



Effects of a high forage diet prepartum on feeding behavior in dairy cattle

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Dairy cows are commonly fed an energy dense diet 3 weeks before calving. New research is showing that feeding higher forage diets prepartum improves postpartum health, but little is known about the effects of high forage diets on feeding behavior of dairy cows.

Aims: To compare feeding behavior of cows on a traditional prepartum diet (control; $NE_L=1.46$ Mcal/kg; 24.3 % concentrate, 77% forage; NDF = 41%) versus a higher forage diet (higher forage; $NE_L=1.41$ Mcal/kg; 13.4% concentrate, 87% forage; NDF = 48%) prepartum.

Methodology: At dry off, 20 multiparous Holstein cows were fed a higher forage diet (treatment diet). Approximately 3 weeks before expected calving cows were either switched to a control diet (control; n=10) or remained on the treatment diet (higher forage; n=10) until calving. Daily DMI and feeding time was measured using an electronic feeding system; this information was used to determine the number and duration of meals, with meals defined using the distribution of intervals between feeder visits. In addition, we distinguished between visits that were nutritive (visits to the feeder in which cows consumed feed) versus non-nutritive (visits were no feed was consumed). Time spent ruminating was measured using an electronic collar.



Feeding Behavior		
	Control	Higher Forage
Meals (n/d)	7.8 ± 0.2**	6.7 ± 0.2
Feeding time (min/d)	205.7 ± 12.7	206.8 ± 12.7
Feeding rate (g/d)	131.1 ± 22.9*	163.0 ± 25.0
Meal size (kg)	2.1 ± 0.1	2.0 ± 0.1
Meal length (min)	45.4 ± 3.2**	53.1 ± 3.5
Nutritive visit (#/d)	60.6 ± 5.1	49.2 ± 5.6
Non-nutritive visit (#/d)	20.5 ± 8.1**	56.4 ± 8.8





Feeding a higher forage diet prepartum resulted in lower DMI and longer rumination times. In addition, cows fed a higher forage diet consumed fewer but longer meals, ate at a faster rate, and paid more non-nutritive visits to the feed bins.

*P <0.1, ** P <0.05 denote differences between treatments

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