New Thinking on Deworming

There's a good chance your deworming strategy needs updating.

By Toni McAllister

Horse IllustratedMay 2008

With all the highly effective dewormers readily available to horse owners today, it seems many veterinarians have removed themselves from the deworming discussion altogether.

"It's been a while since a lot of veterinarians got involved in the whole deworming issue, but the drive is really on to get more veterinarians involved again," says Wendy Vaala, DVM, ACVIM, senior technical service veterinarian for Intervet.

Researchers from major drug companies are pressing vets to get involved with their clients' deworming programs, and for good reason. Many horse owners think that regular deworming effectively controls internal parasites in their animals, but this may not be the case. Few horse owners have a clue about what types of parasites their horses harbor, and whether the dewormers they're using are effective against them.

"Horse owners may be deworming with a product that isn't effective," says Hoyt Cheramie, DVM, ACVS, manager, Merial Equine Professional Services. "They don't know what's working and what's not." These are the issues that worry researchers, so they offer the following advice:

1. Veterinary Expertise and Fecal Egg Count Reduction Tests
Just because you deworm your horse — and he's shiny and in good weight — doesn't mean he isn't full of worms. "The only way to truly determine whether deworming products are working is to conduct fecal egg count reduction tests," Cheramie says.

The fecal egg count reduction test (FECRT) is a simple, two-step process that involves your veterinarian: A first test analyzes the number of eggs from a horse's fresh manure sample before deworming; a second test, conducted about 10 days after deworming, analyzes the number of eggs in a new manure sample from the same horse. Ideally, FECRTs are performed before and after deworming with a product from each of the three chemical classes (see chemical classes chart).

In a perfect world, FECRTs would be run on each individual horse at a given farm, although that's not always practical, especially if you board at a large facility. In these situations, most researchers agree that testing just a few adult horses and foals on each farm provides enough information to determine which parasites are most problematic in the resident herd.

While a FECRT can reveal a lot, it is an imperfect diagnostic tool. Researchers are discussing the limitations of FECRTs, but currently the experts agree these tests are the best measuring sticks available today and are important first steps in any good deworming program. Horse owners should note that FECRTs aren't reliable for detecting tapeworms, so the current protocol is a twice-yearly deworming (spring and fall) with a product labeled for tapeworm treatment.

2.Target the Parasites That Are on Your Farm
Once results are in from FECRTs, your veterinarian can help you develop an effective deworming program based on the types of parasites found on your farm.

Once a schedule is established, it's important to stick with it. "Being six weeks late on a scheduled deworming can be just as bad as skipping it," says Tom Kennedy, Ph.D., senior vice president, Central Life Sciences New Products Development.

The seasons and the region of the country factor into the types of parasites found on your farm. Kennedy provides a scenario: "If it's late fall and you've had bot flies on your horses all summer, it doesn't do you much good to use one of the pyrantels or benzimidazoles for your late fall deworming — you need a macrocyclic lactone to knock the bots out of his stomach."

Use the weather to your advantage when it comes to deworming. If FECRTs confirm that your horse has some built-in

immunity to parasites, and you live in a dry, arid region, then summer is a good time to decrease your deworming.

“Deworm going into summer, then wait until fall when the weather starts cooling down to treat again,” Vaala recommends. Even in cold regions, weather can work to your advantage, especially for those horses with naturally low egg counts. “If you’ve got a foot and a half of snow up in the North, those parasite eggs may not be dead under all that snow, but your horse isn’t going to get down to eat them,” Vaala says. “You don’t have to deworm at the same frequency as when you’ve got optimal conditions for parasite reproduction and transmission, which is spring and fall in most places.”

In addition to region and seasons, Kennedy also says “it’s a farm-by-farm basis.” You can have two 20-acre farms in the same county with the same number of horses on each, but different management practices — manure management, pasture irrigation, number of horses turned out together, age of horses, et cetera — may cause the two farms to have completely different parasite profiles.

3. Horsekeeping Practices
There’s more to parasite control than just dewormers. Your horsekeeping practices help dictate what parasites are on your farm.
Horses shed parasite eggs in their manure. Regular and diligent manure removal goes a long way toward naturally reducing parasite populations on a farm. “Manure management does as much as anything to decrease parasite transmission,” Vaala says.

In addition to removing manure from corrals and paddocks, Vaala reminds owners that if they harrow their pastures or spread manure on pastures, it should be done when the weather is really hot and dry. “Hot, dry weather is the most detrimental to parasites,” she says. Low humidity combined with high temperatures that exceed 90 degrees will kill parasite eggs, the exception being ascarids (roundworms). “Spring and fall are the worst times of year because temperatures are optimal for parasites,” Vaala says.

Also, farms with high horse turnover — new horses coming and going — have a greater parasite management problem. New horses potentially carry parasites that might not currently exist on a farm. This puts all horses in the herd at risk for becoming infected.

