



# Ridin' Herd

► by **Rick Rasby**, beef specialist, University of Nebraska

## Using drought corn silage in beef cow diets

*Drought reared its ugly head in a wide area of the United States, and a large portion of the nation's cow herd was located in the drought-stricken area. Low productivity of pasture and rangeland poses many challenges, including how to best manage cattle in these difficult times and source feeds for the winter.*

*Another challenge, especially in areas where year-round grazing is not an option, is how to economically secure feeds for the time when cows need to be fed harvested forage. In drought conditions, hays and alfalfas that are staples for feeding the cow herd are usually expensive because yield is low and demand is high. Corn silage is a feed not typically fed to beef cows. This year there was a lot of corn silage harvested, especially on dryland corn acres, because corn was not going to make a grain crop.*

### Cost per pound of nutrient

When comparing feeds to use in a feeding program, it is important to know the nutrient content (protein, energy, phosphorus, moisture, etc.) and compare the feeds on a price-per-nutrient basis.

When this pricing procedure is used, it is important to compare the feeds on the same moisture content. As an example, how can grass hay at 88% dry matter (DM) and \$150 per ton be compared to corn silage that is 35% DM and \$65 per ton? The easiest way to compare different feeds is on an equal-moisture basis.

Silage and grass hay are used in cow diets

as an energy source. For example, grass hay is an energy option priced at \$150 per ton delivered. The hay tested 53% total digestible nutrients (TDN), 8% crude protein (CP) and 88% dry matter (DM). The cost of hay per pound of TDN on a 100% DM basis is 16¢ per lb. of TDN (2,000 lb. per ton  $\times$  0.88  $\times$  0.53 = 932.8 lb. of TDN in a ton of hay at 100% DM; then  $\$150 \div 933$  lb. of TDN = 16¢ per lb. of TDN).

Compare this to drought silage that was estimated to yield 15 bushels (bu.) of corn per acre. This corn silage tested at 63% TDN, the DM content is 35% (65% moisture or water), and the cost of the silage packed into

the bunker is \$65 per ton. Typical corn silage is priced at about 10 times the bushel price of corn. The drought silage was discounted because the energy content was about 87% the energy of typical corn silage. Using the same procedure as above, the cost per pound of TDN for corn silage is 15¢ per lb. of TDN (2,000 lb. per ton  $\times$  0.35  $\times$  0.63 = 441 lb. of TDN in a ton of silage on 100% DM basis; then  $\$65 \div 441$  lb. of TDN = 15¢ per lb. of TDN).

### Feeding corn silage in cow diets

Drought-damaged corn silage would be considered a high-quality forage at 63% TDN. A gestating cow will consume about 2.5% of her body weight on a DM basis of corn silage. If the cow weighs 1,200 lb., she could consume on a daily basis 30 lb. of silage. If the silage is 35% DM, this 1,200-lb. cow could eat 86 lb. of silage daily. This seems like a lot of silage, but remember that 30 lb. is silage and the rest is water. If she is fed a full-feed of silage and the silage is 63% TDN, she could consume 19 lb. of TDN daily (30 lb. of DM daily  $\times$  0.63 = 18.9 lb. of TDN).

If the 1,200-lb. cow is in the last one-third of gestation and of average milk potential, she is consuming more TDN than what she needs. Silage could be "limit-fed" to meet her energy requirement. She could actually be fed 64 lb. of corn silage to meet her energy requirement. The silage is 9.2% CP, so the protein needs are also met. Some Conservation Reserve Program (CRP) hay, baled cornstalks or soybean stubble could be added to give cows more to eat. If fed 8 lb. of ground cornstalks (50% TDN, 5% CP, 88% DM), these cows should gain body condition under typical winter conditions. After calving, more energy and protein will be needed in the ration to meet the cow's nutrient needs.

Silage made from drought corn seldom has the same energy value as normal corn silage. Depending on the amount of ears, it will usually be 85%-95% of normal corn silage. The protein content of the drought corn silage is usually as good as normal corn silage. It is a good management practice to sample corn silage and test it for protein, energy (TDN) and moisture.

The corn plant in drought conditions likely contains nitrates. Those nitrates are located in the bottom one-third of the stalk

of the corn plant. To avoid the nitrates when chopping droughted corn for silage, set the chopper head up to 6-8 inches. This will reduce yield.

Making silage from a cornfield that will not make a grain crop or a reduced grain crop is a good management decision. Nitrates will be reduced 30%-60% during the fermentation process of making silage. The reduction in nitrates will occur after the silage has been allowed to go through the 21- to 28-day fermentation period. Even with this reduction in nitrates, it would be a good management practice to still test the silage for nitrates.

### **Final thought**

Drought poses challenges to cow-calf producers because weather conditions have affected the amount of harvest feeds available due to reduced yields. A good option for cow-calf producers who have the equipment to deliver the feed is dryland corn grown in drought conditions that is harvested as silage.

Corn silage will fit into cow-calf diets when hays and alfalfas are priced high. If you have the equipment to deliver silage to the cow herd, consider this feed resource as it may be the most economical feed available.

Remember to price feeds on a nutrient basis. When comparing two feedstuffs, both need to be priced at the same moisture content. The easiest way to get feeds to a similar moisture content is to adjust them both to 100% DM basis.



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**Editor's Note:** "Ridin' Herd" is a monthly column written by Rick Rasby, beef specialist at the University of Nebraska.