

HEALTH & HUSBANDRY

Innovative parasite-control approaches

by Lacey (Robinson) Fahrmeier



After an especially long and brutal winter, the countdown to grass turnout is even more highly anticipated than usual. There is an end in sight; it's finally time to put away the hay grinder, leave the muddy lots behind and open the gates to green pastures. I'm never quite sure who is more satisfied and relieved, me or the stock?

Cattle are amazing machines, built to convert forage to meat and milk. As with any machine, they do require a certain amount of maintenance and effort on the operator's part in order to reach maximum performance. While there are a whole host of management practices that go into optimizing grazing efficiency, parasite control has to be one of the most critical.

Resistance is real

The war on parasite resistance is real, creating the need for more innovative approaches and mindful management. Have you noticed an increase in lice outbreaks this winter despite having treated with a pour-on in the fall? This is just one visible example of how some products are becoming less effective.

While no one likes to see lousy stock rubbing down their corrals, just imagine the unseen damage done to the gut lumen by internal parasites resulting in decreased appetite and nutrient loss.

Ultimately, cattle suffering from heavy parasite burdens have decreased gains, milk production and conception rates; and the parasites may even render the

animal less able to respond immunologically to disease challenges or vaccinations.

Dewormers currently on the market to control internal parasites in cattle include benzimidazoles (the "white dewormers" with brand names including Safe-Guard®, Panacur®, Valbazen® and Synanthic®), macrocyclic lactones (brand names including Eprinex®, LongRange®, Ivomec®, Dectomax® and Cydectin®) and levamisole (brand names including Levasol, Tramisol® and Prohibit®). They are available as injectables, oral applications or pour-ons.

The relative low cost of such products, along with their increased application for fly and lice control, has led to overuse in the industry and therefore more reports of resistance in internal (nematode) parasites.

Unfortunately, this is not just an issue for U.S. producers, a recent study in New Zealand reported ivermectin resistance was evident on 92% of cattle farms, and resistance to both ivermectin and albendazole was evident on 74% of farms.

Testing resistance

The only way to know if you have a resistance issue in your herd is to do a fecal egg count reduction test

(FECRT). This is done by collecting fecal samples on a portion of the herd to conduct fecal egg counts prior

to and after treatment. You should have 90% or better FEC reduction on tests post-treatment.

It is important to work with your veterinarian to first test for resistance in your herd and then to



There are plenty of products on the market for parasite control. They are available as injectables, oral applications or pour-ons.

create a program to manage against it. The good news is there are strategies to address dewormer resistance.

Combining two classes of dewormers and administering them together is a proven way of reducing the number of surviving internal parasites. By combining drugs, efficacy of the treatment increases. Resistance is species- and drug-specific, so achieving higher efficacy equals fewer resistant survivors.

If two drugs, each with 90% efficacy, are used in rotation, then each time cattle are treated, 10% of the worms would survive. However if the two drugs are used in combination, then the efficacy would be 99%. This then yields 10 times fewer resistant survivors. The added expense of a second dewormer could prove to be a small

investment to decrease resistance and avoid a major outbreak.

Refuge population

Creating a refuge population within the herd is an additional approach to minimize worm resistance. It may seem counterintuitive, but leading parasitologists stress that not deworming the 10% of cattle in the best body condition will benefit the overall operation. This helps add to the population of worms susceptible to anthelmintics. Production loss in the 10% is likely to be small because they were in the upper quartile of animals before treatment, and their growth was likely not heavily impaired by parasites.

Genetic resistance

This brings me to my final thought regarding methods of parasite control — genetics.

Experiments have shown that some cattle shed more eggs than others and that heritability of this trait is moderate (approximately 0.3, similar to milk production). Current efforts are directed toward using modern methods in genomic analysis to identify the natural genetic variation that underlies resistance and susceptibility to internal parasites.

Perhaps in the future there will be a genetic marker to help us identify those cattle that are superior at fighting off parasites. Until that day an approach consisting of combined dewormers, refuge populations and careful pasture management will keep resistance at bay and your herd at peak grazing performance. |

Editor's note: "Health & Husbandry" is a regular column in the *Angus Beef Bulletin* devoted to the care and well-being of the herd. Since starting this column, author Lacey (Robinson) Fahrmeier has moved from her position at Kansas State University into private practice, joining the team at Stillwater Veterinary Clinic in Absarokee, Mont.

The only way to know if you have a resistance issue in your herd is to do a fecal egg count reduction test.