

Grazing and dairy payments: developments in The Netherlands

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Outline

- **Background and introduction**
- **2 Experiments on milk fatty acid (FA) composition – CLA: conjugated linoleic acid**
 - Tank milk from 4 regions in The Netherlands
 - Farm milk related to grazing and hours at pasture
- **Recent developments in Dutch dairy payments, rewarding grazing**
- **Discussion, trends and future ideas**

Personal background

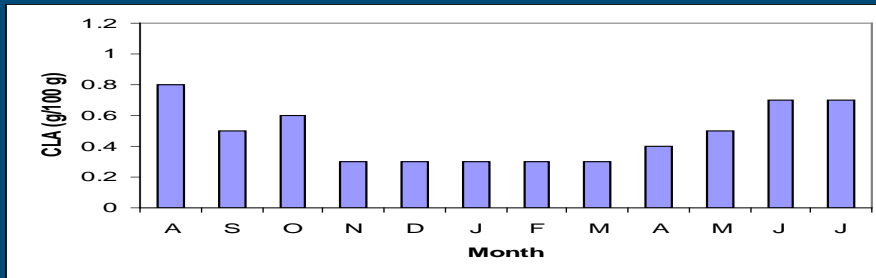
- **MSc Grassland science and plant breeding, WU**
- **Professional career:**
 - **PhD research: grass seed production 1984-1991**
 - **Associate professor of Grassland Science 1991-2011**
 - **Independent scientist since 2011**
- **Active interests: research and publishing, guest lectures, consultancies, etc.**

2 Experiments :

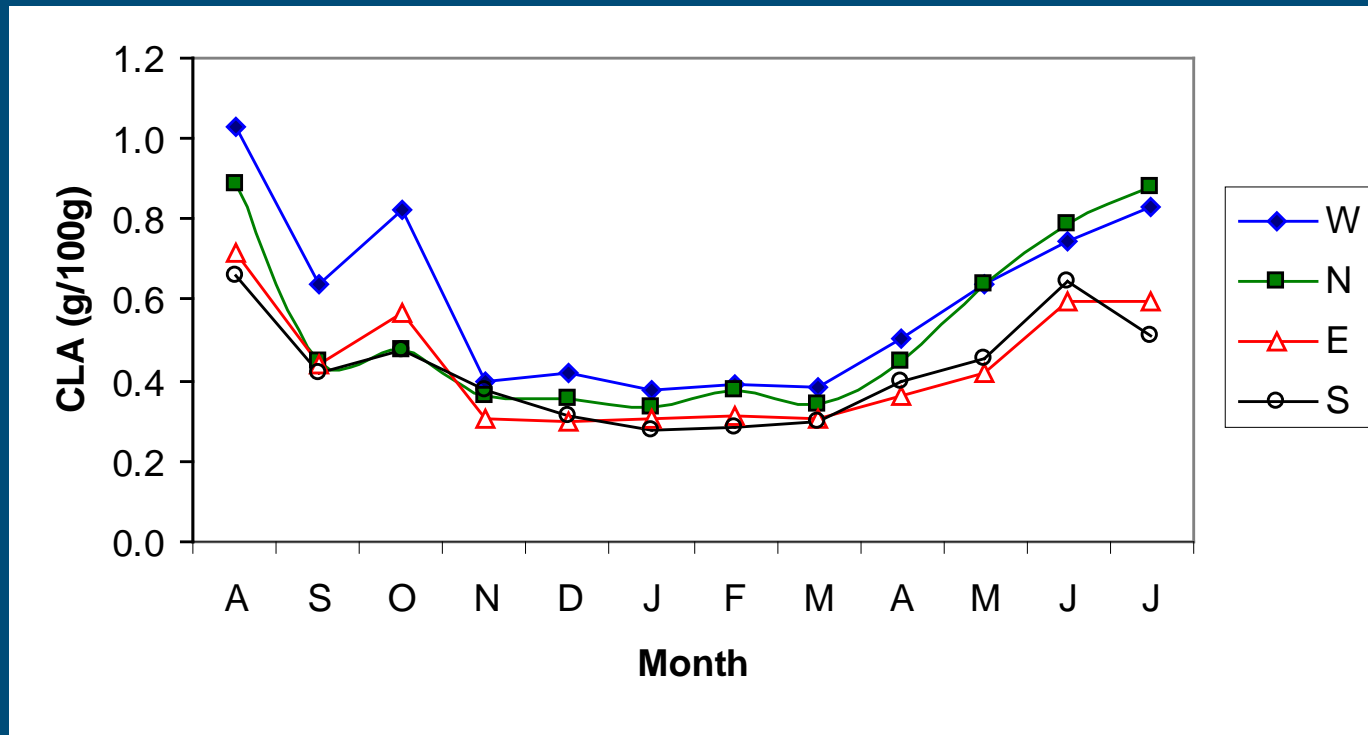
- **1. Pooled farm milk, milk tank samples**
 - Seasonal trends
 - Regional differences
 - Relation with soil type, land use and feeding regime, grazing management and housing system

