

Grazing and automation

- 4rd Meeting of the EGF Working Group “Grazing”
- Wageningen, 14 June 2015



Coordination



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Participants

- 17 countries (16 European)



EGF Working Group Grazing

- Established at EGF 2008 in Uppsala, Sweden
- Aim: exchange knowledge on all aspects of grazing and networking
 - First meeting in 2010 in Kiel, Germany: Research methodology of grazing
 - Second meeting in 2012 in Lublin, Poland: Innovations in grazing
 - Third meeting in 2014 in Aberystwyth, UK: The future of grazing
 - Fourth meeting in 2015 in Wageningen, the Netherlands: Grazing and automation



Grazing and automation

- Combination of grazing and automatic milking
- Virtual fencing
- Use of sensors
- Decision support tools



Today

- Session I: Introduction, state of the art
- Session II: Grazing and EIP-Agri Focus Group “Permanent Grassland”
- Session III: Grazing and automatic milking
- Session IV: Grazing and automation
- Session V: Closure

State of the art of grazing in Europe

Agnes van den Pol-van Dasselaar



State of the art of grazing in Europe

- Members of the EGF Working Group Grazing: thank you for your input in the survey!
- Results are presented today

Grazing in Europe: data and opinions

- Data on grazing in Europe are not easily available
- Survey among members of the EGF Working Group Grazing
 - Educated guesses (majority)
 - Statistical data (minority)
 - No complete overview
- Opinions on several items

	Grazing – average (%)	Grazing – AMS (%)	AMS farms (%)
Belgium	65-95	5-30	5
Denmark	25	n.a.	25
Hungary	0	0	0
Ireland	98-99.9	98-99.5	1-2
Luxembourg	75	43	>20
Netherlands	70	40-60	20
Norway	90	80	30
Poland	20	0	0.1
Slovenia	30-40	<5	n.a.
Spain	30	n.a.	2
Sweden	100	100	25-35
Switzerland	96	n.a.	n.a.
UK	70-90	5-50	1-20

Trends

- Percentages grazing are in general decreasing
- With AMS lower percentage grazing than without AMS

Do you think AMS and grazing are compatible?

- General: Yes
- Remarks: more difficult, if farms increase herd size even more difficult; for some farms yes, not for farms with many hundreds of dairy cows; but you have to be a good grazing manager; cow and farmer need to be prepared and farmer needs to be relaxed; it requires a smart design of the farm that is adapted to the behaviour of dairy cows; completely different strategic farm view needed; as long as number of cows <130 at the farm; if grazing systems are adapted

Main challenges

- Cow traffic: get cows outside and get cows inside, flow of cows coming to the robot
- Grass management, grass allocation
- Infrastructure (roadways and fencing must be excellent)
- Decrease labour
- Large herds need a lot of pasture, walking distances
- Milking frequency of individual cows in large herds
- Peak milk yield in a spring calving herd
- Well educated advisors

Main challenges

- High grass intake
- Maintain high milk production levels
- Training of farmers
- Optimum grazing system
- Quality of the walkway / cow tracks
- Cost price
- Overcome the fear of learning (farmers)
- Need for a totally new mind set

Further automation

- Basics first!
- Mobile fences guided by GPS; barriers and fences opening / shutting to facilitate circulation within paddocks and batches
- Measurement of grass availability, daily growth, soil fertility status, grass intake (yield and quality) per individual cow
 - GPS drone, animal sensors, satellite
- Cow management, cow location in real time (GPS, satellite monitoring and tracking) (paddock/barn, how long waiting in the yard)

Further automation

- Heat detection in cows, animal health monitoring
- Milk quality, e.g. SCC levels
- Cow activity (walk, graze, ruminate, etc.)
- Number of steps in grassland – related to intake
- Herbage allocation – virtual fencing
- Fetch cows
- Commercial mobile AMS
- Controlling and optimisation of soil moisture on the pasture – irrigation

Further automation

- Adapting concentrates fed to milk composition and yield
- Automatic trimming of pastures directly after the cows have grazed
- A model that helps the farmer taking decisions, based on actual situation in the field and anticipation of the weather of the next 4 weeks
 - Matching grass quality with needs of individual COWS
 - Decision to start grazing on a paddock / to move cows to another paddock
 - Management during rain and heavy sun (shade)



Recent developments

- Belgium: Currently other issues more important than grazing
- Belgium: Grazing will most probably be accepted as a measure to reduce ammonia in farms that are situated close to a Natura 2000 region
- Ireland: Benchmarking
- Ireland: Public perception important – taken for granted that Irish milk is produced from grass
- Lux: Agro-environmental subsidy to farms grazing, technical and financial support to farmers installing cow tracks and improving cow traffic (selection gates...)

Recent developments

- NL: Ministry expressed ambition to increase % of grazing dairy cows from 70 to 80%
- NL: exploration option digital recording cows inside/outside
- NL: craftsmanship dairy farmers, farmers' groups for new grazers, inclusion of periphery
- NL: legislation on land-based growth of dairy farms
- NL: 01/01/15: grazing premium from 0.5 to 1 ct / kg milk
- Poland: milk products from grazing dairy cows sold on the market (labels)

Recent developments

- Spain: R&D projects about identification of specific biomarkers that allow authentication of milk from fresh grass feeding and/or pasture grazing
- Sweden: research project establishing and maintaining high-quality trampling-resistant swards
- Sweden: grazing calendar adapted to Swedish conditions
- Sweden: public discussion on the grazing law: both supporters and opponents

Grazing and automation – thank you!



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