



Improved Genomic Technology for Angus Australia Members

February 2015

Angus Australia members will shortly have access to a more comprehensive range of genomic based tests for use within their breeding programs following the introduction of several improvements to the genomic technology that is available for Angus animals over coming months.

The improvements to the genomic technology that is available will ensure that members of Angus Australia will continue to have access to the latest genetic technologies within their seedstock operation.

1. Launch of a Recalibrated Zoetis HD50K Product for Angus

The Zoetis HD50K for Angus (HD50K) product has been recalibrated with an improved product set to be launched by Zoetis in early March 2015.

The HD50K product assesses the genetic makeup of black Angus cattle at more than 50,000 locations across the animal's genome (known as SNPs or single nucleotide polymorphisms) to provide a genomic prediction of an animal's genetic merit. The HD50K genomic predictions are included in Angus BREEDPLAN to calculate Estimated Breeding Values (EBVs) of higher accuracy.

The first version of the HD50K product became available to Angus breeders in 2010. Over time the product has been enhanced, with the latest version of the product including:

- Recalibrated genomic predictions for all existing traits. The recalibration has resulted in an increase in the accuracy of the genomic predictions for the majority of traits.
- Genomic predictions being calculated for an additional six traits, being rump fat, retail beef yield, final weight, gestation length, days to calving and net feed intake (post weaning).

2. Inclusion of Improved Zoetis HD50K into Angus BREEDPLAN

With the availability of an improved Zoetis HD50K product, a number of modifications will be implemented into the Angus BREEDPLAN evaluation.

Fast Facts

- A recalibrated Zoetis HD50K for Angus product will be launched in early March 2015.
- Modifications will be made to Angus BREEDPLAN to accommodate the recalibrated Zoetis HD50K for Angus product within the March 2015 analysis.
- Changes to the BREEDPLAN EBVs of animals for which HD50K genomic predictions are incorporated in BREEDPLAN are expected within the March 2015 Angus BREEDPLAN analysis. The BREEDPLAN EBVs for animals without HD50K genomic predictions will remain unaffected.
- Modifications are underway to Angus BREEDPLAN to accommodate genomic information from multiple service providers.

These modifications will be implemented from the March 2015 Angus BREEDPLAN analysis onwards and include:

- The genomic predictions for all animals previously tested with the HD50K product (approx. 8,500 animals) have been recalculated by Zoetis, with the updated genomic predictions replacing those included in previous Angus BREEDPLAN analyses.
- The relative emphasis that is used when incorporating the HD50K genomic predictions into the Angus BREEDPLAN analysis has been updated to reflect the "new" accuracy of the genomic predictions. The updated emphasis assigned to each genomic prediction is based on research conducted by the Animal Genetics & Breeding Unit (AGBU) in Armidale.



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- The traits for which HD50K genomic predictions are incorporated into the Angus BREEDPLAN evaluation has been expanded from 12 to 14.
- The analytical process by which genomic predictions are incorporated into the Angus BREEDPLAN analysis has been simplified to ensure that it is appropriate for the genomic information that is now available.

The implementation of these modifications will result in changes to the BREEDPLAN EBVs of animals for which HD50K genomic predictions are incorporated in BREEDPLAN.

The magnitude of the change in EBVs will differ for each individual animal depending on the accuracy of the animal's existing EBV, the amount of change observed in the animal's HD50K genomic predictions, and the change in the emphasis that is used when blending each respective genomic prediction within the BREEDPLAN analysis.

Only the EBVs of the individual animal for which genomic predictions are included will change, not the EBVs for its relatives (eg. its parents or progeny). The BREEDPLAN EBVs for animals without HD50K genomic predictions will remain unaffected.

3. Inclusion of Genomic Information from Multiple Service Providers into Angus BREEDPLAN

Work is nearing completion to enable the inclusion of genomic information into the Angus BREEDPLAN

analysis from multiple service providers. At present, only genomic information from the Zoetis HD50K product is included in Angus BREEDPLAN.

Initial efforts are centred on the inclusion of the results from the genomic tests developed by the Beef Co-operative Research Centre (Beef CRC) and the GeneSeek Genomic Profiler (GGP) products.

The introduction of this functionality will enable Angus Australia members to utilise additional genomic products, and select the product that offers the most additional accuracy when predicting the genetic merit for the traits of particular importance to their breeding program.

The timing of the implementation of this functionality into the Angus BREEDPLAN evaluation is still to be determined, however it is anticipated that it will occur within the next few months.

Further Information

To further discuss the upcoming improvements to the genomic technology that is available to Angus Australia members, please contact either Angus Australia's Breed Development & Innovation Manager, Carel Teseling on (02) 6773 4602 or via email carel@angusaustralia.com.au, or Angus Australia's Education, Extension & Youth Manager, Andrew Byrne on (02) 6773 4618 or via email andrew@angusaustralia.com.au.



The information being collected within the Angus Sire Benchmarking Program is greatly assisting with the development of improved genomic based tests for Angus cattle