- **2. Milk from individual farmers related to hours cows spend at pasture**
 - Comparison of farms in
 - Region A, Sep – Feb
 - Region B, June - Aug

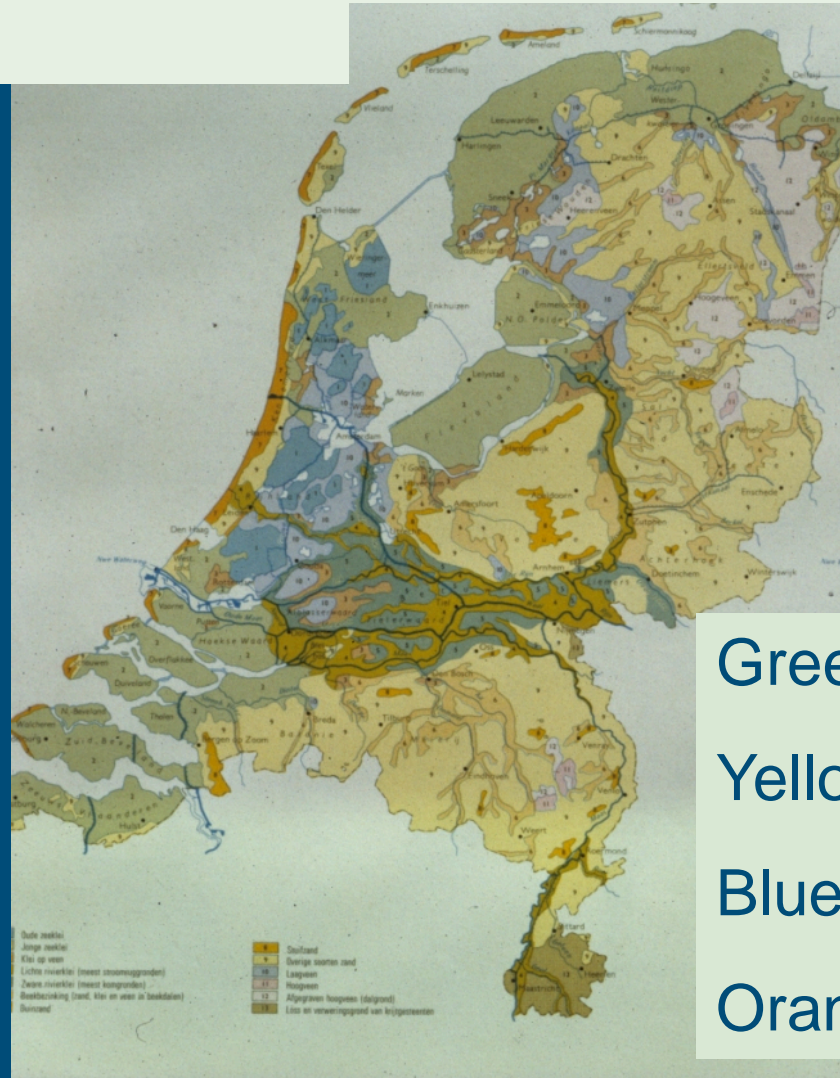
1. Seasonal and regional effects on milk FA (CLA)



