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&

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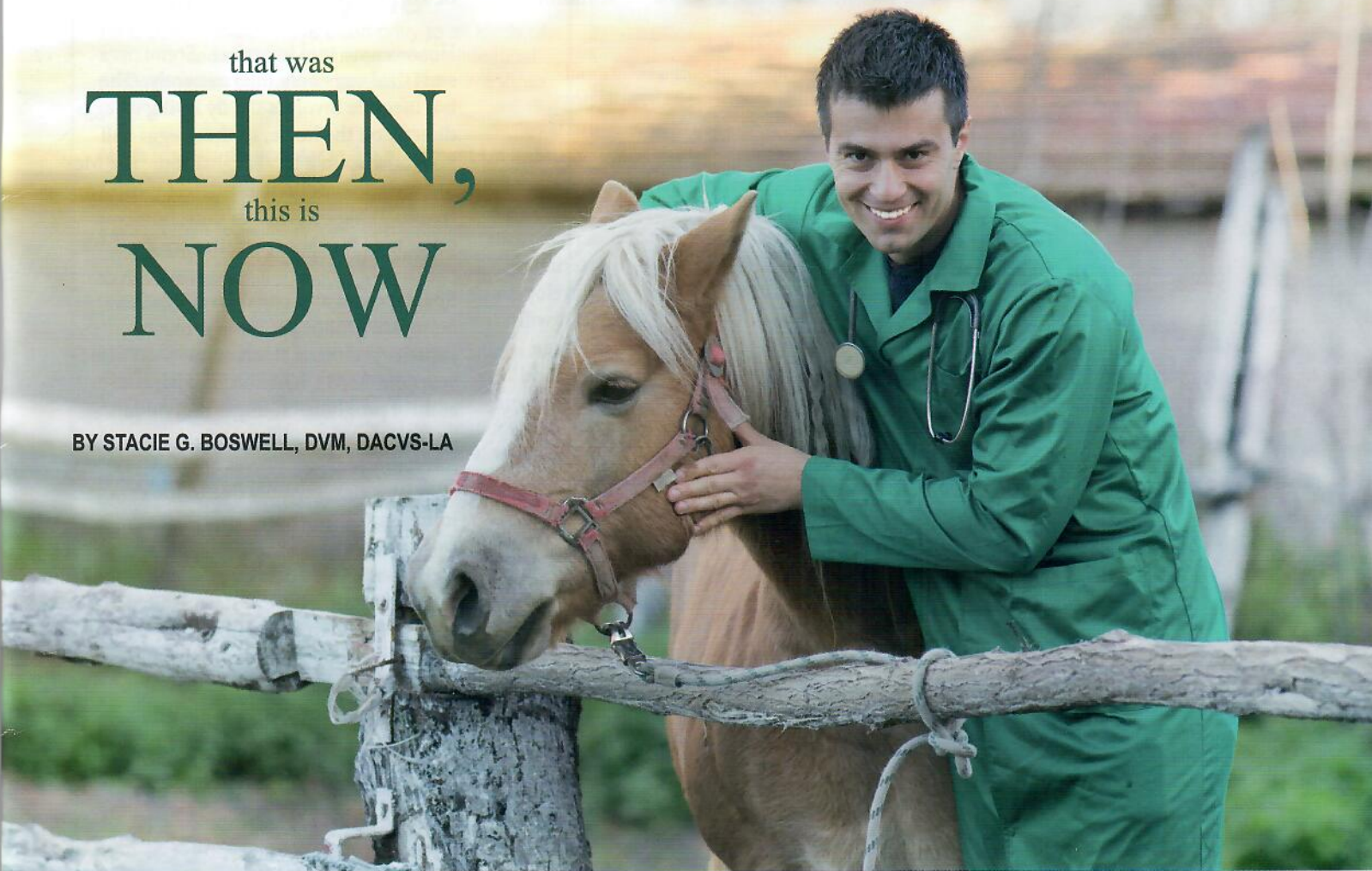
WORMING YOUR HORSE HOW AND WHY

## HORSE FEELINGS HOW REAL ARE THEY?



that was  
**THEN,**  
this is  
**NOW**

BY STACIE G. BOSWELL, DVM, DACVS-LA



Up until relatively recently, veterinary medicine had very few tools. If you are familiar with *All Creatures Great and Small* by James Herriot, you know that he began his veterinary medical career without three of the major medication mainstays that we have now: steroids, antibiotics, and anthelmintics. Anthelmintics are more commonly known as dewormers or parasiticides. The word is from Latin, “ant” meaning against, and “helminth”, referring to a parasitic worm. The only tool Dr. Herriot had available was to manage manure to reduce exposure to parasite eggs.

