

# DNA Questions Answered

AGI President Dan Moser answers the most common questions about genomic testing during member workshop.

by *Kindra Gordon*, field editor

**A**t the 2016 Angus Convention hosted Nov. 5-7 in Indianapolis, Ind., Angus Genetics Inc. (AGI) President Dan Moser took time to answer some of the most common questions he is asked with regard to genomic testing.

The genetic test data collected through the years has contributed to the development of genomic-enhanced expected progeny differences (GE-EPDs), which, in turn, is facilitating greater accuracy and precision for identifying and selecting genetics with increased profit potential for commercial producers.

Moser emphasized that as the Angus breed looks to the future, understanding and utilization of genomic technology by seedstock and commercial producers will continue to be essential.

## 1) What is the difference between high-density (HD) and low-density (LD) tests, and which one do I need for my cattle?

Moser explained that “density” refers to the difference in the number of markers being screened for on the DNA test to assess the genetic makeup of an animal. HD test products have the ability to screen for greater than 50,000 markers. Today, as research improvements are made, many HD tests can screen for as many as 70,000 to 150,000 markers.

A low-density DNA test assesses fewer markers per animal, but offers comparable accuracy in genetic prediction. Moser explains that similar accuracy can be achieved with the LD test because HD data from more than 100,000 animals has been collected to establish the breed’s genotype database. As a result, a process known as imputation can then be used with LD test results to predict the HD genetic profile for the animal, which is equivalent to the genetic profile that would have been obtained if the animal were tested with the HD product.

The benefit of the LD test is that it can be offered at a lower cost. Moser shared that an HD test costs about \$75 per animal, whereas an LD test costs about \$45-47 per animal.



► AGI President Dan Moser explained the difference between high- and low-density genomic tests.

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“In most cases, a low-density test is sufficient,” Moser said. “It does as good a job and at a lower cost.” Moser indicated that for widely used, influential sires, such as bulls used for artificial insemination (AI), conducting a high-density test is beneficial.

## 2) What is the difference between the genetic tests offered by GeneSeek and Zoetis?

Moser explained that both companies offer an HD and an LD test. Zoetis offers i50K and HD50K, its LD and HD products, respectively. GeneSeek offers GGP-LD and GGP-HD, its LD and HD products, respectively. He emphasized that it makes no difference which company’s test is used.

“All of the markers in the tests from either company get the same genotype. It all goes through the same pipeline to produce the outcome of genetic information. We believe it is good to have competition [of two companies] in the marketplace because it motivates us all to do better,” Moser said.

## 3) How important is phenotypic data collection now that DNA testing is available?

“It’s more important than ever to have

phenotypic data collection along with DNA testing, because data plus DNA equates to selection tools that work,” said Moser. “The power of DNA tests comes from having all of those actual data records. That is what gives us accuracy. Without ongoing phenotypic data collection and submission, the accuracy of DNA testing would decay.”

Moser concluded, “I encourage producers to continue to submit data — weights, ultrasound data and other measurements — for our information to continue to be as accurate as possible.”

Learn more about AGI and how genetic testing may apply to your operation at [www.angus.org/AGI/](http://www.angus.org/AGI/).

Moser’s presentation was part of a series of half-hour workshops hosted Nov. 5-6 in the Angus booth within the trade show at the 2016 Angus Convention. For additional coverage of the Angus Convention — including summaries, speaker presentations, photos, videos and more — visit the convention newsroom at [www.angus.media/news/Angus-Convention](http://www.angus.media/news/Angus-Convention).



**Editor’s Note:** *Kindra Gordon is a freelance writer and cattlemaster from Whitewood, S.D.*

