



# Ridin' Herd

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

## Don't let 'em slide by after calving

*Heifer development programs can be a major expense for the cow-calf enterprise. After investing all the money into selection, developing, breeding and getting a live calf, it is essential this young female be managed nutritionally so she doesn't show up open after her second breeding season. If you want to challenge young females nutritionally, do it during the developmental phase. After she becomes pregnant, supply the groceries so she can continue to grow and develop. That doesn't mean to overfeed her.*

### What does the first-calf cow need?

Nutrient needs for mature cows and first-calvers increase, especially during the last trimester and after calving when lactation occurs. When you look at the nutrients required, especially pounds of protein and energy [total digestible nutrients (TDN)], there is not a big difference in total pounds of these nutrients needed in the diet for first-calf females compared to mature cows. However, when you compare the dry-matter intake (DMI) of a first-calf heifer compared to a mature cow, there is a considerable difference.

With that in mind, to get the same pounds of nutrients into a first-calf heifer compared to a mature cow, the nutrient density of the diet needs to be greater. In other words, the quality of the feeds needed in a first-calf heifer's diet should be high.

If a first-calver is developed to be 85% of her mature weight at her first calving and her mature weight is 1,250 pounds (lb.), her weight at her first calving is about 1,065 lb. The actual weight of the female will be more than that because of the weight of the fetus,

fetal fluids and membranes and will be closer to 1,190 lb. (1,065 lb. + 125 lb. of fetus, fetal membranes and fluids).

If she is consuming an average-quality forage diet, her intake is about 2.1% of her body weight on a dry-matter (DM) basis, then her daily intake is about 22 lb. per day ( $1,065 \times 0.021 = 22.4$  lb. DM).

Compared to a 1,250-lb. cow consuming the same average-quality forage, she would consume 26 lb. per day of the forage on a DM basis. Both females will require about 2.2 lb. to 2.3 lb. of crude protein (CP) daily the last month prior to calving.

The diet for the first-calver needs to be 9.5% to 10.0% CP, and the mature cow needs a diet that is about 8.8% CP to meet their respective protein requirements. 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 this requirement is much different. This is a primary reason that

beginning at least three weeks before calving first-calvers need to be managed and fed separate from the mature cows.

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

The data also suggest the nutrient 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.

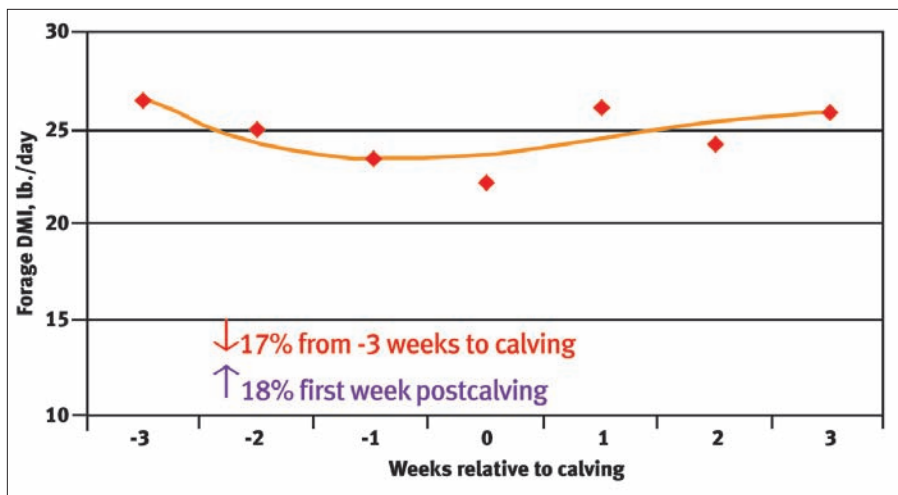
### Feeding the first-calf cow after calving

I think producers do a good job of feeding to meet protein requirements during lactation. More times than not, producers fall short of designing diets that meet energy requirements of the first-calf cow after calving. Good-quality hay would have a TDN content of 55% and better-than-average-quality alfalfa would be between 57% and 58%. A first-calf cow that has average milking ability and is a body condition score (BCS) 6 at the time of calving will need a diet that is about 62% TDN. A combination of this hay and alfalfa or even a full feed of the alfalfa is not going to meet the energy needs of the young female.

The bottom line is, energy needs to be added to the diet. Not many harvested forages are over 60% TDN. Dairy-quality hay would have an energy content this high, but that type of alfalfa is typically not purchased to feed beef cows, nor is dairy-quality hay recommended to be fed to beef cows as their only feed source.

The energy feeds that are selected and fed in high-quality forage cannot have a negative effect on forage digestion, because a majority of the diet is still forage. Corn could be an option and would work well. In most situations, feeding 3.5 lb. to 4 lb. per head per day "as is" would come close to meeting the

Fig. 1: Forage DMI of first-calf heifers



energy needs when feeding a combination of average-quality hay and alfalfa.

When feeding corn at this level, there will be a slight reduction in forage digestion, but not enough to likely see any reduction in performance. The corn could be fed whole. It is important that the protein needs are met when corn is fed in this diet.

Because of the dry weather conditions this summer, a number of producers made corn silage to use in diets this winter. Corn silage is an excellent energy feed and would fit nicely in the diet of first-calf cows after calving. Using the hay and alfalfa hay combination, 12 lb. to 14 lb. per head per day would meet the energy needs of the young female after calving. This looks like a lot of silage, but remember silage is usually 65% moisture.

Many byproduct feeds would work well in high-forage diets. Byproduct feeds, when fed in high-forage diets, do not have a negative effect on forage digestibility. Distillers' grains could be used to meet the energy needs after calving. Again, if the first-calf cows are being fed the hay and alfalfa combination, adding 2.75 lb. to 3.5 lb. per head per day of dried distillers' grains (DDG at 112% TDN) could fit.

When feeding distillers' grains in a diet with hay and alfalfa, there will likely be plenty of protein in the diet. In fact, depending on the quality of the hay and alfalfa, protein is

being slightly overfed. In most situations, overfeeding protein is not economical, but in this situation, especially if the distillers' grains are calculated as being the "best buy" compared to other energy sources, it could be the most economical diet.

### Final thoughts

Once replacement females become pregnant, give them a chance to be productive members of the cow herd for many years. Manage their body condition so they calve in a BCS 6. Beginning three weeks before the start of the calving season, manage and feed first-calvers in a separate group from the mature cows. After calving, first-calf cows will need a high-quality diet to meet their nutrient requirements. Make sure that the energy (TDN) needs are met after calving for the young female. It will likely be necessary to add a high-energy feed to the forage diet to meet the extra energy demand.



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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.