



# FORAGE FACTS

*Publication Series*

## GRAZING CORN RESIDUE

### INTRODUCTION

Kansas has an abundance of crop residue available for grazing in late fall and winter. However, the location of fields in relation to cattle, the lack of shelter or appropriate fencing, and water availability often prevent grazing of many fields. Despite these limitations, residue grazing has become an integral part of many cattle operations, primarily as a feed resource for maintaining the breeding herd during winter or putting weight on cull cows. Calves destined to grass the following summer can also be wintered on cornstalks if appropriate supplementation is used and adequate shelter is available.

### GRAZING CHARACTERISTICS

Weather can be the most important factor in successfully grazing crop residue. Snow cover can reduce or eliminate access to crop residue. Mud may make grazing difficult and may result in decreased performance and greater waste of forage due to trampling. Cornstalk fields grazed shortly after harvest are higher in nutrient content than fields grazed 60 days after harvest. This indicates that there is some weathering loss of nutrients. The greatest nutrient loss appears in the husk and leaf and the loss is primarily a loss in energy content.

One Animal Unit Month (AUM) is the amount of forage required to sustain a 1,000-pound cow or equivalent for one month. One acre of corn stalks will provide approximately 1.5 to 2 AUM of grazing. For example, excellent harvest conditions would mean less grain is left in the field, so there would be a lower total nutrient value and fewer grazing days before cattle would need to be moved to fresh stalks.

Cows grazing cornstalks will consume 25 to 30 percent of the available residue in 30 to 100 days, depending on stocking rate. This can leave enough material to prevent soil erosion. Cattle will select and eat the grain first, followed by the husk and leaf, and finally

the cob and stalk. Therefore, over the grazing period, the cornstalk residue being consumed could be very high in energy content (70 percent TDN) to very low (40 percent TDN). Also, as the stocking rate (number of cows per acre) is increased, the nutrient content of the remaining residue declines much quicker because the grain and husk are being removed at a much faster rate.

### MEETING NUTRITIONAL NEEDS

Salt, phosphorus, calcium, and vitamin A supplements are recommended for all cattle grazing dormant winter range and crop residues. These supplements can be supplied free-choice to the cattle. When protein supplementation is required, natural protein sources provide a better response than protein sources with nonprotein nitrogen such as urea. Three-year-old cows grazing cornstalks from mid-November to February 1 supplemented with .4 pound of crude protein equivalent per head per day in the form of either soybean meal or 7.2 percent urea supplement gained .99 and .76 pound per day, respectively, indicating that if cows have only husk and leaves to consume in a cornstalk field, an all natural protein source is recommended. This could be in the form of a good quality alfalfa or a concentrated natural protein supplement that contains soybean or cottonseed meal.

## COWS AND FIRST-CALF-HEIFERS

As long as cattle have grain to select in a cornstalk field, they will consume a diet that is probably above 7 percent crude protein and as high as 70 percent TDN. This will exceed the protein and energy needs of an 1100-pound cow in mid-gestation. Spring calving cows are at mid- to late gestation during fall and early winter; therefore, their nutrient requirements match well with a crop residue grazing program. Producers need to periodically monitor what is available in the residue field. For gestating cows grazing corn residue, if corn is visible in the manure, supplementation with other than vitamins and minerals is probably unnecessary. However, when most of the grain has been consumed, protein supplementation is needed. A mature 1100-pound cow in mid- to late gestation consuming husks and leaves will need about 5 pounds per day of average quality alfalfa hay to help meet her protein requirement. Cows in mid- to late gestation or after calving forced to eat the cob and stalk will lose weight and body condition. Protein and energy will need to be fed or cow and calf performance will be reduced.

Heifers in late gestation should not be allowed to graze cornstalk fields long after the grain has been consumed. Heifers have a high protein and energy require-

ment and the remaining residue does not have a high enough nutrient content to meet their requirements.

Lactating cows, such as fall calving cows grazing crop residue, need to be managed carefully. As long as lactating cows have grain to select in the field, their energy needs should be met. If the breed type has a high milk potential, protein supplementation is necessary even if the cattle have grain to eat. Crop residue should not be grazed in the spring with lactating cows because of the lower nutritional value of the residue.

Protein supplementation appears necessary for calves grazing cornstalks. Bulkiness of the forage may cause lower performance for young cattle because rumen capacity per unit of body weight is less than with mature cows. There is some indication that a protein supplement with at least .36 pound of escape protein per head per day is appropriate. An escape protein is a protein source that is not digested in the rumen but is broken down in the small intestine. Total protein supplementation may need to be as high as 0.9 pound per head per day. Even then, average daily gain for calves grazing crop residue should not be expected to exceed 1 pound per day. This may be adequate if a producer is wintering calves for low rates of gain and plans to summer these calves on grass.

*This factsheet is based on a University of Nebraska publication authored by Rick Rasby, extension beef specialist, and Roger Selley, extension agriculture economist.*

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