

# Test to Know

## Improve deworming management with diagnostics.

by **Harold Newcomb, DVM**

**I**nternal parasites impact all segments of beef cattle production, from the cow-calf operation to the feedlot. Parasites primarily reduce feed intake, which also negatively affects average daily gain, reproduction efficiency and milk production, and impairs the immune response to vaccines and diseases.

Effective parasite management requires removing enough of the parasite burden to maintain animal performance without contributing to dewormer resistance. That's why diagnostic testing is so important. For instance, if you're only using a dewormer from the endectocide class, such as ivermectin, you may only be getting half of the worm reduction necessary to maintain animal performance.

### Harness the data

Merck Animal Health maintains the world's largest Fecal Egg Count Reduction Test (FECRT)

database to monitor field use efficacy of dewormers approved for use in U.S. cattle. Results from 721 trials and more than 24,000 samples, representing more than 24 states, were compiled from 2009 to 2018.

According to those results, endectocide pour-on and injectable products performed well below the 90% fecal egg count reduction threshold that is critical to ensure proper parasite management (Figure 1). With an endectocide pour-on product, a mere 51% efficacy was attained. Nearly half of the eggs remained 14 days after receiving the pour-on.

Adding fenbendazole made a tremendous difference. When fenbendazole was added, 99.1% effectiveness was obtained (Table 1). Besides improving animal performance, concurrent use of two or more classes of dewormers can help to reduce the rate of resistance, extending the useful

life of each class of dewormer several years.

### Diagnostics in action

The FECRT protocol is a critical tool to assess your deworming program's efficacy, as it helps determine which parasites are present and the parasite load.

Jim Hollenback is a nutritionist for Farmers Cooperative Association in Baxter Springs, Kan. For nutrition programs to be successful for his cattle-producing clients, it's important to have effective parasite management.

"We recommend using FECRT to determine the parasite status and gain a baseline understanding of the parasite load," Hollenback says. He typically works with the producer's veterinarian to conduct the diagnostic testing.

"It can be eye-opening for producers," Hollenback explains. "Many have heard about parasite resistance, but until the FECRT

**Figure 1: Is Your Deworming Program Working?**



<sup>1</sup>Dobson R., Jackson F., Leveck B., Besier B., et al. *Guidelines for fecal egg count reduction tests (FECRT)*. World Association for the Advancement of Veterinary Parasitology (WAAVP) (2011) Proceedings: 23rd International Conference of the World Association for the Advancement of Veterinary Parasitology.

**Table 1: Fecal Egg Count Reduction Test Database\* Efficacy Summary**

Treatment	Efficacy
Endectocide Pour-On	51.0%
Endectocide Injectable	57.4%
<b>All Formulations of Fenbendazole</b>	<b>98.7%</b>
<b>Fenbendazole Drench with Various Forms of Endectocides (Best Practice)</b>	<b>99.1%</b>

\*Merck Animal Health maintains the world's largest FECRT database to monitor field use efficacy of anthelmintic classes. Through 2018, there were 24,186 samples analyzed — 12,171 pre-treatment and 12,015 post-treatment.

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A FECRT includes collecting 20 samples the day of deworming followed by another 20 samples 14 days after treatment. In the samples collected 14 days after treatment, at least a 90% reduction in fecal egg count (FEC) should be observed to know the anthelmintics (dewormers) are working properly and a successful deworming was accomplished.

For best results, sample animals from the same age and management group. The ideal range is cattle 6 months to 2 years of age. For feedlot and stocker cattle, test and treat incoming cattle on arrival to check parasite population. Test grazing cattle after grazing at least two months. For cow-calf operations, sample cattle in pastures.

If the FECRT shows less than a 90% reduction in the fecal egg count (FEC), then additional investigation is warranted to determine if the dewormers were given correctly and at the correct dose.

In some instances, additional diagnostics are needed to confirm resistance issues. Testing with PCR (molecular or DNA-based) testing

can identify specific parasite species, which provides a basis for highly specific, targeted treatments of those parasites. This testing can also assist in developing future diagnostic and treatment plans.

### Best practices for deworming

In addition to annual diagnostic testing and working with your veterinarian, there are a couple best practices that will help ensure maximum efficacy from your deworming protocol.

First, concurrently use two or more classes of anthelmintics (dewormers). Not only does a concurrent deworming program most effectively control internal parasites, but it also helps ensure a sustainable anthelmintic program that keeps resistance to a minimum. In grazing operations where concurrent deworming is not feasible, the use of a feed-grade dewormer with fenbendazole alone provides very high deworming efficacy.

Administering less than the recommended amount may not fully treat the parasites and speeds parasitic resistance.

Hollenback likes the feed-through forms of fenbendazole, especially for his stocker and cow-calf clients who have cattle on pasture.

"Deworming cattle on pasture doesn't require gathering and running cattle through the chute, and it can be highly effective," Hollenback says. "When we use fenbendazole, we see positive efficacy results when we run the FECRT."

Altogether, these deworming best practices, coupled with proper animal and forage management, are important to the overall stewardship of cattle. **HW**

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— Jim Hollenback,  
Farmers Cooperative Association,  
Baxter Springs, Kan.

There are three classes of dewormers approved for use in cattle in the U.S. — benzimidazoles, endectocides or macrocyclic lactones, and imidazothiazoles. The two most commonly used are endectocides and benzimidazoles.

Second, weigh or properly estimate animal weights so a full dose of dewormer is used.