Herd nutrition: evaluating outcomes.

by Brad White, Kansas State University Beef Cattle Institute

Eat more vegetables and less junk food.

Many of us know how we should be eating, but executing the plan and objectively evaluating the outcomes can be challenging. Similar obstacles occur when evaluating cow nutrition strategies.

Finding the right diet to match expected intake and nutrient needs is important. Solicit input from your nutritionist, veterinarian and extension specialist to help develop a nutrition plan. Once you have a nutrition plan for the cow-calf herd, the next steps are executing the strategy and putting appropriate outcome measures in place to determine success.

Implement the plan

Nutrition plans are often based on approximations, which can greatly influence the outcomes. For example, in many cases, mature cow weight, quantity and quality of forage or hay may be estimated, which can affect the amount of feed delivered. Monitoring delivered feed is important, both to estimate consumption and allow planning to modify the diet.

Cattle rations fall into three basic categories:

- the ration formulated by the nutritionist;
- the ration delivered to the cattle; and
- the ration the cattle actually consume.

The most important of these is the ration consumed. Since this is nearly impossible to monitor in a herd, we can track the delivered ration. If cattle are consuming hay or other dietary components more rapidly than expected, evaluate the estimations that led to the expected intake.

Grazing is often the mainstay of nutritional resources for most cow-calf herds during a large portion of the year. Grasses are sensitive to growing conditions and productivity (both quantity and quality) changes throughout the seasons. Matching grazing productivity with cattle nutrition requirements is critical to identify when forage supplementation may be necessary.

Actual intake is very difficult to monitor, but one option is to measure pasture disappearance. This can be assessed by measuring pasture height in representative areas when cattle enter and leave the pasture. This can also provide some idea of relative grass production and, when compared year-to-year, may assist in refining the overall grazing management plan.

Record outcomes

In addition to monitoring feed delivered or estimating consumption, the nutritional status of the cattle should be evaluated throughout the production cycle. The cows' needs change throughout the production year, with the highest nutrient needs soon after calving (during lactation) and the lowest needs during mid-gestation.

A body condition score (BCS) is a subjective assessment of the amount of fat on each cow and results in a numerical score from 1 (very thin) to 9 (obese). In beef cows, the common range of scores includes:

- 4 = thin, one or two ribs showing easily, depressed area by tailhead, slight depression over loin;
- 5 = moderate, slight indication of last two ribs, some fat in tailhead and loin; and
- 6 = good, smooth appearance over ribs, fat over loin causing flat back, fat in tailhead region.

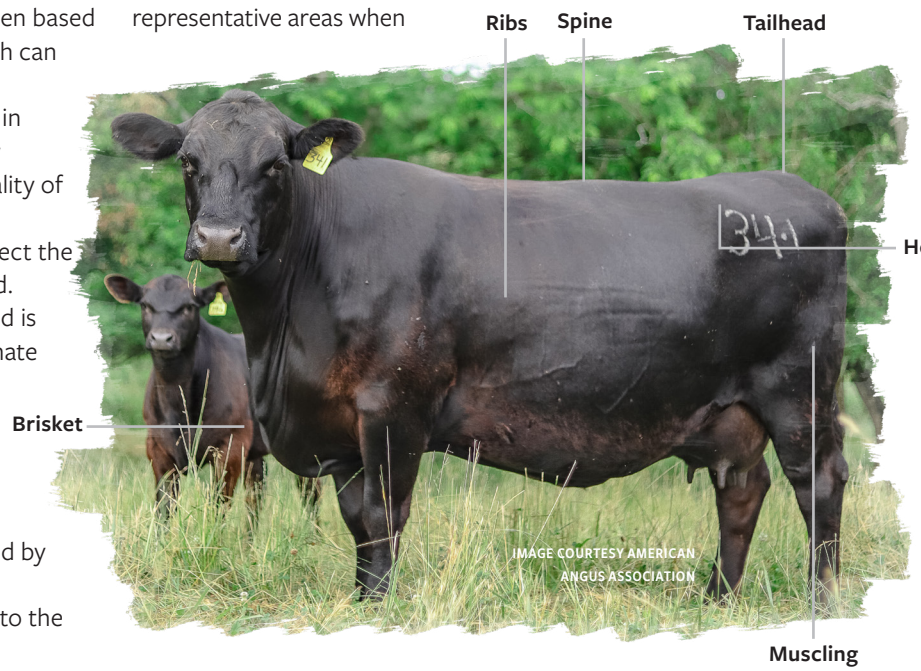
During periods of nutrient availability above requirements, the body composition will change to have a higher percentage of fat, resulting in a higher BCS.

The BCS is a lagging indicator, meaning it follows a period of nutrient surplus or deficiency. Reproductive success is closely tied to BCS at the initiation of breeding season, with cows in a BCS 5 or 6 breeding sooner than cows in a BCS 4 at the start of breeding season.

A change of 1 body score represents approximately 85-115 pounds (lb.) of body weight (depending on frame size of animal).

Precalving is a good time to prepare cattle to have adequate BCS at the time of breeding. The amount of time prior to calving is important, as BCS takes time to change (about two months to increase 1 body score if cattle can gain 1.5 lb. per day), and cows are less likely to gain weight postcalving due to excess nutrients primarily being

Continued on page 44



Body condition can be assessed using these landmarks. Keep in mind, a change of 1 body score represents approximately 85-115 lb. of body weight, depending on frame size of animal.

partitioned to improve lactation.

Some herds record a BCS at pregnancy evaluation (mid-gestation) to allow ample time for necessary adjustments prior to calving that can be achieved with a low rate of gain (0.5 lb. per head per day).

While BCS is evaluated on individuals, the information gathered is best used to make decisions for the herd. Depending on the time of year, keeping most cattle as a BCS of 5 with a few BCS 4 is often acceptable.

If a higher-than-expected percent of the herd has a lower BCS, one thing to consider is segregated feeding of the thinner animals. While this requires more labor, the cost of labor must be contrasted to the cost of providing additional feed or supplementation to cattle in adequate nutritional plane (BCS 5 or greater) that do not need the additional feed.

One of the important reasons to record BCS is to avoid the daily observation effect. The daily observation effect is the challenge to see subtle changes in animals that are frequently observed, due to the gradual nature in body flesh changes.

Two easy ways to help avoid this issue are recording individual body scores and documenting with pictures. In the first, BCS is assessed visually at a predetermined interval (e.g., monthly) and each time the BCS on a subset of the herd is recorded.

This differs from a casual look at the cows thinking they are in good shape. By writing down individual BCS, the observer is forced to think about each cow individually.

Another method is to record pictures of several cows in the herd. This allows easy comparisons between cows at different times of year to see if their body weight is increasing or decreasing, as the previous pictures can be compared in a side-by-side fashion.

Both methods require some time, but they can provide valuable insight into evaluation of the nutritional program.

Conclusions

Creating a nutritional strategy for the herd is important, and how the plan is implemented and evaluated affects overall success. Forages and supplements delivered to the cow-calf herd can be recorded to more accurately evaluate the expected animal intake and improve planning for the next year.

Digital EXTRAs

Access the American Angus Association's guide to condition-scoring cows.

Monitoring BCS is important when managing optimum reproductive rates and production, and BCS should be recorded on individual animals to enable good herd nutritional decisions. ABB

Author Brad White is on faculty at Kansas State University College of Veterinary Medicine and serves as director of the Beef Cattle Institute. To learn more on this and other beef herd health topics, tune in to the weekly Beef Cattle Institute *Cattle Chat* and *Bovine Science with BCI* podcasts available on iTunes, Google Play, or directly from *http://www.KSUBCI.org*.