GenTORE: Genomic Management Tools to Optimise Resilience and Efficiency

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GenTORE – "GENomic management Tools to Optimize Resilience and Efficiency" – is a 5-year European Union funded project within the Research and Innovation Program H2020.

The objective of GenTORE is to develop innovative genome-enabled selection and management tools to optimise cattle resilience and efficiency (R&E) in widely varying environments. These tools, incorporating both genetic and non-genetic variables, will be applicable across the full range of systems (beef, milk and mixed), and will thereby increase the economic, environmental and social sustainability of European cattle meat and milk production systems. To achieve this, GenTORE brings together:

1) multidisciplinary scientific expertise in genomics, environmental assessment, nutritional physiology, health management, precision livestock farming, mathematical modelling, and socio-economics;
2) partners and stakeholders representing breeding organisations, farm technology companies, farm and veterinary advisory services, and farm sectors (organic, grazing, etc.); and
3) a unique data basis including >1 million genotypes.

This multi-actor team will develop tools for:

- multi-breed selection for R&E
- characterisation of diverse farm environments
- large-scale phenotyping of R&E using on-farm technology
- on-farm management of breeding and culling decisions, and
- predicting the consequences for farm resilience of changing breeding and management.

These tools are designed to be applicable under commercial conditions at the end of the project. They will allow increased use of the genomic diversity in cattle breeds, e.g. use of selective cross-breeding to best exploit the local production environment. They will also allow farm managers, their advisors, and policy-makers, to assess the relative importance of breeding for animal resilience vs breeding for efficiency, with respect to system resilience. As such GenTORE will not only enable the use of genomic information to facilitate predictive biology of efficiency- and resilience-related traits, but will also increase resilience of livestock production in the face of current and future challenges of climate change and food security.

Interbull Centre Involvement

The Interbull Centre is one of 21 partners in the project. It is envisaged that the Interbull Centre contributions include data exchange, quality assurance and the development of a phenotype database.

Acknowledgement

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