



# Cornstalks

Range cow nutritionist calls cornstalks an underutilized grazing resource.

Story & photo by **Troy Smith**

In some parts of cow country, the use of cornstalks for fall and winter grazing is taken for granted. The gleaning of corn residues is practiced in many places — certainly in Great Plains states. From Iowa to eastern Colorado, and from South Dakota down into Kansas, cows are commonly seen grazing farm fields. Yet many readers may be surprised to learn that cornstalks represent an underutilized grazing resource.

So says Aaron Stalker, a University of Nebraska range cow nutrition specialist. He cites survey results for Nebraska — arguably the heart of cornstalk grazing country — that suggest only about 25% of the state's nearly 10 million corn-producing acres are grazed after harvest. Stalker believes more cow-calf producers and corn growers may want to consider or reconsider the value of cornstalks as a winter feed resource for maintaining a breeding herd, or for putting weight on cull cows. To graze corn residues most effectively, though, Stalker advises careful attention to stocking rate.

Of course, there may be obstacles to grazing cornstalks. These may include the lack of fencing, convenient livestock watering sites, or shelter from winter wind and snow. Another reason is that many stalk fields are located in areas of intensive row

crop production, while cow numbers are not. Some corn growers object to grazing of residues because it interferes with fall fieldwork. And they may worry that grazing could have an adverse effect on subsequent crop production.



► Aaron Stalker says more cow-calf producers and corn growers may want to consider — or reconsider — the value of cornstalks as a winter feed resource.

According to Stalker, the chief advantage is that corn residues usually make pretty good feed. The accompanying table shows the relative nutrient values of grain, husks and leaves, as well as the less palatable stalk and cob components. The protein and energy content of dryland corn residues are often higher than for residues of corn produced under irrigation. While the overall nutrient content per ton of dryland residues is likely to be greater, research suggests

irrigated fields produce up to two times more residue.

Amounts of residual grain can vary, depending on harvest date, plant lodging and

harvest efficiency. However, the proportion of grain in residues is about the same, on average, whether the corn was irrigated or not. The proportion of husks and leaves is higher for irrigated fields.

“A high-yield field will produce about 16 pounds (lb.) of dry husks and leaves per bushel of grain yield,” explains Stalker, emphasizing that husks and leaves comprise the greatest volume of residue and are normally considered to be forage of “average” quality.

“The nutrient value of cornstalk residue is comparable to many grass hays,” adds Stalker. “Cows get along quite well on this kind of forage, performing as well as cows grazing range and receiving 2 pounds (per day) of 20% protein supplement.”

To achieve optimum animal performance, emphasizes Stalker, producers should use appropriate stocking rates. They need to remember that grazing animals typically will consume about half of the available husks and leaves, with the remainder lost to trampling and weathering. With that in mind, Stalker says a field that yielded 175

**Table 1: Composition of corn residue**

	% DM	% CP, avg.	% TDN, avg.
Grain	86	10.2	90
Husk	55	4.4	58
Leaf	76	6.9	52
Cob	58	2.9	48
Stem	31	3.9	49

Source: Gigax, et al., 2011.



PHOTO BY KASEY MILLER



bushels (bu.) of corn, per acre, will produce about 2,800 lb. of husks and leaves (dry-matter basis). Assuming one-half is actually consumed, each acre produces about 1,400 lb. of utilized forage.

According to Stalker, a cow will consume an amount of forage dry matter equal to approximately 2% of her body weight. For easy figuring, assume a cow weighs 1,500 lb. and consumes 30 lb. of dry matter per day. Therefore, 1,400 lb. of forage dry matter should afford that cow 46.6 days of grazing.

Thus an understanding of animal consumption, plus the relationship between grain yield and available forage yield, can be applied with the concept of animal unit month (AUM), where an AUM represents the monthly forage requirement of a 1,000-lb. animal unit, to calculate the carrying capacity of a field of known size and corn yield.

“We typically recommend a stocking rate of 1.5 AUMs, per acre, for irrigated corn,” states Stalker. “That’s about 45 grazing days per acre. Cows can be maintained at that rate without a supplement.”

Stalker advises producers to use the “Cornstalk Grazing Cow-Q-Lator,” which can be found online at [www.beef.unl.edu](http://www.beef.unl.edu), as an aid in determining stocking rates for grazing cornstalks. An Excel program, this decision-making tool can calculate the number

of acres needed, based on the number of animals to be grazed for a certain number of days and the grain yield of the field. Or, by plugging in the number of acres available, the grain yield, plus the number and size of cattle to be grazed, the calculator can determine the number of grazing days the field should provide.

Veteran cornstalk graziers know that when first introduced to a stalk field, cows will seek out the grain first. Consequently, it’s important to evaluate each field for residual corn. Stalker says rumen acidosis and founder can be problematic when ear drop exceeds 8 bu. per acre, but grain spills in a field typically pose more danger. When there is significant risk of cows consuming too much grain, an appropriate intervention may be the addition of sodium bicarbonate to their drinking water. Stalker recommends mixing at a rate of 2.5 lb. per 100 gallons of water.

Producers may also wonder about the risk of nitrate poisoning among cattle grazing cornstalks. Stalker says irrigated fields generally pose little risk, but high nitrate levels can be a concern in severely drought-stressed cornfields. Still, nitrates typically are

more concentrated in the lower portion of the plant stalk, and not in the grain, husks and leaves. Risk is greater when cattle are forced to consume that portion of the stalk nearest the ground.

“Usually, nitrates aren’t a problem when grazing corn residues, unless nitrate levels are high in the drinking water, too,” says Stalker. “Baled cornstalks usually present a greater

risk, since most of the stalk is taken when the plant is cut and baled. Ensiled cornstalk stover is safe since the ensiling process eliminates nitrates.”

Stalker reminds producers that residues from genetically modified varieties of corn are utilized just as readily as others, and there is no difference in animal

performance. Weather can be a key factor influencing successful grazing of cornstalks, though. Wet, muddy weather hastens the decline in forage quality and increases waste. Stalker says the risk of utilization loss due to snow cover is overestimated, as cows normally find forage under several inches of snow. Often underestimated is the impact of ice, for even a relatively small amount can inhibit residue grazing.

To corn growers concerned about grazing impacts to crop ground, Stalker says research shows there is no effect on future yields. Leaving some residue on fields does help hold soil moisture, but too much can be detrimental. Benefits of grazing include ridding the field of volunteer corn during the next growing season, and grazing animal activity helps incorporate litter into the soil, and animal manure adds nutrients.

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— Aaron Stalker

**Table 2: Dry matter (DM) of corn residue**

Corn residue	% moisture	% of residue, DM basis
Husk	45-50	12
Leaf	20-25	27
Cob	50-55	12
Stem	70-75	49

Source: Wilson, et al., 2003.

