

## **Feeding For Fertility**

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Nutrition and energy status are key drivers of beef cow fertility and reproduction. Since energy use is prioritized for maintenance, lactation, growth and then reproduction, poor nutrition will result in long post-partum anestrous and low conception rates.

It is difficult to precisely measure an animal's nutritional status. In regards to energy it is typically assessed on body weight and condition. Protein, vitamins and minerals are also of concern. When severely deficient it is likely more difficult to maintain a healthful appearance and body condition. Likewise when an energy deficiency is evident by thin cattle, often deficiencies in other nutrients also exist. Sometimes cows with good condition and appearance from prior management can be affected with present conditions affecting the events of reproduction.

Nutrition-reproductive studies have shown an appropriate strategy is to ensure through fall and winter management that cows calve at an appropriate body condition. The most opportune time for economically putting weight on cows is fall and early winter. Return to estrous and conception rates in the early part of the breeding season show an almost linear increase as body condition score at the time of calving increases from three to seven.

The period from calving to breeding can be nutritionally challenging as cows are lactating with nutrient requirements peaking about six weeks post calving. It is important to prevent major weight loss through feeding high quality forages or supplementing to keep cows on a steady or increasing plan of nutrition going into the breeding season. Challenging situations arise when cows in dry lot lose excessive weight prior to turnout, when early grazing turnout is not adequate meet needs, or for later breeders when summer grass loses quantity and quality due to drought. Depending on cow type and milking ability, approximately 60% TDN and 11% crude protein. are required to maintain condition.

While less obvious than energy status reflected by condition, minerals and vitamins play key roles in the events of reproduction (estrous, ovulation, fertilization and placentation). In particular deficiencies of phosphorous, copper, zinc, selenium, and Vitamin A have been shown to impact fertility. Therefore herd nutrition should include supplementation targeted to known shortages associated with feed analysis or the region. In the challenging pre breeding period, responses have been shown to feeding more biological available chelate forms and by deliveries which result in more uniform uptake by the herd such as injections or supplement delivered.

Attempts to correct for thin cows just prior and through breeding season can be helpful, but won't typically completely correct for low condition at calving. Flushing with high energy grain based supplements, feeding limited high fat feeds, and use of by-pass protein have shown improved breeding, particularly of young and still growing cows.

Herds experiencing difficulty in meeting nutritional and cow condition targets, and having breeding challenges might want to evaluate if their breeding/calving season and cow type is appropriate for available feed resources.