# The Digestive Tract

## Post-purchase nutrition, handling affect bull fertility.

*by Dan Shike, University of Illinois*

For the majority of commercial cow-calf producers, genetic progress occurs through the purchase of herd bulls. Understanding your herd's genetic potential, defining operational goals, and identifying and purchasing the best bull(s) your budget can afford are necessary for sustained success.

There continues to be more and more expected progeny differences (EPDs) and dollar value indexes available to assist in identifying the highest-performing and most profitable genetics available. However, the nutritional management and development of a bull can significantly affect his ability to breed and to provide multiple seasons of service.

### Lopsided focus

Fertility and reproductive success in cattle production are essential to financial viability. Fertility in females receives the majority of the attention. Significant work exists on identifying genetic predictors of fertility, as well as nutritional management strategies to maximize reproductive success.

Interestingly, bull fertility receives much less attention in research circles. However, selection and management also have the potential to affect male fertility, and a significant portion of the reproductive failures that occur in cow-calf enterprises are the direct result of bull infertility.

Geneticists have begun evaluating fertility traits in bulls and are working to identify traits that are heritable and routinely evaluated at bull studs. It appears there will be additional EPD values beyond scrotal circumference in the future.

Regardless, the effects of management and nutrition have the potential to affect bull fertility *now* (as well as after we have more selection tools available).

### Here and now

Seedstock producers across the United States routinely feed high-energy diets to developing bulls prior to selling them. Following purchase, most bull buyers maintain their bulls on a lower-energy, forage-based diet.

Producers debate the best approach for developing bulls. Many breeders develop bulls on grain-based diets to maximize gains and showcase performance

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potential. Other seedstock producers develop bulls on forage in an effort to mimic the diet type the bulls and their daughters will have to perform on while in production.

If bulls are underdeveloped and experience restricted energy intake, puberty will be delayed. The bulls' ability to cover cows as yearlings will be jeopardized. However, if bulls are overfed, fat can be deposited in the scrotum, which could affect their ability to regulate testicular temperature, ultimately resulting in impaired semen quality.

Bulls can be developed successfully on grain or forage, but it is important they be properly developed to an ideal body condition score (BCS) and that they pass a breeding soundness exam (sometimes referred to as a BSE).

## Handling transition

Nutritional management after purchase is key to a successful breeding season. Often bulls are purchased several weeks, if not months, before they will be used. How you transition the bulls to your environment and nutritional management can have as much influence on their breeding success as the management prior to purchase.

Bulls need to be in good condition, but not fat; hard, but not thin. If the bulls have been on a high-energy, grain-based diet, you need to transition them to a lower-energy, forage-based diet. If your bulls are overly conditioned, it is ideal to lean them up. However, remember they are still growing, and you do not want to crash them.

In addition to providing the appropriate energy and protein to support targeted gain [typically 2 pounds (lb.) per day for yearling bulls], it is critical to offer a high-quality mineral supplement. Trace mineral nutrition (especially zinc, copper, and manganese) is important for proper skeletal development, foot and skin integrity, and semen quality. Mineral nutrition for bulls is not the place to try and save a few dollars.

***Capitalize on your investment by planning the nutrition and management of bulls post-purchase and after breeding season.***

Bulls need to be physically fit and athletic to be able to cover cows and maintain fertility. It is important that your bulls have adequate space to exercise when you bring them home. Exercise prior to breeding season can help reduce injuries.

Bulls should be maintained on a well-drained surface to help harden the hooves and minimize risk of foot rot and digital dermatitis. Bulls can be a challenge to manage and are hard on facilities, but it is very important to provide the proper environment for them prior to turnout.

## Prep for next year

While prebreeding management is important, you also need to manage the bulls following breeding season to ensure they will be ready for the next breeding season.

Yearling bulls can lose significant weight (200 lb. or more) during their first breeding season. In addition to gaining

that weight back, they are also still growing. Ideally, they will reach 75% of their mature weight by 2 years of age.

A yearling at a BCS 5 following breeding season will need to gain about 1.5 lb. per day to reach target weight at 2 years of age. However, a bull in a BCS of 3 will likely need to gain 2.5-3 lb. per day to replenish body reserves and gain necessary weight to reach 75% of mature weight at 2 years of age.

Once you have assessed BCS of the herd bulls, it might be necessary to manage them differently. If you have multiple bulls of multiple ages, it is unlikely they will all need the same nutritional management following breeding season.

Bull purchases have the potential to dramatically affect the trajectory of your operation.

## Digital EXTRAs

Find more on bull nutrition.

Most commercial cow-calf producers spend significant time and resources establishing relationships with seedstock producers to identify and acquire superior genetics. However, to truly capitalize on this investment, producers need to develop and execute a plan for management and nutrition of bulls post-purchase as well as after the breeding season. ABB

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.