The effect of grass intake on the farmer’s income

Agnes van den Pol-van Dasselaar
Michel de Haan, Aart Evers,
Bert Philipsen (the Netherlands)
Grazing in Europe

- Throughout Europe, forage is the main feed for dairy cattle
- Working Group Grazing
Grazing in Europe in 2010

- Germany: large variation, decreasing
- Switzerland: 70-80%, decreasing
- Poland: variation, decreasing
- Czech Republic: 20%, slight increase
- Slovenia: 25%, stable or decreasing
- Portugal: 50%, increasing
- Spain: 0-20%, slow increase
- Greece: 15%, slow increase
Grazing in Europe in 2010

- Norway, Sweden, Finland: welfare legislation: six weeks to four months outside, decreasing
- Denmark: 35-45%, decreasing
- Ireland: 99%, staying consistently high
- UK: 95%, decreasing
- The Netherlands: 75-80%, slow decrease
- Belgium: 95%, decreasing
- Luxemburg: 75-85%, decreasing
- France: large variation, decreasing
Grazing in Europe in 2010

- In the north and northwest, grazing is practised more often than in the south and southeast.
- The percentage grazing is decreasing rapidly.
Reasons for less grazing

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

- General public appreciates grazing animals in the landscape
- Biodiversity of the landscape increases
- Society associates grazing with animal welfare
- Part of the culture
But what about economics?
The relationship between total costs of milk production and grass proportion of the diet

\[ R^2 = 0.78 \]

Dillon, Roche, Shalloo & Horan, 2005, XX Int. Grassl. Congr
But what about economics under less favourable conditions?

- **Aim:** to study the economics of grazing and zero-grazing for farms with less favourable conditions for grazing:
  - Automatic milking
  - Small grazing surface (25% instead of 75%)
  - Large herd (150 animals instead of 75)
  - High milk yield per cow (9,500 instead of 8,000)
Methods used

- DairyWise: an empirical model that simulates technical, environmental, and financial processes on a dairy farm
  - FeedSupply model
  - DairyHerd model
  - GrassGrowth model
Economics of grazing

Difference between grazing and zero-grazing (€ per 100 kg milk)

- No restrictions
- Automatic milking
- Small grazing surface
- Large herd
- High milk production
Effect of grass intake on income

![Graph showing the relationship between grass intake (kg DM cow\(^{-1}\) yr\(^{-1}\)) and the difference between grazing and zero-grazing (€ per 100 kg milk). The graph indicates a positive correlation as grass intake increases.]
Conclusions

- In general grazing is economically more attractive than zero-grazing.
- The only exception is when the available grazing area is too small (grass intake less than 700 kg DM cow\(^{-1}\) yr\(^{-1}\)).
- The more grass the cows eat in the pasture, the larger the income profit.
- Economy is not the most important influencing factor for grazing in northwest Europe.
If economy isn’t, what is?

- The Netherlands: on-farm participatory research on 60 dairy farms
- In the end, personal preferences, experiences and habits of the farmer will be decisive in the choice between grazing and zero-grazing.
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