

DEWORMING DILEMMA?

LET SAFE-GUARD® SHOW YOU THE THREE THINGS YOU MUST KNOW TO ENSURE YOU GET ROTATION RIGHT.



Ever felt that every other dewormer ad you see offers different or conflicting advice about how best to deworm your horse, leaving you more confused than ever? Or that the media is jammed with warnings about parasite resistance to equine dewormers that is impossible to understand?

Well, the truth is that since research studies turned up evidence of dewormer resistance, horse owners are left wondering where to go from here. Horse owners and managers can no longer blindly rotate dewormers, nor can they rely on a one-product-fits-all program. When parasites get tough, or the science starts to baffle us, horse owners need to get tougher – and smarter. We got our horses into this. Now, we need to get them out.



THREE SIMPLE STEPS

The good news is that there is a relatively simple, three-step solution to the deworming dilemma, and it starts with knowing the enemy – those tiny thieves that steal your horse's health. From there, you can create a custom program that promises optimum health and reins in resistance.

Also remember that your veterinarian is an excellent source for instruction and guidance when you have questions regarding your deworming program.

1. KNOW THE ENEMY

As any smart strategist knows, your best offense is a defense based on understanding the enemy – in this case, parasites – in order to mount a successful assault.

The Criminal Line-up

A basic understanding of these tiny thieves, their life cycles and their preferred modes of attack, is vital. That's where both timing and the right choice of deworming compounds join the fight. The main culprits include small strongyles (particularly encysted small strongyles), ascarids, large strongyles, pinworms, threadworms, bots and tapeworms. Each has a unique life cycle and is more threatening at various times of the year, or to different horses, depending upon age, environment and climate. But we'll try to keep it simple.

Encysted Small Strongyles

Perhaps the sneakiest invaders are encysted small strongyles, larvae that, once they are embedded in the intestines, pose a severe health risk. The presence of large numbers of larvae can cause weight loss and poor overall condition. Even worse, the possibility of a mass emergence of hungry adults from the intestinal walls – all at the same time – can cause a potentially fatal case of colic or severe diarrhea. Young and old horses are more vulnerable, while most healthy adult horses are fairly resistant. (About 20% of adults are more susceptible than the rest and are classified as “high shedders,” but more on that later.) Not all dewormers are effective against these parasites, particularly in the encysted stage. Only two drugs can kill off encysted small strongyles: a five-day larvicidal dose of fenbendazole (Safe-Guard® Power-Dose® or Panacur Powerpac) or moxidectin.



Ascarids

Also known as roundworms, ascarids are most dangerous to foals and young horses under age two. Infected foals may develop respiratory disease associated with larval migration through the lungs and intestinal disease from juvenile and adult parasites in the small intestines. Once on the pasture, ascarid eggs are like impenetrable fortresses and can survive hot summers and freezing winters. And, because on many breeding farms certain compounds like ivermectin and moxidectin are no longer effective due to overuse and increased resistance, a special deworming program using a two-day dose of Safe-Guard® is recommended for foals.



Large Strongyles

Commonly called bloodworms, large strongyles are extremely dangerous if left unchecked. Larvae weaken abdominal artery walls, causing problematic blood clots, and some species migrate to other organs, wrecking havoc wherever they trudge. Symptoms range from diarrhea and weight loss to potentially fatal colic due to obstruction of blood flow to entire segments of the intestines. All compounds are effective against adult stages, and if little or no resistance is detected, it is best to use an established dewormer and save newer compounds from resistance build-up for as long as possible. Only macrocyclic lactones and larvicidal dosages of fenbendazole are effective against the damaging larval stage.



Pinworms

Although relatively harmless to overall health, pinworms can be irritating when they cause severe itching around the rectum and tailhead. As a horse scratches, there may be tail hair loss and skin patches rubbed raw. Dewormers used for other parasites



usually destroy pinworms at the same time, although there are reports of pinworm infections that appear to be resistant to some dewormers.

Threadworms

These guys target young foals under six months of age. Adult threadworms that live in the intestinal tract can cause weakness, diarrhea and emaciation. Controlling threadworms in adult horses, particularly broodmares, is important to protect nearby youngsters. All three drug classes can blast away threadworms.

