

**Animal Research Programme –
Sustainable Production Systems and System Analysis
RMIS No: 6020**

Title

Multi-species swards and multi scale strategies for multifunctional grassland-based ruminant production systems

Abstract

MULTISWARD is a small or medium-scale focused research project funded through the European Union Seven Framework Programme. (FP7). Overall, Multisward will support developments and innovations in grassland production and management throughout the diversity of European farming systems, pedo-climatic and socio-economic conditions. It will enhance regulating and supporting services from grasslands at the farm and landscape levels whilst improving the competitiveness of grassland-based ruminant production systems. This will be achieved by a concerted use of diversity: multi-species swards, diversity of plant communities at the farm and landscape levels and diversity of production systems at the landscape level.

1. To reach this goal, MULTISWARD will:
2. Define the roles and utility of grassland from economic, agronomic and environmental perspectives and determine stakeholder's requirements and expectations with respect to multi-functionality in EU countries
3. Assess the performance of multi species swards (MSS) in terms of plant productivity and animal nutrition over a range of environments and determine the most appropriate mixtures according to the soil and climatic conditions
4. Optimize the role of MSS in the provision of regulating and supporting services and maintaining a high level of biodiversity
5. Design and evaluate innovations in grazing and animal management (including animal genetics) to enhance the sustainability and competitiveness of grassland-based ruminant production system
6. Provide adequate evaluation tools (indicators and models) to assess ways of combining high production efficiency with optimal provision of regulating and supporting services from grasslands at farm to regional levels
7. Identify and analyse the effects of socio-economic and policy scenarios supporting grassland development or inducing grassland replacement by annual crops in order to support the design of future policies

Specifically, in terms of Irish grassland and Irish dairy production, MULTISWARD will:

- provide an assessment of the roles and utility of grassland and determine stakeholders expectations towards multifunctionality in grassland
- evaluate the predictive capacity of grass growth models
- develop and provide information on innovative grazing systems
- establish the environmental sustainability of milk production from grazed grass
- investigate the appropriate animal for efficient grass based milk production
- further develop whole farm modelling and decision support tools

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