Sorting Gate

EPDs: back to basics.

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The U.S. beef herd is on the brink of expansion mode, and that could potentially mean greater selection pressure on your current bull-buying decisions, the effects of which your herd may realize many years into the future.

Eighty-one percent of respondents to the *Industry Insights* survey conducted by Angus Media and CattleFax (see "The Survey Says: Angus Genetics Provide Value Through Supply Chain," page 120) felt it was important for their bull to be registered. Fifty-four percent said the expected progeny differences (EPDs) and profit indexes documented on the registration paper are the thing that influences their decision most when buying bulls.

With all the advancements in technology over the last decade, cow-calf producers can rest assured their bull suppliers have been doing everything possible to provide them the best bulls in the industry. Using EPDs is one of the best tools to help make selection decisions.

What are EPDs?

An animal's performance is due to two main factors — genetics and environment. However, the two are not independent of each other. Without the right environment and management, animals will be less likely to meet their full genetic potential.

Members take advantage of data collection and correct contemporary groupings in order to make proper assessments of genetic merit. These data are then sent to the American Angus Association. There they are analyzed against multiple herds from around the nation to create genetic prediction tools, like EPDs, to compare animals across different environments.

The Angus database is one of the major assets of the breed. Phenotypic performance records have been submitted for millions of animals in the Angus breed, which adds validity to the genetic tools provided for selection. Because of this large database, Angus EPDs are updated every week, allowing producers to leverage the most current and accurate information possible for bull selection.

Why EPDs matter

An EPD is the best estimate of the genetic value of an animal as a parent. When reading an EPD, the numbers are meant to compare how an animal's progeny (calves) would perform relative to another animal's progeny when the bull is bred to similar females and the calves are managed in a similar environment.

Let's say Bull A has a weaning weight (WW) EPD of 70 and Bull B has a WW EPD of 50. This means that when bred to similar females and their calves are managed in a similar environment, Bull A's calves would be expected to weigh, on average, 20 more pounds (lb.) at weaning time than Bull B's calves.
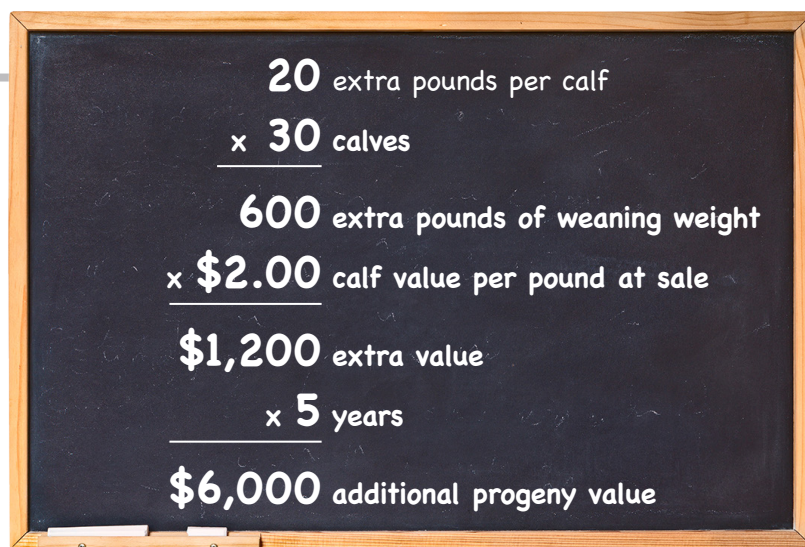
Let's say each bull sires 30 calves. Bull A has 30 calves at an average of 570 lb.; Bull B has 30 calves at an average of 550 lb. At a price of $2.00 per lb., Bull A's calves would garner $34,200. Over five years, his calves would earn $171,800.

At the same price point, Bull B's calves would bring $33,000 the first year, and $165,000 in five years. The difference between the value of these two bulls' progeny over five calf crops would be $6,000.

To better compare animals, the Angus database has a percentile breakdown for current sires, current dams, non-parent bulls and non-parent cows (*https://www.angus.org/Nce/PercentBreakdownSires*). These percentile breakdown charts provide a percentile ranking reference for various EPDs, allowing you to compare potential herd bulls or replacement females to the rest of the breed.

Remember, EPDs update every week, so do your homework ahead of time.

To see the most current or updated EPDs on your current bull battery or a potential new herd sire prospect, you can always visit *www.angus.org* and look up your bull by his registration number.

If you aren't a regular member of the American Angus Association, but have a bull transferred to your name, you become an affiliate member. That enables you to create a AAA Login account, through which you can look at your entire transferred bull battery. Contact the Association at 816-383-5100 for more information.

Predicting EPDs

EPDs have four major inputs seedstock producers take advantage of to ensure the most accurate values are predicted — pedigree, performance, progeny data and genomics. In most cases, yearling bulls will only have their pedigree, performance and genomic data included into the calculation, as they are too young to have recorded progeny of their own. As stated before, genomics adds a level of accuracy that really allows commercial breeders to protect their investment during the bull-buying process.

Angus breeders have been data-driven early adopters of technology, and genomics is a great example. In 2015, nearly 130,000 genotypes were included in the Association's weekly genetic prediction of EPDs. Today, 1.7 million genotypes are included.

20 extra pounds per calf

× **30** calves

600 extra pounds of weaning weight

× **$2.00** calf value per pound at sale

$1,200 extra value

× **5** years

$6,000 additional progeny value

Today, nearly two-thirds of the animals registered in the American Angus herdbook are genotyped. That means a considerable increase in accuracy for commercial breeders using EPDs in their decision-making.

In fact, a young yearling bull has the same accuracy level for a trait like calving ease as a bull that has already recorded 20 progeny records sent into the Association. Table 1 shows the average accuracy and predicted number of progeny equivalents currently recorded for a subset of traits recorded in the American Angus Association herdbook.

It is not just its commitment to genotyping that keeps the Angus breed thriving.

Angus breeders have religiously submitted performance data. Today the evaluation has nearly 12 million weaning weights and more than 2 million ultrasound carcass records. Our heifer pregnancy, docility and foot score databases have increased 100% or more in most instances in the last decade.

Table 1: Heritability, progeny equivalents (PE) and average accuracy (Avg. ACC) values for traits in the American Angus Association's National Cattle Evaluation

Trait	h²	PE	Avg. ACC
Calving ease	0.19	25	0.33
Weaning wt.	0.28	27	0.42
Dry-matter intake	0.33	11	0.31
Docility	0.44	11	0.35
Hair shed	0.36	8	0.26
Foot claw set	0.25	13	0.27
Heifer pregnancy	0.15	17	0.22
Maternal milk	0.12	35	0.31
Carcass wt.	0.44	14	0.39
Marbling	0.48	10	0.35
Ribeye area	0.32	16	0.35
Fat	0.33	13	0.32

The large amount of data Angus has compared to other breeds allows for EPDs and other genetic tools tied to this database to be more highly accurate.

So, next time you make a genetic decision about your herd, whether it is buying a new herd bull or keeping a replacement heifer, leverage this genetic information to benefit your herd. Keeping those in mind in addition to environment and phenotype will help you make the most beneficial genetic change in your herd. ABB

Editor's note: Authored by AGI staff, "Sorting Gate" is a regular Angus Beef Bulletin *column featuring herd improvement topics for commercial producers using Angus genetics. For additional information on performance programs available through the American Angus Association and AGI,* visit www.angus.org *and select topics under the "Management" tab.*