

MILK PRODUCTION AND COMPOSITION OF DAY AND NIGHT GRAZING PERIOD OF COWS FED A TOTAL MIXED RATION

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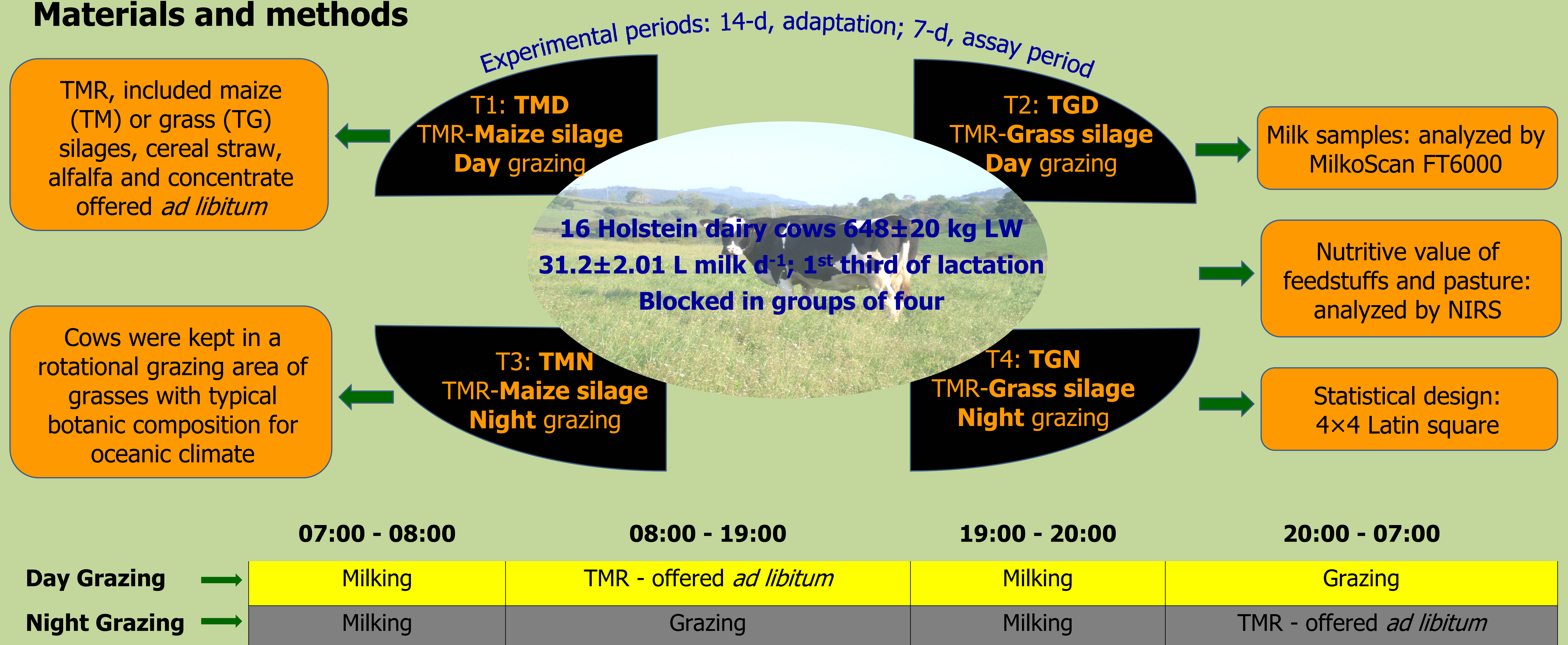
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Introduction

Grazing is the least costly source of nutrients for dairy cows in wet areas, and could reduce feed costs and benefit herd health. However, supplementation is necessary to provide the energy required for genetic potential of animal to be fully reached. Supplementation with total mixed ration (TMR) could help produce high yields of milk with enhanced protein and fat contents. It is necessary to determine if the grazing moment affect milk yield and composition.

The aim was to compare milk yield and composition and TMR intake between cows fed TMR *ad libitum* and grazing during day or night, both trials employing high-quality pasture.

Materials and methods



Results

Table 1. Nutritive value of forage and total mixed rations with maize (TM) or grass (TG) silage during experimental period. Results in $g\ kg^{-1}\ DM$.

	TM	TG	Forage
Dry matter ($g\ kg^{-1}$)	521.5	496.1	149.7
Organic matter ($g\ kg^{-1}\ DM$)	912.7	893.9	896.3
Crude protein ($g\ kg^{-1}\ DM$)	141.1	143.8	215.0
Neutral detergent fibre ($g\ kg^{-1}\ DM$)	402.9	433.9	454.0
Acid detergent fibre ($g\ kg^{-1}\ DM$)	250.9	263.4	229.7
Starch ($g\ kg^{-1}\ DM$)	195.5	150.4	ND
Net energy ($Mcal\ kg^{-1}\ DM$) ¹	1.57	1.49	1.67

¹ NRC (2001); ND: No determined.

Table 2. Dry matter intake (DMI), milk yield and composition under different dairy cows feeding strategies.

