

HD50K for Angus Genomic Enhanced EBV Frequently Asked Questions



Information on the High-Density 50,000-Marker Panel

1. Q: What is the HD50K for Angus?

A: The HD50K for Angus is the beef industry's first and only high-density DNA panel where more than 50,000 DNA markers are genotyped for each animal. This powerful tool can help producers more dependably predict genetic merit in young, unproven Angus cattle, as compared to mid-parent EBVs alone. This information saves time and money by providing more complete and accurate information for more precise selection and mating decisions on young animals.

2. Q: What is a MVP™?

A: The MVP, or Molecular Value Prediction, is a numeric value derived from the overall sum of different gene marker effects in the animal's genotype for each specific trait of interest. It is expressed in units of the trait to help producers apply the information to breeding and management programs.

3. Q: What traits are available in the first release of the High-Density 50K panel for black Angus?

A: MVPs for 16 traits are available in the initial release of the HD50K for Angus. MVPs for the following traits will further enhance the evaluation of available performance data and EBVs: birth weight, weaning weight, yearling weight, mature cow weight, scrotal size, milk (maternal component of weaning weight), calving ease direct, calving ease daughters, marbling, rib fat depth, eye muscle area and carcass weight. MVPs for tenderness, feedlot daily gain, dry matter intake and feed efficiency (measured as net feed intake) will provide genomic estimates of an animal's value for these difficult to measure but economically important traits.

4. Q: How were the High-Density panel predictions validated?

A: The High-Density panel prediction equations were initially validated in the U.S. from a data set with 5,100 genotyped Angus animals with phenotypes and genetic evaluation available for these traits. In addition, a significant number of Australian and New Zealand born high accuracy sires were used to further calibrate these prediction equations. A proprietary strategy, developed by Pfizer Animal Genetics and reviewed by external scientific experts, was used to simultaneously develop the prediction equations from the High-Density panel and cross-validate on unrelated subsets of animals. Additionally, a further validation population was put together from a combination of high accuracy sires used in Australia and New Zealand. The MVPs were also supplied to AGBU (Animal Genetics and Breeding Unit) for an independent validation utilising extensive phenotypic data from these animals and their contemporaries and progeny.

5. Q: Can the HD50K be incorporated into Angus Group BREEDPLAN EBVs?

A: Yes, as of April 2011, HD50K results can be incorporated into Angus Group BREEDPLAN EBVs resulting in genomic enhanced EBVs.

6. Q: Now that Genomic Enhanced EBVs are available, what information will breeders receive after testing?

A: You will still receive a full HD50K for Angus report from Pfizer Animal Genetics, however, if samples are submitted through the Angus Society, the results will also automatically be incorporated into a subsequent Angus Group BREEDPLAN analysis that will produce Genomic Enhanced EBVs for every animal tested.

7. Q: The initial offering is targeted for black Angus populations. Does this mean that this product's application is best used only in Angus cattle?

A: The High-Density panel is best utilised to provide results on black Angus cattle.

8. Q: Why is your initial offering only available for black Angus?

A: The data available for discovery in our initial research was predominantly black Angus and therefore the prediction equations developed were designed specifically for the black variant of the breed. Our R&D team is evaluating High-Density panel data from other breeds with a view to releasing prediction equations for non-Angus cattle in the near future.

9. Q: How long will it take for me to get results back after I send in a sample?

A: Customers can expect a four to six week turnaround once the sample and completed order form are received by Customer Service.

It is important to plan sample collection events well before any sale or selection day. If Genomic Enhanced EBVs are required, please also factor in the date of the monthly Angus analysis.

10. Q: What types of DNA samples are recommended for High-Density testing?

A: Semen or hair samples will be accepted for High-Density testing. Sample collectors for hair can be obtained from Pfizer Animal Genetics. The following table lists the amounts needed for each sample type for testing:

Sample Type	Amount Required
Hair	Two Pfizer Animal Genetics hair sample collectors with at least 20 to 30 visible follicles each
Semen	One full straw

11. Q: At what age can animals be sampled?

A: Hair samples can be taken as soon as the animal is 2 months old. Semen samples can be taken once the animal is old enough to produce a viable sample.

12. Q: How much will it cost to test my animals when new traits are available?

A: An animal's 50K genotyping profile from a one-time sample submission provides the opportunity for ongoing access to MVP upgrades for future unique traits and technology advancements from Pfizer Animal Genetics. The price to access those upgrades will be established as new offerings become available.

For more information, please visit our website or contact your Pfizer Animal Genetics representative:

QLD: Terry Farrell 0437 226 122 | NSW & WA: Steve Parker 0407 822 465

VIC, SA & TAS: Jeff Doolan 0419 664 834 or call our Customer Service team on 1300 768 400.