

BY THE NUMBERS

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Where is the Value in \$Values?

How producers can use selection tools to find profit and productivity.

For nearly 20 years, bioeconomic indexes, or \$Values, have been available for registered Angus cattle. These indexes were developed with the commercial producer in mind, and that remains true today. Bioeconomic indexes are a selection tools combining the genetic merit of an individual for multiple traits and their economic relationship given a breeding objective in a single number.

At the American Angus Association, these indexes are called dollar value index, or \$Values, and they provide the opportunity for commercial producers to select for profitability given specific breeding objectives. The \$Values encompass the revenue generated from genetically derived outputs and associated expenses from required inputs.

They also allow for multiple-trait selection by combining various expected progeny differences (EPDs) and economic assumptions into one number to predict profitability. \$Values only have meaning when used in comparing the relative merit or the ranking of individuals.

The \$Values rely on the assumptions for the industry-relevant components used in calculating the indexes. Angus Genetics Inc. (AGI), the American

Angus Association and Certified Angus Beef alongside industry-leader CattleFax work together to update these economic assumptions annually, which are derived from the previous seven-year market trend rolling average.

\$Values

Currently, there are seven \$Values available for registered Angus cattle. Table 1 summarizes which EPDs are directly included in each \$Value.

For maternally focused indexes, maternal weaned calf value (\$M) and weaned calf value (\$W) are expressed in dollars per head, predicting preweaning profitability differences among sire groups. Cow energy value (\$EN) provides an opportunity to fine-tune the cow herd for costs associated with maternal milk and cow size.

Feedlot value (\$F), grid value (\$G) and beef value (\$B) are expressed in dollars per carcass, to assist commercial beef producers in selecting individuals profitable for

terminal traits including feedlot gain and carcass merit.

Combined value (\$C) is expressed in dollars per head. This \$Value aims to characterize profitability differences across the entire chain by combining the two underlying breeding objectives that drive the Association's maternal (\$M) and terminal (\$B) economic indexes. Combining maternal and terminal traits into one economic selection index allows a

Table 1: EPDs that directly influence each \$Value.

Trait	Maternal			Terminal			
	\$M	\$W	\$EN	\$F	\$G	\$B	\$C
CED	X						X
BW		X					
WW	X	X					X
*PG (YW-WW)				X		X	X
CEM	X						X
MILK	X	X	X				X
MW	X	X	X				X
DOC	X						X
HP	X						X
CLAW	X						X
ANGLE	X						X
DMI				X		X	X
CW				X	X	X	X
RE					X	X	X
MARB					X	X	X
FAT					X	X	X

*PG, Postweaning Gain assess the gain differences from weaning to yearling.

producer to maximize profitability by making genetic progress through several different traits.

Understanding \$Values

A common question is about understanding how two animals can have similar \$Values, but have different EPDs that are directly included in that index. The answer to the question is in understanding the basics of indexes.

There is a statistical background that models the relationship between the genetic merit of individuals (EPD) and economics based on the selection goals specified for a given index. Because of these complex relationships between various EPDs and the economics of a production system, it is possible different combinations of EPDs could lead to the same expected profitability function (\$Value).

For example, in Table 2, if we look at animals that all have the same \$M value, also listed are the EPDs directly included in that index. Before we can really evaluate this, we need to revisit the breeding objective of \$M, which is to predict profitability differences due to genetics from the time of conception to weaning.

Table 2. Examples of bulls with similar maternal weaned calf value (\$M).


Bull	CED	WW	CEM	Milk	MW	DOC	HP	Claw	Angle	\$M
A	5	61	11	42	55	32	15.9	0.46	0.48	79
B	10	74	13	20	61	28	14.8	0.56	0.50	79
C	-2	66	5	21	58	30	18.0	0.46	0.49	79
D	13	55	8	37	34	5	19.4	0.49	0.48	79

\$M is built on a self-replacing herd model, where commercial cattlemen replace 25% of their breeding females in the first generation and 20% in subsequent generations. Remaining cull females and all male progeny are sold as feeder calves.

Part of where opportunity lies within an index is being able to find variety in the animals that can have a similar index value, keeping in mind the index values are useful when comparing animals. If a commercial producer lives in a limited-resource environment, creating their own replacement females, and is looking for a sire to use on cows that have not had calving issues, there is opportunity to look at a sire like bull C (see Table 2). If a commercial producer is looking to make replacements from his first-calf heifers and has docility at the top of the list of important traits, maybe a bull like B fits their needs.

Using \$Values to make selection

decisions is an incredibly powerful tool. Understanding the breeding objectives they were built from is the first step in using the tool.

From there, knowing what the commercial producer is needing in their specific situation to meet their goals allows the flexibility within similar \$Values. 



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Editor's note: For more information on \$Values, visit www.angus.org/nce/. ValueIndexes or watch the webinar "Decoding \$Values" from February 2023.

SCAN TO WATCH
"Decoding \$Values."