	Day		Night		MSE	Significance ¹		
	TMD	TGD	TMN	TGN		S	T	S*T
DMI TMR ($kg\ d^{-1}$)	13.2	14.9	12.3	12.9	0.31	0.07	*	NS
Milk yield and composition								
Milk yield ($kg\ d^{-1}$)	31.2	30.7	32.3	31.2	0.30	NS	NS	NS
Milk protein ($g\ kg^{-1}$)	31.9	32.2	31.7	31.7	0.01	NS	NS	NS
Milk fat ($g\ kg^{-1}$)	31.9	32.9	32.7	34.3	0.03	0.08	NS	NS
Milk lactose ($g\ kg^{-1}$)	49.8	49.5	49.8	49.7	0.01	NS	NS	NS

¹ Significant statistical probabilities * $P < 0.05$; NS: Non Significant; S: effect of silage; T: effect of time of grazing; S*T: Interaction. MSE: Mean standard error.

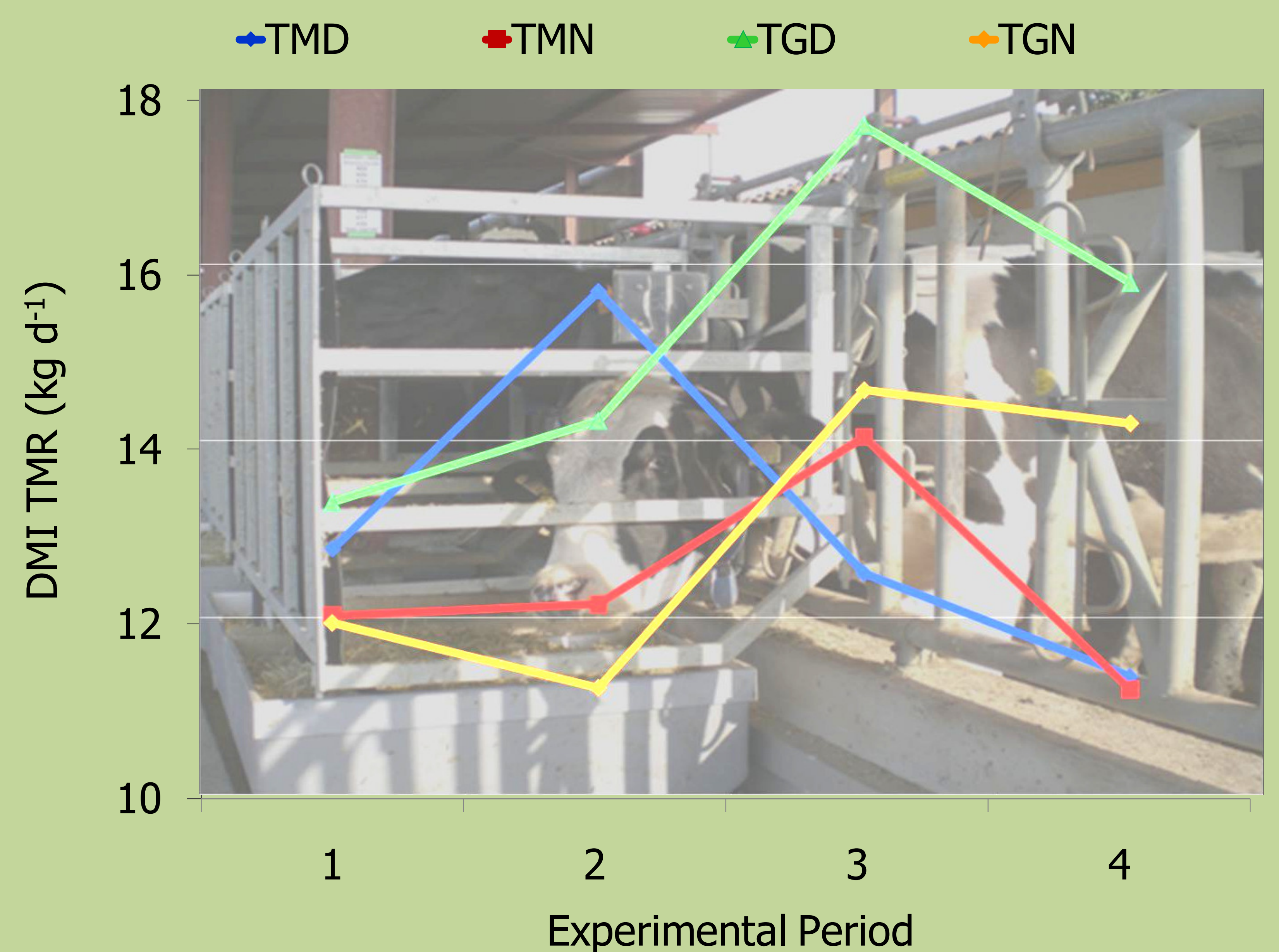


Figure 1. Dry matter intake of TMR.

Conclusions

- Night grazing appears more effective, because at night saved 1.5 kg of TMR per day without negative effects on milk yield or milk composition. The differences in TMR intake suggest that the most economical returns were obtained grazing after evening milking and by allowing cows to feed TMR diet during the day.

- Results could provide an alternative to some farmers to adopt a good compromise between feeding to yield, by having two different grazing periods of sunrise or sunset.