Elgersma et al., 2006.
Modifying milk composition
through forage. *An Feed Sci.
Techn.* 131: 207-225



Soil types in The Netherlands



Green: clay

Yellow: sand

Blue/purple: peat

Orange: river clay

Experiment 1, conclusions

■ Pooled farm milk, milk tank samples

Regional differences related to soil / land use / ration:

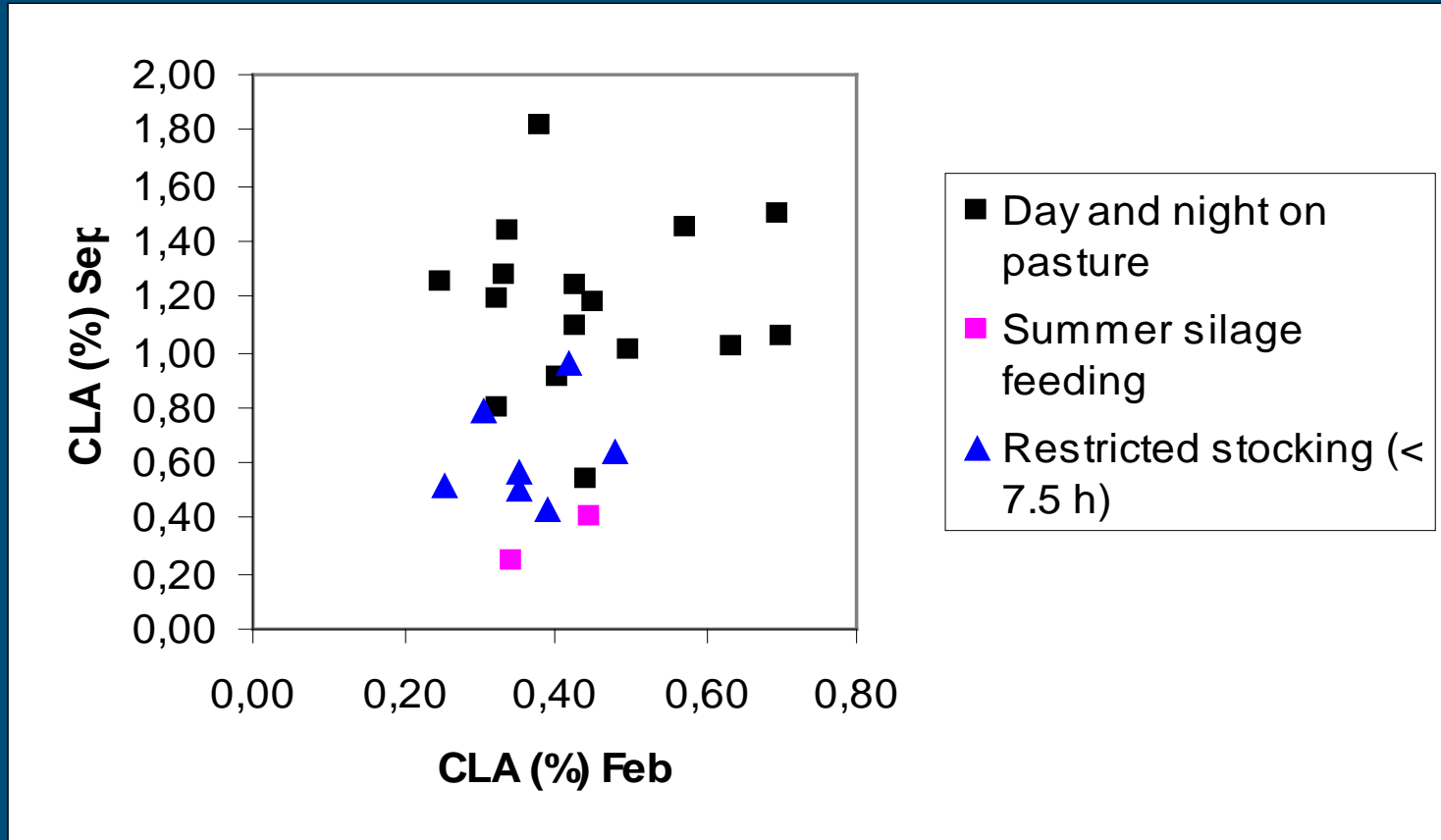
- West / North: clay and peat (organic soils), mainly grass
High CLA levels in milk (Apr-Oct)
- South / East: sand, less grass, less grazing, maize silage at night, more summer-feeding (i.e. indoor, no fresh grass)
Low CLA levels in milk (Apr-Oct)

