

BY THE NUMBERS

by Esther McCabe, director of performance programs

Committed to Data Collection

Keeping and submitting accurate records is the foundation of the selection tools available today to Angus breeders and their customers.

American Angus Association members have long been dedicated to improvements and quality recordkeeping, driving the breed forward. The development of the selection tools available today, such as expected progeny differences (EPDs) and dollar value indexes (\$Values), is because of the investment members make in recording pedigrees and collecting phenotypes, and both performance and genomic data.

Each piece of information that is part of an EPD has a critical role in the value of the prediction, and it all starts with quality records.

When the first individual ancestral herd records, known as pedigrees, were kept and later published, this allowed for breeders to establish superior lines of breeding and avoid animals with undesirable traits or pedigrees. Nearly a decade after the first Angus herd book was printed, the Angus Herd Improvement Records (AHIR®) program was established to evaluate performance records on Angus cattle.

Keeping and submitting accurate records is the foundation of the selection tools available today.

Making it count

Angus breeders have been and continue to be dedicated to

submitting performance records.

In fiscal year 2021 alone, members submitted more than 774,000 weights including birth, weaning and yearling that were included in the Association's weekly National Cattle Evaluation (NCE). That averages more than 14,880 weights processed each week.

The backbone of the NCE is the phenotypes. While the database supporting the NCE is robust, each generation further away an individual animal is from phenotypic records, the less useful those older records become. Without current, accurate phenotypes in the evaluation, the NCE would lose prediction power, as would the selection tools.

As more quality, current information is added to the database, this data is more informative to the evaluation to improve predictions.

Advancements in technology, specifically genomics, have provided the opportunity to improve the accuracy of EPDs for a young, non-parent animal. Since incorporating genomics in EPDs, the question often

arises, "If improved accuracies can be obtained through using genomics, can I stop spending the time and

money collecting phenotypes?"

The short answer is no. The genomic predictions for traits are based on the phenotypes, and without the phenotypes,

genomics cannot function as they do today.

For more detailed explanations of genomics and phenotypes, see previous "By the Numbers" in the *Angus Journal* from December 2018 and February 2021.

Costs and benefits

It is no secret quality data collection and submission is an investment. In business, investments are not made without the return outweighing the cost. While most members are not data entry experts, they are business owners who routinely evaluate costs and benefits.

There are a few hurdles for data collection. Collecting phenotypes takes time and, often, focused effort.

For example, weights, foot

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scores, body condition scores and scrotal circumference measurements are not just collected by chance. With the exception of weights that might be recorded automatically through a system linked to the scales, phenotypes require someone dedicated to evaluating the trait, recording the data and submitting the record.

For subjective traits, like foot score, docility, and teat size and udder suspension, it takes focused effort to have the consistency of the same person taking all the measures within a group. Taking phenotypes also costs money for things such as scales, certified ultrasound technicians or the labor required.

On the other hand, there are benefits for overcoming those hurdles. Quality data collection allows for those records to improve prediction accuracy and decrease selection risk. It also provides the opportunity for members to contribute their own data to their weekly evaluation vs. relying on other members to do so.

With genomics included in the evaluation, more exact relationships are used in the EPDs, and if ancestors have little data behind them, there is little to go on. As breeders, not only do you rely on the selection tools to be accurate and current, but your customers do, too, as they use the tools to select the next generation for their herd.

Today, these tools can help market commercial calves to the feedlot because of commercial programs like the Genetic Merit Scorecard® (GMS)



that aids in differentiating the value of good black-hided Angus cattle from the rest.

Data collection over time allows for the opportunity to look back and see what changes have been made. It also can show trends and how quickly the change in that direction is taking place. Good records also can provide information when issues arise. Quality records can help to make business decisions, whether that is where to source feed for the winter, when to hedge cattle or for selection purposes.


Similar to how the first Angus breeders made decisions using only pedigrees to select their breeding animals, today there is more information to help make those

decisions with less risk.

Phenotypic traits

Phenotypic data is valuable, as is genomic testing, and recognizing those committed to data collection is important. Last year there was an addition to the bottom of EPD/Pedigree Lookup that lists the phenotypic traits for an individual animal submitted to the Association.

For example, if the list includes CE, BW, WW, YW, YH, SC, UScanWT, UIMF, URE, URIBFat and URumpfat, this animal has had calving ease, birth weight, weaning weight, yearling weight, yearling height, scrotal circumference and ultrasound measurements submitted.

For the records kept on the ranch to further aid in development of selection tools, the information needs to be submitted to the Association to be included in EPDs and \$Values. Information that is collected and left sitting unused is like it was never collected to begin with. It is like getting a check and never cashing it — it's of no use. 

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Editor's note: For more information, visit www.angus.org/performance or contact the member services department at 816-383-5100.