Vaala says that zeroing in on newcomers can significantly reduce parasite threats. “When you quarantine a new horse, do a fecal egg count reduction test,” Vaala says. If the counts are moderate to high after the first phase of the FECRT, Vaala recommends dosing with ivermectin, moxidectin or Panacur PowerPac. Hopefully the second phase of the FECRT shows a significant reduction in eggs, and the horse can be released into the herd. If there isn’t measured reduction, then treatment with a second chemical, under veterinary guidance, might be warranted before the horse is released into the herd.

4. Age Considerations
Deworming strategies should be adjusted throughout a horse’s life cycle. For example, foals and senior horses are most susceptible to certain parasites. While small strongyles and possibly tapeworms are the biggest concern for senior — and adult — horses, ascarids are most problematic for foals. Deworming protocols for youngsters generally call for more frequent dewormings to control ascarids, but strategies typically change by the time a horse reaches his second birthday, as he develops a natural immunity to the parasite. (Most horses develop age-related immunity to ascarids, although there are now some reports of ascarids in adults.)

According to Vaala, ascarids are difficult parasites because they are so hardy. “The eggs can persist for up to 10 years on a pasture. They’ll survive heat, they’ll survive freezing.” This is particularly problematic on breeding farms. “It’s not an easy fix,” she says.
FECRTs should be run on horses during different life stages to determine their parasite loads and unique deworming requirements.

5. Capitalize on Built-in Immunity
Some horses do have a natural immunity to internal parasites. FECRTs might reveal that deworming three times a year is effective for these horses, whereas other herd members might need more frequent treatments because they carry a higher parasite load. The old adage that 20 percent of horses carry 80 percent of the parasites is still a generally accepted rule among researchers. And the 20 percent group is “shedding” (passing through their manure) most of the parasite eggs on your farm. The other herd members are infected when they ingest the parasite eggs during grazing.

“There are certain horses that are contaminates,” Cheramine says. “If you can figure out which horses those are by doing FECRTs, then you can target those horses.”

Vaala agrees and says that if you can divide horses on a farm into low shedders, medium shedders and high shedders, then you can strategically treat each group differently.

What's the harm in deworming the entire herd at the same time in the same way? The horses with a natural immunity to parasites are treated too frequently with drugs they don't need, which increases their risk of resistance. And the horses that really need deworming (the high shedders) may not be getting treated enough.

6. Resistant Parasites
"Resistance is becoming an ever-increasing problem in the sense that no one drug is going to solve the problem on any one farm," Vaala says. "It's been slow to gain recognition, but horse owners really need to be aware of the problem. If owners have not been involving their veterinarians in doing fecal exams and reviewing deworming strategies, they very easily may have an ineffective program."

"The more you expose a parasite to any drug, the greater chance you have of developing resistance," Cheramie says.
To help prevent drug resistance, researchers agree that based on FECRT results, horse owners should stretch out the period of time between deworming for horses that don't carry high parasite loads.

"We only have so many drugs to play with," Vaala says. "Use as few drugs as possible to get the job done."

7. Rotation Isn't Carved in Stone
Effective deworming has nothing to do with how many times per year you deworm. "Many horse owners think that by rotating products every eight to 10 weeks, everything is OK," says Vaala. "That's a misconception. You probably do need to use different products, but which products for which horses is what it comes down to right now. The best strategy begins with doing fecals [FECRTs] on all horses."

"Make sure that what you rotate with is effective for your horse," Cheramie says. Once FECRT results are in, your veterinarian will recommend a deworming strategy that may include rotation. There are three chemical classes of dewormers available today: macrocyclic lactone, pyrimidine and benzimidazole. All of these chemical classes contain several drugs within them, but researchers agree that rotating between drugs in a class is not effective rotation. Instead, rotation involves rotating between chemical classes as dictated by FECRTs and your veterinarian.

A fourth drug, praziquantel, doesn't fall into any of the above chemical classes. It was introduced a few years ago to treat tapeworms and is typically combined with a drug from the macrocyclic lactone class.

8. Follow Dosage Directions
Correct dosing with the appropriate dewormers is critical. Not only do you want to stick to a schedule and product recommendations made by your veterinarian, it's important to follow the dosing directions found on the label, which are based on your horse's weight.
"Most people do a very poor job of getting a full dose of dewormer into the horse," Kennedy says. If your horse spits out his dewormer or you accidentally miss the target, you're underdosing him.

Vaala also reminds owners to have a good estimation of what their horses weigh. She explains that underdosing gives parasites a chance to survive and build resistance. Ask your veterinarian for guidance on dosing based on your horse's weight. Large draft horses and oversized warmbloods might need additional dosing, since many dewormers only dose up to 1,200 pounds. Small horses and ponies might require less than a full tube.

Download a reference chart of dewormer chemical classes.

Download a chart to keep track of your horse's deworming schedule.

Toni McAllister is a horse owner from Southern California and a contributing editor to Horse Illustrated.