

December 2021

Annual Enhancements to TransTasman Angus Cattle Evaluation

A number of enhancements were implemented into the analytical software that is used to calculate Estimated Breeding Values (EBVs) within December 2021 TransTasman Angus Cattle Evaluation.

The enhancements are part of the annual updating of the TransTasman Angus Cattle Evaluation analytical software and will result in the calculation of EBVs that better predict the genetic merit of Australian Angus animals.

1. New Selection Indexes

Following the completion of a comprehensive industry consultation process during 2021, new selection indexes have been introduced, replacing the Angus Breeding, Domestic, Heavy Grain and Heavy Grass selection indexes which have been published since 2014.

Ten selection indexes will now be published for animals within the TransTasman Angus Cattle Evaluation (TACE).

The selection indexes cater for a range of different breeding systems, target markets and production systems, and include:

Index Name	Abbreviation
Angus Breeding Index	\$A
Domestic Index	\$D
Heavy Grain Index	\$GN
Heavy Grass Index	\$GS
Angus Breeding Low Feed Cost Index	\$A-L
Domestic Low Feed Cost Index	\$D-L
Heavy Grain Low Feed Cost Index	\$GN-L
Heavy Grass Low Feed Cost Index	\$GS-L
AngusPRO Index	\$PRO
Angus Terminal Sire Index	\$T

The \$A and \$A-L selection indexes will be published in the standard Estimated Breeding Value (EBV) display for an animal, whereas the other selection indexes will be made available from the Angus Australia website for those breeders who wish to use them in their selection decisions.

The introduction of new selection indexes has resulted in considerable changes to the selection indexes values that are published for animals. In addition to the re-ranking of

animals, the magnitude of the new selection indexes is also higher, while there is also a greater difference between the selection index values of different animals.

2. Maintenance of genomics pipeline

Several elements of the pipeline by which genomic information is incorporated into the calculation of EBVs have been updated, including:

- **Re-estimation of the reference haplotype library:** The reference haplotype library that is used when converting (imputing) the raw genotypes from different genotyping platforms into a standard set of SNPs for use in the genetic evaluation has been updated. Some changes in EBVs may be observed for animals with low density genotypes (i.e. <20K) or their close relatives as a result of this enhancement.
- **Incorporation of additional SNPs:** The single nucleotide polymorphisms (SNPs) that are used in the genetic evaluation have been updated to include additional SNPs from the latest genotyping platforms.
- **Re-estimation of the allele frequencies:** Allele frequencies are used to assess whether an animal is sufficiently related to the genomic reference population to enable the utilisation of its genomic information in the genetic evaluation. The allele frequencies used as part of these quality assurance checks and may result in the inclusion of a small number of genotypes that were previously excluded, or conversely the exclusion of a small number of genotypes that were previously included in the genetic evaluation.

The updating of these elements has resulted in minor changes in EBVs and EBV accuracies for most animals, however are important in maintaining the genetic evaluation software.

3. New EPDs

A revised set of EPDs have been included for imported American and Canadian Black and Canadian Red Angus animals. The inclusion of updated EPDs has resulted in changes to the EBVs for some imported animals, and their relatives.

Further Information

To further discuss any of the enhancements that have been implemented in the mid December 2020 TransTasman Angus Cattle Evaluation, please contact Andrew Byrne, Angus Australia's Breed Development & Extension Manager, on (02) 6773 4618 or andrew@angusaustralia.com.au.