What EPDs Are In My $Values?

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Probably the most popular question received at the American Angus Association about dollar value indexes ($Values) is the request for a list of expected progeny differences (EPDs) used in the index calculations. Most of the time, the inquiry is directed toward beef value ($B), but the conversation generally leads to weaned calf value ($W). Here is the basic list.

Table 1 provides a summary of EPDs involved. While the list is simplistic in nature and doesn't really convey the array of computations behind each index, it at least addresses the EPDs having impact. $Values use available EPDs on registered-Angus animals, and the accuracies on traits are used to assess how much emphasis can be placed on particular traits in some cases.

Weaned calf value. $W is geared toward the preweaning performance and maternal traits of the cow herd. It includes EPDs for birth, weaning weight, milk and mature size. Yearling weight and height EPDs can also have impact, depending on the accuracy and availability of mature size EPDs.

Table 1: EPDs included in $Values

$W	$B
BW	YW-WW
WW	MARB
Milk	CWT
MW, MH	RE
(YW, YH)	FAT

Beef value. In contrast, the $B is a postweaning gain and carcass trait index made up of feedlot value ($F) and grid value ($G) to improve postweaning performance and carcass trait merit.

$F considers postweaning gain genetics described by the yearling weight and weaning weight difference. $G can be used wholly or broken down into its quality grade ($QG) and yield grade ($YG) index attributes.

$QG includes marbling, obviously. $YG includes traits one would find in a yield grade equation — carcass weight, ribeye and fat thickness EPDs.

An animal can have a $F, but still have no $G or $B. In this case, the animal has no carcass EPDs to contribute to $G. That is a limiting factor to calculate $B. Also, $B is not simply the sum of $F and $G. The $B calculations include additional adjustments.

What is $EN?

An additional selection index, $EN is a specialized value accounting for savings in future daughters by monitoring lactation and maintenance energy requirements. A larger value is more favorable when comparing two animals (more dollars saved on feed energy expenses). Most are satisfied with $W, since it contains the milk and mature size EPD, along with the same math for energy requirements.

Why are $Values expressed in dollars?

Economic assumptions are used in the $Value calculations to convert the genetic effect differences into dollars. A three-year rolling average

Table 2: Economic assumptions as updated Jan. 11, 2013

Weaned calf assumptions	
Base calf price	$140
Cow/Heifer mix	80%/20%
Cow weight	1,300 lb.
Feed energy cost, per MCal NE_m	$0.095
Feedlot assumptions	
Days on feed	160
Ration cost, $ per dry ton	$315
Fed market, $ per cwt. live	$110
Quality grade assumptions	
Prime, $ above Choice	$12
CAB®, $ above Choice	$4
Choice-Select spread	$10
Standard discount	–$20
Yield grade assumptions	
YG 1 premium	$4.50
YG 2 premium	$2.25
YG 3 (base)	0
YG 4 & 5 discount	–$20
Average carcass weight, lb.	816
Heavy weight discount	–$20

is used to establish typical industry economic values for assumptions such as Choice-Select spread. Examples of these economic assumptions are given in Table 2. If the EPDs change or the economic assumptions change, then the $Values are sensitive to these component changes. $Values do not appear with an accuracy value.

An example of how to use $Values

Table 3 illustrates the comparison of two sires and their $Values. As with EPDs, the difference between animals indicates the average expected difference in the relative value of future progeny if random mating is assumed and calves are exposed to the same environment. $Values have meaning only when compared to the $Values of another animal or breed average.

On average, the future calves out of Bull B will be expected to have about a $9 per head advantage over calves out of Bull A for the preweaning phase. If these calves were retained through the feedlot and carcass phase, the calves from Bull A are $15.85 greater in postweaning and carcass value.

Table 3: Comparison of two sires and their $Values

Animal	$W	$F	$G	$B
Bull A	$16.11	$31.89	$20.76	$45.95
Bull B	$25.09	$27.30	$ 7.29	$30.10
Difference $/head	$ 8.98	$ 4.59	$13.47	$15.85

Editor's Note: *Sally Northcutt is director of genetic research for the American Angus Association.*