

STANDARDIZED SAMPLING RECOMMENDATIONS

After the first Intervet-sponsored industry Round Table on Anthelmintic Resistance in 2005, leading veterinary parasitologists reconvened in 2006 to identify strategies to slow the development of anthelmintic resistance. (See the March issue of MWI Messenger, Pgs. 46-47). Consensus was built on recommendations for a testing protocol that would provide a standardized method for cattle producers and practitioners to determine if there is a potential anthelmintic resistance problem in their herd.

Although the group's recommended testing protocol goes into greater detail, the following summarizes the recommendations under consideration:

WHICH ANIMALS?	When testing, pull samples from pastured cattle of the same age and management group. Calves should be at least 3-4 months of age and/or grazing for 45 days before testing.
HOW MANY?	For statistically repeatable results, sample 20 random animals no matter what the herd size.
WHEN?	Collect samples from random animals on the day of treatment and again 14 days post treatment. Conduct the test when pasture conditions support high parasite transmission.
HOW?	Fecal samples should be taken from rectal or observed freshly dropped feces. Use an inverted re-sealable sandwich-size bag to grab a golf ball-size sample. Seal bag, making sure all air is removed.
SHIPPING?	Clearly label each individual sample, refrigerate overnight and ship with a self-contained freezer pack (not ice) using "next-day" delivery and avoiding weekend delivery.

NEW VALUE IN AN OLD PROVEN TEST

Growing incidence of anthelmintic resistance calls for a standardized testing protocol.

Sub-clinical disease caused by parasite infection has a costly effect on cattle health and performance, including reproductive losses, hampered immune development, reduced appetite and lower weight gain. During the past decade, safe and inexpensive products have been available to minimize parasite infection. But what would happen if those tools stopped working?

Though the body of research on anthelmintic resistance in U.S. cattle herds is a small but growing area, the threat of diminished efficacy in deworming treatments has caused concern among the industry's leading veterinary parasitologists.

MEASURE TO MANAGE

While participating in a 2005 round-table discussion on anthelmintic resistance, top U.S. veterinary parasitologists agreed both that anthelmintic resistance exists in U.S. cattle herds and that it likely exists to an even greater extent than is documented because there has not been sufficient testing.

So how do you know if your dewormer is working? A Fecal Egg Count Reduction Test (FECRT), used properly, can provide a useful snapshot of the existence of parasites in a group of cattle and can be a preliminary indicator of anthelmintic product efficacy. A FECRT can not definitively identify resistance but may indicate further testing is needed to definitively diagnose resistance.

Veterinarians use a number of fecal testing methods, such as the Wisconsin Sugar Floatation test and the McMaster test. However, there has not been a consistent, science based method for applying these tests in U.S. cattle operations, to assess overall levels of parasite infection, as well as assess the efficacy of dewormers.

Researchers are gaining clearer understanding of egg shedding distribution in given cattle populations and can apply statistical probabilities to the collection and interpretation of data. As a result, when veterinary parasitology experts reconvened for a second round-table meeting to discuss anthelmintic resistance in August 2006, they identified a standard protocol for the field testing of anthelmintic resistance.

"There is new information and better understanding on how to use the fecal sample tests appropriately," notes Harold Newcomb, D.V.M., technical service veterinarian for Millsboro, Del.-based animal-health specialist Intervet Inc. "It required from Intervet to put together the minds of top parasitologists for the industry to finally identify a consistent manner of utilizing available tests."



TESTING PROCESS

Cattle practitioners are in the lead position to educate producers on parasite control by using the FECRT in a new way. By testing for resistance, veterinarians can increase their value to their cattle producer clients.

The process for parasite evaluation is simple:

1. With guidance from a practitioner, producers collect fecal samples from their cattle herd using recommended, standardized guidelines. (See sampling directions in sidebar)
2. Fecal samples are tested in-house or sent to third-party laboratories, where they are tested for worm egg counts using the Modified Wisconsin Sugar Flotation test.
3. The parasitologists involved in the analysis will disclose the test results and provide consultation on recommended deworming practices that the veterinarian can then discuss with his or her producers.

Not only can practitioners provide parasite evaluation services to individual clients, they also may consider hosting a Parasite Evaluation Clinic (PEC) locally, inviting cattle producers to bring in samples, have them tested at the clinic, and immediately discuss and act on the study results.

For more information about implementing a value-added testing program for your clients through a third-party lab or setting up a PEC event at your clinic or feed store, talk to your Intervet representative or contact Intervet at 1-800-441-8272.

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STANDARDIZED FECAL TESTING PROCEDURE

Just as standardized sampling is important, a standard testing procedure is equally important to benchmarking and validating the test results.

"When polled during the Anthelmintic Resistance Round Table, leading parasitologists and researchers noted that each had a signature way of testing fecal samples," said Harold Newcomb, D.V.M., technical service veterinarian for Intervet. "While most used one of two tests, not all the details were the same."

To compare apples to apples, the group agreed to use a standardized Fecal Egg Count Reduction Test (FECRT) and standard lab procedure based on the Modified Wisconsin Sugar Float test or the Double Wisconsin Sugar Float test.

Additional recommendations for standardized testing include:

1. Centrifuge at 800 to 1000 RPM for 5 minutes
2. Record total nematode worm egg count for each sample
 - a) Express in eggs/sample size (specify sample size, i.e. 1g, 3g, 5g, etc.)
 - b) Count every egg present as numeric value
3. Calculate efficacy by subtracting the average post-treatment worm egg-count from the pre-treatment average, dividing by pre-treatment count and then multiplying by 100.

If anthelmintic efficacy is less than 90 percent, options available include additional laboratory tests, or the producer can rotate to a different class of anthelmintic dewormer.

The most efficient process to implement a FECRT program is to collect and ship fecal samples to regional, third-party laboratories. If you would like more information about implementing a value-added testing program for your clients through a third-party lab, please contact Intervet at 1-800-441-8272.