



Innovation in action

Breeding for production and function – supporting early adoption and implementation of genomic data into Texel genetic improvement

CIEL supported industry-led research



Challenge

The Texel is a highly adaptable breed. AHDB's 2021 GB Breeds Survey showed that more than 27% of all rams used in GB were Texels, and 26% of all ewes were mated to Texel rams. Approximately 2.6% of the national flock was purebred Texel and 15% of crossbred ewes were found to be Texel sired. Overall, the breed and its crosses represented 12% of all ewes in GB.

A performance breed, cumulative results from the last 6 years of AHDB's RamCompare project show Texel sires continuing to dominate the rankings, with 14 of the top 20 rams for overall carcass merit index being Texels. Continued investment by the Texel Sheep Society and its members supports the breed's genetic progress and successful uptake by breeders using genetic improvement tools to continually improve meat yield and growth rate whilst optimising muscularity and fat cover.





Action

The aim of this project, initiated and led by the Texel Sheep Society, was to develop a road map, reviewing the Society's phenotyping resource and strategy whilst considering the integration of genomic evaluations into its genetic improvement programme. The research also sought to identify the most effective approach to, and development of, data pipelines to help deliver and facilitate uptake of genomic information by farmers. This will continue to support the breed's progress and improvement of cherished commercial production and environmental traits that provide significant value and benefit to the industry.

Undertaken in collaboration with SRUC EGENES, AbacusBio and Map of Ag Group, the project investigated the effect the inclusion of genomic data may have on the improvement in estimates of genetic merit for both proven and unproven animals. The project also looked into the effects on pedigree, levels of inbreeding, and how animals might be re-ranked for individual breeding values and overall indexes.

Impact

Financial benefits, attributed to a combination of an increasing genetic trend, increased use of rams from pedigree registered flocks and increased use of Texel rams to breed replacements, are predicted to be significant, amounting to £244 million between 2016 and 2035 (AbacusBio 2016). This CIEL-supported project in conjunction with Texel Sheep Society's own investment, paves the way for the inclusion of genomic information in performance evaluations of pedigree Texel animals and has enabled the collation of Texel genomic data into a single repository, with knowledge of how to maintain this information in the future.

The inclusion of genomic information in evaluations and routine delivery of genomically-enhanced breeding values to Texel breeders will be a first for the UK sheep industry, improving access to vital genomic information supporting increases in genetic improvement of the Texel breed.



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