

# DIGESTIVE TRACT

## Don't overlook importance of heifer development

by Dan Shike, University of Illinois



As calving season approaches, much effort is focused on maintaining proper nutrition for the cow herd.

Nutrition during gestation and postcalving has lasting effects on the calf, as well as on the performance and reproductive success of the cow. Thus, it is critical to focus management efforts on the cow herd at this time.

However, operations that retain and develop their own replacement heifers need to have a well-developed plan to ensure success.

### Multiple approaches

Heifer development represents a significant expense in beef cattle operations due to the opportunity

and development costs associated with retaining heifers. Producers have the opportunity to manage replacement heifers a number of different ways after weaning. The strategy or development system used can be quite variable in costs and success. When possible, implementing a heifer development system that mimics the future production environment is recommended.

One of the keys to successful heifer development systems is to have heifers cycling prior to the breeding season. Conception rates are improved in females that are bred on second or third estrus rather than at pubertal estrus. Nutritional plane affects age at puberty.

If you have retained heifers that

were born late in the calving season, those heifers will require a greater plane of nutrition to reach puberty than older heifers. Some

operations like to calve heifers prior to cows to allow for management to focus on calving heifers and allow greater time between calving and rebreeding. If this is a system you employ, those heifers will likely require a greater plane of nutrition. You need to keep in mind that calving at 23 months instead of 24 months means those heifers need to be cycling a month sooner if you want them to calve a month sooner.

Traditionally, it has been recommended that heifers reach 60%-65% of their mature body

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weight by time of breeding to ensure proper development and a high proportion of heifers cycling at the onset of the breeding season. More recently, some research groups have investigated developing heifers to 50%-57% of mature body weight.

The primary motivation for considering a heifer development system that develops heifers to a lighter weight would be the cost savings for feed. Many of these recent studies have reported

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comparable reproductive results and reduced costs for heifers developed to 50%-57% of mature body weight compared to systems that develop heifers to 60%-65% of mature body weight.

Some may ask why developing heifers to a lighter weight would work sometimes, but not always. There are certainly older studies supporting developing heifers to heavier weights prior to breeding and some new work as well. Several factors could lead to different results. Environment, health protocols, synchronization protocols, breed of cattle and desired age at calving could all be contributing factors. This will continue to be an area of interest, and future research addressing different heifer development systems in different regions of the country is certainly warranted.

### Recommendation

My recommendation is simply to evaluate your current system and

the costs and success associated with it. If you are achieving high pregnancy rates and keeping costs in check, clearly you have a system that works for your operation. If your costs are low but your pregnancy rates are as well, then you may want to consider developing your replacements to a heavier target weight. If you have good pregnancy results on your heifers but your costs are high, then you may want to consider developing to a lighter target weight to save input costs.

An additional consideration is the effect that your heifer development system has on future production and longevity. Some would argue that if the development system used to achieve 65% of mature body weight at time of breeding doesn't match the future production environment, there could be future consequences. Basically, if developing heifers on fewer resources and to a lighter weight at

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breeding does result in a few less pregnancies, these are likely the metabolically and reproductively less-efficient females. From a long-term profitability standpoint, it costs less to cull these females for not becoming pregnant as heifers than it does to cull them for not rebreeding after having their first calf.

Nutritional management and heifer development systems can vary significantly from operation to operation and from region to region. There are many systems that can be implemented and result in success. It is key to evaluate your current situation and determine if your approach is achieving the results you would like.

As always, it is critical to not just

focus on maximum output (reproductive success), but to also weigh out the inputs required and costs associated to achieve that output. You should be in the business of optimizing your heifer development system, not maximizing. And remember, developing heifers in a system that mirrors your future production environment will likely lead to the greatest longevity of those females in the operation. ■

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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.