To graze or not to graze,that's the question

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Grazing in Europe

- Throughout Europe, forage is the main feed for dairy cattle
- Long-term data of grazing in Europe are limited available

Grazing in Europe

- Norway, Sweden, Finland: welfare legislation: six weeks to four months outside
- Denmark: 84% in 2001, 70% in 2003, decreasing
- Germany: decreasing
- NL: 1990-95%, 2000-90%, 2004-85%, 2006+2007-80%
- Belgium: decreasing
- Luxemburg: 90%, decreasing
- UK: 95% in 2005, decreasing
- Ireland: grass based seasonal systems dominate

Nutritive value of herbage

Table 1. Net energy and crude protein contents of herbage for dairy cows during the growing season in Ireland (Horan and Shalloo, 2007), the Netherlands (Van Vuuren and Van den Pol-van Dasselaar, 2006) and Norway (Johansen, unpublished data).

	Mar	Apr	May	June	July	Aug	Sept	Oct/Nov
Net energy for lactation (MJ kg DM^{-1})								
Ireland	7.1	7.1	7.0	6.9	6.6	6.4	6.7	6.7
The Netherlands		7.2	7.0	6.9	6.8	6.8	6.9	
Norway			8.8	7.2	6.9	6.9		
Crude protein (g kg DM^{-1})								
Ireland	223	222	166	176	169	189	203	228
The Netherlands		237	214	223	227	237	261	
Norway			264	207	193	227		