Experiment 2:

- Milk from individual farmers related to feeding management

Relation milk CLA content with feeding / grazing regime

A. Farm milk from Sept (various systems) and Feb (all cows indoor)



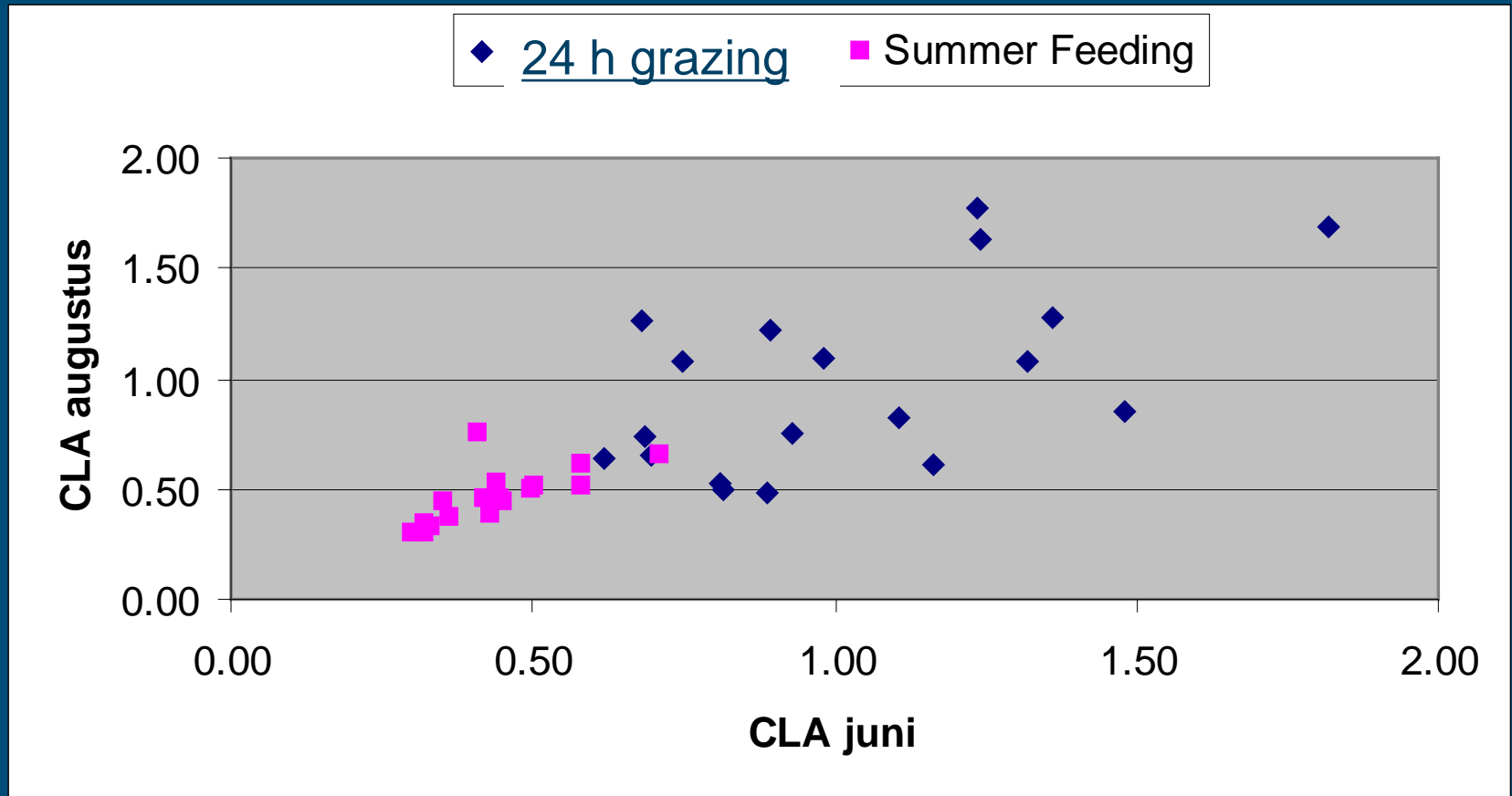
Most CLA (UFA) in milk from cows Day and Night on pasture, intermediate levels with restricted stocking and low CLA with no fresh grass.

