



Ridin' Herd

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Developing replacements: feed challenges

The drought of 2012 has posed challenges for cow-calf producers to source feed and forages for the winter.

Even in these tough times, cow-calf producers have kept enough heifers to replace some of the cows that have left the herd. A challenge with this group of females is to design a nutrition program for them to reach their target weight before the start of the breeding season using some medium- to low-quality forages.

Using residues to develop heifers

Corn residues are a relatively inexpensive feed resource, but they are low in protein and energy, especially for growing calves and replacement heifers. Beef producers often target a

specific average daily gain (ADG), so it is important to know the amount of a supplement to feed to calves grazing

corn residues in order to achieve a desired level of gain.

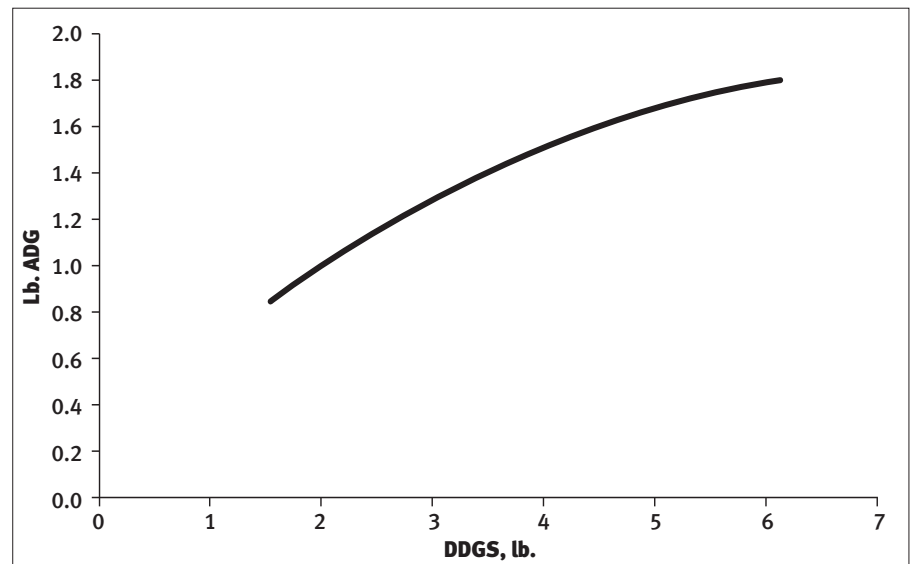
Due to their high energy [112% total digestible nutrients (TDN)] and high protein content (30%), dried distillers' grains plus solubles (DDGS) fit well as a protein and/or energy supplement in many grazing situations.

In one experiment, DDGS were fed to weanling steer calves grazing nonirrigated corn residue to determine daily-gain response and residue-intake response to increasing levels of DDGS

[from 1.5 to 6.5 pounds (lb.) per day in 1-lb. increments; see Fig. 1. Steers were fed DDGS individually using Calan

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Fig. 1: Grazing cattle avg. daily gain and predicted forage dry-matter intake response due to increased levels of DDGS



Source: "Dried Distillers Grains Supplementation of Calves Grazing Corn Residue," 2006 *Nebraska Beef Report*, page 36.

electronic gates. Daily gain increased from 0.9 lb. (1.5 lb. DDGS) to 1.8 lb. (6.5 lb. DDGS) per day. Forage intake decreased from 11.3 lb. (1.5 lb. DDGS) to 8.3 lb. (6.5 lb. DDGS) per day.

These results provide information for selecting a DDGS supplementation level to achieve a target gain. The ADGs in this experiment are similar to ADGs that many would target for replacement heifers.

Not developing heifers in a drylot has always been appealing to producers because they don't have to fight the mud in the winter. In addition, input costs have steadily increased during the last few years, especially harvested feed costs. In most areas of the country, there is an abundance of crop residue for winter grazing.