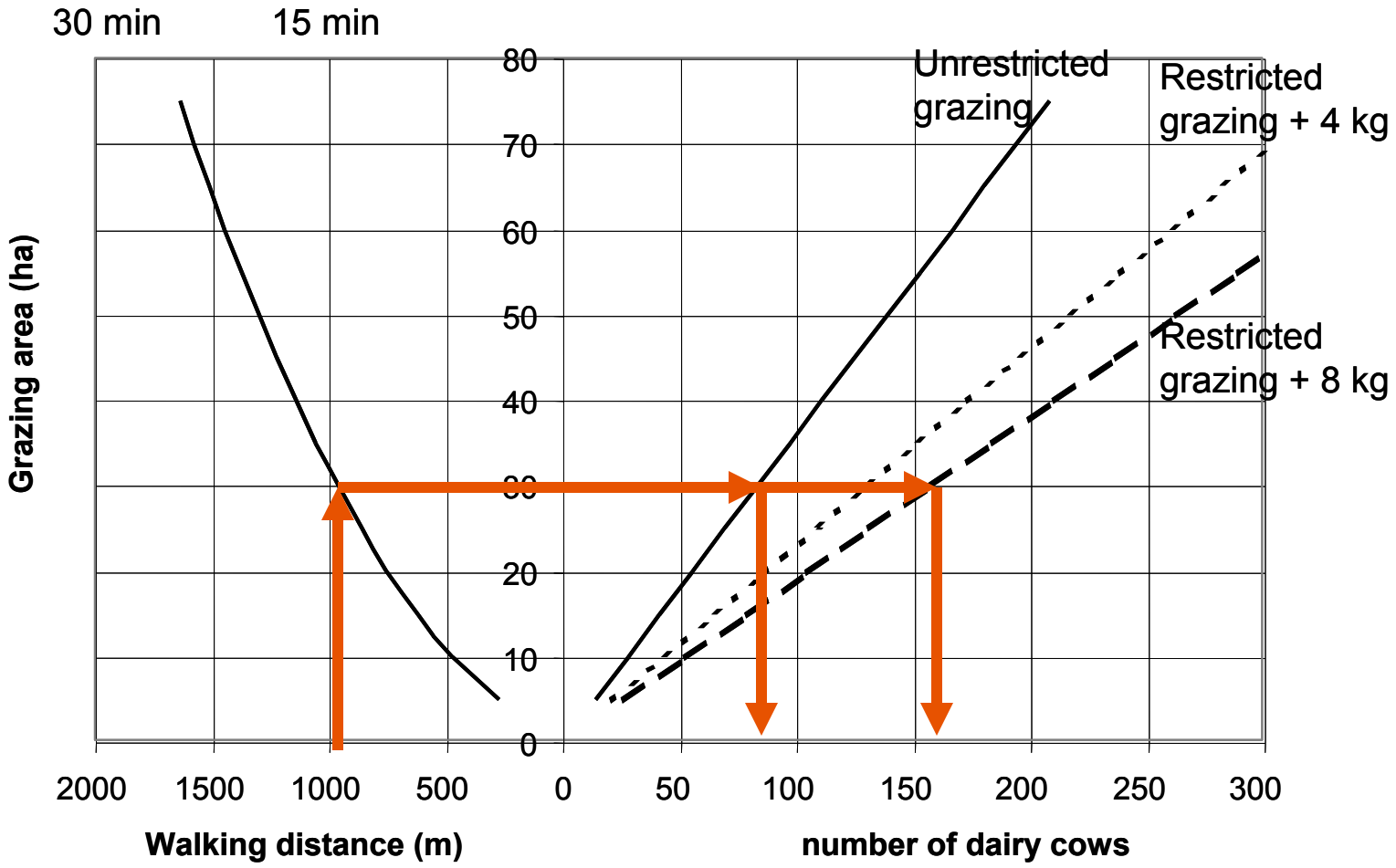
Reasons for less grazing

- To control rations and optimise grassland utilisation
- Increased herd size
- Increased use of automated milking systems
- Reduced grass growth in summer time
- Need to reduce mineral losses
- Labour efficiency

Walking distance

- Grazing becomes more complicated with increasing herd size
- The average distance between paddock and milking parlour increases

Walking distance



Walking distance

- Position of the farm buildings is important
- Possibility of milking dairy cows at the pasture is reconsidered again
- Mobile automatic milking robot? Easily transportable milking parlour?

Mobile milking

Mobile milking

Mobile milking

Mobile milking: Natureluur

Mobile milking: Natureluur

Mobile milking

Perspectives for

- Land on large distance from barn
- Partial grazing large herd
- Nature farming

Research themes “Natureluur” (NL)

- Technical development of this innovation
- Explore grazing systems with ‘Natureluur’
- How will cows behave?
- Optimize cattle management

Mobile milking

Less grazing, is this a matter of concern?

Grazing system and society

- General public appreciates grazing animals in the landscape
- Biodiversity of the landscape increases
- Society associates grazing with animal welfare

Grazing system and society

- Extent to which the general public notices grazing depends on:
  - Number of animals
  - Area grazed
  - Time the animals spend grazing
  - Place of the pasture
  - Moment of grazing