Much higher CLA levels in September than in February

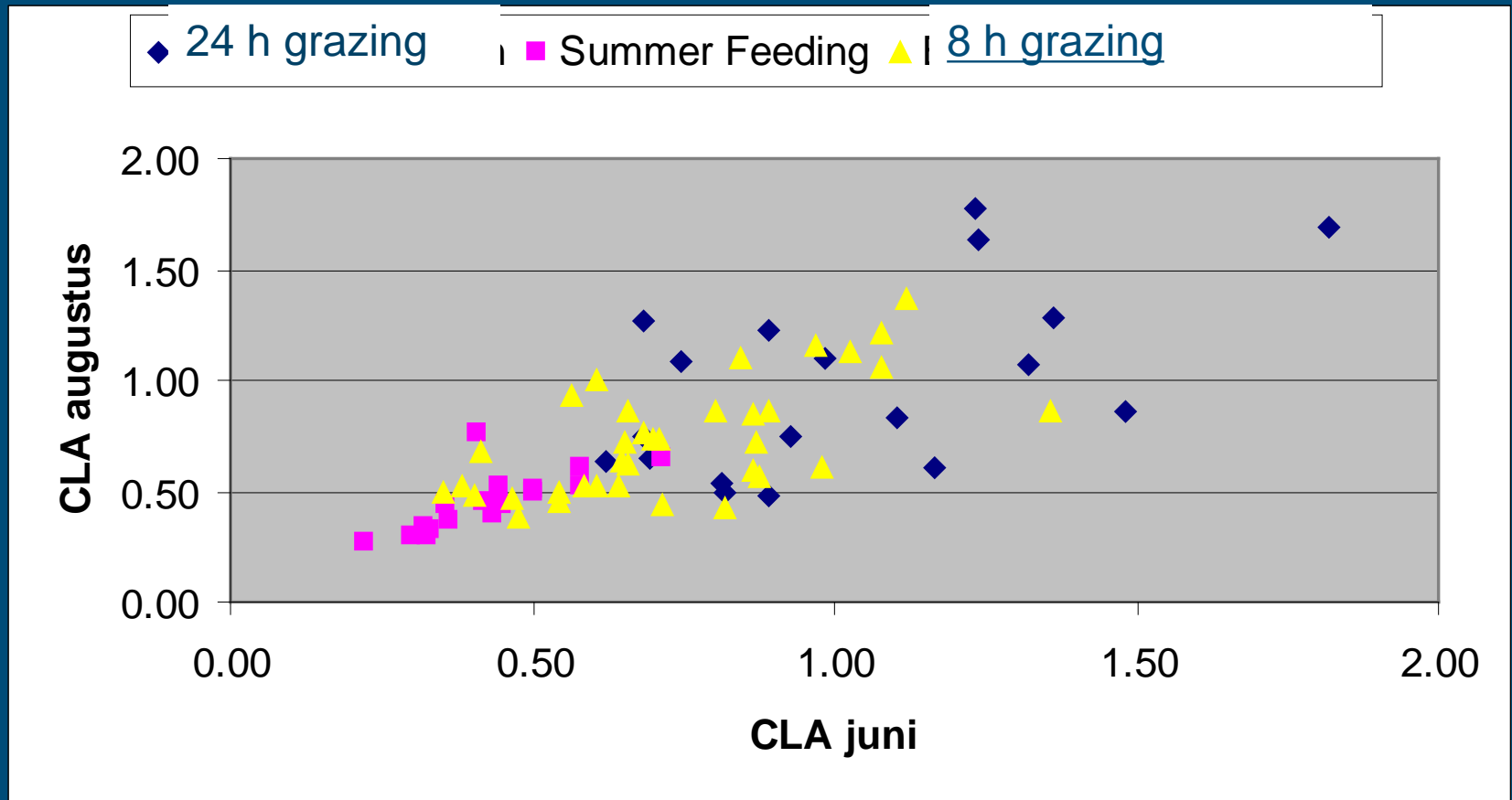
Relation milk CLA content with feeding / grazing regime

