



U.S. cattle industry addresses emerging issue of internal parasite resistance

Today's deworming products have made reducing the parasite burden in most U.S. cattle herds a relatively easy task with a positive return on investment. However, the repetition of using the same deworming drugs has led to a growing number of herds showing signs of resistant parasites.

To date, most research on cattle anthelmintic resistance has come from outside the United States. However, since 2003 there have been an increasing number of research-based presentations, documenting resistance in U.S. cattle operations. These presentations have been made at meetings of the American Association of Veterinary Parasitologists (AAVP) annual scientific conference. As a result, AAVP is establishing a working group to develop sound recommendations concerning anthelmintic efficacy testing and management options to curb the growing incidence of resistance.

Recently, at the 2007 National Cattlemen's Beef Association annual meeting in Nashville, Tenn., the Emerging Cattle Health Issues Working Group added "cattle anthelmintic resistance" to its list of animal disease research priorities.

To help answer some of the many questions surrounding anthelmintic resistance in cattle, Intervet brought together nine of the top U.S. cattle parasitology experts to discuss and identify possible solutions to anthelmintic resistance in U.S. cattle. The first Intervet-sponsored round-table discussion was held in conjunction with the 2005 American Association of Veterinary Parasitologists annual scientific conference in Minneapolis, Minn.

"Anthelmintic resistance is a growing phenomenon globally, and we are beginning to see evidence that it could impact our U.S. cattle herd," says Bert Stromberg, Ph.D., professor of veterinary pathobiology at the University of Minnesota College of Veterinary Medicine. "The round table on anthelmintic resistance provided an independent forum for expert parasitologists to rally around the issue and work

together toward practical solutions that help producers understand and avoid the costly damages of anthelmintic resistance."

Resistance is a genetic change in the worm population in a herd of cattle or on a specific pasture that occurs over time. Individual worms are not changing. Rather, there is a change in the ratio of worms susceptible to a class of anthelmintic dewormer versus the population of worms not susceptible to that anthelmintic class. By administering dewormers, producers are not inducing resistance—they are simply providing resistant parasites an environment in which to flourish and multiply.

The round table participants determined that frequent and repeated use of the same drug class of anthelmintic is a considerable risk factor for development of resistance. Another risk factor discussed by the panel was the effect of sub-therapeutic drug levels on the survivability of resistant worms. The panelists concluded that some parasites survived sub-therapeutic levels of treatment that would have been eradicated by exposure to a full dose of the drug. With that in mind, the round-table participants had concerns about the endectocide class of dewormers. Endectocide dewormers persist in the animal and pasture environment at declining levels for an extended duration of time.

The endectocide class of dewormers shares a similar antiparasitic mode of action. As a result, if a parasite is resistant to one endectocide, it is likely also resistant to the other endectocide dewormers. Ivomec, Eprinex, Dectomax and Cydectin are the primary endectocide products on the market, along with numerous generic ivermectin products.

The round-table participants also noted that anthelmintic resistance is not confined to a certain region or area of the country. When dealing with resistance, one must look at the individual farm involved because management practices there can be different from practices right down the

road. And producers who are bringing new cattle into their operation are at risk of contaminating their pastures and cattle with resistant parasites.

The team of cattle parasitology experts reconvened for a second time in August 2006 in Denver, Colo., where they rolled up their sleeves and began identifying solutions to the problems outlined at the previous meeting. After building consensus, the participants are now in the process of taking their recommendations to peer groups within the cattle veterinary community for discussion, industry-wide input and validation.

A strategic deworming program can significantly reduce the worm burden in your cattle and pastures. If anthelmintic resistance is suspected, rotation to a different class of dewormer can help your cattle have healthier digestive tracts and greater appetites for larger weight gains. Safe-Guard is a highly effective anthelmintic that has a different mode of action compared with the endectocides. Safe-Guard can be effective against worms that are resistant to endectocides. By using Safe-Guard blocks, mineral or feed products, efficient and effective season-long deworming is achievable without having to bring up and rework cattle that have already been turned out.

So how do you know if your dewormer is working like it should? Parasitologists recommend lab tests of fecal samples from 20 random animals within a group, before treatment and again 14 days later. Average worm egg counts for the group should decline by 90 percent or more to confirm anthelmintic efficacy. Consensus is building among top U.S. veterinary parasitologists that the Fecal Egg Count Reduction Test (FECRT) can provide a useful snapshot of the existing parasite load within a group of cattle, as well as an indicator of anthelmintic product efficacy.

Talk to your veterinarian or animal health provider to learn more about proper application of fecal egg count reduction testing.