

# Development of integrated livestock breeding and management strategies to improve animal health, product quality and performance in European organic and 'low input' milk, meat and egg production

## Objectives

The LowInputBreeds project has four main objectives:

- ▶ To develop and evaluate innovative breeding concepts to deliver genotypes with 'robustness' and quality traits required under 'low input' conditions.
- ▶ To integrate the use of improved genotypes with innovative management approaches. These will focus on issues where breeding or management innovations alone are unlikely to provide satisfactory solutions e.g. mastitis and parasite control.
- ▶ To identify the potential economic, environmental and ethical impacts of the project's results. The project needs to ensure that the results are in line with society's different needs, priorities and consumer expectations.
- ▶ To establish an efficient training and dissemination programme aimed at rapid application of project results in organic and 'low input' livestock farming.

## Key Facts and Figures

- ▶ 5-year EU Collaborative Project
- ▶ Project duration: May 2009 – April 2014
- ▶ Total budget: € 9 million/EC contribution € 6 million
- ▶ 94 person-years of research, over 60 scientists involved
- ▶ 21 leading research and industrial organisations from 15 countries:

Newcastle University, UK, Coordinator

Research Institute of Organic Agriculture FiBL, CH, Scientific coordinator  
 Applied Genetics Network, CH; Danish Centre for Bioethics and Risk Assessment, University of Copenhagen, DK; Federal Research Institute for Rural Areas, Forestry and Fisheries vTI, Institute of Organic Farming, DE; Federal University of Viçosa, Brazil; Georg-August-University Göttingen, DE; Institut de Sélection Animale BV, FR; Institut National de la Recherche Agronomique de Tunisie, Tunisia; Institut National de la Recherche Agronomique, FR; IPG, Institute for Pig Genetics BV, NL; Lincoln University, NZ; National Agricultural Research Foundation, GR; Swiss Brown Cattle Breeders' Federation, CH; Swissgenetics, CH; TOPIGS Iberica / Pigure Ibérica, ES; University of Catania, IT; University of Guelph, Canada; University of Ljubljana, SL; University of Louvain, B; Wageningen University and Research Centre, Livestock Research, NL



### Subproject 1: Cattle

Novel breeding approaches, including genome-wide selection and cross-breeding, will be implemented and tested to assess the potential of these new technologies.

#### Main issues addressed

Mastitis, fertility, milk quality, environmental impacts, lack of structured breeding programmes for organic and 'low input' systems.



### Subproject 2: Sheep

Within breed selection strategies for biotic and abiotic stress tolerance (including marker assisted selection) will be combined with innovative management strategies.

#### Main issues addressed

Heat and cold stress, gastrointestinal nematodes, mastitis, meat and milk quality, lack of support for Southern European small ruminant production systems.



### Subproject 3: Pigs

A specific "flower pig breeding" concept on the basis of collective on farm data registration instead of specialised breeding populations will be established.

#### Main issues addressed

Pig survival, heat stress, nutritional and sensory meat quality, lack of appropriate breeding infrastructure for the organic and 'low input' sector.



### Subproject 4: Laying hens

A "farmer participatory breeding system" with direct feed back of farmers to the breeding company will be designed in order to develop an improved free-range hen.

#### Main issues addressed

Animal behaviour problems, protein supply, sensory and nutritional egg quality, ethical issues, lack of 'low input' focused breeding experience and infrastructure.

## Subproject 5: Impact Assessment

A multi-criteria evaluation of the environmental, food quality, economical and ethical impacts of the innovations resulting from subprojects 1 to 4 will be carried out.



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 Instituto de investigaciones para la agricultura orgánica

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