Bots

Those irritating botflies buzzing around each autumn lay yellow eggs on your horse's hair, mainly on the legs. The horse licks the eggs, the eggs hatch and the larvae are swallowed. These little squatters take up residence in the stomach for a year, eventually turning into grubs and passing out in the animal's feces. While in the stomach, they can cause digestive problems, weight loss, poor condition and poor feed conversion. Remove any visible eggs on the hair coat and administer a macrocyclic lactone compound, such as ivermectin. An ideal time to treat for bots, in temperate climates, is after fly season is over and cold weather arrives.



Tapeworms

These guys enjoy a category all their own. Tapeworms attach to the intestinal walls and absorb any food that happens to pass by, while disrupting motility in surrounding segments of the intestines. A heavy infestation can cause dangerous blockages. Praziquantel is effective against tapeworms but has no effect on any other parasites. A double dose of pyrantel can also be used to treat tapeworm infections.



2. KNOW YOUR HORSE

It used to be enough to just know the worms. Scientific research, however, suggests that there is much more to know today, as horses vary in their susceptibility to parasites, and some worms have become resistant to certain classes of dewormers.

Each individual horse faces a unique parasitic challenge, beginning with age and adding in life circumstances. By factoring age in with geographic region, living conditions, and the results of properly-timed fecal egg counts, a straightforward deworming program can be devised. Your veterinarian is a great resource to assist you.

Age Groups

In general, horses fall into four age groups: 1) foals; 2) adolescents – yearlings through age two; 3) adults; and 4) seniors over age 15. Each has specific challenges.

Foals

Unlike older horses, foals are dangerously susceptible to roundworms (ascarids). Unfortunately, resistance to ivermectin and other macrocyclic lactones exists in some regions, and these compounds may no longer be effective to use in foals to treat ascarids. Therefore, a double-dose of a fenbendazole product is recommended at eight weeks of age or older. From there, young foals through weaning age benefit from deworming at two-month intervals to help prevent ascarids from maturing into egg-laying adults that lay eggs in pastures, waiting to infect the next generation of foals. Since foals and weanlings are more susceptible to most parasites, they require more frequent deworming.



Shedding status is most likely a genetic or inherited trait. High shedders (about five to 20 percent of mature horses) can look just fine, but secretly go about contaminating pastures and infecting everyone around them.

Adolescents

Young horses from yearlings through age two, with their immature immune systems, also require more frequent dewormings using a variety of compounds over that time. These treatments are usually administered during the grazing seasons.

Adults

Each adult horse, on the other hand, may need a slightly different program, depending upon living conditions and whether each is a high shedder or a low shedder, based on the number of strongyle eggs in their fecals. Most horses over age two have developed varying degrees of immunity to parasites, and, as a general rule, are only mildly affected by their presence – unless infestations become heavy.

Shedding status is most likely a genetic or inherited trait. High shedders (about five to 20 percent of mature horses) can look just fine, but secretly go about contaminating pastures and infecting everyone around them. Determining,

via fecal egg count tests, which of your horses are high shedders can and should affect management and stocking practices. High shedders may need to be treated for parasites more often and compounds used may vary, while low shedders may not need to be dewormed as often, or with different products.

Seniors

Horses over age 15 are similar to adults, unless they have developed health conditions that affect their aging immune systems. If Cushings Disease or another condition develops that compromises a senior's immune system, it may require a highly-customized deworming program to better address disease challenges.

New Horses

Also keep in mind that when a new individual of unknown background is introduced, it is important – and safest for the horse – to administer a larvicidal dose of fenbendazole over the first five days it is in residence and prior to turnout on pasture.

3. KNOW THE PLAN

Once you know which enemies specifically threaten each of your horses, it is time to set up the right rotational deworming plan for each individual. This program should span one year's time, at the end of which, a new plan for the following year may or may not be warranted.

Choose Your Weapons (Carefully!)

No new deworming molecule has been developed in more than 20 years, and resistance to the existing compounds is growing. In addition, there are no new compounds on the near horizon, although research is progressing. Therefore, just as with antibiotics, it is best to use the right dewormer at the right time against the parasites of concern. Save a "big gun" dewormer for use only when other drug classes fail.

