

Range Beef Cow Symposium XX

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Re-evaluate Traditional Postweaning Heifer Development

by Barb Baylor Anderson

FORT COLLINS, Colo. (Dec. 14, 2007)—Traditional approaches to postweaning development of replacement heifers during the last several decades have primarily focused on feeding heifers to achieve or exceed a target weight to maximize pregnancy rates. But changes in cattle genetics, economics and research may suggest it's time to re-evaluate those traditional approaches.

"Intensive heifer development systems may maximize pregnancy rates, but not necessarily optimize profit or sustainability," Rick Funston of the University of Nebraska West Central Research and Extension Center at North Platte told attendees of the 2007 Range Beef Cow Symposium Wednesday, Dec. 12. The cooperative extension services and animal science departments of Colorado State University, South Dakota State University, the University of Wyoming and the University of Nebraska hosted the symposium Dec. 11-13 at the Larimer County Fairgrounds and Events Complex near Fort Collins.

"Developing heifers in this manner requires significant use of fuel and feed, and high capital investment in equipment and facilities," Funston continued. "The fuel requirement to harvest and deliver feed to cattle creates high energy demands in the system. Cereal grains used in heifer diets

detract from the system's sustainability due to growing demand for human food and ethanol production."

Studies in numerous species provide evidence that diet during development can partially control physiological changes necessary for puberty. Energy balance and other nutritional factors influence reproductive performance in heifers and cows. In addition, previous research indicated that rate of postweaning growth was thought to be an important factor affecting age of puberty, which in turn influenced pregnancy rates.

The universal thought process has been that "puberty occurs at a genetically predetermined size. Only when heifers reach their target weight can high pregnancy rates be obtained," he said. "Replacement heifers have been fed to achieve 60% to 65% of expected mature body weight by the time breeding started in order to reach puberty."

Fast-forward three decades, and more contemporary research has shown the pattern of growth heifers experience prior to achieving critical target weight could be varied. In fact, heifers may be developed to lighter-than-traditional target weights without any negative effects on profitability or future productivity.

"Numerous studies have been performed to determine how energy inputs affect heifer

development program success," he said. "Limited research has been performed to determine whether inherent differences in development systems affect reproductive efficiency or future productivity of heifers ... And some studies provide evidence that heifer development systems can influence reproductive performance, but do not provide evidence of effects independent of energy intake and/or growth rate."

Funston says producers can decrease feed costs by altering rate and timing of gain, which creates periods of compensatory growth and allows producers to limit supplementation to critical periods. Total energy intake, and possibly costs, may be reduced by limiting heifer gain early postweaning followed by accelerated gains before breeding season.

"Ongoing research evaluating lifetime productivity of heifers developed with either unlimited or restricted access to feed during postweaning supports the potential to reduce target weights when developing replacement heifers," he said. "Age at the beginning of the breeding season may be more critical for a successful pregnancy than body weight."

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