EU-LI-PHE
EUROPEAN NETWORK ON LIVESTOCK PHENOMICS

EUROPEAN LIVESTOCK PHENOMICS NETWORK

A COST Action connecting breeders, researchers, farmers and industry to accelerate the science of farmed animal phenotyping across Europe.

FACTSHEET
OCTOBER 2025

COST ACTION CA22112

5
WORKING GROUPS

40+
COUNTRIES INVOLVED

2023-2027
ACTION DURATION

CA22112
COSTREFERENCE

WHAT IS PHENOMICS?

Phenomics is the systematic, large-scale capture and analysis of animal phenotypes. By integrating four dimensions of data, it turns complex biological signals into actionable decisions for breeding, farming and research.

PHENOTYPE
Observable traits: growth, milk yield, behaviour, health scores.

GENOTYPE
Genomic data, DNA variants and epigenetic markers.

ENVIRONMENT
Climate, housing, management systems and farm conditions.

MANAGEMENT
Feeding, veterinary care and husbandry practices.

Phenotype + Genotype + Environment + Management = Insight & Better Decisions

EU-LI-PHE WORKING GROUPS

Working Groups drive the scientific and dissemination agenda of the Action:

WG1 Phenotyping Technologies
Reviews genome/epignome-to-phenotype links; maps research needs and new application roadmaps.

WG2 Genome to Phenome Integration
Surveys phenotyping technologies and infrastructures; defines a roadmap for animal-wide data capture.

WG3 Computational Resources & Methods
Evaluates models, analysis tools and cyberinfrastructure for large-scale phenomics data.

WG4 Economic Impact, Regulations & Society
Assesses economic and societal dimensions; reviews regulatory frameworks and data governance.

WG5 Stakeholder Engagement & Dissemination
Drives communication, training events, publications and the network's online presence.

cost EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

Funded by the European Union

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HOW PHENOMICS HELPS

Livestock phenomics delivers measurable value to every actor in the production chain:

BREEDERS

- Faster genetic gain via high-density trait data
- Multi-trait selection indices
- Genomic prediction accuracy improved
- New functional traits identified

FARMERS & VETS

- Early disease detection through precision monitoring
- Optimised feeding and reproduction
- Reduced antibiotic use
- Better animal welfare scores

RESEARCHERS

- Access to harmonised multi-species datasets
- Novel computational phenotyping methods
- Cross-country collaboration networks
- Clear impact pathways from data to decision

ANIMALS & SOCIETY

- Improved animal health and welfare
- Reduced environmental footprint
- Transparent food production systems
- Increased sector resilience and competitiveness

HOW EU-LI-PHE ENABLES THIS

CONNECT

Harmonises methods across European countries and institutions.

STANDARDISE

Develops shared trait definitions and training resources.

TRANSLATE

Bridges research with breeders, farmers and technology providers.

DID YOU KNOW?

- Sensor fusion outperforms any single data source
- Phenomics can cut methane per kg product by 20-30%
- EU livestock sector worth over €168 billion annually
- Over 500 researchers joined EU-LI-PHE in year one
- Cross-species models transfer insights between cattle, pigs, poultry and sheep
- AI-driven phenotyping reduces labour costs by up to 40%
- Standardised protocols increase data reuse fivefold
- Early-career researchers make up 45% of membership

ACTION DETAILS

Action CA22112
Start: 27 September 2023
End: 26 September 2027
Chair: Prof Luca Fontanesi, University of Bologna
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GET INVOLVED

Visit www.cost.eu/actions/CA22112
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