Effects of the reduction of feeding frequency in dry beef cows on animal performance and labour costs

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Extensification of production systems

- Increasing herd size
- Increasing pasture areas

= Labour intensification

Management simplification

Objective

Effects of the **reduction of feeding frequency (daily vs. weekly)** on:

- Performance of dry beef cows
- Forest pasture use
- Labour costs

Materials and methods

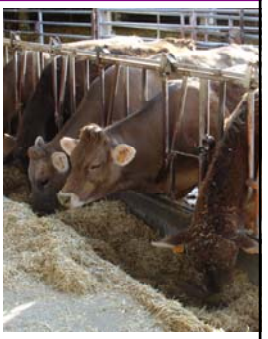
jan febr mar apr may jun

68 d *79 d*

DAILY n=18: DAILY feeding 10 kg TMR/day (*housed*) | Forest grazing

WEEKLY n=28: WEEKLY feeding 70 kg TMR/week | Forest grazing

Forest pastures



Dry Parda de Montaña cows
(breeding dec-mar)

La Garcipollera Research Farm
Central Pyrenees, 950 m a.s.l.

Total Mixed Ration

47% barley straw, 11% DH lucerne,
13% barley grains, 8% molasses,
7% orange pulp, 5% gluten feed,
4% soybean meal, 4% rapeseed cake

10 kg/day = 120% maintenance req.

Forest pastures

250 ha
European black pine
(Pinus nigra) plantations

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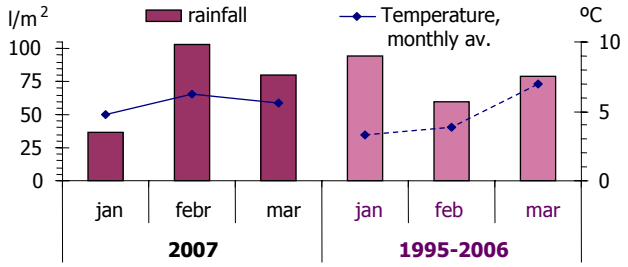
Forest pastures
250 ha

Measurements

- LW: 14 d
- BCS: initial & final
- Urea, B-OH-B, NEFA triglycerids: 14 d
- Faecal N: 14d
- LW and BCS: initial & final
- Time devoted to feeding distribution, d
- % TMR consumed and cows observed around the feeders, 2/d
- Diet quality (TMR & pasture)

Meteorological conditions



Average temperature: 5.5º C
Total rainfall: 221 l/m^2
(22 d rain + 8 d snow, unmelted 16 d)

Statistical analysis

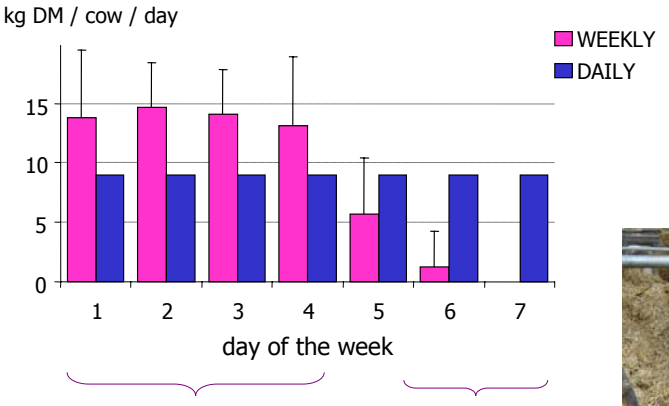
Performance data: GLM
fixed effect Feeding Management
Nutritional indicators: Mixed model
fixed effects Feeding Management & Sampling Date, random effect Cow

Results

1. Cow performance

	Feeding management	WEEKLY	DAILY	P
LW:	LW start winter	577	579	NS
	LW end winter	567	592	0.07
	LW end spring	579	599	NS
	ADG winter	-0.091	0.254	***
	ADG spring	0.287	0.293	NS
BCS:	BCS start winter	2.68	2.77	NS
	BCS end winter	2.63	2.89	**
	BCS end spring	2.71	2.93	**
	Var BCS winter	-0.04	0.12	**
	Var BCS spring	0.11	0.08	NS

2. Feed consumption rate



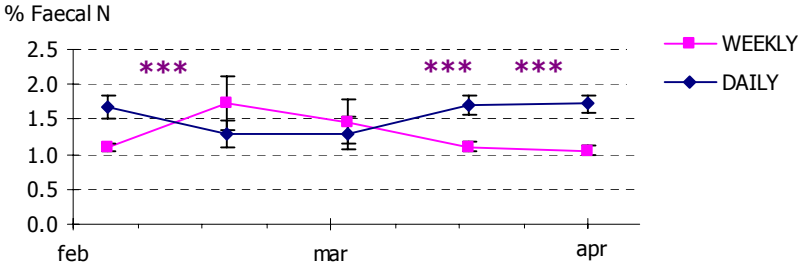
3. Diet quality

- Quality of offered diet:

	% CP	% NDF	% ADF
TMR	9.0 ± 2.5	54.9 ± 3.8	31.7 ± 3.3
Pasture	4.4 ± 0.3	76.0 ± 3.3	42.1 ± 2.8

