By the Numbers

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Cow energy value

If your production environment is variable, then the American Angus Association's cow energy value ($EN) may be a selection tool of interest to your breeding program. The $EN was designed for producers seeking a better handle on matching cows to their production resources.

$EN is not an EPD

$EN in the Angus breed is actually an index value from the Association's suite of dollar value ($Value) indexes. $Values encompass the revenue generated from genetically derived outputs and associated costs (expenses) from required inputs. $Values only have meaning when used in comparing the relative merit or ranking of two individuals.

Let's review the definitions of $EN and weaned calf value ($W).

Expressed in dollars savings per cow per year, $EN assesses differences in cow energy requirements as an expected dollar savings difference in daughters of sires. A larger value indicates more dollars saved on feed energy expenses and, therefore, is more favorable when comparing two animals. Components for computing the cow $EN savings difference include lactation energy requirements and energy costs associated with differences in mature cow size.

$EN is not necessarily a measure of efficiency, but looks at input cost differences (feed energy expenses) among animals and presents the differences in easy-to-understand units of measure — dollars and cents. Again, it only considers the cost side of the equation; it does not include any revenue differences.

$W is an index that may help producers look at both the expense and revenue sides of the beef cow profitability equation. $W, an index value expressed in dollars per head, is the expected average difference in future progeny performance for preweaning merit. $W includes both revenue and cost adjustments associated with differences in birth weight, weaning direct growth, maternal milk and mature cow size.

$EN is a specialized index, and it shares many of the mathematical components of $W. It helps to consider $EN as a refinement tool for producers who desire to focus on identifying genetics that will help reduce inputs after they have met their other selection criteria. Both the $EN and $W were released by the Association in December 2004 as part of the National Cattle Evaluation (NCE) for the breed.

Identifying cows that fit a particular environment and management scenario can be done effectively with tools that characterize these genetics.

Example of $EN

$EN is available to assess differences in cow energy requirements as an expected dollar savings difference in future daughters of sires.

Example:

Bull	$EN
A	15.75
B	4.68
Difference	11.07

In the above example, the expected difference in cow energy savings per cow per year for future daughters of the two animals is +11.07 (15.75 – 4.68 = +11.07). A larger value is associated with more dollars saved on feed energy expenses tied to lactation energy requirements and cow size differences.

A commercial producer selecting bulls for the herd needs to identify the traits that need improvement. For example, the producer could identify bulls that meet the goals for traits such as calving ease, growth and carcass merit, and then refine his selection if there are differences in the energy requirements that will meet other production goals.

A word of caution: Single-trait selecting for $EN would tend to identify animals with low milk and smaller mature size, but with no indication of progeny performance levels. Very rarely is single-trait selection effective in a system-based breeding program.

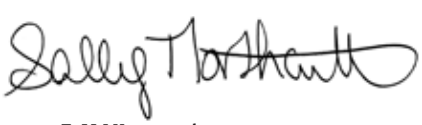
Commercial producers are really the audience for which the $Value indexes were developed. Simplifying multi-trait selection for commercial producers allows them to make selection decisions that will enhance the profitability of their operations. Many cow-calf producers who market calves at weaning are using $W as an index to balance both the cost and revenue side of the formula. $EN is a more specialized tool for certain producers in challenging production environments (limited feed resources, variability of feed).

A look to the future

The various index values have been used by breeders at different levels. As breeders push the envelope on production, some genetic outcomes may indicate that excessive milk production or excessively large mature size can create issues in certain environments. The increased focus on reducing input costs has brought more attention to both $W and $EN.

Creating an awareness of the differences that can exist on the cost or input side is essential. Identifying cows that fit a particular environment and management scenario can be done effectively with tools that characterize these genetics.

The American Angus Association has ongoing research at several universities to evaluate female efficiency on high-energy diets and female efficiency on high-forage diets as well. Futuristically, as feed efficiency genetic values are developed, they will become additional components of indexes like $EN and $W.



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Editor's Note: *"By the Numbers" is a column by Association performance programs staff to share insights with Angus members about data collection and interpretation, the National Cattle Evaluation (NCE), genetic selection, and relevant technology and industry issues. If you have questions or would like to suggest a topic for a future column, contact Sally Northcutt, director of genetic research, or Bill Bowman, director of performance programs, at 816-383-5100.*