



Ridin' Herd

► by Rick Rasby, University of Nebraska

Grazing corn-crop residue will help reduce winter feed costs

The national cow inventory is at an all-time low, which results in a record-low feeder-calf inventory. With plenty of feedlot bunk space, there will be competition for these calves. Demand for feeder calves will mean cow-calf producers may garner a good price for them.

On the other hand

Annual cow costs continue to increase. Data from the Kansas Farm Management Association analysis of cow-calf enterprises from 2008 to 2012 indicates the average annual cow cost for this three-year period was \$853 per cow, with a range from \$707 to \$1,010. Feed costs are 50%-65% of annual costs.

In the Kansas Farm Management data, there is about a \$100 difference per cow in annual feed costs between the high-profit and low-profit producers. With the drought of 2011, 2012 and 2013, annual feed costs will be higher, and there will be more variation between high- and low-profit cow-calf enterprises.

Many areas of the United States have an abundance of crop residue available for late fall and winter grazing. A number of those acres are corn crops that were irrigated this summer. Some row-crop producers are concerned that grazing corn residue will reduce yield of the subsequent crop, whether it be corn followed by corn, or corn followed by soybeans.

Nutrient characteristics

The corn cob and stalk are lowest in

protein, energy and palatability. The leaf and husk are intermediate in nutrient quality, but high in palatability. The grain is highest in

nutrient quality. In fields that the corn has been harvested as grain, there is very little grain left in the field — likely less than a bushel of corn per acre. The amount of residual grain left in the field varies depending on factors such as harvest date, lodging due to insects and disease, and harvest efficiency.

Although cows spend time in soybean stubble when they have access to both cornstalks and soybean stubble, overall nutrient quality is low. The total digestible nutrient (TDN) content of the soybean leaf and pod are relatively high in protein and energy; however, there is not a lot of the leaf and pod left in the field. Sometimes there are some whole beans left in the field, but again, not many. Soybean stems are low in energy and protein, similar to wheat straw or lower. The low energy content of the soybean stem left in the field after harvest is due to the high lignin content. Lignin is the indigestible cell wall component of the plant. Bottom line, soybean residue offers little grazing opportunities.

For every bushel of corn, about 15-16 pounds (lb.) of husk and leaf are produced.

Grazing characteristics

Cows are selective grazers. When grazing residue, cows will select and eat the grain first, followed by the husk and leaf, and finally the cob and stalk. Because of this selection process, a corn-residue diet could be very high in energy content (70% TDN) at first when there is corn left in the field to very low (40%-50% 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, leaf and husk are being removed at a much faster rate.

The amount of leaf and husk left in the field is related to grain yield, but hybrids obviously vary in this relationship. For every bushel of corn, about 15-16 pounds (lb.) of husk and leaf are produced. When determining stocking rates, calculate so that cows consume half the husk and leaf, and leave the other half of the husk and leaf and the majority of the stalk and cob as organic matter to be trampled into the soil.

Remember, there is also cob and stalk in corn residue, and the stocking calculations don't have the cows eating the cob and stalk. Although in the grazing calculations the cows are removing half the husk and leaf, in reality, cows are actually removing less than 15%-25% of the residue as they are depositing organic matter back onto the field in the form of manure and urine.

There is a calculator to help you determine stocking rate for a given corn yield at <http://beef.unl.edu/web/beef/learning/cornstalkgrazingcalc.shtml>.

Grazing management

Remember, grazing days are determined by corn yield and number of cows. Don't overgraze. Our data suggest that for March-calving cows, if cows graze crop residue based on our recommendations, the only supplementation needed is salt, vitamins and minerals (http://beef.unl.edu/c/document_library/get_file?uuid=4f986585-d3f1-4e00-ad3b-9945992c0af7&groupId=4178167&pdf). You will notice in this data set that cows, supplemented and nonsupplemented, entered the stalk-grazing period at a body condition score (BCS) of 5 (1 = emaciated; 9 = obese). If cows are thin at the beginning of the stalk-grazing period,



PHOTO BY KASEY BROWN

supplementation, other than salt and mineral, is warranted.

Subsequent yield

A crop owner may think that when cattle are grazing a cornstalk field, nutrients are being removed. If cows maintain weight while grazing a stalk field, by definition, no nutrients are lost. There will be some weathering and residue lost to wind. With this in mind, it can almost be assumed that essentially no organic losses are attributed to cows grazing the residue. This concept is supported by many years of cornstalk grazing, measuring subsequent corn yield, and finding

no difference between grazed and ungrazed fields (http://beef.unl.edu/c/document_library/get_file?uuid=196f3d5f-02ea-405b-b5a9-ccc80944fb74&groupId=4178167).pdf).

There is some need to expand this database to more soil types and landscape erosion potential. If calves graze cornstalk residue and are supplemented, more nutrients may be added to the field than removed due to grazing.

Final thoughts

Crop residues provide producers an opportunity to reduce cow costs. Don't leave cows on stalks after the grain, husk and leaf

have been removed. There are some corn-residue fields that should not be grazed because of landscape and erosion potential. Cows will graze through 4 to 6 inches of snow cover. Cows will not be able to graze residue fields that are covered with ice and this should not be underestimated.



EMAIL: rrasby@unlnotes.unl.edu

Editor's Note: Rick Rasby is a beef specialist with the University of Nebraska.