

# THE BREEDPLAN Edge

#### **DID YOU KNOW**

BREEDPLAN represents over 14 million animals, almost 40 cattle breeds and 100+ breed associations distributed across 14 countries.

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BREEDPLAN uses pedigree, performance and genomic information combined with advanced analytical processes to provide Estimated Breeding Values (EBVs)



All technical developments and enhancements are reviewed by a large team of Australian livestock geneticists to ensure the science that underpins BREEDPLAN remains at the cutting edge of genetic evaluation services world-wide.

## **Exciting New Developments**

## New Accuracy Calculation Software for Single-Step BREEDPLAN Analyses

As the volume and density of genomic (DNA) information used in BREEDPLAN evaluations continues to grow, it highlighted the need for greater efficiencies to account for SNP effects in the calculation of EBV accuracy.

Rather than reducing the amount of genomic data to keep things "workable", BREEDPLAN developed an advanced algorithm for accuracy calculations that allows the highest of genotype densities to be retained. *Read more here https://breedplan.une. edu.au/news/new-accuracy-calculation-softwarefor-single-step-breedplan-analyses/* 

#### Southern Multi Breed Project (2020-2025) Update

The aims of this project are to collect performance information (including DNA) to support existing breed genetic evaluations for temperate cattle breeds and additionally may assist in the future development of EBV's for new traits and multibreed evaluations in the future. This project has reached a significant milestone with the first heifers born within the project now having their own calves on the ground that represents the first opportunity for the project to fully evaluate female fertility. This is just one of the numerous research projects that are contributing to BREEDPLAN that are detailed in the *Spring 2022 Update magazine*.



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## The International Hereford and Brahman Projects

ABRI's research and development team regularly conduct projects that explore opportunities to address international reach and demands from breeders. Despite the low level of across-country linkage that often exist among beef breeds, the international trade in beef genetics and the accumulation of genomic data has opened the way for some beef breeds to start moving towards genetic evaluations of an international scale. *Read more here Autumn 2022 Update Magazine.* 

#### The Low Methane Beef Project

This project is a collaboration between MLA, NSW DPI, Angus Australia, and UNE with the aim of creating Estimated Breeding Values (EBV's) for greenhouse gas emission traits. Previous research has shown that breeding for lower methane emissions is possible. However, a large volume of animals measured for greenhouse emission traits, simultaneously with production traits is required to underpin EBV's to allow for effective selection.

Read more here https://www.une.edu.au/ connect/news/2022/04/une-enters-\$19-millioncollaboration-to-breed-low-emission-livestock detailed in the Spring 2022 Update Magazine.

#### AGBU Beef Genetics Research (Funded by the MLA)

AGBU continues to develop the science for incorporating genomics into genetic evaluations particularly for composite, crossbred, and multibreed populations. Populations currently being tested for Single Step BREEDPLAN include Brangus, Droughtmaster, Limousin, and Tropical Composites, as well as development of multibreed genetic evaluations using Repronomics<sup>™</sup> datasets which include Brahman, Santa Gertrudis and Droughtmaster populations all together.

Further BREEDPLAN enhancements:

- development of a new reproduction module to capture both AI and natural mating into a single breeding value.
- improved diagnostics enabling a partitioning of the contributions to an EBV.

AGBU's BREEDPLAN research and development is regularly presented to an expert Technical Committee, ensuring BREEDPLAN is cutting edge and technically rigorous.

BREEDPLAN: Accelerating genetic progress in beef cattle since 1985

Please contact ABRI at any time for further information regarding BREEDPLAN



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