Increase Genetic, Reproductive Returns

by **KASEY BROWN,** *associate editor*

Forage is not always a least-cost feed resource, and cow-calf producers must be conscious of matching their cows to their forage resources. David Lalman, Oklahoma State University (OSU) animal scientist, told attendees of the 2014 Applied Reproductive Strategies in Beef Cattle (ARSBBC) symposium in Stillwater, Okla., Oct. 8-9 that cows need to match their environment efficiently.

Efficient cows reach sexual maturity early, have a high rate of reproduction, low rates of dystocia, longevity, minimum maintenance requirements, and the ability to convert forage resources to pounds of beef, he said.

Genetic trends in cattle are changing, though. In all breeds but one, milk genetic trends are increasing. More milk means higher yearlong maintenance requirements. This is related to greater visceral organ mass relative to empty body weight. He emphasized that the relationship of milk production to the conversion of calf weaning weight is not efficient, because the calves are just swapping grass for milk.

"Is there a limit of milk production that your forage can support?" he challenged.

Aggressive selection for muscle also affects a cow's maintenance requirements and size. He noted that in the Angus breed, while height trends have been flat since 1997, pounds of mature weight have been increasing. Fat composition decreases when overselecting for muscle, simply meaning that the body dilutes fat with more muscle. To balance the amount of fat needed for proper body condition, the cow has to get heavier.

He said research indicates that for every 100 pounds (lb.) of increased mature cow weight, her calf weighs an additional 6 lb. at weaning. The value of that added calf weight probably ranges from $5 to $7, but the annual cost of that 100 lb. of additional cow weight is $42.

He added, "Seventy percent of energy that produces a pound of beef comes from cow maintenance."

"We've been teaching guidelines based on condition that reflects the nutrient status that maximizes reproductive performance. A major limitation is that we focus on short-term effects on reproduction," Lalman said. "Tough times don't last, but tough cows do."

He asserted that a long-term commitment is needed to improve a cow's environmental match without needing to increase inputs. Moderation in size, milk and muscle is needed, and he suggests keeping only early-born and early-bred heifers. Additionally, buy (or keep bulls) out of cows that always calve early. Purchase a bull out of cows that are managed like yours.

Tools are available to help select efficient females. He suggested using residual average daily gain (RADG), residual feed intake, longevity and stayability expected progeny differences (EPDs); selection indexes for maintenance and profit; and the Angus optimal milk module.

Lalman spoke during Wednesday's ARSBC session focused on the impact of environment and management on cow herd efficiency. For more information, visit the Newsroom at *www.appliedreprostrategies.com* to view his PowerPoint or listen to the presentation.

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