

## Equine Veterinary Associates

### Deworming Protocol

We have two basic regimens for keeping the parasites in and on your horse to a minimum:

#### 1. Rotational Deworming – TIME FOR A CHANGE

The goal of this regimen is to try and use the most effective dewormer against the parasites present in your horse at the time and stage of their life cycle they might be susceptible to it. Since it is impossible to know all of this information at the time of deworming, we used to recommend rotating active ingredients (not brand names!) to try to prevent the parasites from becoming used to or resistant to one particular dewormer, and giving one every six to eight weeks. What we have learned over the years is that there is no one program that works for all horses. Despite rotating ingredients, parasite resistance is increasing. Most horses do not need to be dewormed so often because they are carrying low to moderate parasite burdens. Therefore our deworming protocol needs to be more individualized so that we are giving the most effective class of wormer to the right horse at the right time.

The first step in improving your deworming protocol is to identify the low, moderate, and heavy parasite egg shedders. This is best done by getting a fresh fecal sample (just a few “apples”) and storing it in a sealed container in the fridge until you can get it to your veterinarian, preferably within 48 hours. You should plan on collecting this just before you are about to deworm again, or at least four weeks after the **ERP** (see below) of the last wormer you used. We then submit it to a lab for a specific type of fecal evaluation that gives us a number of parasite eggs per gram of feces, or **EPG**. This gives us a baseline to help determine how often your horse should be dewormed. In addition, all new horses should be tested and treated accordingly before they are turned out on the pasture with the others. It is interesting to note that **20% of the horses on a pasture shed 80% of the parasite eggs**, and these horses aren’t necessarily the ones that look “wormy.” The fecal egg count (**FEC**) is the only way to know for sure.

Here are the recommended pasteworming rotations based on the fecal egg count, measured in eggs per gram (EPG):

**“LOW SHEDDER” (0-250 EPG)** = twice a year, spring & fall

Mar or Apr - Ivermectin + Praziquantel  
Sep or Oct - Moxidectin +/- Praziquantel

**“MODERATE SHEDDER” (250-500 EPG)** = four times a year

Mar or Apr - Ivermectin + Praziquantel  
May or Jun - Ivermectin  
Sep or Oct - Moxidectin +/- Praziquantel  
Dec or Jan - Fenbendazole/Oxibendazole or Pyrantel

**“HEAVY SHEDDER” (>500 EPG)** = six times a year, about every other month

Jan - Fenbendazole/Oxibendazole  
Mar - Ivermectin + Praziquantel  
May - Ivermectin  
Jul - Pyrantel or Fenbendazole/Oxibendazole  
Sep - Moxidectin +/- Praziquantel  
Dec - Pyrantel

The second step to determine if you're deworming correctly is to identify resistance to a specific wormer or chemical class. After you have your baseline FEC and pasteworm your horse, a fecal sample is resubmitted in 10-14 days to check for a certain percentage of decrease in the number of parasite eggs. This is called a fecal egg count reduction test, or **FECRT**. The expected percentage varies depending on the chemical class of wormer, and if it is not high enough (or the EPG goes up!), you could have a very strong resistance problem. This is especially important to check on the horses that had higher baseline FEC's.

Here are the chemical classes of active ingredients in the currently available dewormers, some brand names, and their associated egg reappearance period, or **ERP**:

- Moxidectin (*Quest*) ERP=10-12wks  
with Praziquantel (*Quest Plus*)
- Ivermectin (*Equell, Equimectrin, IverCare, Rotectin, Zimecterin*) ERP=6-8wks  
with Praziquantel (*Equimax, Zimecterin Gold*)
- Fenbendazole (*Panacur, Safe-Guard*) ERP=4-5wks
- Oxibendazole (*AnthelcideEQ*) ERP=4-5wks
- Pyrantel pamoate (*Strongid, Rotectin P, Liqui-Care P*) ERP=4-5wks

The ERP basically indicates the amount of time we expect a wormer to “last” before we might start seeing small strongyle eggs in the horse’s feces again. You would not want to dose a horse again before the ERP of the last wormer used has passed. If this interval gets shorter, meaning we get a significant fecal egg count before the ERP is up, that is another indicator of resistance to that wormer.

The advantages to this protocol include availability and low cost of paste and pelleted dewormers from feed stores, web sites, catalogs, and your veterinarian. We do recommend that you stick with well known brand names, as generics cannot always be trusted to be as effective. If you have multiple horses, you can dose each one separately and make sure they get treated.

The main disadvantage is human error, which can in turn affect the accuracy of the fecal egg count and contribute to resistance. You must dose the horse accurately by weight, and if you’re not sure most of these products are safe to overdose by a couple hundred pounds. If your horse is fractious or does not like to have things put in its mouth, there is a good chance you will underdose it or the paste will get spit out. You might have a horse with a high FEC or a low FECRT all because it’s not getting enough wormer and/or not swallowing it.

