Nutrition Strategies for Beef Cows Following Calving

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ow nutrition following calving is a critical component of maintaining body condition as the breeding season approaches. Nutrition program goals, between calving and breeding, are to provide adequate nutrients to sustain milk production for the calf while maintaining cow body condition through peak lactation period. The relationship between cow body condition and average interval from calving to first heat after calving demonstrates the importance of maintaining cow body condition through the lactation period to ensure cows will return to estrus during the desired breeding season (Table 1). Effect of cow body condition score (BCS) at calving on pregnancy rate underscores the importance of a nutrition program that maintains BCS through the lactation period (Figure 1).

Cow milk production increases substantially after calving (Figure 2). Peak production generally occurs at one month after calving. As a result, cow energy and protein requirements also increase with the increase in milk production. From a nutritional standpoint, a cow's initial response to the increase in nutritional requirements is to increase the feed she can consume (increase intake). Generally, cow intake prior to calving will be 1.85-2%; post-calving intake can increase to \geq 2.5%. Proper nutrition management requires providing higher quality roughage as the base of the cow diet – and more of it.

Although the average beef cow can subsist on relatively low quality roughage throughout most of the year, the increase in nutrient requirements and subsequent increase in intake following calving will require the diet to be of a higher quality. A diet too low in quality will restrict intake and thus limit nutrient acquisition. Base roughage of the diet following calving, if no supplementation is provided, will need to be at least 12% crude protein (CP) and 68% total digestible nutrients (TDN). Lower quality roughage may be used as the base, but additional protein will be required to maintain adequate intake levels. For example,

lower quality grass hay (CP=<8%) or corn stover (CP=<6%) could serve as the base. However, a protein supplement such as 3 lbs/head/day of dry distillers grains, 1.5 lbs/head/day of 44% soybean meal, or a protein lick tub would be necessary to maintain intake. Energy supplementation, such as corn grain, for beef cows is rarely required, even at peak lactation. Low quality roughages generally have ample dietary energy. They simply lack necessary protein to allow the rumen to effectively break down and extract carbohydrates (energy) tied up in the cellulose and hemicellulose making up roughage. It is important to note that the base roughage component of the diet needs to be forage tested so the need for dietary supplementation, if any, can be determined.

Table 1. Relationship between body condition and the average interval from calving to first heat.

Body Condition Score	Average Post-Partum Interval, days
3	89
4	70
5	59
6	52
7	31

Post-Partum Interval is time between calving and first heat or estrus after calving. *Houghton et al., Purdue University.*

Figure 1. Cow BCS effect at calving on pregnancy rate.



Figure 2. Relative milk production level, dietary energy requirement, and dietary

