

Changing towards a seasonal low-input pastoral dairy production system in mountainous regions of Austria – results from pilot farms during reorganisation



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Introduction + objectives Most of the milk produced in Austria is based on preserved pasture in combination with cereal grains as feedstuff (all year-round) with dairy cows bred for high daily milk yields.

To obtain novel information on low-cost pastoral milk production in mountainous regions a research project with pilot dairy farms was carried out.

- 6 dairy farms (5 organic, 1 low input) in mountainous regions were accompanied during change-over to a seasonal low-input dairy production system based on pastures
- The project team consulted and accompanied them and recorded the results

- **Strict annual cycle** in milk production only realised on 2 farms
- Duration of the grazing season 155 – 215 days
- **High forage quality** on pasture (6.3 MJ NEL and 21% CP kg⁻¹ DM)
- High amounts of supplemental feeds on 2 farms → pasture proportion < 40 %
- On the other four farms a pasture proportion of 45 – 61 % of the total DM intake y⁻¹ was realized in the last project year
- **Concentrate input decrease 30 %** per cow and **milk yield decreased** from 6,475 kg (3.94 % fat; 3.38 % protein; 2003) to 5,837 kg cow⁻¹ (4.06 % fat; 3.33 % protein; 2007).
- Number of cows and **milk production per farm increased** (6-7%).
- **Higher production efficiency** per unit milk for the four pilot farms in comparison to the average results of the organic and conventional farms.
- The **grazing strategy with seasonal calving is feasible for animal health reasons**

Table: Results of pilot farms 1 – 4 in comparison to average results of organic and conventional farms of the federal extension programme (triennial means)

	pilot farms 1–4 means (min-max)	federal extension program (means)	
		organic farms	convent. farms
Cows (n farm ⁻¹)	29.1 (12.9-36.2)	22.5	24.0
Milk yield (kg cow ⁻¹)	5,542 (5,076-6,263)	6,320	6,973
Milk fat (%)	4.02 (3.85-4.18)	4.16	4.28
Milk protein (%)	3.34 (3.25-3.40)	3.38	3.48
Grazed pasture (% of DM intake y ⁻¹)	47 (41-54)	n.a.	n.a.
Concentrate (kg cow ⁻¹ y ⁻¹) ¹	581 (257-976)	1,291	1,787
Herd complementation (%)	23 (13-31)	32	34
Non return rate – 90 days (%)	73 (50-86)	64	61
Insemination rate (N cow ⁻¹)	1.4 (1.3-1.5)	1.5	1.6
Calving interval (days cow ⁻¹)	419 (407-432)	393	394
Expenses for animal health (Euro cow ⁻¹ y ⁻¹)	33.1 (18.3-40.3)	58.2	63.4
Marginal income (Euro cow ⁻¹ y ⁻¹)	1,640 (1,310-1,939)	1,645	1,720
Marginal income (Euro Cent kg milk ⁻¹)	29.4 (26.6-31.8)	25.9	24.6

→ With optimal site-specific seasonal grazing systems, a **grazed pasture proportion of 45 to 60% (max. 65%)** of total DM intake of cows is attainable in mountainous regions

→ Despite lower milk yield per cow, **lower marginal costs per unit milk are possible** under well managed grazing systems

→ **Getting cows in calf within a short period is a big challenge** in strict seasonal dairy programmes.

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