B. Farm milk from June and August

Day and Night grazing *versus* Summer Feeding, i.e., indoor on silage



Day and Night grazing *versus* Summer Feeding *versus* Daytime grazing



Experiment 2, conclusions

- **FA composition in milk from individual farms is related to feeding management:**
 - Milk CLA (and unsaturated fatty acid = UFA) content is much lower without fresh grass (indoor feeding of ensiled feed) than when cows eat fresh grass
 - Highest UFA concentrations with day and night grazing, lower levels with restricted stocking (daytime grazing only)
 - Milk UFA content is a function of hours at pasture (reflecting fresh grass intake)

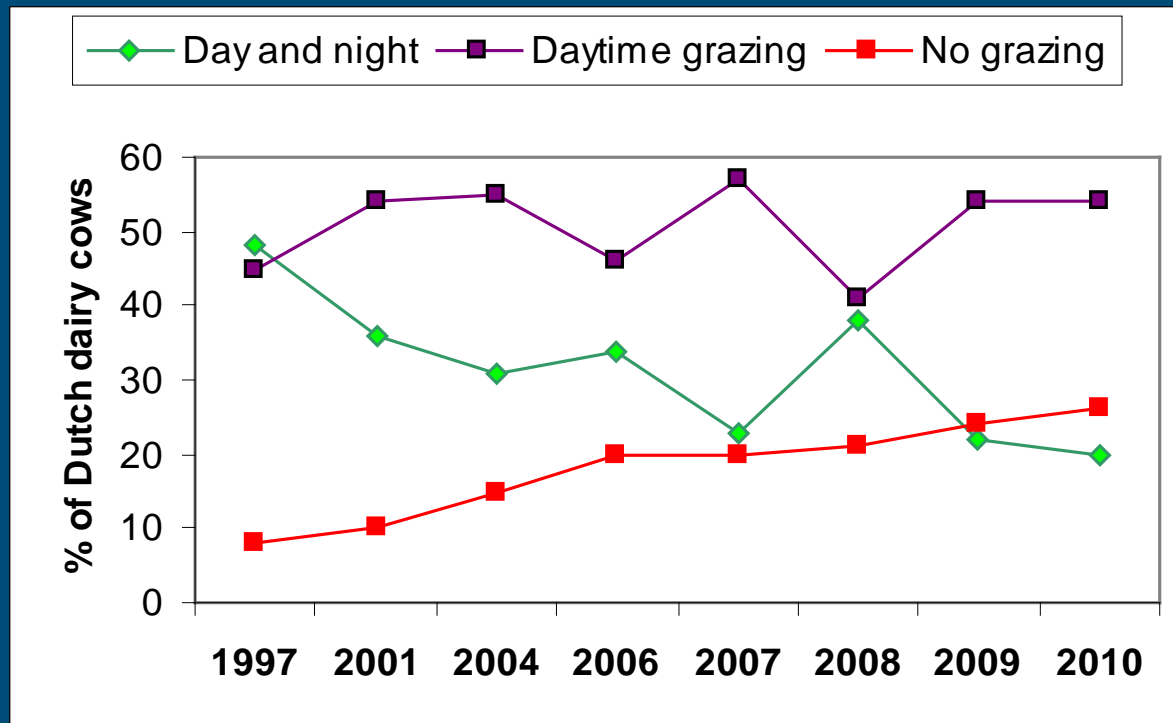
Scientific publications ...

e.g., Elgersma et al. :