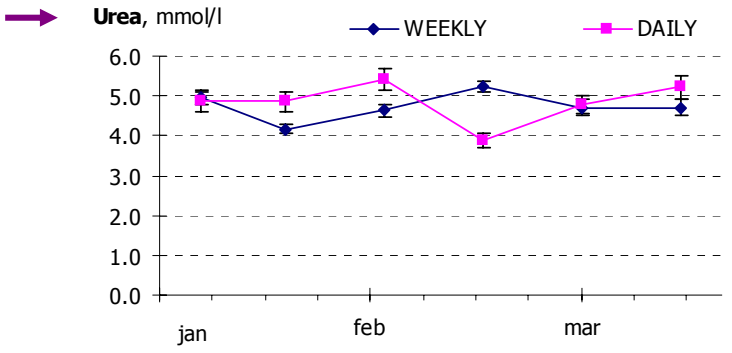
- Faecal N content:

average 1.28% WEEKLY vs. 1.54% DAILY (***)



4. Nutritional status

mmol/l	WEEKLY	DAILY	
Urea	4.72	4.82	NS
NEFA	0.40	0.13	***
B-OH-butyrate	0.20	0.15	***
Triglycerids	0.27	0.33	*



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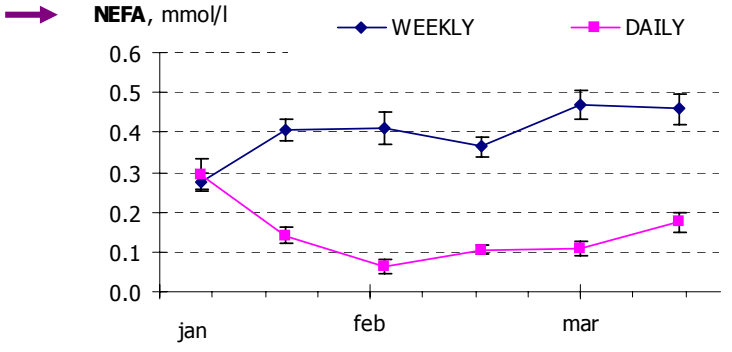

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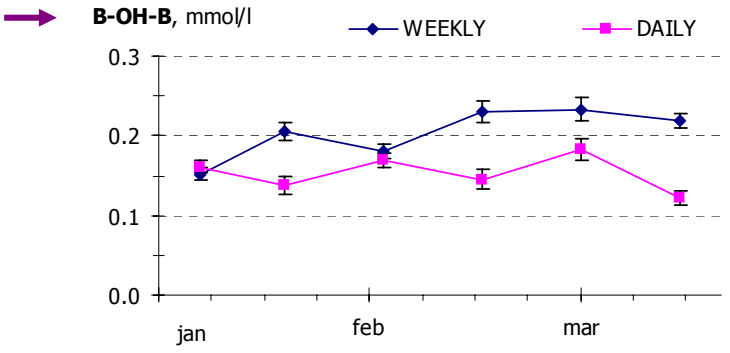

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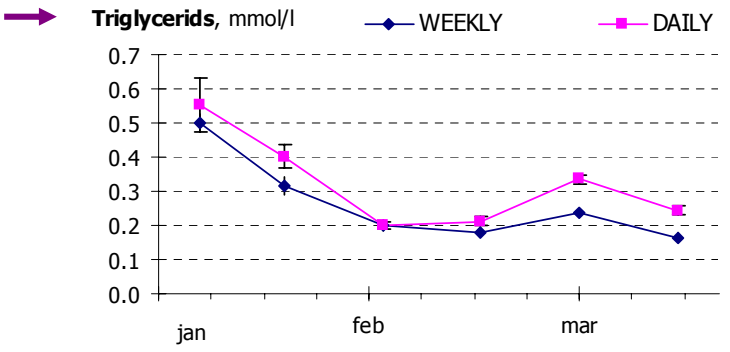
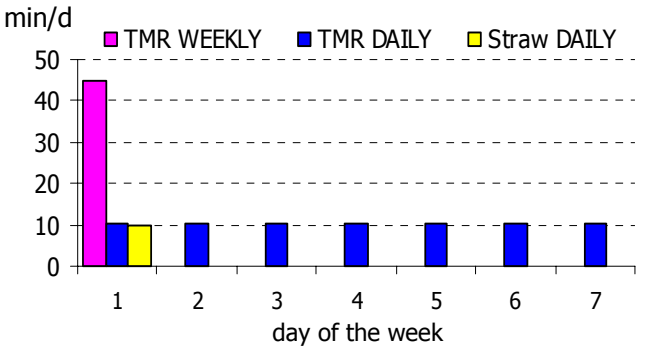


5. Labour

- DAILY labour per feeding treatment



- TOTAL labour per cow during the winter (68 d)

	DAILY	WEEKLY	
TMR distribution, min	36.5	15.5	**- 63%**
Bedding straw, min	5.2	-	
Bedding straw, kg	312	-	

+ manure management …

Conclusions

- Outwintering and the reduction of feeding frequency to once weekly does not have negative consequences on dry cow performance in the long term, provided nutritive requirements are met.
- This simplification of feeding management allows for a considerable reduction of labour costs.