

New Selection Tools

4 p.m. session, Tuesday, Dec. 6, 2005

Presenter: Mark Enns, Colorado State University

RAPID CITY, S.D. (Dec. 6, 2005) — Colorado State University's Mark Enns and his fellow geneticists have long said that if you can measure a genetic trait, they could produce an expected progeny difference (EPD) for it. Enns told attendees of the 2005 Range Beef Cow Symposium that EPDs have been the best tools for producers to use in making genetic selection decisions.



Mark Enns of Colorado State University discussed the difference between indicator traits and economically relevant traits. [PHOTO BY LYNN GORDON]

Over the years, the number of trait EPDs available has grown from five to 15 or more. With so much information to sift through, however, the process of making selection decisions has become a daunting task for many producers.

“How does a producer decide which traits have the greatest influence on income and expenses?” Enns asked.

Fortunately, there are ways to help ease the process of selecting for cattle that are more profitable. The first process, Enns said, is to sort for economically relevant traits (ERTs) vs. indicator traits. Distinguishing between the two will reduce the number of EPDs to be considered for selection.

Enns described ERTs as those traits that directly relate to cost or revenue from production. If performance in these traits is changed one unit, there is a direct effect on either expense or income. Indicator traits are not directly related to profitability, he explained, but can add accuracy to the calculation of EPDs for economically important traits.

For example, decreasing birth weight by 1 pound (lb.) is not likely to have a direct effect on costs or revenue. However, increasing calving ease by 1%, meaning 1% fewer heifers require assistance at calving, can lower labor costs and increase the number of calves for sale.

ERTs can reduce the amount of information to be considered and help combine the economics of production and genetic improvement; however, the concept does not completely evaluate each EPD's impact on profitability, Enns said. “To put a dollar value on EPDs, producers can use a selection index suited to their operation. ... The best indexes account for costs as well as income.”

For example, a producer might determine that increasing weaning weight is worth a certain amount of added income due to increased pay weights. But, the index would

also account for an accompanying increase to mature weight of females and potential increases to feed costs. A number of breed associations have developed generalized indexes for producers to use in the process of assigning values to EPDs.

“The next step beyond the selection index is the decision-support system,” Enns said. “This tool allows producers to tailor the selection system to his specific operation, taking into account current production levels, costs of production and the marketing program.”

As part of the National Beef Cattle Evaluation Consortium (NBCEC), Colorado State University is developing a Web-based decision-support tool to simplify the process of selecting breeding stock that produce more profitable offspring.

— by Troy Smith, field editor, Angus Productions Inc.
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