- 2003 Comparison of the effects of grazing and zero-grazing of grass on milk fatty acid composition of dairy cows. *Grassl Sci in Europe* 8
- Influence of cultivar and cutting date on the fatty acid composition of perennial ryegrass. *Grass and Forage Sci.* 58.
- Comparison of the fatty acid composition of fresh and ensiled perennial ryegrass affected by cultivar and regrowth interval. *An Feed Sci Techn* 131
- 2004 Quick changes in milk fat composition of cows after transition from fresh grass to a silage diet. *An Feed Sci Techn* 117
- Rapid decline of contents of beneficial omega-7 fatty acids in milk from grazing cows with decreasing herbage allowance. *Grassl Sci in Europe* 9
- 2005 Effects of N fertilisation and regrowth period on fatty acid concentrations in perennial ryegrass. *Ann. Appl. Biol.* 147
- 2006 Modifying milk composition through forage. *An Feed Sci Techn.*131
- Grazing versus indoor feeding: Effects on milking quality. *Grassl Sci Eur* 11
- Fresh herbage for dairy cattle: the key to a sustainable food chain. *Springer-Verlag*

**However ... trend is less day and night grazing,
more indoor feeding all year round**

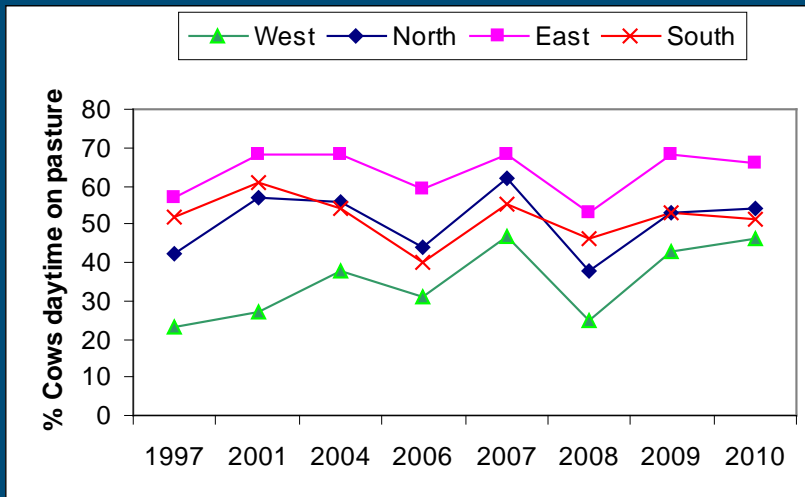
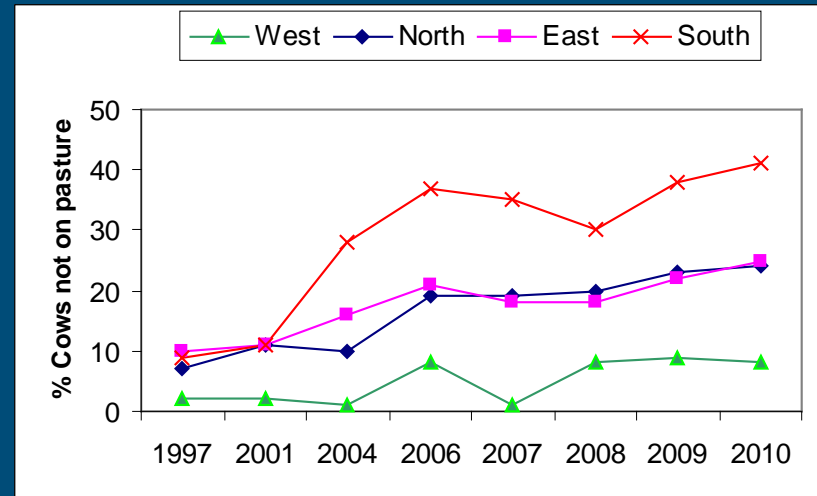
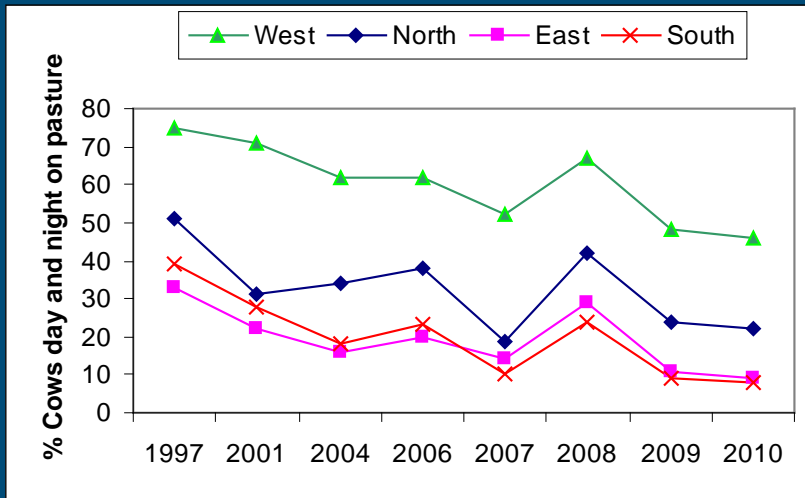
Trend in grazing systems in The Netherlands



