

Project Partners

The GplusE consortium involves academic and industry partners from 6 EU countries together with the USA and China to allow access to a range of Holstein sub-types kept under both pasture-based and indoor intensive dairy systems



UCD: University College Dublin, School of Veterinary Medicine
Dublin, Ireland



RVC: Royal Veterinary College
London, UK



AFBI: The Agri-Food and Biosciences Institute
Belfast, Northern Ireland, UK



UGent: Universiteit Gent, Faculty of Veterinary Medicine
Merebelke, Belgium



AU: Aarhus University, Department of Animal Science
Foulum, Denmark



CRA: Consiglio per la Ricerca e la Sperimentazione in Agricoltura
Roma, Italy



ICBF: The Irish Cattle Breeding Federation Society Limited
Bandon, Ireland



HZAU: Huazhong Agricultural University
Wuhan, China



KCA: The Knowledge Centre for Agriculture
Aarhus, Denmark



MU: University of Missouri
Columbia, MO USA



ULg-Gx : University of Liège, Gembloux Agro-Bio Tech
Gembloux, Belgium



ULg-FVM: University of Liège, Faculty of Veterinary Medicine
Liège, Belgium



CRA-W: Walloon Agricultural Research Centre
Gembloux, Belgium



FBN: Leibniz Institute for Farm Animal Biology
Dummerstorf, Germany



Unifarm: Unifarm BVBA
Assen, Netherlands

s-EAAP: Service EAAP Srl - Rome Italy



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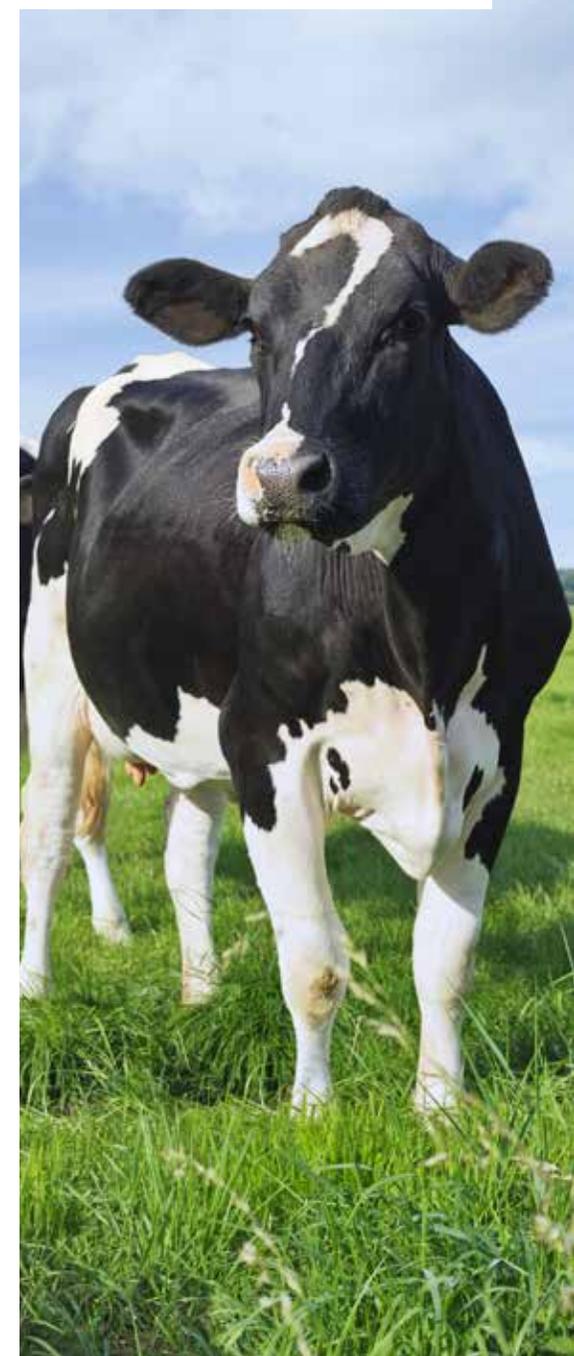


Genotype *plus* Environment

Integration for a more sustainable dairy production system

GplusE is designed to optimise production efficiency, environmental footprint, health and welfare of dairy cows through a holistic approach that considers both state-of-the-art genomic selection and management strategies.

