

# THE DIGESTIVE TRACT

## Balance genetics, phenotype, nutrition

by Dan Shike, University of Illinois



Balance. I think we all have an idea of what that word means. Yet, I think we can interpret and apply it very

differently depending on the situation or context.

Take work-life balance, for example. Few people want to admit they don't have good work-life balance. However, how often do you find yourself thinking someone else could work on their balance a little bit?

The same goes with balance in the beef industry. Not many cow-calf producers would tell you they are single-trait selecting when they choose a new herd bull. But the "balance" of traits one producer lands on

may look quite different than the "balance" of traits another producer finds ideal.

I doubt many cow-calf producers would say it is not important to feed a balanced diet to the cow herd or developing heifers. Yet, there are many different strategies being utilized for developing heifers and maintaining the cow herd.

Some producers spend very little on additional inputs, and others supplement forages and buy the most expensive mineral on the market. I am confident both of

these producers could easily justify their approach. As we are more than halfway through 2020 (thank goodness!), and we look ahead to building a cow herd positioned to be profitable for the next decade, what "balanced" approach will you take?

### Genetics

First, I encourage you to take a hard look at your genetics. Where have you been placing selection pressure? Have you made genetic progress in those areas? Have any traits suffered as a consequence?

There is no perfect balance of traits. Each operation needs to have a defined set of production goals to know what genetics will be the best fit.

Cattle producers have long been tempted to pursue output traits that are easily quantified and economically incentivized. The challenge is some traits are easy to improve and the financial reward is fairly immediate. The problem arises when other traits suffer that may have more long-term effects.

Geneticists and breed associations have worked hard to develop economic indexes to help producers select bulls on a balance of traits. The American Angus Association has a whole suite of dollar value indexes (\$Values), including beef value (\$B), feedlot value (\$F), grid value (\$G), weaned calf value (\$W), maternal value (\$M) and the all-encompassing combined value (\$C). I highly

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recommend embracing these tools and understanding how to interpret and use them in sire selection.

Even with indexes, producers still need to take into consideration their operation's goals. If you are looking for a bull to use as a terminal sire, with all progeny being fed out and sold on a grid, then \$B is the Angus index you should focus on. However, if you want to focus on maternal characteristics, \$M is the index you want to prioritize. \$C, the combined value, is designed to characterize profitability across the entire chain. Finding the right balance of traits for your operation's goals is key to long-term success.

## Phenotype

Second, I believe it is important to balance selection pressure for genetic progress and phenotype. There are some traits for which we still don't have good genetic predictors. The American Angus Association introduced expected progeny differences (EPDs) for claw set (Claw) and foot angle (Angle) to help improve genetic selection for foot soundness, but replacement

heifers and bulls should still be evaluated for overall structural correctness and mobility. If you want your females to have longevity in your herd, you better place some selection pressure on sound feet and legs. Fleshing ability, udder and teat quality, and overall muscling are traits that should not be ignored if you want your cow herd to stand the test of time.

I know there are operations that make every mating on a computer looking at numbers, and I know there are operations that never consider an EPD when making a mating. I challenge you to find the right "balance" for your operation to continue in the pursuit of that ideal cow.

## Feed the need

Finally, to maximize profitability and efficiency, each operation needs to know the nutritional requirements of the herd throughout the production calendar, and know how to balance the herd's plane of nutrition to meet

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those requirements. I have written at length about this topic, as it is the basis of cow-calf nutrition. Again, there is no perfect one-size-fits-all solution.

Some producers graze year-round (or darn close) and use very few supplemental feeds, only offering the least expensive mineral on the market. With such low input costs, those operations can afford to give up a little on the output side.

Other operations use supplemental feeds, lick tubs and creep feed. As long as these operations receive additional output and revenue to cover their costs, there is nothing wrong with that approach either. The key is knowing what you need and balancing your inputs and outputs.

If supplementing cows doesn't result in better pregnancy rates,

calving rates or future calf performance, then it was probably not money well-spent.

If the creep feed costs more than the additional gain you put on the calves is worth, it probably wasn't the best decision.

Balance is the key. Each operation has to find the right balance for their own operation. Just because something worked or didn't work for someone else doesn't always mean you will have the same result. Good records and critical evaluation of each management decision are crucial in identifying the best strategies to position your cow herd for long-term success and viability. |

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.

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