Each of the three primary drug classes, plus one specific to tapeworms only, has its place in most rotation programs. They include:

- 1) **Benzimidazoles – Fenbendazole**, Example: *Safe-Guard*[®], *Panacur*; Larvicidal fenbendazole, Example: *Safe-Guard*[®] *Power-Dose*[®], *Panacur Powerpac*;
- 2) **Macrocytic lactones – Ivermectin**, Example: *Zimecterin*, *Eqvalan*, or **Moxidectin**, Example: *Quest*;
- 3) **Pyrimidines – Pyrantel**, Example: *Strongid C*, *Pyrantel Paste*; and
- 4) **Praziquantel** (for tapeworms only), offered in combination with a macrocytic compound. Example: *Zimecterin Gold* (combination), *Quest Plus* (combination).

It is important to note that all three classes of deworming compounds are effective against adult small strongyles, when resistance build-up is minimal.

However, only a larvicidal dose of fenbendazole can safely destroy all larval stages (EL3 and LL3) of encysted small strongyles where they hide out, killing them before a disastrous adult mass emergence through intestinal walls. The macrocytic lactone Moxidectin (a deworming compound to consider re-servicing for cases of resistance) is also effective against later stages of these encysted small strongyle larvae (LL3), but this drug is not recommended for young foals and thin, debilitated horses of any age.

Geography & Management

It is smart to know the unique parasitic challenges of the farm where your horse resides. For example, in some regions of the country, macrocytic lactone dewormers, such as ivermectin, no longer are effective against roundworms, due to overuse and increased resistance to this molecule. This can especially be

However, only a larvicidal dose of fenbendazole can safely destroy all larval stages (EL3 and LL3) of encysted small strongyles where they hide out.



detrimental to foals and, instead, a double-dose treatment of fenbendazole is advised at approximately eight weeks of age. Weather and climate also affect the life cycles of some parasites, so taking into consideration wet versus dry conditions, amount of sunshine, and hard frost events is helpful.

Another powerful weapon against parasites is adopting good environmental management practices. These include, but aren't limited to, daily manure removal in stalls and twice weekly removal from pastures and paddocks; pasture rotation; inter-species grazing (sheep, cattle, goats, etc. rotated through horse pastures); providing any supplemental grain or hay in raised containers off the ground; and keeping overcrowding to a minimum.

Customized Rotation Programs

The analysis of a fecal egg count (FEC) test can help you understand the parasitic challenges of a particular horse, especially when trying to determine which adult horses are high shedders and therefore may need a tougher deworming program, and which are low shedders, and don't require treatment as often (saving money and slowing resistance build-up). You may even decide to house horses differently when shed rates are known. FEC tests also can be used to confirm that the drugs you are using are still effective. (Please see sidebar for easy tips on how to gather samples.)

Those Three Things You Must Know?

Once you know (1) which parasitic enemies are a threat, and (2) you factor in your horse's age, environment and deworming history, you can (3) create the right rotational deworming program for each horse in your care. Although the complete, 100% elimination of those little bandits is impossible, no matter what the circumstances, the proper use of available compounds will thin their ranks and ensure your horse's long-term health.

Copyright © 2013 Intervet Inc., a subsidiary of Merck & Co., Inc. All rights reserved • Intervet Inc. (d/b/a Merck Animal Health)



GET THE SCOOP ON POOP

A fecal egg count (FEC) test is the best way find out which parasites are present and to devise the right rotational deworming program. Using a "one-product-fits-all system" can contribute to increasing dewormer resistance by parasites in your area. Remember that FEC tests detect eggs laid by adult worms, but do not detect immature stages, such as migrating larvae and encysted small strongyles.

Obtaining test samples is easy. All you need is a fresh manure sample the size of your fist and a clean, zip-closing baggy.

- Write your name and the horse's name on the baggy, turn it inside out and place your hand inside, as you would with a glove.
- Pick up the fresh droppings, flip the bag back to the right side and seal it. (Hands stay clean!)
- Keep the sample cool and deliver the specimen within 12 hours to be tested by your veterinarian or a designated lab.
- The best time to have a fecal test run is during parasite transmission seasons, such as fall and spring, but it can be done anytime.

It is strongly advised that you review the test results for each horse with a veterinarian to determine the right dewormer rotational program for one year for each horse. It may vary by individual, even on the same property.