



Measure Up Winter Cow Feed Options

Corn-crop residue is still a cost-effective alternative.

by **Barb Baylor Anderson**, field editor

The dramatic drop in corn prices may mean you can economically pencil corn back in as a feed alternative, but nutritionists say don't dismiss other options. University of Illinois (U of I) researchers continue to evaluate corn-crop residue and find it is still a sound winter feed choice for cows.

"We have been studying residue for a while. It is one of the more abundant feedstuffs in the Midwest, and has been more than competitive from a price standpoint," says Dan Shike, U of I assistant animal science professor. "As prices have come down,

corn is once again competitive, but corn-crop residue is still a great option for beef operations."

In research conducted through the Dudley Smith Initiative in Pana, Ill., Shike and associates have compared various stocking rates and strip-grazing management to see what may be best for cows. In addition to grazing corn-crop residue, cows received 4

pounds (lb.) of dried distillers' grains with solubles (DDGS) per day. Three alternatives were evaluated at the site:

- ▶ 1 cow per acre with fence moved every two weeks on 24 acres divided into three strips.
- ▶ 1.5 cows per acre with fence moved every two weeks on 24 acres divided into three strips.
- ▶ 1.5 cows per acre with fence moved every week on 24 acres divided into six strips.





PHOTO BY KASEY BROWN

“We were interested to see if there is an advantage to heavier stocking rates or moving fence for strip-grazing,” says Shike. “You get more-uniform nutrition with strip-grazing because the cows only have access to a portion of the field at a time. They are apt to eat all that is there. Cows otherwise selectively graze for the most palatable grain first, followed by husks and leaves. If they can graze the whole area, they trample residue that could have been fed.”

Shike says research found moving the fence every week or every two weeks did not affect anything but the labor charge. Producers may be better to move the fence based on weather and field conditions. For example, he says, if you move cows in for grazing in the fall and it is wet, you will lose some residue for feeding. If it is dry, cows will not trample the residue.

More than nutrition effects

Shike is taking the initial research a step further. The specialists are now looking at how fall grazing ties crop and livestock

Table 1: Cow performance results

Item	1 cow/acre (2 wk.)	1.5 cows/acre (2 wk.)	1.5 cows/acre (1 wk.)
Initial BW, lb.	1,260	1,276	1,272
Final BW, lb.	1,343	1,340	1,318
BW change, lb.	83	64	46
Initial BCS	5.4	5.4	5.3
Final BCS	5.8	5.7	5.8
BCS change	0.4	0.3	0.4

production together. Again at the Dudley Smith farm, they are tracking 36 Angus cows with GPS to monitor their locations and strip-grazing results. They are evaluating cattle performance, grazing behavior, forage selectivity and interrelationships among cattle spatial occupancy, soil characteristics and subsequent crop yields.

Shike says the first set of yield data shows no crop yield difference from grazed vs. non-

grazed areas of the field. Soil sampling and compaction show minor differences between the two areas, although the compaction in the grazed areas is below the threshold of agronomic concern. They will continue to study the impact, and he advises producers to consider DDGS supplementation if cows go in later in the season when stalks have degraded or are wet.

CONTINUED ON PAGE 258

► **Above:** “You get more-uniform nutrition with strip-grazing because the cows only have access to a portion of the field at a time. They are apt to eat all that is there. Cows otherwise selectively graze for the most palatable grain first, followed by husks and leaves. If they can graze the whole area, they trample residue that could have been fed,” says Dan Shike, U of I assistant professor.

Table 2: Economics

Item	1 cow/acre (2 wk.)	1.5 cows/acre (2 wk.)	1.5 cows/acre (1 wk.)
Cornstalks (\$15/acre), \$/hd./d	\$0.36	\$0.24	\$0.24
DDGS (\$200/ton @ 4 lb./hd./d)	\$0.40	\$0.40	\$0.40
DDGS feeding labor ^a , \$/hd./d (1.5 hr. for all 192 hd.)	\$0.09	\$0.09	\$0.09
Fence moving labor ^a , \$/hd./d (20 minutes – 2× or 5×)	\$0.01	\$0.01	\$0.02
Total cost, \$/hd./d	\$0.86	\$0.74	\$0.75

^aLabor @ 12/hr.

“If it is September and calves were just weaned from the cows, residue will meet all the cows’ nutritional needs. However, you will need to supplement protein in November and December for cows calving in January with corn-gluten feed or DDGS and always with minerals,” he says. “Replacement heifers, or first-calf heifers, also require some protein and possibly energy supplements.”

The research will continue, but Shike already is a firm believer that strip-grazing is a sound management solution for many beef operations, especially in the Midwest.

