Developing sustainable permanent grassland systems and policies across Europe: SUPER-G

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Content

• Background
  • Focus on livestock grazing systems dominated by permanent grassland (PG)
  • Improving management practices

• SUPER-G project
  • Overall aims & objectives
  • Multi-actor & transdisciplinary approach
  • Examples of decision support tools
  • Co-innovation & co-production of new tools & management approaches
Background

• Efficient management of PG – key to productivity & profitability
• Strong link between grass utilisation & profitability
• Dependent on policies & financial mechanisms
• Society dependent on the ecosystem services (ES) provided by PG
• How to retain PG and the rural communities that depend on them?
SUPER-G – overall aims & objectives

SUPER-G will apply a multi-actor approach to:

• **Better understand** the importance and functioning of PG within a range of European biogeographic regions and farming systems
• **Benchmark** PG performance across Europe
• **Co-develop integrated approaches** for profitable and sustainable PG management
• **Co-develop tools and policy mechanisms** to support the maintenance and sustainable management of PG
Permanent grassland (PG)

“any land dominated by grasses or herbaceous forage that can be grazed/mown and has not been included in the crop rotation of a holding for five years or more”
Ecosystem services & farming systems

• Ecosystem services (ES):
  • Food production
  • Biodiversity
  • Climate regulation (including carbon sequestration)
  • Water quality
  • Mediation of water flows
  • Erosion control
  • Landscape and recreation

• From *intensified farming systems* to *remote* and *high-mountain* areas

• Natural, semi-natural and agriculturally improved
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WP1 & WP6 – Management & Ethics requirements

WP2 – Delivering sustainable systems

WP4 – Securing performance

WP3 – Benchmarking & testing

WP5 – Aiding decision-making

WP6 – Communication & Dissemination
SUPER-G five biogeographic regions

SUPER-G partner organisations
Farm networks – benchmarking & testing

<table>
<thead>
<tr>
<th>Livestock type</th>
<th>Biogeographic region</th>
<th>Country</th>
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<tbody>
<tr>
<td>Sheep</td>
<td>Alpine, Cont, Med, Boreal, Pan, Atl</td>
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<tr>
<td>Pigs</td>
<td>Med, Alpine</td>
<td>ES, PT, SI</td>
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<td>Horses</td>
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<td>DE, SE, SI</td>
</tr>
<tr>
<td>Goats</td>
<td>Alpine, Cont, Med</td>
<td>SI, PT</td>
</tr>
</tbody>
</table>

Networks

- Conventional (C) or organic (O) networks

Experimental platforms
Potential management practices

- Applying various grazing systems to improve productivity, grass utilisation and the delivery of other ES (e.g. C sequestration)
- Demonstrating and validating the use of canopy sensing to monitor grass growth and quality
- Testing virtual fencing for more flexible grazing management
- Using diverse seed mixes to investigate the potential to increase productivity in low input systems and tolerate drought and/or waterlogged conditions
- Providing enhanced pollination
- Combining robotic milking with grazing
Securing PG performance

- Consumer/citizen focus groups
- Monetary & non-monetary values
- Socio-economic drivers & barriers for farmer adoption
- Review existing policies & impacts
- Integrated approaches for permanent grassland management
- Developing appropriate policy options & information for decision support tool (DST) development
Decision Support Tools

- AgriNet Grass (Ireland)
- GrassCheck (UK)
- FARMAX (New Zealand)
- Healthy Grassland Soils (UK)
- Farmscoper (UK)
- Mountain Grazing Farmers (Slovenia)
- PastureBase (Ireland)
- Cows & Opportunities (Netherlands)
- Forage for Knowledge (UK)
- Free Walk Farmers (Europe)
Long term grass growth and quality monitoring project

Grass growth forecasting:
  - 7 day
  - 14 day

Network of 48 commercial dairy, beef and sheep grass monitor farms

Range of systems, land type, growth potential and management intensity

Fig. 1: 2018 GrassCheck farm network

Fig. 2: Latest info available at AgriSearch.org/GrassCheck

Grass growth
Grass quality
Weather data
Week Beginning 11 June 2018

Management Notes:

- Growth has fallen in line with predictions and due to the dry conditions experienced particularly in the eastern counties of NJ.
- Predictions this week show a dramatic fall in grass growth based on weather forecasts and current dry soil conditions at AFBI Hillsborough. These extremes haven’t been witnessed since June 2008 and it is likely that these predictions will be localised to areas which continue to receive little rainfall.
- However, a large range in growth rates is currently evident across GrassCheck farms (24 – 137kg DM/ha/day). Wetter farms or those which have received localised heavy rainfall recently are expected to maintain current growth rates.
- Grass quality remains low across much of the province due to the stress on the plant from dry weather. Testing grass and reviewing current supplementation rates for stock to meet animal requirements for target performance.
Estimating crop available nutrients
Healthy Grassland Soils

- Visual Soil Evaluation tool for grassland
- Origins — Peerlkamp (1967) and VESS (2009) - topsoil structure and porosity
- Focus on the most structurally damaged layer
- Link to management options
Approach to co-developing DSTs across Europe

• Review of existing tools and key gaps
• Farmer workshops to determine what tools should be developed
• Workshops for co-development and testing of farm level tools
• Development of farm level tools for assessment of productivity, profitability and ES
Conclusions

- PG are under threat, but important within many livestock grazing systems
- Need co-development of integrated approaches for profitable & sustainable PG management
- Need co-development of approaches, tools & policy mechanisms to:
  - Support profitable livestock grazing systems
  - Maintain PG & the rural communities that depend on them
Thank you!