



# By the Numbers

► by **Kelli Retallick**, AGI director of genetic service

## Angus GS: commonly asked questions

*As of Saturday, Nov. 4, members were able to order the Angus GS™ test through AAA Login. Angus GS is a high-density genomic test at an affordable price. Built by the science team at Angus Genetics Inc. (AGI) with input from scientists at Neogen GeneSeek Operations, it is the only Angus-specific chip of its kind.*

### Setting the stage

“Angus GS is designed to work hand in glove with [the] genetic engine to calculate EPDs (expected progeny differences). We placed all the SNPs (single-nucleotide polymorphisms) used in the single-step genomic evaluation onto the new genotyping array, so cattle genotyped with Angus GS will benefit from actual genotype calls and not rely on imputation,” Stephen Miller, director of genetic research, said.

Since its release, members have started to take full advantage of its benefits and value to remain at the forefront of the industry, and they posed different questions.

### What does GS in Angus GS mean?

This stands for Angus Genomic Selection. Angus breeders now benefit from genomic selection with our genomic-enhanced EPDs (GE EPDs). The name signifies this as the product of choice for GE EPDs.

### What will the new test cost?

The new test will cost \$37 per test, which includes parentage markers.

### Is this simply the GGP-LD with a different name?

No. This is a brand-new design, specifically for Angus. While Angus GS is powered by Neogen GeneSeek Operations, it is truly an Angus test and the only breed-specific genomic profile in the beef industry. It contains custom markers selected for Angus not found on other tests, placing members in the driver's seat. Angus GS will not be sold to other organizations. However, the opportunity to license to international partners such as the Canadian or Australian Angus associations allows for greater marketability of members' genetics to foreign countries.

### What are the advantages of Angus GS?

► The core set of SNPs are genotyped directly, not imputed. Imputation works great, but any time one can directly

genotype markers, it is the best it can be.

- It's built for Angus by Angus, making it more useful and complete. Sharing chip space with other breeds and purposes is no longer required when we own our own array, so it only makes sense to saturate the panel with more markers just for your cattle.
- Genes selected for Angus genetics could lead to future refinement of more traits. Several research markers were added for traits like fertility, health and meat quality.
- It is priced for whole-herd genomic selection. At \$37 you don't have to pick and choose; test them all and make better decisions.
- It's more than a chip; it is a new plan for the Angus business.

### Does this mean anything I have tested previously is now obsolete?

Absolutely not. The current genomic markers used in weekly Angus genetic evaluation will still be utilized for prediction of EPDs.

### Can and should I upgrade previously tested animals?

Producers will see no change in EPD accuracy and little to no change in the EPDs by re-testing animals on Angus GS. The same core markers will be fed into the EPD calculations, so the results won't change. Animals tested previously on a low-density platform (GGP-LD, i50k) can be re-tested on Angus GS, a high-density platform. However, the AGI team recommends producers invest dollars in testing new animals rather than re-testing animals already genotyped.

### Is this an Angus or a Neogen product?

Angus GS was specifically branded and built by the American Angus Association and AGI for the membership. While this is the Angus genomic test, Neogen collaborated with AGI scientists in the chip design and will provide the genotyping lab services.

### Is the new product more accurate than previous tests?

The AGI team has worked to saturate Angus GS with markers targeting genomic regions of influence in Angus cattle. This means the potential for increased future test accuracy. Additional markers for traits like fertility, feed efficiency and meat quality have been included to advance research for future trait selection. Angus-specific markers added to the test were found to possibly have effects in research populations. Before new markers are added to the Angus weekly evaluation, a larger subset of animals must be tested with Angus GS to determine the ultimate value of these markers. Initial utilization of Angus GS will be similar to upgrading newly tested animals from a low-density to a high-density test available through AGI.

### What about commercial producers?

Zoetis has agreed to lower the price of GeneMax® Advantage™ to \$28 per test. Seedstock producers who wish to ensure commercial customers can take advantage of the GeneMax Sire Match should feel comfortable using Angus GS to test bulls being sold to producers for this year's breeding season. Angus GS will be compatible with commercial tests available through AGI.

### What about add-ons, such as genetic conditions?

All genetic conditions currently monitored by the Association will be available for inclusion in the new test with an add-on fee. In addition, parentage markers are also included in the Angus GS test design and are compatible with previously reported parentage results in the Association's database, as well as those of our international partners.

### Parting thought

Angus GS is about looking to the future while rewarding each member who has invested in genomics. This opportunity was made possible because of the volume of testing and genotyping data available to support the cause, matched with the sophisticated genetic evaluation models behind Angus's weekly evaluation.

As we continue, members' commitment to data collection will be key. Genomic predictions are only as good as the database behind them, and Angus GS is one more tool to help build the best database possible. For any further questions, please contact the Angus Genetics team at 816-383-5100.

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