

BY THE NUMBERS

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Evaluating Cow Longevity

Maternal weaned calf value predicts profitability differences from conception to weaning, including how likely cows are to leave the herd early due to fertility, temperament and foot structure.

Maternal weaned calf value (\$M) marks a new era for Angus breeders. \$M is an index, expressed in dollars per head, that predicts profitability differences from conception to weaning with the underlying breeding objective assuming individuals retain their own replacement females retained from within the herd. The remaining females and all male progeny are then sold as feeder calves

The model assumes commercial producers will replace 25% of their breeding females in the first generation of daughters and 20% of their breeding females in each subsequent generation. Traits included are: calving ease direct and maternal, weaning weight, milk, heifer pregnancy, docility, mature cow weight, claw set and foot angle.

Why change?

This new \$Value better identifies cattle that will excel as mothers than any previously available selection tool. To accomplish this, the index also puts emphasis on cow traits that have not been included in selection indexes, namely docility, foot score and heifer pregnancy. To include these traits in an economic selection index, their value needed to be determined. The economic value is how an expected progeny difference

(EPD) change translates into a profit difference in the production system modeled.

The economic weight for all three traits was determined in a similar manner. As breeders can appreciate, cow longevity is an economically important trait. Cows that leave the herd early are culled at a relatively low price. The

cost of each of these three traits was determined by modeling how a unit change in each trait influences cow longevity overall.

In all cases, there is a threshold where cattle are culled. As EPDs for heifer pregnancy and docility increase, and as the two foot score EPDs decrease, fewer females will be culled early. This is an economic benefit in the selection model behind the \$M index.

Member driven


The 2018 survey of members and the commercial industry identified cow longevity as the most important trait. Related to \$M, breeders ask about the missing longevity EPD. Although there is no direct longevity EPD, there is an indirect one determined through the influence of cows that leave the herd early. These EPD in combination cover some of

Table 1: Characterization of traits influencing longevity in the Angus Maternal Weaned Calf Value Index (\$M)

Trait	Year	Number of Records/
	Introduced	EPD May 31, 2019
Foot Claw Set	2019	19,538 / 1,185,879
Foot Angle	2019	18,174 / 1,185,879
Heifer Pregnancy	2011	99,775 / 1,248,259
Docility	2011	302,016 / 1,578,471
Weaning Weight	1972	9,190,155 / 11,103,865

the most common reasons cattle leave the herd early.

Table 1 shows when each EPD was introduced and the number of records in the Angus genetic evaluation which was released on May 31.

This will be accomplished by measuring these traits in proper contemporary groups so the data can contribute to their genetic evaluation. This dedicated recording, along with genomic profiling, will provide the most accurate EPD, which will also spread the EPD more as information comes in and allow \$M to best characterize the profit differences behind cattle. 



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Editor's note: If you have questions on these new EPDs, please contact the Performance Programs department at 816-383-5100.