



Research Update

► Summaries of current beef cattle research

to either DIP or UIP supply. This linkage is mainly due to overheating when hay is baled or stacked with greater than 20% moisture, or when silage is harvested at less than 65% moisture.

Feedstuffs with high ICP are often discolored and have distinctly sweet odors in many cases. When the ratio of ICP:CP is 0.1 or greater, meaning more than 10% of the CP is unavailable, the crude protein value is adjusted. Adjusted crude protein (ACP; see below) values should be used for ration formulation.

Adjusted crude protein (ACP): This is crude protein corrected for ICP. In most nutrient analysis reports, when ACP >10% of CP, the adjusted value is reported. This value should be used in formulating rations when ICP:CP >0.1.

Digestible protein (DP): Reported by some laboratories, do not use DP values without the guidance of a nutritionist. They are not needed for most ration formulation because nutrient requirements and most formulation tools are already adjusted for protein digestibility. Furthermore, protein digestibility is influenced by external factors.

Final thoughts

I'll discuss the rest of the terms on a forage analysis next month. There are three primary factors that determine forage quality:

1. maturity at harvest;
2. maturity at harvest; and
3. maturity at harvest.

The less mature the forage, the higher the quality at harvest. Also, the less mature the forage, the lower the tonnage harvested. For the cow-calf enterprise, these need to be balanced.

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Editor's Note: "Ridin' Herd" is a monthly column written by Rick Rasby, professor of animal science at the University of Nebraska. The column focuses on beef nutrition and its effects on performance and profitability.

Animal ID system: Survey indicates no clear majority favors or opposes

A national survey conducted in spring 2006 indicated no large majority in favor of or opposed to the implementation of a national animal identification system (NAIS).

The survey, conducted as a joint project between Kansas State University (K-State) and *BEEF*® magazine, included participants selected from a mailing list of cow-calf producers with more than 100 cows, said Dale Blasi, K-State Research and Extension beef specialist.

A random sample of 1,000 producers was selected from the magazine's mailing list. The survey gathered the thoughts and opinions of 522 cow-calf producers from 41 states. Data were collected by Prism Business Media Inc. and analyzed by both Prism Business Media and K-State.

"The bottom line," Blasi said, "is that these data provide us with a better understanding of producer attitudes toward the implementation of a national animal identification (ID) system. The data ultimately indicates that there is no large majority in favor of or opposed to such a system."

More information about the survey is available by contacting Blasi at 785-532-5427 or dblas@ksu.edu; or K-State Research and Extension veterinarian Larry Hollis at 785-532-1246 or lhollis@ksu.edu.

Study shows vaccine reduces prevalence of *E. coli* O157 in cattle

K-State researchers are conducting a series of studies to test a vaccine, which may reduce the presence of *E. coli* O157 in feedlot cattle, said T.G. Nagaraja, professor of microbiology in the College of Veterinary Medicine.

E. coli O157, a pathogen commonly found in the feces of beef cattle, can enter the food chain during harvest and cause foodborne illnesses in humans, as well as economic implications for producers, Nagaraja said.

The researchers, who are part of K-State Research and Extension, recently completed the third study in a series of experiments, which included 60 feedlot

calves that all tested positive for *E. coli* O157, said Daniel Thomson, who is the Jones professor of production medicine and epidemiology for the K-State College of Veterinary Medicine.

The calves were divided into one of three treatment groups that each received different doses of the vaccine (*Escherichia coli* O157 Siderophore Receptor Porin) on days 0 and 21 of the eight-week experiment. Group 1, the control group, received a placebo vaccine; Group 2 was administered 2 cc of the vaccine; and Group 3 was given 3 cc.

The study showed that the total prevalence of *E. coli* O157 in cattle that received 3 cc of the vaccine decreased by 15% when compared to cattle that received a placebo, Nagaraja said. The overall prevalence for each treatment group was 33.7% for the placebo group; 29.1% for Group 2 (2 cc); and 17.7% for Group 3 (3cc).

This study was the third in a series of studies in which the first two also showed promising results, Thomson said. The first study was conducted as a challenge study. Cattle were administered the vaccine and then challenged with *E. coli* O157 bacteria.

"In the first study we saw a significant decrease in animals with *E. coli*, and it appeared to be a very promising vaccine to take into the field to study," Thomson said. "The second study was conducted on 20 lots of cattle in a commercial feedlot in Nebraska."

The results of the second study showed a 60% reduction in the number of cattle shedding *E. coli* O157 relative to the cattle that were given a placebo vaccine, he said.

K-State will conduct another study this summer in a feedlot setting and may look at the effects of different doses, said Thomson.

— Story by Leah Bond, lbond@ksu.edu, K-State Research and Extension

