

Matching Cows and Production to the Environment



PHOTO COURTESY SHEILA JENSEN

Beef cattle specialist encourages producers to consider the environment when making genetic decisions.

by **Troy Smith**

From a price standpoint, calf-sellers should be happy, happy, happy. Prices received in recent years suggest tremendous financial opportunity for commercial cow-calf operators, provided their costs of production are under control. Therein lies the rub. Prices cattle producers pay for many production inputs have increased dramatically, including prices paid for a historically least-cost feed resource: grazed forage.

Despite rising rental rates and purchase prices, grazed forages remain the least expensive feedstuff for maintaining beef cows. That's the reason why cow-calf producers have long been advised to match

cow biological type to their respective environment's forage resources and, especially, the forages available for grazing. But Oklahoma State University Beef Cattle Specialist David Lalman fears many producers are trying to make the environment fit the kind of cows they like.

Lalman says genetic selection emphasizing muscle, growth and milk production has resulted, in many instances, in beef cows that really don't fit production systems based on grazed forages. He cites the industry trend toward cows of larger mature size and greater milking ability. Such cows have higher nutrient requirements which a grazed

forage system may not satisfy. Commonly, the production environment must be modified by supplementing or replacing grazed forages with purchased or harvested feedstuffs.

In Lalman's home state of Oklahoma, the average beef cow relies heavily on harvested feed. In 1960 her grazed forage diet was supplemented with about three-quarters of a ton of hay per year. Now, says Lalman, the average Oklahoma cow consumes 2.25 tons of hay annually. Her diet consists primarily of hay for 150 days each year.

Production environment modifications, or enhancements, result in added cost which may not be offset by increased productivity. Selection for increased growth through weaning and increased milk really ought to yield increased weaning weights, unless genetic expression for those traits is limited by the environment. However, Lalman says Standardized Performance Analysis (SPA) data from New Mexico, Texas and Oklahoma show no evidence of sustained increases in weaning weights in commercial cow-calf operations.

Benchmarking data from the North Dakota Cow Herd Appraisal Performance Software (CHAPS) program indicate that, after a decade of relatively steady increase, weaning weights have been static since 2006. Such evidence makes Lalman wonder if genetic potential in cattle has surpassed the capacity of forage to provide increased production.

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— *David Lalman*



a commercial cow-calf perspective, the industry is on an unsustainable path, relative to some traits. Cows are big, and we can't seem to get enough milk or muscle," states Lalman. "The result is that fed inputs — costs per cow-calf unit — are increasing, while limited data suggest that production is not."

Admittedly, the trend toward larger frame size has waned. However, Lalman says mature cow weight per inch of height continues to increase. The push for more muscle and more capacity but less fat increases potential for negative impact to fertility. Less body fat in proportion to muscle means these cows have to be heavier to obtain the same fat composition, which is still thought to be the best mediator driving fertility. So, bigger cows may have to achieve a higher body condition score to be in optimum condition for breeding.

Too often ignored, says Lalman, is the relationship between increased milk production and year-long maintenance requirements for beef cows. The higher nutrient requirements associated with

increased genetic potential for milk production can be linked to increased visceral organ mass, relative to live weight. According to Lalman, selection for milk has pushed lactation potential so far that cows of some beef breeds are approaching maintenance levels for the Holstein breed.

"If you continue to select for milk," states Lalman, "you continue to select for animals with higher maintenance requirements."

Selection for high growth is accompanied by higher feed intake and greater gut capacity, which also result in increased visceral organ mass relative to live body weight. Just like selection for more milk, the consequence is higher cow maintenance requirements.

Lalman also advises commercial producers to consider how mismatches between cow type and environment may affect reproductive performance. Southwest SPA data show no improvement in weaning rates since the benchmarking program began more than 20 years ago. Lalman says Oklahoma calf weaning rates

of 80-82% show there is a challenge, but also opportunity, for application of management to improve reproductive performance.

Lalman says targeting more moderation in growth, mature size and milk, combined with alteration of ranch stocking rates, would seem a good response to economic trends and likely would result in increased efficiency.

Lalman believes the Hereford breed stands on the brink of an era of opportunity. However, he warns against trying to be all things to all people. Hereford producers need to capitalize on the differences their breed offers.

"Fertility cannot be treated as a secondary trait. In my opinion, it has been for about 20 years," says Lalman, noting how greatest selection emphasis has been placed on calving ease, marbling and cutability. "We have somewhat forgotten the commercial cow."

Lalman advises Hereford producers to put pressure on cows to perform. Seedstock breeders as well as commercial operators should make their cows work for a living

without artificial enhancements to the environment. He recommends selecting sires born to cows that have calved early in the calving season every year while managed under real-world conditions.

"Be careful of size and growth. Forage efficiency is more important," stresses Lalman.

"Commercial producers should find seedstock sources that put priority on economically relevant traits related to fertility and forage use efficiency. (Seedstock suppliers should) cull open cows, save only early-born heifers and keep only early-bred replacements in the herd. Purchase bulls out of cows that are managed like yours, or worse," he adds.

Relative to other breeds, Hereford milk production is low but increasing. Lalman advises caution. If the trend toward more milk continues, he believes a real Hereford advantage may be lost.

"It is an advantage," emphasizes Lalman. "Congratulations. You're in a wonderful position. Don't run from it." **HW**