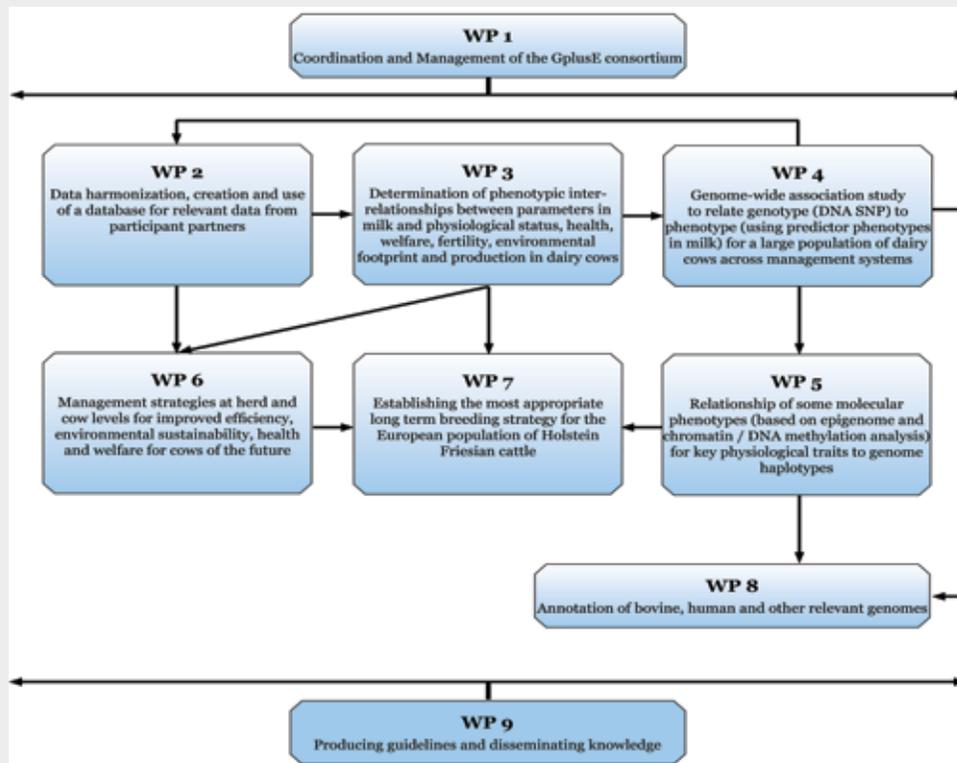
The GplusE project will link new genomic data to a comprehensive array of phenotypic information that will add important novel traits to those currently recorded by most dairy breeding organisations. We will also develop systems that will focus herd and cow management on those key time points in dairy production that have a major influence on attributes of the rest of the productive cycle including efficiency, environment, health, fertility and welfare of cows. This will significantly advance the science, efficiency and management practices in dairy production well beyond the current state-of-the-art.



What we will do

The overall objective of the GplusE project is to develop and exploit genomic data and analytical tools, new phenotyping approaches and breeding strategies for sustainable dairy production systems. To achieve this we will:

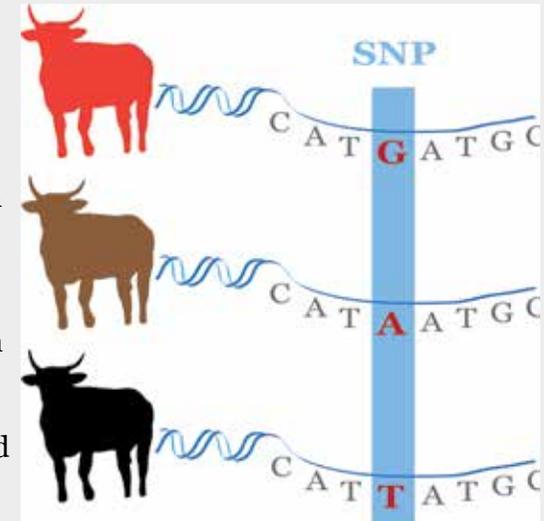
- Develop and validate new, easily-measured phenotypes that can supplement or correlate with and replace traditional phenotypes.
- Identify novel genomic markers, including causative mutations, for the key phenotypic traits.
- Generate ENCODE-like data for the bovine as a public resource.
- Build and validate an appropriate management blueprint based on Hazard Analysis & Critical Control Point (HACCP) and Evolutionary Operations (EVOP) principles.
- Develop new breeding and management strategies.



Expected outcomes

The outcomes from this proposal will include identification of SNPs that add new and precisely defined phenotypes to selection programmes and management systems, enabling cows to remain healthy and thereby improving longevity and welfare.

An increase in general cow health traits and, thus, a potential increase in intrinsic resistance to disease, will also result in reduced antibiotic intervention for the European dairy herd.



This will not only lead to an increased food-product quality due to a lower incidence and scale of antibiotic residues, but may also help to slow down the development of multi-drug resistant bacteria through more appropriate and targeted use of antibiotics.



The GplusE project started in January 2014 and will end in December 2018. It is coordinated by Prof Mark Crowe, University College Dublin, Ireland.