

# THE DIGESTIVE TRACT

## Nutrition and reproductive rates

by Dan Shike, University of Illinois



The goal of any successful cow-calf operation is for each cow to have one calf per year. All

management decisions should be focused on achieving this goal. Nutrition is key to successful reproduction. Managing the nutrition of the cow herd year round is essential to ensure the cow is in ideal condition at the time of breeding.

Historically, most of the focus has been on managing cow body condition score (BCS) prior to calving through breeding. This is clearly a critical time in the production cycle. However, managing nutrition following

breeding is also key to maintaining pregnancy.

The beef cow is resilient and can handle small fluctuations in energy balance. However, long-term success and increased cow longevity rely on focused management throughout the production cycle.

Managing nutrition and cow BCS prior to calving is essential to a successful breeding season. If a cow is in a negative energy balance and is below a BCS of 5 prior to calving, the likelihood of her becoming pregnant decreases significantly.

Both the cow's BCS and the current plane of nutrition at time of breeding are important.

It is possible to get cows pregnant that are below a BCS of 5 at time of calving. If the cow is below a BCS of

5, it is essential that she is in a positive energy balance from calving through breeding season. The problem is that this is difficult to achieve without supplemental feed, and

that supplemental feed is costly! It is far more economical to manage the cow herd's BCS prior to calving, and it will likely result in improved pregnancy rates, as well.

### Low preg rates?

If you find your herd consistently struggling to maintain BCS from calving to breeding, assess the situation and determine what is causing the problem. If cows are losing weight and BCS, then they are

**If every year your cows are too thin at breeding time and you have poor pregnancy rates, it is very likely your cows are not well-matched to your environment.**

in a negative energy balance. If cows are in a negative energy balance, they are consuming less energy than required. There are essentially two ways to address this — increase energy intake or decrease energy requirements.

To increase energy intake from breeding to calving, offer supplemental feed or shift your calving date to more closely align peak requirements with peak forage

*Continued on page 44*

availability. Supplement decisions should be based on forage tests and supplement costs.

There are multiple options for supplementing additional energy and protein. Local availability of feedstuffs often dictates what is the most economical.

If your calving date does not have your peak energy requirements of your cow herd aligned with the peak forage availability, careful consideration should be given to shifting the calving date. Your calving date sets the entire production calendar, and you should consider the ramifications on your operation before shifting your calving date.

### Need drivers

If you are calving at a time that matches peak forage availability with peak cow requirements, you may need to reevaluate your cows and their requirements.

Cow size and milk production are the two biggest drivers of cow requirements. It is well-established that in an industry that sells by the pound, we have chased growth and milk production. However, any potential gains that could be achieved by increasing the genetic potential for growth and milk in your herd will be negated if your cow no longer fits your environment. It is essential your cow is matched to your environment.

Now, I am certainly not one to say that everyone needs a 1,200-pound (lb.) cow with low milk production. There are plenty of environments throughout the country that can support a larger cow with more milk production. However, if every year your cows are too thin at breeding time and you have poor pregnancy rates, it is very likely that your cows are not well-matched to your environment.

One of the basic principles of nutrition is to know your cow's requirements.

### The odd year

Occasionally, even if your cows are well-matched to your environment,

you will have a year when they are not in as good of condition as you would like going into calving. It may have been a tough year, and weather conditions may not have been favorable. In this situation, you can still change the requirements of your cows instantly.

As I have shared before, I am a proponent of early weaning. Weaning immediately reduces the energy requirements of the cow and could be just the bump needed during breeding season. Even if you don't want to wean a calf at 80-100 days of age, you could still wean at 150 days and try to regain BCS before the next year's calving and breeding season. Just keep in mind that won't help get your cows bred this year.

### Never let up

Good producers know you can never let up on your management. I have stressed it is essential cows are in good BCS at the time of breeding, but that doesn't mean you can let up after you have artificially inseminated (AIed) the cows and turned the bull in. Recent research has evaluated the effects of nutrition postbreeding. Clearly, nutrition then matters, as well.

One of the most common mistakes made is an abrupt change of diet at time of breeding. For some spring-calving herds that have to house their cows in a drylot in



PHOTO BY SHAUNA HERMEL

If your calving date does not align peak energy requirements of your cow herd with peak forage availability, careful consideration should be given to shifting the calving date, which sets the entire production calendar. Consider the ramifications before making a change.

Due to the imbalance of nitrogen and carbohydrate and the high moisture contents of the forage, cows often enter a negative energy balance.

Several supplementation strategies have been considered to alleviate the effects of the reduced energy balance due to grazing lush pasture. These strategies have ranged from transitioning cows from winter feeding rations to pasture; offering a dry, low-protein, high-energy supplement; to offering supplemental hay while grazing. Regardless of the strategy, the goal is to keep the cow in a positive energy balance and minimize abrupt

changes at such a critical time point.

If your operation isn't profitable, it is likely your reproductive rates could be better or your feed costs are too high. Nutritional management of the herd affects your herd's reproductive rates and your bottom line. If your feed costs are too high, reconsider your cow and how she fits your environment. Just because you have done everything right and your cows are in ideal shape at breeding doesn't mean you can let up. Postbreeding nutrition is essential to maintaining early pregnancy. ■

the winter, this can be especially true.

It is common for cows to be wintered on a corn-silage-based total mixed ration (TMR) during the winter in the upper Midwest. For ease of management, some of these operations would synchronize and AI prior to turning cows out to pasture.

You would think turning cows out to green grass right after you bred them would be a good thing. However, abrupt changes in diet are not ideal, and lush green grass isn't always the best during breeding season.

I covered this in more detail in a previous column, but will review briefly. Lush immature forages usually contain a high nitrogen (N) content and fewer carbohydrates.

Editor's note: "The Digestive Tract" is a regular column in the *Angus Beef Bulletin* focused on nutrition for the beef cattle life cycle. Dan Shike is associate professor in animal sciences at the University of Illinois.