One of the earliest dewormers was levamisole. Ivermectin came on the market in 1971. These dewormers seemed a miracle cure for killing parasites.

However, the worms quickly outsmarted the drugs, and it became clear to scientists, veterinarians, and stockmen that they did not kill 100% of the parasites. Worms that were resistant were able to survive longer, and reproduce better.

Many horsemen then tried “rotational deworming” schedules that were intended to prevent parasite resistance. The thought was that if some worms were not killed by Dewormer A, they could be killed using

Dewormer B, or Dewormer C. Again, parasites developed resistance to multiple dewormer strategies.

Daily deworming came into practice, but it turns out that the absolute worst-case scenario of parasite resistance to dewormers is administration of daily dewormer pellets. This type of program quickly selects for worms that survive despite administration of these chemicals.

Inappropriate dosing also contributes to parasite resistance.

Another method is the “Panacur

PowerPac”, which is a double-dose of fenbendazole administered once daily for five days. It kills some stages of parasites that other dewormers do not. The PowerPac should be used only after fecal evaluation and consultation with your veterinarian.

In light of the history of parasite resistance, scientifically, we have come full circle: Now veterinary medicine recommends manure and pasture management as an important part of appropriate parasite control. These strategies are meant to reduce exposure an animal has to parasite eggs. This is critical



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for ensuring that internal worm numbers (a horse's parasite burden) are minimized.

### The bottom line

Deworming horses on a rotational basis four or six times a year is not supported by current science, and is harmful to the environment. Parasite resistance to dewormers is a common problem. Manure and pasture or paddock management is critical for modern parasite control. Fecal egg counts and veterinary consultation should be used to develop an appropriate deworming strategy. It will take into consideration the horse's age, climate, possible parasite exposure, and any special circumstances. Directions and dosage on the dewormer label should be followed precisely because inappropriate dosing is less effective for parasite control, and may contribute to resistance.

### So why did everything change?

In addition to the problem of resistance, dewormers pose two significant concerns for the environment. One is that farm dogs that eat horse feces will ingest the parasiticide that is excreted. Ivermectin is passed out of the body, virtually unchanged in chemical structure, in about 24 hours. Breeds that are highly sensitive to ivermectin (collies, shepherds, and sheepdogs) can ingest a toxic dose of the dewormer by eating the horse's feces. Dewormers also can affect natural, beneficial insect populations and water-dwelling animals. Experiments have shown suppression of insects in and delayed degradation of cattle feces after treatment with parasiticides. Run-off from pastures or paddocks containing feces from recently-dewormed horses can be lethal to a pond or stream's fish population and other water-dwelling creatures.

### Testing to worm strategically

The McMaster's fecal egg count method effectively measures the parasite eggs per gram of feces (epg) [see inset]. In horses, The McMaster's fecal egg count consistently detects large and small strongyles and most other intestinal parasites. It is useful for determining which horses actually should be dewormed, and it is an excellent tool for identifying individual horses with heavy infestations. Using the McMaster's test before and after strategic deworming can show the effectiveness of the dewormer and identify farms or horses that harbor

parasites that are resistant to certain dewormers.

However, no tool is perfect. Some parasites shed eggs only intermittently. The bot lifecycle involves the fly laying its eggs directly on the horse, so those eggs will not show up in a fecal evaluation. The McMaster's does not reliably detect pinworms (photo 7), tapeworms, or bots; however, other tests for these parasites are available.

### Special cases and considerations

Some age groups are more prone to parasite problems. Horses less than three years old need a more intense parasite-control program. Younger individuals are more prone to heavy, life-threatening infestations. Older horses are also at greater risk, possibly due to lower immunity.

*Habronema* (photo 8) is prevalent throughout the southwestern United States and is more commonly known as the stomach worm. Aberrant migrating larvae or abnormal egg deposition can cause skin lesions, conjunctivitis (inflammation around the eye), or other problems that can be very painful to the horse. While the larvae of *Habronema* have been identified in fecals, it often is only noted as "summer sores." These sores or eye problems need more than just a dewormer dose, and examination by your veterinarian is advised.

### Good news for New Mexico

New Mexico does catch one break when it comes to parasite control. Ultraviolet light and dry conditions destroy parasite eggs. New Mexico's dry high-plains, mountainous, and desert environment is very hostile to equine parasites. The good news is that it is possible to virtually eliminate certain parasites by keeping paddocks and stalls manure-free. Manure management is probably the single most important factor in effectively reducing parasite populations.

