News Column

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Nutrition during Last Trimester Critical for Beef Cows

A big factor in determining the health of a new born calf and the performance of the cow and calf after birth is the nutrition of the cow and fetus during the last ninety days of gestation. Over seventy five percent of the growth of the fetus occurs during this time.

The amount of crude protein and energy needed to support fetal growth and preparing the cow for birth increases from mid gestation to late gestation by about twenty five percent. (1.6# of crude protein to 2.0# of crude protein, 11# of TDN to 13.7# of TDN). The dry matter intake of the cow during this period increases by about fifteen percent, but not enough in some most cases to make up for the shortfall in protein and energy of the diet. The minimum nutrient density of the total diet on a dry matter basis (forage plus supplement if any) needs to be somewhere around 7% crude protein and 50% TDN for the middle third of gestation and 8% crude protein and 54% TDN during the last trimester.

Meeting the protein and energy targets mentioned above make it possible for the beef cow to calve in a body condition score of five or six. A cow in a body score of five will be smooth over her spine and vertebrae and only her last two ribs will be visible. A cow with a body condition score of six will be even smoother with no ribs showing. Cows that calve in good body condition (5 or 6) give more milk and return to estrus sooner, allowing them to have a calf every 365 days.

Calves born to cows in good body condition are able to better regulate their body heat and to stand and nurse more quickly. This results in the calf getting colostrum into their bodies more quickly. Research studies have shown that intake of colostrum has long term effects on the health of beef cattle.

Some more recent studies in Oklahoma and Nebraska illustrate the importance of fetal nutrition on the subsequent performance of calves. These studies were partially prompted by a study of children born to mal-nourished women in England. Children born to these mothers had more health problems as adults. The Oklahoma and Nebraska studies showed similar results. Average daily gains and calf health were higher in calves born to cows which had adequate levels of protein and energy in the diet.

The Nebraska study took this concept a step farther and compared the reproductive performance of heifers born to cows that had been supplemented and un supplemented while grazing corn stalks. Heifer calves from cows that received protein supplements had higher pregnancy rates

than heifers from non supplemented cows. Heifers from supplemented cows had a pregnancy rate of 93% compared to 80% for heifers out of non-supplemented cows.

In addition, heifers from supplemented cows calved earlier in the calving season, 77% in the first 21 days, compared to heifers from non sup-plemented cows, 49% calved in the first 21 days.

Knowing the protein and energy density of the hay or forage you are feeding is essential in determining if supplemental feed is needed and if so how much. A forage sampler is available in our office to use for taking samples and with that information I can assist you planning a nutrition program that can meet the needs of your cows during this critical time.

For more information about this and other livestock topics contact the Ellis County Extension Office at (785) 628-9430 or you can email me at scampbel@ksu.edu

To keep up with the latest beef cattle research, the Agricultural Research Center in Hays annually host "Roundup" it will be held on April 20, 2017. See www.wkarc.org for details.

Information and contacts for specific concerns can be found at our website http://www.ellis.ksu.edu or you can like us on Facebook at https://www.facebook.com/K-State-Research-and-Extension-Ellis-County-301258596692/