# Grazing Crop Residue

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Research at the University of Nebraska – done the first time about 30 years ago and repeated 10 years ago – shows no detrimental effect on subsequent grain yields from grazing stalks. Their work was on irrigated corn fields and they actually showed a slight increase in corn and soybean yields the summer after grazing corn stalks in the fall or winter.

Because there is a strong correlation between grain yield and residue, predicting how many grazing days to expect from a corn stalk field is easily accomplished once we know the grain yield.

For each bushel of corn produced, about 41 pounds of residue is also produced. Of this residue, about 40% is leaf and husks, the part that is highly digestible and a good source of cattle feed.

Forty percent of 41 pounds equals 16 pounds of leaf and husks produced per bushel of corn. Because some residue will be tromped, some will blow away, and you want to leave some behind, only about 50% of that 16 pounds will be utilized by grazing cows. So, now we are down to 8 pounds of consumable residue per bushel of corn taken off the field.

Next, we multiply 8 pounds of residue by the per acre corn yield to determine the expected amount of consumable residue per acre. For a 100 bushel per acre corn crop, the number is 800 pounds per acre of residue that we expect our cows to consume.

Now, to determine how long that 800 pounds per acre will last for a grazing cow, we need to know how much she will eat. Consumption will be about 2% of body weight, so cows weighing 1300 pounds will consume about 26 pounds of feed per day.

The final step is to divide 800 pounds by 26 pounds consumed per day to determine how many cow grazing days to expect per acre. The answer in this example is 30.77 grazing days per acre from 100 bushel per acre corn residue. That's one cow per acre for one month.

If the corn yielded 200 bushels per acre, the number of grazing days per acre would be double. You could graze one cow per acre for two months, or two cows per acre for one month.

If you're renting corn stalks – whether you are the cow owner or the corn stalk owner – it is important to know the grain yield in order to more accurately estimate the amount of residue available, and a value per acre.

Some cattlemen prefer to rent on a per acre basis instead of paying an amount per head per day. This is especially true if they own an adjoining pasture or field and are renting corn stalks where the cows will run on both parcels at the same time. In that situation a per acre rent may be in order. However, we generally prefer a per head per day rent to encourage cattlemen to utilize the residue early and then remove their cattle from the field.

In our 100 bushel per acre corn example above where we have 30 grazing days per acre available, if the rent was $.50 per head per day, then the per acre rent would be $15. If the rent was $.75 per head per day, then $.75 x 30 = $22.50 per acre. If the rent was $1.00 per head per day, then the per acre rent would be $30.

In drought situations where there was no grain produced, these numbers will be off and producers will have to rely on experience to estimate available forage. In those fields, a per head per day rent is probably the best solution.

If you have questions, you can reach me at the Riley County Extension Office at 785/537-6350. Or, you can send e-mail to gmcclure@ksu.edu.