

Native breeds for agroecological dairy farming: a farmer's perspective

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Project partners



Transitions in Dutch dairy farming

- Decades of specialization and intensification:
 - Now dominance of Holstein Friesian cattle
- Current challenges: Biodiversity loss, climate change, environmental pressure (nitrogen)
- Developing towards more extensive livestock farming and agroecological practices

What type of cow would suit agroecological systems?

Opportunities for native Dutch breeds?

- Most of the native dual-purpose breeds are “at risk” (FAO)
- Breed owners mention robustness, good health and fertility
- Originally bred as dual-purpose in low-input systems



Dutch breeds and their production systems

- Groningen White Headed and Dutch Friesian mostly kept in extensive, grazing systems
- Meuse-Rhine-Yssel also kept in more intensive systems with maize

Groningen White Headed



Dutch Friesian



Meuse-Rhine-Yssel



Research questions and approach

- What type of cows do farmers desire for agroecological farming systems?
- What are the experiences of farmers with native Dutch breeds?



27 farmers
participating



Analysis of
farm data



Interviews with
14 farmers

Characterization of participating farms

- Self-defined “nature-inclusive”
- Using native Dutch breeds
- 68% organic (NL=3.5% in 2022)
- Short supply chains

	NL average	NL organic	Project farms
Farm size (ha)	60.2	87.2	84.5
Dairy cows (n)	111	91	96
Farm intensity (kg milk/ha)	16,750	7,300	8,533
Milk production (kg/cow)	9,148	7,000	6,323

Based on data of 2021 and 2022

A spectrum of “nature-inclusiveness”

Biodiversity in small adaptations in conventional system

Biodiversity as driving force of production system



- Some hectares of species-rich grassland or flowery field margins
- Day-time grazing during summer
- Grass supplemented with maize and concentrates

- Large part of farm is old, species-rich or nature grassland
- Day-and-night grazing during large part of the year
- Planting fodder trees and shrubs

3 categories of “nature inclusiveness”

	Category 1 (n=7) <i>Small adaptations for biodiversity</i>	Category 2 (n=7) <i>Large space for biodiversity</i>	Category 3 (n=13) <i>Biodiversity driven</i>
Stocking density	High	Medium	Low
Concentrate use	High	Medium	Low
Maize in diet	High	Medium	Low
Grazing	Low	Medium	High
Nature land	Low	Medium	High
Permanent grassland	Low	Medium	High



Animal performance per category

	Category 1 (n=7) <i>Small adaptations for biodiversity</i>	Category 2 (n=7) <i>Large space for biodiversity</i>	Category 3 (n=13) <i>Biodiversity driven/ central</i>
Milk (kg/cow/year)	7356	6283	5692
Calving interval (days)	419	398	374
Claw problems (incidence)	0.24	0.11	0.14
Mastitis (incidence)	0.10	0.08	0.11
Veterinary costs (€/cow/year)	76.4	64.6	57.1

More focus on biodiversity: lower milk production, better functionality

Breeding goals for agroecological systems

- Farmers at different places of the spectrum mention comparable breeding goals:

"A smaller, robust cow. It needs to eat grass and have high milk solids."

Cat. 1

"We are searching for a cow that does well with little external inputs."

Cat. 2

"Cows that do well in what they were made for: living from roughages."

Cat. 3

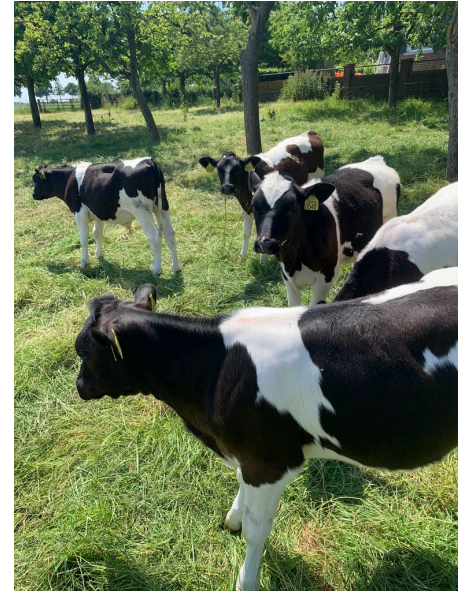
Breeding goals and desired cow characteristics

- Trouble-free, self-sufficient and robust
- Grass and roughage utilization, grazing behaviour
 - Quality of animal products
 - Milk solids and meat production
- Animal health
 - Claw and udder health (depending on farm)
- Fertility, especially for seasonal calving



Breeding strategies and bull selection

- From personal passion to completely outsourced
- One breed vs. combining multiple breeds
- Animal selection based on:
 - Breed
 - Mother lines
 - Exterior of the animal
- Availability genetics and data often limited



Animal genetics per category

	Category 1 (n=7) <i>Small adaptations for biodiversity</i>	Category 2 (n=7) <i>Large space for biodiversity</i>	Category 3 (n=13) <i>Biodiversity driven/ central</i>
Dutch Friesian p.b.	12%	24%	6%
Groningen White Headed p.b.	11%	14%	25%
MRY p.b.	25%	7%	3%
Holstein Friesian p.b.	18%	23%	16%
Crossbred	18%	23%	43%

p.b. = purebred, animal belonging for at least 75% to this breed

Experiences of farmers with Dutch breeds

- Animal health

"The vet does not have to visit often."

- Grass and roughage utilization

"A Holstein thrives on perennial ryegrass. But our cows thrive on biodiversity."

- Dealing with variations in weather and feed

"A flexible farmer with flexible cows."

- Meat production (marbling) of cows and calves



The use of Dutch breeds

- Some difference of breed choice over the spectrum of nature inclusiveness
- Choice for a specific Dutch breed is not only technical
 - (family) tradition, locality, marketing
- Deliberate choice for (cross)breeding with dual-purpose breed

Conclusions and next steps

- There is a spectrum of nature-inclusiveness; breeding goals are comparable for farmers across it
 - General health and roughage utilization
- Farmers have positive experiences with Dutch breeds in agroecological farming
- More information and data required on non-conventional farming practices and on the Dutch breeds
- Next steps: breeding goal discussions