

condition score (BCS) is very important. An adequate BCS of 5 or 5.5 on a 9-point scale is crucial to getting animals bred back.

Know how much TDN your cattle need to consume to breed back successfully, Hancock urged. "It's much easier and much better to try to keep them at that body condition score than it is to try to build it back."

Don't forget the microbes

"At the end of the day, we need to recognize that we're not just feeding the animal; we're feeding the microbes that are in that ruminant animal," Hancock reminded producers.

The energy value in a forage is the fiber content that is able to be broken down into the basic sugar molecules that are then able to be converted into energy.

Fiber is just long chains of sugar, he reminded his audience. Microbes convert those chains into an energetic product, and the animal then turns it into meat and milk.

Factors influencing forage content

Hancock introduced seven factors he considers most important to improving forage content.

Plant maturity. "The No. 1 factor, bar none, over everything else, is plant maturity," he said. After a forage reaches 80% of its maximum growth, it begins to lay down more fiber and lignin, making the crop less digestible. When harvesting forages, shoot for 80%-90% of plant maturity.

The later a crop is harvested, the greater the yield, but the lower the quality. Less digestibility means more manure.

"We might be producing more bales, but at a certain point, we're just producing more manure," Hancock pointed out.

Forage species. His second most significant factor was forage species. He encouraged producers to grow the highest-quality forage that will actually persist in their respective regions.

Bale storage. Without proper storage, bales can lose an average of 4 inches (in.), or 25% of its total weight. That can extend up to 12 in., or 50%, in extremely wet conditions.

"Those bales that are stored on the ground, we're paying for barns whether we want to or not," he said. Look at ways to break the connection between the wet ground and the bale, he urged. Any way to break that connection can improve your bale losses.

Rain during curing. Different species are affected differently by rain damage, Hancock noted. Additionally, when rain falls on cut hay the day it's cut, loss is less significant than

if it falls a few days later.

Moisture at baling. Heat can have a significant effect on protein content and protein digestibility, he said. As heat increases, usable protein decreases. Palatability can increase to a point if hay is heat-damaged, because heat has a caramelizing effect. However, protein content decreases with significant heat and moisture.

Fertilizer. Fertilizer can have a significant impact on protein content, but not on digestibility and energy. Hancock noted that he worries about nitrates in Bermuda grass with greater than 15% CP.

Varieties. Finally, he pointed out that forage variety can make a difference, as well. He encouraged producers to study up on new varieties and forage varieties that work best in their environments.

Grass grows grass

"Be careful of the cutting height of your implements," Hancock noted as a closing point.

Leaving grass on the field feeds soil microbes. Forage will grow back faster, stronger and with higher quality than if it's taken all the way to the ground.

— *Story & photo by Shelby Mettlen*

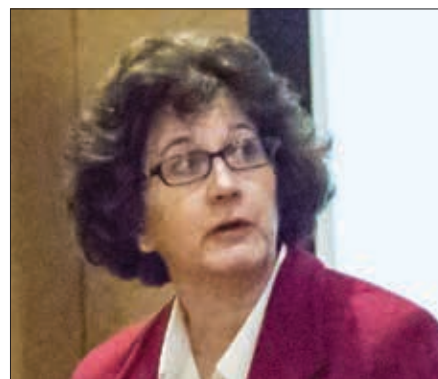
Know Your Requirements

If you don't first address the energy and protein requirements of your cattle, minerals aren't going to matter, Beth Kegley, professor of animal science at the University of Arkansas, told her audience at the Cattle Industry Conference Feb. 1. Kegley spoke as part of the 24th annual Cattlemen's College in Nashville, Tenn.

Proper mineral nutrition is important to your cattle operation.

One of the most complicating factors surrounding mineral nutrition in cattle production today is that mineral requirements at each stage of the production chain can be vague.

"We don't really know what we don't know," she said. At a certain level, it will be apparent in the animal's appearance that it isn't doing well. Otherwise, and in most cases, the animal simply won't be functioning to its full potential. "You'll be leaving something behind."



► "The digestive tracts of these animals are never 100% efficient," said Beth Kegley, professor of animal science at the University of Arkansas. "They're never absorbing 100% of what you feed them. That percentage varies dramatically based on the chemical form of the mineral."

As with other nutritional requirements, cattle have different mineral needs at different stages of the production cycle. Growing cattle have different requirements than gestating cows.

Mineral requirements can also vary by breed of cattle, she said.

"The scientific literature says Simmental and Charolais have a greater copper requirement than Angus." Continental and British breeds have a greater susceptibility to grass tetany than Zebu breeds like Brahman cattle.

Efficiency

"The digestive tracts of these animals are never 100% efficient," she noted. "They're never absorbing 100% of what you feed them. That percentage varies dramatically based on the chemical form of the mineral."

Kegley listed several factors that can alter the mineral content of forages.

Other minerals in the diet play a part in the efficiency and absorption of each mineral.

"What we worry about most in the beef cattle industry is that there can be a negative effect of molybdenum and sulfur on how much copper is absorbed," she noted.

Mineral content varies due to both soil type and forage type, application of fertilizer and pesticides, soil pH, and plant maturity.

Kegley encouraged producers to educate themselves and build some knowledge of their individual situations.

"Talk to your neighbors, talk to your local extension agents," she said. "They will know regional generalities for what minerals are potentially deficient."

— *Story & photo by Shelby Mettlen*

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