

Worm Away

Deworming is a friend to quality grade.

by Steve Suther

Parasites in cattle detract from their health and ability to thrive and grow. Increasingly, research shows that infection leads to compromised quality grade potential.

Early research work on the effect of deworming was only concerned with the cost-benefit analysis related to weight gain. Beginning in the mid-1990s, studies took subsequent carcass quality into account; these studies point toward significant benefits for dewormed groups vs. control groups.

Studying specifics

For example, a series of nine feedlot trials by Pfizer Animal Health, across seven years and 13,000 cattle, found a consistent quality grade advantage for cattle dewormed with the company's Dectomax® product vs. the control. One of the studies showed a 10.9% shift to more Choice carcasses. The other trials did not focus on the magnitude of the shift because of insufficient numbers in any one trial group. However, each trial shows the positive shift (4% to 24%) to higher quality grade for dewormed cattle.

Pfizer's Robert Rew concluded in a 2000 study, "Our focus has been on the decrease in fecal egg counts, the increase in feed consumption and the increase in gain during the feeding period. That seems logical in the sense that reducing worm burdens allows the animal to increase its appetite and, therefore, its gain." He noted that improvement in carcass quality had not been previously connected to deworming.

Other companies have also begun to document the added carcass value from deworming, and the studies will continue to add to the industry's understanding. Preliminary results, however, show a significant shift to higher quality grade between lower Choice and the upper two-thirds of the grade, which is the marbling level requirement for the *Certified Angus Beef*® (CAB®) brand.

A 1997-1998 Colorado and Oklahoma grazing and feedlot study of 734 steers — so large that sponsor Intervet calls it the "mother of all trials," or MOAT for short — sheds more light on the issue. Besides the classic decrease in egg count and increases in gain and feed efficiency, the study documented a big health advantage for cattle dewormed with Safe-Guard®. While 60% of those never dewormed on pasture or in the feedlot required some treatment, that figure was only 7% for cattle dewormed in both settings.

"The cattle used in the MOAT were not high-grading cattle," says Chris Reinhardt, Intervet technical services specialist. "They were of mixed breeding, including a percentage of Brahman influence." Even so, those dewormed in both settings achieved 55.2% Choice, compared to 29% Choice for the control group. Figured on the relatively depressed 1997 fed cattle price of \$60 per hundredweight (cwt.), the dewormed cattle showed a value per head advantage of \$47.49.

Translation for today

The advantage could be greater on today's grid markets, Reinhardt notes. A significantly higher share of the dewormed cattle achieved the premium Choice levels of marbling (see Tables 1 and 2). There was a numerically higher percentage of such premium carcasses for pasture deworming only.

"However, using Safe-Guard at feedlot arrival did have a positive net effect, 9.74% vs. 5.59% average Choice and above, despite the

Table 1: MOAT pasture and feedlot deworming trial¹

Dewormed on pasture	Dewormed at feedyard	Percent grading avg. Choice and above
Yes	Yes	8.44 %
Yes	No	6.37%
No	Yes	11.04%
No	No	4.76% ²
Yes or no	No	5.59% ³
Yes or no	Yes	9.74%

¹Dewormed with Safe-Guard® (fenbendazole); ²P=0.194; ³P=0.0541

Source: May 2000 *Bovine Practitioner*.

Table 2: Idaho 2000 pasture deworming trial¹

Dewormed on pasture	Percent grading avg. Choice and above
No	35.5 ²
Yes	40.4

¹Dewormed with Safe-Guard® (fenbendazole); ²P=0.419

poor grading of the group as a whole," Reinhardt says. A trial on higher-quality calves in Idaho also showed a numeric improvement in those grading average Choice and above (40.4% vs. 35.5%).

A 4- or 5-percentage-point shift might seem small, but the effect of such a shift on the whole U.S. beef industry would be huge, says Larry Corah, Certified Angus Beef LLC (CAB) vice president. "Even 1% more CAB acceptance results in 35 million more pounds of product for the brand, and at least \$4 million more in producer premiums, based on what packers paid in 2003."

Millions of feedlot cattle are either not dewormed or it is done ineffectively, Reinhardt says. "With cattle from the Southeast that typically carry a heavy parasite burden, that can stay with them through the finishing phase and affect performance and quality grade."

Reinhardt says the connection between deworming and higher quality grade relates to the concept of marbling as a lifetime event. "Every day a calf has energy available above the needs for maintenance and lean tissue deposition, part of the extra energy will be deposited as marbling," he explains. "The better job we do of keeping stockers free from parasites while on grass, the greater the likelihood that they will begin to deposit marbling while on grass."

The same is true in the feedlot, where animal maintenance uses up the first 8-10 pounds (lb.) of feed consumed. "If parasitism is using up nutrients from the remaining 8 to 12 pounds of dry matter, there is less energy available for marbling deposition," Reinhardt says. When deworming lifts the parasite burden, research shows feedlot cattle consume more feed and energy, too.

Another line of reasoning holds that calves or yearlings that come off pasture relatively free of parasites will be better able to respond to vaccinations given on arrival at the feedyard. Data from the Ranch-to-Rail program in Texas and the Tri-County Steer Carcass Futurity (TCSCF) in Iowa demonstrate the grading advantage for healthier cattle.

