Research for the Benefit of Specific Groups (in particular SMEs or SME associations)

Ireland, France, The Netherlands, Belgium, Sweden, Denmark.

SME-AGs from 6 different counties, and 6 RTD Performers, 2 SME end users

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Objectives

1. Develop optimum feeding strategies for dairy cows incorporating grazed grass and AM for various production systems in Europe
2. Optimise the integration of AM with cow grazing using new technologies
3. Increase the sustainability of integrated grazing and AM technologies
4. Develop tools that will allow dairy farmers to optimise economic efficiency when combining grazing with AM systems
5. Continuously disseminate new technology to end-users in a form that is easily accessible and locally adapted to improve farm efficiency
Why AMS

Technology that relieves farmer from physical labour, more milk per full time labour unit

Technology that contributes to social life (incl. family of farmers)

Milk frequency aligned with yield

Easy data catch and management
Why grazing

Cheap fodder
Good for cow health and cow welfare
Improved milk quality with fresh grass
Contributes to landscape, biodiversity
What the consumers want
What the farmer wants
Monitor farms in all countries
Work packages

WP 1 Optimum feeding strategies for dairy cows incorporating grazed grass with AM for various production systems in Europe

Monitor farms, best practice
Experiments in Denmark, with home grown feed
Different Cow breeds in Ireland and Sweden
Optimising the Irish system with:
• Increased cow number in herd (80) with one robot
• Supplementation in spring and autumn
Work packages

WP 2 Optimise the integration of AM systems with cow grazing using new technologies.

- A GPS farm mapping tool is being developed and demonstrated on research farms in different countries
- The recording of tracking behavior of dairy cows in AM systems is being evaluated in terms of management decision making
- New automated milking technologies such as the mobile AM systems for fragmented farms and carousel AM systems for larger herd sizes will is being evaluated in grazing environments.
Developed Grasshopper – calibrated automated measure of for grass height
Sensor registration of grazing time

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<tr>
<th>mark 1</th>
<th>maj-18</th>
<th>maj-19</th>
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<tbody>
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<td>daily growtht (kg DM/ha)</td>
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<td>35</td>
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<td>Yield (kg DM/ha)</td>
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<td>1772</td>
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<td>Yield in kg DM/mm</td>
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<td>outside time (digital)</td>
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<td>eating time grazing (timer)</td>
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<td>kg DM intake per hour of grazing</td>
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<td>rain (mm)</td>
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Mobile automatic milking

Trevarez and Liège and Haderslev
Work Package 3

Increase the sustainability of an integrated AM and cow grazing milk production system

- develop a template for sustainability assessment of AM and grazing
- Monitor farms will provide data for analysis
- Develop a sustainability assessment tool developed for farmers
### Interesting indicators identified

#### Indicators
- Farm profitability
- Debt
- Stability in income - Resilience
- Production costs
- Labour
- Investments
- Production level
- N and P Balance
- Biodiversity
- GCE
- Chemical usage
- Energy use
- Water use
- Atmosphere
- Soil
- Landscape quality
- Animal welfare
- Working hours
- Farm continuity
- Work-life balance
- Product Quality
- Image and participation
- Work quality
- Role in the region
- Relation and cooperation farmers
- Relation and participation in community
- Use of consultancy and advice
- Education and skilled staff
- Diversification and openness farm
- CSR
- Economic autonomy
Work Package 4

Economic assessment of integrated grazing and AM technologies

• An economic comparison of AM on dairy farms where cow grazing is practiced and where not has been performed in F,NL, and DK
• The financial interaction between capital investment, labour requirements and running costs for integrated grazing and different AM technologies is being determined based on data from research farms and monitor farms using the most appropriate bio economic farm model
• A web based decision support tool is being developed to assist EU farmers to optimize their farm production system.
Work Package 5

Dissemination.

- From the RTDs to the SME-AGs
- Between the individual SME-AGs and their direct members (SME) and stakeholders within each country;
- From the RTD’s to the scientific community internationally as well as to extension personnel in the respective countries;
- To the wide group of dairy farmers within the EU;
- To relevant Government Departments, policymakers and legislators within the different countries and the EU.