“If there is no long-term effect on crop yield or soils, strip-grazing corn-crop

residue is a great winter feed alternative for diversified crop and livestock operations,” says Shike. “Grazing also is better than harvesting residue into bales because of the costs associated with baling, including equipment, transportation and storage. Cows are the most efficient harvesters.”

If you can’t graze, baling and feeding residue may be your best option. Shike says the researchers are looking at various diets, including an unlimited hay diet, unlimited corn residue bales with DDGS supplementation, and total mixed rations using high and low levels of ground corn residue and DDGS.

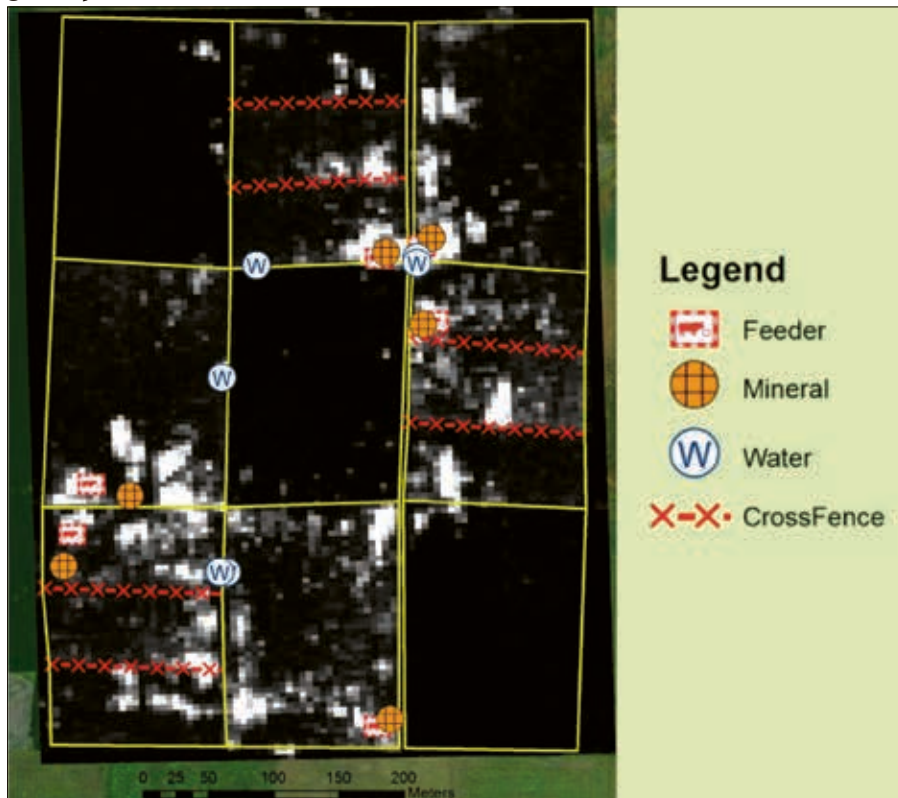
“Feeding DDGS and corn residue results

in adequate or improved performance and reduced feed cost compared to traditional unlimited hay diets fed in herds with more than 100 cows,” says Shike. “Unlimited stalks are less expensive than grinding stalks and feeding total mixed rations, especially in small herds where DDGS can be hand-fed.”

Ultimately, Shike says herd size, existing equipment and facilities determine which system is the best fit for any producer, but he says strip-grazing generally offers a better gain for the cows than continuous grazing and adding more residue.

Editor’s Note: A former National Junior Angus Board member, Barb Baylor Anderson is a field editor from Edwardsville, Ill.

Fig. 1: Cattle spatial occupancy was uneven throughout strip- and continuously grazed paddocks



Randomized fall grazing study

Calculate cow needs

You can calculate your cow feed needs using this University of Nebraska formula:
 Pounds of leaf and husk per acre = [(bushels per acre corn yield × 38.2) + 429] × 0.39

For example, 200-bushel (bu.) corn is equal to 3,146.9 pounds (lb.) of leaves and husk.

Cows are not able to consume all of the corn residue. Depending on weather conditions, cows will harvest approximately 50%.

So 3,147 lb. × 50% = 1,573.5 lb. of leaves and husk.

A 1,300-lb. gestating cow will eat approximately 25.5 lb. of dry matter (DM). If you feed 4 lb. of dried distillers’ grains with solubles (DDGS), she will eat 21.5 lb. of residue. Based on these assumptions, a producer could get 75 days with a 1-cow-per-acre stocking rate, or 50 days with a 1.5-cows-per-acre stocking rate.