Supplementation strategy needed for heifers

Producers do a good job of using these feedstuffs in feeding strategies for the cow herd. To get heifers developed to an acceptable target weight prior to first breeding, they have to achieve a minimal daily gain. Crop residue or winter range by itself will not provide the needed gain. A supplementation strategy for replacement heifers using these feed resources will need to be implemented.

Research conducted at the University of Nebraska compared performance of heifers developed in a drylot (DL) compared to heifers that grazed cornstalk residue (CR) for 145 days and were supplemented 1 lb. per head per day of a 28% protein cube on a dry-matter basis as part of their development program. Although there was a statistical difference in conception rate to artificial insemination (AI; 64% DL, 54% CR), there was no difference in yearling pregnancy rate or pregnancy rate for their second breeding season.

In another experiment, heifers were developed using winter range and/or cornstalk residue and supplemented 1 lb. per head per day of a 28% protein cube on a dry-matter basis as part of their development program. There was no difference in yearling pregnancy rate between the two groups, and pregnancy rates as 2-year-olds were not statistically different either.

In the third experiment, the supplementation rate was between 1 lb. and 2 lb. per head per day of the protein supplement (29% crude protein) dry-matter basis. There was no difference in AI conception rate, yearling pregnancy rate or pregnancy rate as 2-year-olds. There was no difference in calf birth weight or weaning weight.

While it may be difficult to compare this group of experiments, the observation would be that when supplementation rate was increased, heifer gain increased, yearling pregnancy rates were not much different, but pregnancy rates for the 2-year-olds were numerically



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greater, especially for heifers that grazed cornstalk residue. That might lead one to think that a supplementation rate closer to 2 lb. per head per day should be considered. At 1 lb. per head per day, the diet is deficient in protein (mainly degraded intake protein) for heifers consuming cornstalk residue or dormant

winter range. Cost difference favored developing heifers on residue compared to in the drylot (see <http://bit.ly/10PZDIN> and <http://bit.ly/Tk7nfO>).

Baled cornstalks

Using cornstalk bales and Conservation Reserve Program (CRP) hay

as part of a heifer development program will be challenging without incorporating into the ration a high-quality feed like distillers' grains. Feeding baled corn residue is different than grazing corn residue.

In a grazing situation, heifers will select mostly husk and leaf, which are the highest-nutrient components left after the corn grain has been removed.

When feeding distillers' grains, calcium is needed in the mineral supplement. No phosphorus will need to be supplemented.

If the cornstalk bale is ground, there will be no selection and heifers will consume husk, leaf, cob and stalk. If big round bales are fed free-choice, heifers will likely select the husk and leaf, and that would be similar to what they would select if they were grazing a corn-residue field.

It is important that cornstalk bales and CRP hay be sampled and analyzed for protein, energy (TDN) and moisture so that diets can be balanced to achieve the target weight before the breeding season.

When feeding distillers' grains, calcium is needed in the mineral supplement. No phosphorus will need to be supplemented.

Final thoughts

In challenging times, pushing the pencil on management strategies that reduce the need for harvested feed inputs will increase profit potential. It would be nice to think that all harvested forages could be eliminated, but this is likely not possible because of snow and ice in some states. Producers will need to have some harvested forages on reserve.

It has been reported in this column that heifer development costs can be reduced by designing feeding programs to target heifers to 55%-60% of their mature weight before the start of the first breeding season. Heifers developed to lighter prebreeding weights maintained adequate breeding performance during the second, third and fourth breeding seasons.

If you consider this type of heifer development program, you may want to retain more heifers into the program in case low rebreeding performance is incurred and overall cow numbers can be maintained. In addition, recently, females that do not get pregnant in their first breeding season have not been costly as the price of yearlings sold after the grazing season has been good.

Finally, developing heifers using crop residues may be a means to reduce development cost and not impair reproductive performance. Replacement heifers developed on crop residues will need to be supplemented to achieve targeted ADG as residues are low in protein and energy. These management strategies can impact profit potential of the cow-calf enterprise.



Editor's Note: "Ridin' Herd" is a monthly column written by Rick Rasby, professor of animal science at the University of Nebraska. The column focuses on beef nutrition and its effects on performance and profitability.