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

Geographical location:
European Union

Keywords:
grazing
Farming practice
grassland utilization
grassland
Plant production and horticulture

Agricultural sectors:
Fodder and forage
Beef cattle
Dairy cattle
Sheep & Goats meat
Sheep & Goats milk

Main funding source:
EU Framework programmes

Project acronym:
MultiSward

Project type:
Research project

Starting date:
2016

Website:
MultiSward [1]

Title (in English):
Multi-species swards and multi-scale strategies for multifunctional grassland-based ruminant production systems

Language:
English

Objective of the project (native language):
Sustainable agriculture requires to combine economic performance, social acceptance of production systems and preservation of the environment. Grassland-based ruminant production systems are at the basis of a major economic sector and may provide efficient tools to mitigate environmental impacts and to generate environmental benefits, especially regarding biodiversity in all European regions.

Objective of the project (in English):
To support developments and innovations in grassland use and management in different European
farming systems (including low-input and organic), pedoclimatic and socio-economic conditions. This makes it possible
i) to enhance the role of grasslands at farm and landscape levels to produce environmental goods and
to maximise services from biodiversity and
ii) to optimise economic, agronomic and nutritional advantages.

Description of activities (native language):

1. Define roles and utility of grassland at catchment and landscape levels from economic, agronomic and environmental perspectives and determine stakeholder’s requirements and expectations with respect to multi-functionality of grassland in EU.
2. 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.
3. Optimize the role of MSS in the provision of regulating and supporting services and maintaining a high level of biodiversity.
4. Design and evaluate innovations in grazing and animal management (including genetics) to enhance the sustainability and competitiveness of grassland-based ruminant production system.
5. Provide 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.
6. Identify and analyse the effects of several socio-economic and policy scenarios supporting grassland development or inducing grassland replacement by annual crops in order to support policy design

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Short summary for practitioners

Practice abstract 1

*Short summary for practitioners (in English):*

The use of multispecies swards allows to improve agricultural sustainability within more intensively managed grassland. One of the reasons is that sheep, cattle and dairy cows eat more when they are fed with grass-legume mixtures. The mixtures lead to a higher production of meat and milk in all cases, whether the mixtures are used as fresh forage or as silage, and as well for stall-fed as for outside grazing animals.

The animals behave increasing their grazing time and intake when they are presented with a mixture of various pasture species. The presence of legumes in the mixtures is the critical factor to rise milk output per ha, mainly due to higher milk production per cow. In the same sense, when lambs graze in diverse pastures, compared with grass-only pastures, they perform higher average daily gains per animal.

Mixing seems to be also good at herd level: rotational grazing of cattle and sheep leads to better average daily gains, particularly in sheep.

Source URL:

Links
[1] https://www.multisward.eu/