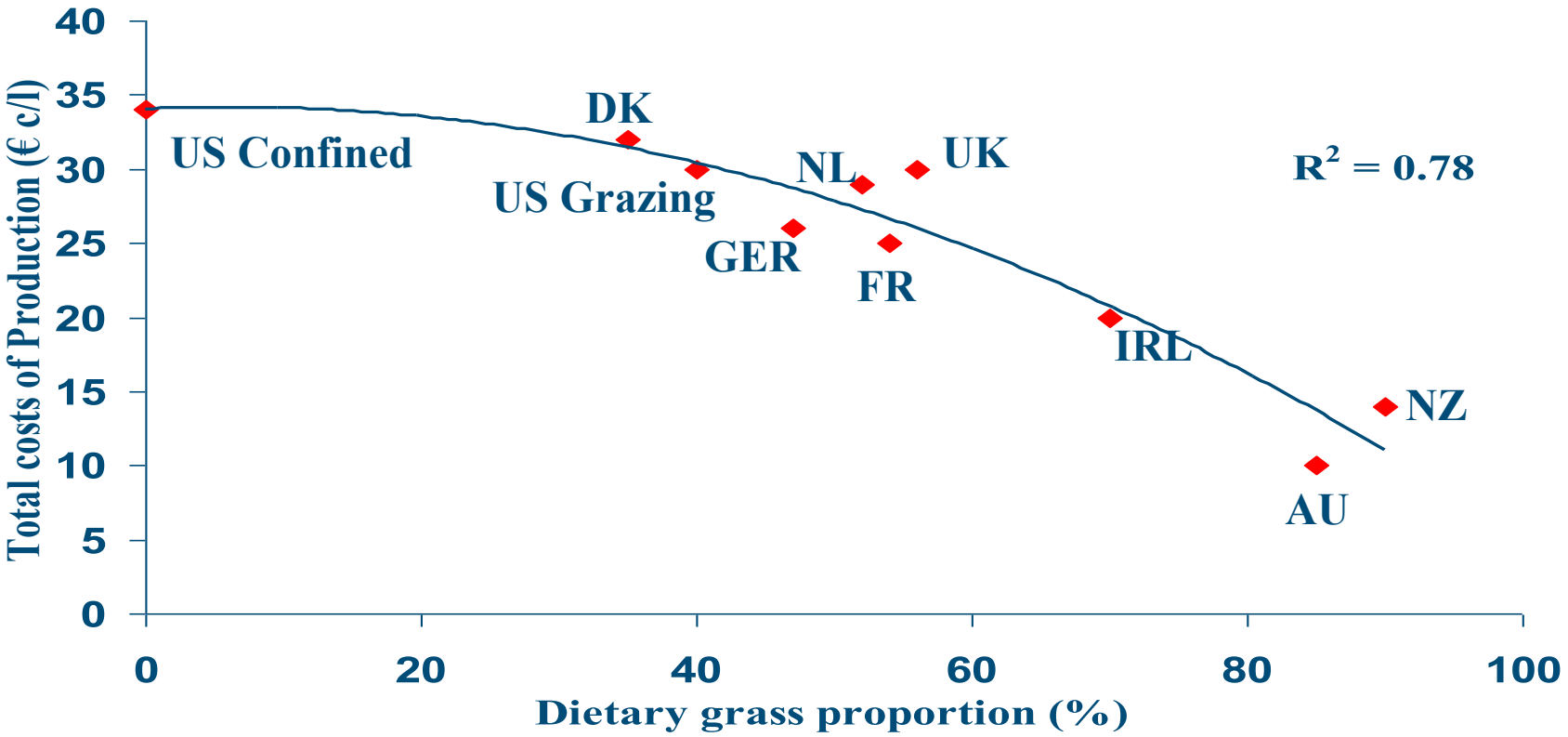
Advantages of grazing

- Natural behaviour and animal health
- Environment: less ammonia volatilisation, energy use, methane emission
- Milk quality: fatty acid composition
- Image of dairy farming
- Labour and economy

Effect of grazing system on economy

- Irish models indicate that early grazing will generate an increased profitability of Euro 2.70 per cow per day for each extra day at grass
- In the Netherlands, difference is on average throughout the year Euro 0.5 – 2 for every 100 kg milk produced
- On very intensive farms (>20.000 kg milk / ha), zero-grazing may be economically attractive

The relationship between total costs of milk production and grass proportion of the diet



Dillon, Roche, Shalloo & Horan, 2005, XX Int. Grassl. Congr

Effect of grazing system on labour

- Labour input is lowest for unrestricted stocking.
- Restricted stocking and zero-grazing require approximately the same labour input
- Calculations show that grazing yields the best returns per hour worked
- However, also the quality of the labour counts!
  - Easy – difficult
  - Light - heavy

Disadvantages of grazing

- Labour: management
- Less grass yield
- Lower grass utilisation
- Unbalanced diet
- Environment: nitrate leaching, denitrification, nitrous oxide emissions, N losses, P losses

Grazing: yes or no?

Determining factors

- Legislation
- Grass yield, sustainability, animal welfare etc.
- Importance attached to various aspects is very personal
- Also, there are conflicting views
- Individual farmers can have an effect on most of the relevant aspects via their management strategy

Determining factors

- Developments in dairy farming, especially increased herd size
- Grazing scores well on the whole
- However, there's another important influencing factor next to the elements already described: THE INDIVIDUAL FARMER

Determining factors

- Personal preference of the farmer determines the grazing system used
- Knowledge on the effect of grazing is affected by personal preferences and experiences
- Preferences may change:
  - With time
  - During major life events
  - Communication with society

Conclusions

- Trend of decreasing % of dairy cattle with unrestricted stocking in Europe will continue
- Behind this decline are economical, practical and personal motives
- Number of grazing dairy cattle may be influenced by legislation, knowledge transfer and development of relatively simple grazing systems

Interesting websites

- www.fill.lu (German): project to stimulate grazing

- www.koeenwij.nl (Dutch): project to make farmers aware of different aspects of grazing and let them decide themselves using arguments with respect to economy, labour, environment and personal preference

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