



Ridin' Herd

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Forage costs and planning ahead

It seems annual cow costs get higher each year, or at least they can potentially increase each year. This year is no exception. Drought has increased forage prices nationally. There are some management practices that are essential to consider this year.

Management essentials

There is no need to keep nonproductive cows around for any reason or any length of time. Pregnancy-check cows as soon as possible, and consider marketing options for those that are open.

Inventory your homegrown forage/feed supply. Test forages for moisture, crude protein (CP) and energy (TDN). Test summer annuals for nitrates. Once the quality of your forages is known, determine what other feeds and supplements need to be purchased to make up any nutrient deficiencies.

Seek out winter grazing opportunities. Having the cows graze to meet their nutrient needs is less expensive than having to carry harvested forages to them. Dormant winter range with some supplementation can be an inexpensive option. Crop residues can also be an inexpensive option.

Grazing crop residues

When grazing residue, cattle will select and eat the grain first, followed by the husk and leaf, and finally the cob and stalk. Because of this selection process, the cornstalk residue diet consumed could be very high in energy content (70% TDN) at first to low (48%-52% TDN) at the end of grazing. Also, as the stocking rate (number of cows per acre) increases, the nutrient content of the residue declines more rapidly as the grain and husk are being removed at a much faster rate.

Cows grazing cornstalks or grain sorghum stubble will consume 25%-50% of the available residue in 30-100 days, depending on stocking density or stocking rate, leaving enough material to prevent soil erosion. In the Midwest, weather records indicate the range in number of continuous grazing days for crop residue is 65-111 days.

Weather can be the most important factor in successfully grazing crop residue. For example, snow and/or ice cover can reduce or eliminate access. Mud may make grazing difficult and may result in decreased animal

performance and forage waste.

During years of heavy snow accumulation, grain sorghum stubble provides better grazing than cornstalks. The grain sorghum head is cut off near the top of the plant, leaving more standing forage in the form of leaves above the accumulated snow.

However, delayed frost, unseasonably warm temperatures and moisture allow grain sorghum plants to remain green or develop new growth after grain harvest. This new green growth, commonly referred to as "suckers," may be high in toxic prussic acid. If "sucker" growth occurs, cattle should not graze the stubble until at least seven days following a hard freeze.

Variables

Stocking rate influences the amount of grain, husk and leaf available per animal. The amount of grain and the amount of husk available affect diet quality because both are highly digestible. The rate of decline in digestibility is affected by stocking rate, trampling, residue components available and environmental factors. Previous comparisons have shown that gains increase as stocking rate decreases. Stocking rate influences the quality of the diet consumed and, consequently, animal performance.

Residue (leaf and husk) yield is related to grain yield, but hybrids obviously vary in this relationship. With high-producing corn (irrigated or with ample rainfall) there will be about 16 pounds (lb.) of dry leaf and husk per bushel (bu.) of corn yield. The specific relationship is: 1 lb. leaf and husk per acre on a dry-matter basis = $([\text{bu./acre corn yield} \times 38.2] + 429) \times 0.39$. Some residue disappears by trampling and other factors. We estimate 50% utilization of the leaf and husk.

Instead of remembering this equation, there is a nice spreadsheet available that will help you determine the number of acres at a certain corn yield needed for a certain number of cows. To run this spreadsheet, available at <http://beef.unl.edu/learning/>

[cornStalkGrazingCalc.shtml](#), you will need Excel.

Do not force cattle to eat the cobs and stalks. Ordinarily, dry cows will maintain body weight, and may gain 0.5 lb.-1 lb. per head daily on corn and grain sorghum residue-grazing programs when grain, husks and leaves are available.

Our data would suggest March-calving cows that were protein-supplemented and those that were not protein-supplemented grazing similar corn residue fields were similar in reproductive performance even though protein-supplemented cows weighed 23 lb. more precalving. However, cows in both groups had a body condition score (BCS) greater than 5.0 (on a 9-point scale) prior to calving (<http://beef.unl.edu/beefreports/200901.shtml>). Cows grazed from mid-November to about mid-February each year, and stocking rate was determined using the grazing calculator mentioned above. Cows were about a BCS of 5 when they began grazing the corn residue. Salt, mineral and vitamin A supplements are recommended for all cattle grazing crop residues.

If the cows are fall-calving cows, a whole different approach needs to be designed. The cows are lactating, and you are asking them to rebreed during the residue-grazing period.

Purchasing supplements

Protein and energy supplements are designed to compensate for deficiencies in crude protein or energy content of the base diet. For beef cows, the base diet is forage.

The objective of a good supplementation program should be to supply the required amount of protein or energy rather than a specific amount of supplement. Therefore, when choosing among various supplements, a good strategy is to calculate the cost of each supplement per pound of nutrient needed, then purchase the supplement that is most economical.

To calculate cost per pound of nutrient, simply divide the cost per ton of the supplement by the number of pounds of nutrient in a ton of the supplement. This assumes that all supplements are similar in moisture content. The result is the cost per pound of nutrient (example: crude protein or TDN).

When all supplement options are priced

on a cost per pound of nutrient, the most economical supplement can be identified.

There are other factors to consider when purchasing supplements. With today's fuel prices, purchasing a supplement with a greater concentration of nutrient may decrease delivery cost because fewer tons would be needed to supply the same amount of protein. Supplements may differ in the amount of waste that results when they are fed or delivered. For example, alfalfa hay does not cost the same amount to deliver to cattle and results in more waste than feeding cubes, but it may still be the more economical supplement.

Producers can easily account for cost differences in transportation, feeding and waste in addition to purchase price of various supplements by using the "Feed Cost Calculator" found online at <http://westcentral.unl.edu/agecon/>. Click on "Livestock Production Decision Aids," then click on "Feed Cost Cow-Q-Lator." Excel is needed to open the spreadsheet.

Final thought

A few experiments have evaluated the effect of winter grazing of crop residues on subsequent grain production. Data from these experiments conducted in Nebraska

indicates that fall and winter grazing has no significant effects on crop yields compared to ungrazed areas. Neither corn, soybean nor grain sorghum yields were adversely affected following grazing.



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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.