

## Balanced Nutrition Helps Minimize Calving Difficulty

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The most commonly dreaded period in cow-calf production for spring calving herds is about to occur – calving out heifers. There have been many strides from a genetic perspective that have reduced the proportion of heifers that need calving assistance. This has been primarily accomplished by using high calving ease sires, high accuracy sires through AI, and heifer selection tools such as pre-breeding exams to evaluate pelvic size and shape. All these tools help minimize the chance of calving difficulty. However, if nutrition and body condition are not appropriate at calving, even if you made the best genetic decisions, you can be setting yourself up for a wreck at calving.

When calving heifers, the ideal situation would be heifers that complete parturition quickly and with no-to-minimal assistance. If assistance is needed, the earlier the better. Research shows that a greater percentage of heifers were cycling at start of breeding and a greater percentage were bred if assistance was provided early during parturition as compared to delaying assistance.

There are multiple reasons that calving difficulty can occur which may include calf too big, pelvis too small, abnormal presentation, lack of uterine contractions or fatigue, and twins to name a few. Abnormal presentations cannot be eliminated by genetic selection or nutritional management, so be prepared for these scenarios a minimum of 3 weeks before your first calf is expected.

Calf birth weight is often blamed as the sole culprit of calving issues. Calf birth weight can be affected by several factors – genetics, gestation length, and to an extent dam nutrition. High calving ease sires typically have a shortened gestation length, hence the reason that most of those calves are a bit lighter in weight. On average, calves will gain between 1.5-2 pounds of body weight in late gestation. For example, if the average gestation length is 283 days and if a calf is born a week early it will often weigh 10-14 pounds less. Dams that experience cold stress in the last trimester may have calves that are heavier in weight. Typically birth weights are greater for calves born in the spring or winter as compared to fall born counterparts. A Nebraska study that evaluated 6 years of data found for each 1-degree F lower than the average winter temperature (December through February) calf birth weight increased 1 pound (Deutscher et al., 1999). The increase in birth weight is most likely due to the needed increase in nutrient flux through supplementation to off-set cold stress events. Now you might think, it is a cold winter and I do not want to deal with calving problems, “I will just make that cow survive on the same diet she has been on and not account for added maintenance requirements due to cold stress.” That thought will lead to a plethora of other issues, that can extend through that calf’s entire productive life.

Many producers and researchers have tried to manage calf birth weight through dam nutrition. The thought is that by restricting feed the calves will be lighter at birth and have fewer calving issues. This concept turns out to create more calving issues than appropriately

feeding heifers. A study done at Kansas State University in the 1970s found that heifers that were fed 67% of nutritional requirements as compared to 100% of nutritional requirements had 7% fewer calves born alive; half as many return to estrus within 40 days of calving; calves 25 pounds lighter at weaning; and heifer calves that reached puberty 20 days later (Corah et al., 1975). Additionally, restricting heifer diet in the last trimester can result in potentially lower quality and quantity of colostrum; reduced absorption of immunoglobins from colostrum potentially driven by weaker calves that were slower to nurse; an increase in calf scours; and reduction in overall weaning weights. A review article evaluating the effect of supplementing either energy or protein to heifers found that feeding appropriate to slightly higher nutrient content than required to heifers did not affect calving difficulty. In 9 studies where energy was supplemented to heifers, 7 of the studies showed no change in calving difficulty; whereas the others showed a slight increase in the number of heifers that needed assistance at calving. In the years where the heifers needed assistance, the winters were incredibly cold and wet. As mentioned above, typically in long periods of extremely cold weather, calf weight will be increased. When evaluating excessively supplementing a protein feed to heifers, 1 out of 5 studies showed an increase in calving difficulty with no changes in the other 4 studies.

It is very important to appropriately balance a diet for 1<sup>st</sup> calf heifers. These heifers need appropriate energy to help with the birthing process or they will “quit” on you as they just run out of steam going through parturition. Additionally, the calves need enough energy to quickly get up and nurse and if dam energy is restricted, calves will be lethargic. Proteins are essential for colostrum quality which has major lifetime effects on that calf. As you are preparing for this spring calving season, please “don’t starve the calving difficulty out of your heifers”.

For more information, please contact the local K-State Research and Extension Office. K-State Research and Extension is an equal opportunity provider and employer.

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