



# By the Numbers

► by **Sally Northcutt**, director of genetic research, American Angus Association

## DNA tests for Angus breeders and their customers

*With choices available for DNA tests to better characterize Angus genetics, it is important to seek the appropriate path for your operation goals.*

*Depending on whether you are an Angus registered breeder or a user of Angus genetics in a commercial cattle production system, the choice of a genomics test should be tailored to your specific needs. The following outline is designed to give you an overview of the path to assist in achieving your genetic improvement goals.*

### Path 1:

#### Registered Angus breeders

DNA trait tests, also referred to as genomic trait tests, are available to better characterize Angus seedstock through expected progeny differences (EPDs) with improved accuracies.

1. Available tests are offered through Angus Genetics Inc. (AGI), and results are included in weekly Angus EPD updates. The two tests are:
  - a. Igenity® Profile for Angus, and
  - b. Pfizer HD 50K for Angus.Details regarding the traits offered and their impacts on EPDs can be found at [www.angus.org/AGI](http://www.angus.org/AGI).
2. Test results are designed for use in the Association's genomic-enhanced EPDs.
3. Young animals with limited data, particularly nonparents, receive the greatest benefit in accuracy and will likely see the largest change in EPDs from the inclusion of genomic results compared to that of animals that are more proven.
4. Genomic results can cause EPDs to change, so expect the accuracies to increase compared to a pedigree-estimated result, and take into consideration that the EPD may move up or down with this additional information.
5. Genomic-enhanced EPDs include all available data for an animal, including pedigree, performance measures from proper contemporary groups and any available genomic results.
6. Calves with limited data contributing to their EPDs due to age, contemporary group size (e.g., embryo transfer calves), or missing data benefit from genomic results generating EPDs that would otherwise not be computed.

### Path 2:

#### Commercial producers using Angus bulls

Commercial bull buyers using Angus genetics have access to Certified Angus Beef LLC's (CAB) GeneMax™ DNA test.

1. GeneMax provides affordable results on the genetic potential for marbling and gain in high-percentage animals sired by registered Angus bulls.
2. Individual Angus-specific DNA results are provided as an economically weighted value, called a GMX Score, which combines both marbling and gain.
3. The GMX Score is expressed on a 1-to-100 scale, with a higher number being more desirable.
4. As a selection tool for marbling and gain in potential replacement heifers, GeneMax can assist in characterizing end-product genetics.
5. As a marketing tool, GeneMax provides a resource for documenting quality value of commercial replacement heifers with adequate gain. Likewise, feeder calves have documentation for potential grid-marketing paths.
6. Results from GeneMax are not included in EPDs and were designed to assist commercial producers using Angus genetics.
7. Details on testing strategies, results, sire identification and ordering steps are available at [www.cabpartners.com/genemax](http://www.cabpartners.com/genemax).



**Editor's Note:** "By the Numbers" is a column by Association performance programs staff to share insights with Angus members about data collection and interpretation, the National Cattle Evaluation (NCE), genetic selection, and relevant technology and industry issues. If you have questions or would like to suggest a topic for a future column, contact Sally Northcutt, director of genetic research, or Bill Bowman, director of performance programs, at 816-383-5100.

**E-MAIL:** [snorthcutt@angus.org](mailto:snorthcutt@angus.org)