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*Stacie G. Boswell, DVM, DACVS-LA is an equine veterinarian at Western Trails Veterinary Hospital in Edgewood, New Mexico. She may be reached at [stacieboswell@gmail.com](mailto:stacieboswell@gmail.com).*



## Worming Myths

As a veterinarian, I have been privy to all kinds of lore and "secrets" about how to reduce intestinal parasite worm burdens in horses. Here are three of the most common:

**Myth** (especially popular in the southeast United States): Feeding your horse a cigarette once a month will kill the parasites.

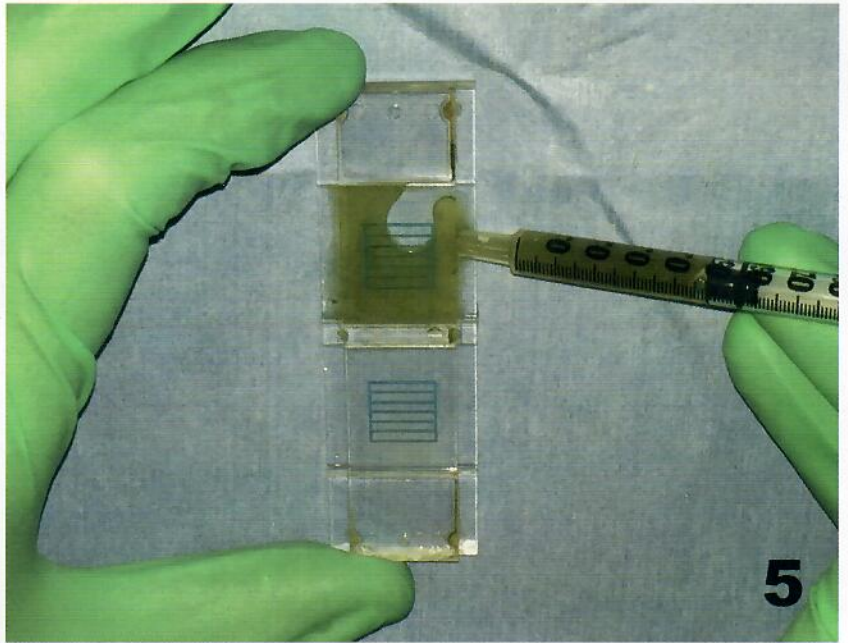
**Fact:** While tobacco is toxic to parasites, in order for it to be a high enough concentration to have an effect, you would also have to toxify your horse.

**Myth:** Diatomaceous earth is like "glass shards" and will destroy internal parasites.

**Fact:** The truth is, this has NEVER been validated in any scientific study. The main component of diatomaceous earth is silica, which is also the main component of glass. Think about that logic: would "glass shards" be healthy for the intestinal lining? Absolutely not! And in fact, there is evidence that it can be abrasive to the delicate intestines of your horse.

**Myth:** "I use an herbal dewormer, and look at how healthy my horse is!"

**Fact:** You cannot tell parasitism for sure by looking at the outside of a horse. If you decide that an herbal or natural deworming remedy or supplement is the right choice for your horse, it is prudent to have your veterinarian perform a fecal egg count before and after administration. This will help determine if the purported deworming product is providing the protection your horse needs. Since herbs and supplements are not regulated by the FDA, they are not held to regulatory restrictions regarding label claims.



### PHOTOS OF MCMASTER'S PROCEDURE

1: Supplies necessary for the McMaster's fecal egg count are shown in Figure 1 and include feces, fecal flotation solution, measuring vial, calibrated McMaster's slide, and a syringe. 2: The proper amount of flotation solution is added to the vial. 3: One gram of feces, as measured by volume in the vial, is then added. 4 and 5: The mixture is then carefully syringed into the calibrated chamber of the McMaster's slide. 6: A microscope is used to observe the number of parasite eggs within the grid on the McMaster's slide. This number is used to calculate the eggs per gram (epg) result.

PHOTO 7: A pinworm on a horse. These parasites lay their eggs on the skin outside the rectum, which can lead to tail rubbing. Pinworms are one of the few intestinal parasites that are not reliably detected on fecal evaluation.

PHOTO 8: A granuloma in the conjunctiva (soft tissue of the eye) that was caused by migrating Habronema larvae. This parasite is susceptible to ivermectin, but additional treatment is warranted and consultation with a veterinarian is advised.

