

SORTING GATE

Choose the selection criteria that best fit your goals

by Kelli Retallick, Angus Genetics Inc.



Every day brings new conversations with Angus seedstock providers and commercial

producers. Through those conversations, I hear multiple strategies, breeding goals and explanations of just what type of cow works best for them.

Individuals employ multiple tools to make decisions. When it comes to breeding decisions, differing goals can lead to different selection pressure being placed on individual expected progeny differences (EPDs). With 21 different EPDs being produced weekly by the American Angus Association, this can become quite the balancing act.

One thing most producers can agree upon is that to keep doing what they love, profitability must be a driving force of any operation. Cow-calf producers take advantage of dollar value indexes (\$Values) to help guide profitable breeding decisions on the ranch.

What are \$Values?

\$Values are economic selection indexes that estimate how profitable future progeny will be within a certain breeding scenario. These tools place economic weight on individual EPDs that affect costs and revenues of individual operations.

\$Values are easy to use as they direct genetic change in several different EPDs at once while targeting profitability. As such, they take on some of the balancing act of breeding decisions.

While \$Values provide the opportunity to select for profit, it is important to understand that each selection index is built to target individual segments of the beef industry. The American Angus Association publishes several different economic selection

indexes, each with a different goal in mind. Let's dive into a few.

Maternal weaned calf value (\$M) places greater emphasis on the cost side of commercial cow-calf production than any tool available. This index is built off a self-replacing herd model in which commercial cattlemen replace roughly 20% of their breeding females each year with heifers raised within the operation. Remaining cull females and all male progeny are sold as feeder calves.

Expressed in dollars per head, \$M is the most maternally focused index available and considers all the traits affecting income and expenses from conception to weaning.

Increased selection pressure on \$M decreases mature cow size while maintaining weaning weights consistent with current production. Under \$M selection, heifer pregnancy and docility have an increased emphasis, and foot traits start to improve. The index finds the most profitable cattle when producers receive no economic benefit for traits affecting postweaning or feedyard performance.

Beef value (\$B), on the other hand, focuses on the terminal side of the production chain. It facilitates multi-trait genetic selection for feedyard performance and carcass merit. \$B represents the expected average dollar-per-carcass difference based on progeny's postweaning performance and ability to perform on a carcass-merit grid. This index assumes producers are weaning all calves (males and females) to retain ownership on those calves through the feedyard and market those animals on a value-based carcass-merit grid.

Selection for \$B over time will increase postweaning gain, feed efficiency and carcass quality. It finds the most profitable animals

relating to profitability from weaning to when that animal is hung on the rail. It does not include any of the maternal traits included in \$M.

Combined value (\$C), first published earlier this year, is a selection index designed to help select animals that will be profitable when looking at the entire production chain. \$C combines the breeding objectives and EPDs from \$M and \$B into one value for profit. It's based on the assumption a commercial producer will replace about 20% of his/her breeding females each year with replacements developed from within the herd and market the rest of the female and male progeny on a quality-based carcass-merit grid.

Selection on \$C leads to increased gain and carcass merit without doubling the genetic potential for mature cow size over the next 10 years, which is predicted to happen if producers select on \$B alone. It also aims to keep other cow traits within the guard rails by putting emphasis on calving ease, fertility, foot structure and docility.

Putting the tools to use

Each tool is designed to help commercial producers aim for profitability. In many cases a cow-calf operation may still have to look to EPD component traits or a combination of \$Values and EPDs to make the best decisions for the individual farm or ranch.

For instance, if you are a cow-calf producer who sells feeder calves, \$M is designed for you. However, \$M disregards any postweaning

Table 1: Traits included in \$M, \$B and \$C

Trait	\$M	\$B	\$C
Calving ease direct	X		X
Calving ease maternal	X		X
Weaning weight	X		X
Maternal milk	X		X
Mature weight	X		X
Docility	X		X
Heifer pregnancy	X		X
Foot claw set	X		X
Foot angle	X		X
Postweaning growth*		X	X
Carcass weight		X	X
Marbling		X	X
Fat		X	X
Ribeye area		X	X
Dry-matter intake		X	X

*Postweaning growth assesses the gain differences from weaning to yearling.

profitability. That means things like carcass weight or postweaning gain are not included in \$M. For this reason, sole selection for \$M may not be the best option.

It would be wise for a cow-calf producer to consider not only \$M, but also make sure those animals rank appropriately for \$C, which includes the postweaning gain and grade traits. No one wants to find themselves in a situation where buyers are not purchasing feeder cattle because they do not perform postweaning.

Be wise, be informed and be comfortable asking questions about these tools before implementing them in your programs. Every one of us wants to ensure beef cattle production succeeds into the future, and \$Values are just one more way to strike a balance. |

Editor's note: "Sorting Gate" is a regular column featuring herd improvement topics for commercial producers using Angus genetics. Kelli Retallick, director of genetic service for Angus Genetics Inc. (AGI), is a regular contributor. For additional information, visit www.angus.org.