



Ridin' Herd

► by **Rick Rasby**, Extension beef specialist, University of Nebraska

Give them a chance to be productive cows

Calving season has either started or is just around the corner. You've spent a lot of time selecting, managing and designing a breeding program for the females that are about to calve for the first time. If the replacements are selected from your herd, these heifers won't generate any income for almost two and a half years when they wean their first calf. Feed costs are the greatest costs in the beef cow enterprise. Skimping on the groceries for first-calf females after calving is not a place to save on feed costs.

Feeding first-calf females

I think we'd all agree that first-calf cows are a drag on the beef cow enterprise. Although they represent some new genetics and future brood cows, they require more labor, higher-quality feeds, and they reward your efforts by weaning the lightest group of calves in the herd. We know this is temporary, because if we've done our homework with due diligence, they will reward us by being productive cows for a long time. That means each and every year they get pregnant and wean a calf that performs well in the feedlot or has the potential to be productive if selected as a replacement.

There is nothing more disappointing than learning that that future brood cow is not pregnant with her second calf. You have more than two years of expenses and one calf and her as a cull to generate income from that unit.

One of the challenges to getting those first-calf females rebred is providing a high-quality diet to them after calving. You have

been harped on enough to make sure the protein needs are met for this group after calving. And, for the most part, you do a good job of meeting the protein requirement.

In many situations, however, the energy needs are not met and the first-calf females lose weight and body condition from the time of calving to the start of the breeding season. This does not bode well for a successful breeding season.

If you look at the pounds of protein or energy needed by the first-calf female compared to a mature cow at the same stage of gestation or lactation, they are not all that different. However, if you look at the percent of the diet that needs to be protein or energy between these two groups of females, there is a big difference.

The difference is because of the amount of feed/forage that they can eat. The mature

cow is heavier and has a larger rumen; therefore, intake is greater. The point of this discussion is that with young females the rumen you are working with is smaller compared to a mature cow. Although the pounds of a nutrient needed may not be much different, the diet quality needed to meet their nutrient requirements is much different. This is a primary reason that beginning at least three weeks before calving first-calf heifers need to be managed and fed separate from the mature cows.

Research conducted at the University of Nebraska by Tim Loy reported in the 2004 *Nebraska Beef Report* indicates that as the first-calf heifer is within three weeks of calving she experiences a 17% decrease in daily feed intake (Fig. 1). These data further illustrate the need to separate first-calf heifers from mature cows beginning at least three weeks before the start of the calving season. These data also suggest that the nutrient

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density of the diet has to be high because intake is restricted.

Intake is re-established to more "normal" levels by about one week postcalving. The reduction in feed intake is not yet understood. The most logical explanation

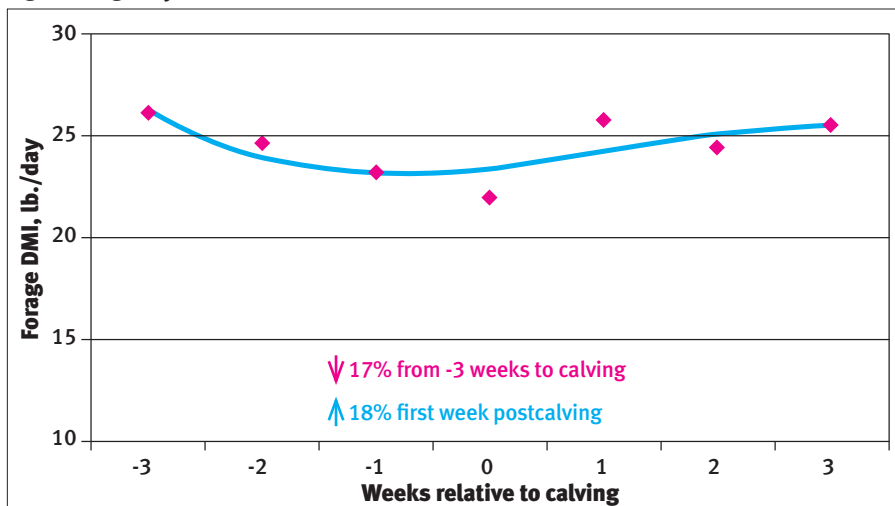
would be that the fetus has increased in size and takes space that the rumen would normally be occupying. Another explanation could be that hormones being produced late in gestation affect appetite.

The 1996 *Nutrient Requirements for Beef Cattle* indicates that first-calf females postcalving need to consume a diet that is between 62% and 64% total digestive nutrients (TDN) and 10%-11% crude protein (CP), depending on level of milk production. These nutrient densities also assume that females are being fed to maintain body condition postcalving, not trying to increase body condition.

If you have meadow hay that tests 58% TDN and 12% CP, prairie hay that tests 54% TDN and 6.5% CP, bromegrass hay that is 58% TDN and 11% CP, or early-bloom alfalfa at 60% TDN and 20% CP, feeding a combination of these feeds or any of these feeds individually will not meet the first-calf female's energy (TDN) needs, and some of these forages will not meet their protein needs. A high-energy feed will need to be supplemented. Corn, distillers' grains, 20% cube or silage may be choices.

In many ranch situations, the supplement would be fed on the ground instead of in bunks. Depending on the quality of the hay and the energy content of the supplement,

Fig 1: Forage dry-matter intake of first-calf heifers



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it may take 2 to 3 pounds per head per day. Is there some waste? I am sure there is. How much waste? I'm not sure I know. I think there is very little waste when feeding a hard energy cube/cake or whole-shell corn. We have supplemented wet and dry distillers' grains on the ground, and you would be hard-pressed to find any left. It appeared the cattle pretty much licked the ground clean.

A research report in the 2010 *Nebraska Beef Report* (<http://beef.unl.edu/beefreports/201006.shtml>) summarizes a research project to determine difference in performance when cattle were supplemented distillers' grains in a bunk or on the ground. There were differences in performance between the two treatment groups, and performance favored cattle fed in the bunk compared to fed on the ground. Using back calculations on performance differences, they determined there was a 13%-20% waste.

If distillers' cost \$200 per ton on a dry-matter (DM) basis, the cost of the waste in this research project was 3¢ to 4.5¢ per head per day. The average cost of the wasted feed was 3.75¢ per head per day. Feeding strategies to reduce waste would include placing the supplement on hard, dry ground; placing the supplement on an uphill slope; and placing the supplement on an uphill slope next to a fence or next to an electric fence. Using these numbers, you could also calculate whether it would be cost-effective to purchase bunks.

Final thoughts

Feed costs are high. The young beef female poses challenges, but she is the future of your cow herd. Don't short her after calving, especially don't skimp on the energy. She has enough challenges between calving and the beginning of the breeding season. Don't overfeed her, but give her an opportunity to be a productive part of the herd. If you are providing the supplement by feeding it on the ground, supplement placement is important. Account for feeding losses.



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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.