Managing Resistant Parasites in Horses

Understanding the basics of parasite resistance and developing a deworming program

Parasite control is an important component of all equine health care programs. It is no longer enough to simply pull out a tube of dewormer and treat your horses every eight weeks. Today it is critically important to understand the basics of parasite resistance and develop a deworming program that will work for your farm. That program will need to be re-evaluated and modified as environmental conditions change from year to year, and farm management and number of horses fluctuate. It is imperative that all horse owners begin to combat resistant parasites that can spread from farm to farm, causing alarming consequences for the equine community.

Resistance is a real threat!

With no new products on the horizon, it is important to protect our horses by keeping current products effective. Resistance is defined as the ability of parasitic worms in a population to survive a treatment that was once effective against the worms.

Today most horse owners continue to follow recommendations that are 30 to 40 years old and may be using products that are totally ineffective. The ground work for resistance was already in place in the late 1960's when new deworming products were introduced along with the recommendations that horse owners use them every 8 weeks. Prior to the introduction of these products, the large strongyle (Strongylus vulgaris) was the parasite of greatest concern. These large parasites migrated through arteries, interrupting blood supply to the gut, causing colic and sometimes death. However the use of the drugs of the 1960s and newer products of the 70's and 80's greatly reduced the prevalence of large strongyles on farms. Unfortunately, indiscriminate use of these products has lead to a drastic increase of another parasite, the small strongyle (cyathostomes). By the 1980s it was recognized that virtually 100% of the eggs being shed by horses were small strongyle eggs.

Small strongyle larvae

- Are very small, virtually microscopic in size.
- Over 100,000 small strongyle larvae can live in a horse resulting in the production of millions of eggs.
- Hundreds can live in a droplet of water on a blade of grass.
- Populations of these parasites on farms can be very large - billions of larvae can occur in pastures.
- Because of their rapid reproductive rate and ability to produce massive numbers of eggs, it is very easy for resistant worms to develop quite quickly. The more frequently deworming products are used, the quicker the resistant parasite levels will build.
- Normally there are very few resistant worms on a farm. Each time deworming products are used, the worms that are susceptible to the product are killed. Only the resistant worms survive and pass on genes for resistance. Horses graze and pick up resistant larvae and then shed more resistant worm eggs. Over time the whole population on the farm is resistant.

Old Methods of deworming is not working

- What should you do? Work with your veterinarian to develop a program that works for your farm, at the same time reducing reliance on deworming products that can lead to resistant parasites.
- To develop an effective program it is necessary to understand the parasites that you want to control - in other words, it is necessary to think like a parasite.

If you are a parasite...

- Parasite's number one goal is to produce thousands of eggs.
Thinking like a parasite will help you deal with them!

Goal of a parasite control program:

- Parasites have evolved over millions of years to be very good at what they do. The goal of a parasite control program today is not to eliminate parasites, but to reduce transmission, maintain worm burdens below harmful levels, and manage those horses that maintain chronically high parasite levels.

- To do this **is critical** to involve your veterinarian in management decisions, use fecal egg counts to determine what the parasite levels are in your horses and on your farm, and make decisions base on environmental conditions, pasture management practices and parasite levels on the farm.

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