Note the X-scale: 1997-2001 (4), 2001-2004 (3), 2004-2006 (2), then annual

Source: www.cbs.nl

Different regional trends in grazing systems



- Day and night grazing ↓
- Daytime grazing = or ↑ (N)
- No grazing: ↑ (S, also N/E)

Grazing system per region in 2010 in NL

Percentage of milking cows on each of 3 systems

	Day/night	Daytime	No grazing
West	46	46	8
North	22	54	24
East	9	66	25
South	8	51	41
Overall	20	54	26

Publicity and developments

- **2003:** Our results were picked up by the media
- **2004:** Findings were communicated to the dairy industry
- **2005:** a joint chain-approach project 'White engine on green fuel' was finished with CONO Kaasmakers
 - West NL, cows on grass, grazing premium, upmarket cheeses
- **2006:** Livestock's Long Shadow, FAO report
 - Environmental issues and options
- **2007:** Foundation for Grazing launched (Stichting Weidegang), aims to increase visibility of cows in the Dutch landscape
 - Dairy coop Friesland Foods started paying their farmers a grazing premium (5 ct / 100 kg)
 - Dairy coop Campina launched branded milk from selected farmers who fed Nutex (linseed) in addition to grazing
- **2008:** 17 December the decision was taken to merge Friesland Foods and Campina into FrieslandCampina

More developments, 2011



■ April 2011:

- C1000 retailers announced a replacement of their private label dairy products with milk from grass-fed cows
- Action Group 'Wakker Dier' suggested to offer Dutch grazing cows to UNESCO as immaterial cultural heritage. **Arguments:** *landscape, Dutch image, animal welfare and animal health (mastitis, claws, fertility) as well as healthier FA in milk.*

■ June 2011: 'Minister' of Agriculture Mr Bleker stated that further reduction of cows having access to pasture is undesirable

■ September 2011:

- FrieslandCampina withdrew branded Nutex milk
- Discussion by 'Wakker Dier' on health claims for drinking milk

More developments, 2012 and 2013

- FrieslandCampina increased its grazing premium 10-fold from 5 to 50 cent / 100 kg milk, when cows are outdoor > 6 h/day for > 120 days/year
- **March 2012:** 'Minister' of Agriculture Mr Bleker wants discussion with partners in the dairy production chain on continuation of initiative for cows at pasture
- **April 2012:** turning out cows in spring is again front-page news in the papers
- **April 2013:** retailers as Lidl and COOP guarantee 100% Dutch 'pasture milk' in their shops

Statements

- Image rather than evidence is a main driver for industries
- Media are a key to influence the public
- Action groups affect the opinion and trigger the debate
- Sentiments in the media dictate the political agenda
- Retailers are very sensitive to consumers' opinion
- Despite scientific research and facts, marketing and publicity dictate developments

- In this case scientific evidence, marketing and current efforts go hand in hand to keep the Dutch cows on grass which may counterbalance the trend for keeping more cows indoors, depending on the region

Thank you for your attention



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