

Daniel P. Keenan, DVM
Ron McAlister, DVM
Lynsey D. Makkreel, DVM

Keenan McAlister Equine



Deworming: The Principles

We used to think of deworming as easy. There were only two rules. 1) Deworm every horse every 60 days and 2) Use a different dewormer than you used last time. Simple, easy to remember and **wrong**. That guideline is about 30 years old and parasitologists stopped recommending it about 20 years ago, although no one (including veterinarians) heard the message. The problem is that there are only 3 classes of deworming drugs (although they are available in dozens of brand names) and there has not been a new dewormer in about 25 years. Furthermore, there is nothing new on the horizon. We are probably stuck with the drugs we have for a long time, and those are becoming less and less effective. Parasite resistance has become a large problem. It has been estimated that nearly all the small strongyles (the main parasite of adult horses) are resistant to one of the three classes of dewormer, and 50% of strongyles are resistant to two of the classes. That doesn't leave us with a lot of options. That is also why random rotation of drugs is no longer acceptable. When you rotate, you are following an effective dewormer with one or possibly two ineffective dewormers.

The new way of thinking about parasite control is to change the goal from deleting parasites from inside your horse to remove them from the environment, and deworming is only one step in that process. Most parasites are spread on pastures, not in stalls or dirt paddocks which are far too hostile to parasite eggs. A clean, well bedded stall is too dry for eggs to develop and the urine and ammonia in a dirty one quickly kills any eggs. Management techniques come into play in our new goal of parasite control, and worms haven't developed resistance to management techniques. These include all of the things you have heard. Don't overcrowd pastures, deworm new horses before adding them to the herd, rotate pastures whenever possible, and rotate horses with other livestock (cattle and horses "clean up" the other species parasites, but are immune to them). In fact, one study in England showed that removing manure from the pasture twice weekly was more effective at controlling parasites than any deworming schedule.

But back to deworming. If one or two of the dewormers you use are ineffective, how do you know which ones to use? The answer is: fecal testing. Fecal testing is the most important weapon in parasite control. Testing lets you identify the ineffective dewormers and avoid them, and it lets you find out the proper deworming interval (60 days or less is excessive in most cases, and the majority of back yard horses do well on twice a year treatment).

So if rotation is not an option and frequent treatment is discouraged, how the heck DO you deworm? Well, you start at the beginning. Do a fecal. If there are parasites present, deworm your horse with whatever dewormer you want. 10-14 days later, do another fecal test. If the parasites are gone, continue to use that dewormer (but at an interval longer than 60 days). If the parasites were not adequately reduced, you have a resistance problem and that dewormer is banned. Repeat the process. The average program consists of fecal testing once yearly and deworming 2-4 times a year.

Fecal testing has limitations. First, the sample must be handled properly. Collect a golf ball size sample of fresh, moist manure (Samples should be less than 24 hours old. That dried up fossil in the corner of the stall is useless) and put it in a zip lock bag. Squeeze out all the air and seal it up. Keep it cool until turned in for testing. Be aware that regular fecal tests do not detect bots or tapeworms.



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Underdosing also selects out for parasite resistance. Use a weight tape on your horse (or ask your veterinarian) to determine the proper dosage. While overdosing is usually very safe, underdosing leaves parasites in your horse, especially those that are developing resistance to that drug. Make sure your horse doesn't spit out a portion of the dose (this is the same as underdosing). Do not mix the dewormer with

feed (unless it is a product designed to be mixed, such as EquiBits). The daily dewormers are designed to go into feed and work well, although fecal testing and occasional paste deworming are still necessary.

A little more on rotation. This is the hardest concept for people to give up. They have read and been told that it is the way to deworm all of their lives and can't believe it has changed. Well, it hasn't changed because it never really was recommended, at least, not in the way they know. When rotation was first proposed, the parasitologists were talking about Slow Rotation, or using one drug for a year or so before switching classes. This got corrupted into Fast Rotation, or changing classes with every treatment. Slow Rotation always was and still is the preferred method. Fast Rotation has a limited use in cases of serious resistance.

Some Random Points:

1. There is no such thing as a Killing Frost. Many parasite eggs can survive freezing temperature for 6-12 months. However, below 45 degrees, the parasites slow down so much that they are considered non-infective. The point is, most winter deworming is unnecessary. Let Mother Nature take care of the problem for free.
2. Horses exhibit a fecal avoidance behavior. Given enough pasture, they form Roughs and Lawns. They poop in the rough and graze in the lawn. If overcrowded, they pay no attention to the rule.
3. Harrowing or dragging mixes Roughs and Lawns and forces horses to consume more eggs. Dragging is an excellent idea, but should be done in late spring and early autumn (when temperatures are above 85 degrees), and then the field should be left vacant for 3-4 weeks for the eggs and larvae to die.
4. Horses don't get parasites from eating fresh manure. Parasites are not infectious when manure is first passed. Eating fresh manure will give your horse bad breath and black teeth, but not worms.
5. For the Green People out there, moxidectin (Quest) breaks down once it leaves the horse's body, but ivermectin remains active in the environment. Ivermectin deposited by several animals will decrease the beneficial insect population (especially dung beetles) of a pasture.



For some recommended deworming plans, see our next handout **Deworming-The Plan**

Daniel P. Keenan, DVM Ron McAlister, DVM Lynsey Makkreel, DVM
165 Third Street ♦ Bordentown, New Jersey 08505 ♦ 609-291-0535 ♦ fax 609-291-8899
www.KeenanMcAlister.com ♦ KME@KeenanMcAlister.com