## 2. Daily deworming

This involves adding to the feed about 2 oz. (dose based on your horse's weight) of a pelleted dewormer once a day year-round. The active ingredient is *pyrantel tartrate*, and is in *Strongid C*, *Strongid C2X*, *Continuex*, or *Equi-Aid CW-2W*. It is extremely important that you have an accurate estimate of your horse's weight, or guess high, for this protocol to be effective. Of course, the horse also has to eat the full dose every day, and be fed separately if you have multiple horses to prevent "stealing." To test for efficacy a FEC can be performed at any time, and >100 EPG could mean parasite resistance or improper dosing.

The main advantage to this protocol is that your horse never gets a chance to get infested with high numbers of larvae or adult worms because they are killed at the stage ingested by the horse. In addition, several parasites of horses have a stage that involves migration through the intestinal wall, liver, or lungs, which can cause major damage, so that does not get a chance to happen. It can be started at 5-6 months of age.

The disadvantage to daily deworming is mainly cost; it depends on the dose, but runs approximately \$0.45-0.55 a day. Buying in larger quantities is less expensive. You also have to make sure each horse gets its full dose every day as mentioned above. You do still have to pasteworm your horse, but only twice a year (in the spring and fall, like a "low shedder") with an *ivermectin* or *moxidectin* product to kill bots, as *pyrantel tartrate* does not. We recommend that one or both of the pastewormings include *praziquantel* for tapeworms.

## Additional information about deworming

### Parasite control on the farm

There are strategies you can use that do not involve any chemicals or drugs:

- Rotate your pastures if possible, and rest them completely during hot, dry weather
- Cross-graze your pastures with cows or goats
- Avoid overstocking

- Remove as much manure as possible from the paddocks and smaller pastures
- Drag or harrow your pastures only during the hottest, driest times of year and keep the horses off of them for several weeks afterwards
- Talk to you extension agent about composting

### Factors that can affect your horse's risk for parasites

All of these are also taken into consideration when designing the best deworming protocol for your horse:

- Age of the horse
- Local climate
- Natural immunity of horse
- Pasture rotation
- Manure removal & disposal
- Resistant parasites
- Number of horses
- Type of pasture
- Horse management & grouping
- Location of feeders
- Use and transport of the horse

### Tubeworming

Historically veterinarians “tubewormed” horses, meaning a nasogastric tube was passed through the horse’s nose into the stomach and a liquid wormer was poured in. The main reason for this was liquid wormers were all that was available, and such a large volume had to be given to accurately dose a horse the tube was the only way to deliver it. Obviously this is much more traumatic to the horse and time-consuming for the veterinarian. We believe that the current available concentrated paste and pelleted dewormers can accurately dose a horse, and if it’s all swallowed, it’s going the same place as the tube! In other words, there is no advantage to tubeworming and it is not “better” than daily or rotational deworming except for the fact that the wormer is 100% guaranteed to be delivered to the stomach. We do offer deworming your horse with *ivermectin* liquid through a drench gun, which goes in the mouth and squirts the liquid through a long metal “straw” into the back of their throat where it is easily swallowed.

### Purge deworming

We will usually recommend a specific type of purge deworming for horses with high fecal egg counts, if we suspect encysted small strongyles (which cannot be tested for), if they look extremely “wormy,” or if they have an unknown or inaccurate deworming history, such as a new purchase. It is a double-dose (i.e. twice the horse’s weight) of *fenbendazole* five days in a row. It comes pre-packaged by Intervet in a *Panacur Powerpac*. This is the “slower, gentler” way of killing small strongyle larvae that are encysted in the walls of the intestine, which can prevent absorption of nutrients and cause major long-term damage. It’s not a bad idea to work this into your rotational deworming program and use it in July or August, when the fewest numbers of parasite eggs are on the ground due to heat and dry weather, so re-infection is at a minimum. *Quest* is also labeled for encysted small strongyles, but can be too “fast-acting” for a sick or debilitated horse. Always ask your veterinarian which would be appropriate for your horse.

### Pregnant mares

During her pregnancy a mare still needs to be regularly dewormed. However, we feel it is ideal not to give her any paste wormers during the first 60 days. Therefore, we recommend deworming just prior to breeding, and then resume your normal protocol after 60 days gestation. The exception is the daily wormer, which can be used at any stage of pregnancy and nursing according to the label. In addition, there is one specific parasite larvae (*Strongyloides westeri*, a.k.a. threadworms) that can pass to their foal in the milk, so they should be dewormed with an *ivermectin* product just prior to or 12-24 hours after foaling to prevent transmission.

### Foals

A foal should be paste wormed for the first time at one month of age and once a month thereafter until it’s weaned or reaches six months. Each dose should be according to its estimated weight at the time. We recommend using a *fenbendazole/oxibendazole* or *pyrantel pamoate* product for the first five months. Then at six months of age give an *ivermectin* or *moxidectin* product that includes *praziquantel*, and begin the same protocol you use for your adult horses.