITISM***

Contrary to popular belief, horses can have potentially dangerous 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
- Decreased stamina
- Slowed growth
- Colic
- Lethargy or decreased energy
- Unthriftiness
- Pot belly
- 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, and in monitoring the effectiveness of the program.

Fecal egg count involves collecting two or three fresh manure balls from the horse to be tested. Results are expressed as eggs per gram (epg) of manure. A fecal egg count of less than 200 epg suggests a light parasite load. High fecal egg counts of 500–1,000 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 only intermittently. Larvae do not produce eggs at all and may be present in large numbers in a horse 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. Most are broad-spectrum, meaning that they are effective against several different types of parasites. It is generally best to use a broad-spectrum dewormer as the basis of your deworming program. If a specific problem is identified, a more specific dewormer can be used.

### ***Rotating products***

Whether or not to rotate dewormers (switch to a chemically different product every few months or every year) is a controversial topic. When the same or a chemically similar dewormer is used repeatedly for years, the parasites may become resistant to it and the product then becomes less effective, or even ineffective.

However, rotating products too often could create strains of parasites that are resistant to multiple products. Whether or how often to rotate classes of dewormer is something you should discuss with your veterinarian.

### ***Monitoring***

Whichever deworming program or product you use (e.g., daily vs. monthly, vs. two or three monthly dewormings; single product vs. rotation of products; etc.), have your veterinarian perform fecal egg counts every 6–12 months to make sure your program is effective. 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 via manure, good management is essential.

- Keep the number of horses per acre to a minimum to prevent overgrazing and reduce pasture contamination.
- Pick up and dispose of manure regularly (at least twice a week, 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.
- 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 lifecycles of equine parasites.
- Keep foals and weanlings separate from yearlings and older horses to minimize the foals' exposure to parasites.
- Use a feeder for hay and grain rather than feeding on the ground.
- Remove bot eggs regularly from the horse's hair coat (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.