



Rumination behavior and its relationship to feeding behavior in Holstein dairy cows prepartum

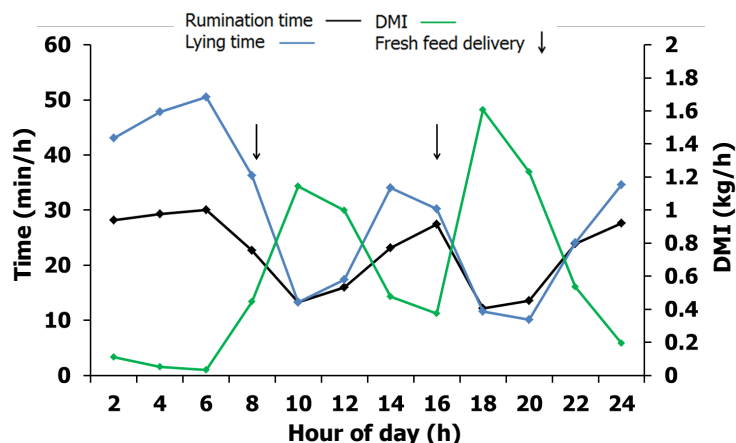
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The availability of automated measuring systems for rumination has allowed for detailed analysis of when cows ruminate and how periods of rumination are associated with other behaviors.

Aims: 1. To describe the diurnal pattern of times spent ruminating in prepartum dairy cows.
2. To determine the association between rumination time and DMI and lying time.

Methodology: Rumination, DMI and lying time of 42 mature, non-lactating dairy cows (21 ± 10 d dry (mean \pm SD)) were monitored for 9 d. Automated monitoring systems were used to record rumination (using HR-Tags, SCR), DMI (using electronic feed bins, Insentec) and lying time (using Hobo Pendant G loggers, Onset). To determine if rumination behavior can be used to estimate daily DMI, Pearson correlation was used to test the within cow association between these variables. In addition, data were summarized in 2-h intervals to determine if periods of peak rumination within a day were associated with periods of DMI and lying time. Finally, we tested the hypothesis that peak periods of rumination may occur some hours after peak periods of DMI by assessing correlations between these variables after a lag of 2, 4 and 6 h.

Diurnal Patterns



HR-Tag rumination collar

Within cow correlation coefficients between rumination and DMI (kg/d)

Parameters	r	95% CL
By day	-0.18*	-0.29, -0.07
By 2-h interval		
No lag	-0.72*	-0.75, -0.69
2 h lag	-0.16*	-0.22, -0.11
4 h lag	0.23*	0.20, 0.27
6 h lag	0.17*	0.11, 0.18

* P < 0.001

There is a lag of approximately 4 h between intake and the onset of rumination. Cows preferentially ruminate at night and while lying down.