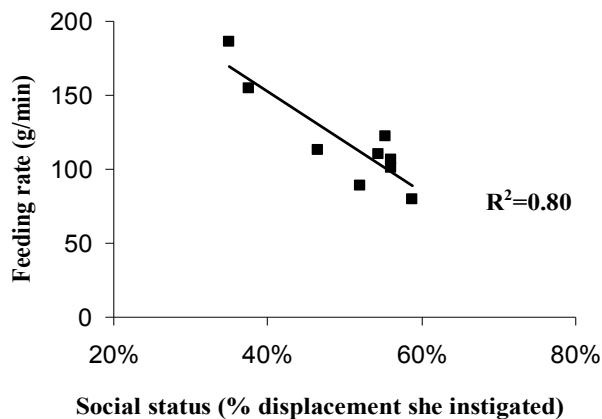


COMPETITION AT THE FEEDER ALTERS FEEDING AND SOCIAL BEHAVIOR OF TRANSITION DAIRY COWS

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Transition cows require sufficient dry matter intake (DMI) to meet the increasing energetic demands of lactation. Management strategies that reduce competition can increase feeding activity of mid-lactation cows, but it is unclear if this is true for the transition cow. The objectives of this study were to test the effect of a competitive feeding environment on transition dairy cow behavior. DMI and feeding behavior were monitored from wk -1 before to wk 2 after calving for 110 Holstein dairy cows using an electronic feeding system. Social behavior was recorded as displacements at the feed bunk during the wk -1 before calving. Cows were assigned to a competitive (2:1 cows:bin) or non-competitive (1:1 cow:bin) treatment 1 wk before calving. Cows diagnosed with clinical illness were removed from the dataset. Each cow on the non-competitive treatment was matched for parity and baseline feeding data with one cow from a pair in the competitive treatment, resulting in 10 matched pairs. The transition period was separated into weekly periods: wk -1, +1 and +2. Differences in feeding behavior between treatment groups were tested using a mixed model in SAS separately for each period; Proc GLM was used to determine the relationship between social and feeding behavior. In the week before calving, competitively fed cows tended to visit the feeder more often (43 vs. 32 visits/d, SED=4, $P=0.10$), yet there was a trend for them to consume less feed (13.4 vs. 15.1 kg/d, SED = 0.61, $P = 0.06$) at a slightly faster rate (118 vs. 95 g/min, SED=10, $P=0.10$) compared to cows fed non-competitively. In wk +1, cows fed competitively tended to eat less than non-competitively fed cows (13.9 vs. 15.6 kg/d, SED = 0.75, $P = 0.11$), but this difference was not observed by wk +2; competitively fed cows compensated in intake during wk +2 by increasing the rate at which they ate (142 vs. 105 g/min, SED=11, $P = 0.02$). In the wk -1, competitively fed cows were involved in



more displacements at the feed bunk compared to non-competitively fed cows (24 vs. 10 no./d, SED 3.8, $P = 0.02$). Competitively fed cows that were least likely to instigate a displacement were the most likely to eat faster in wk -1 ($R^2=0.8$, $P < 0.01$, Figure 1). The results of this study suggest that competition at a feeder can negatively affect the DMI of transition cows in the week before calving, and changes in feeding behavior are dependent on social status.

Figure 1: The relationship between feeding rate and social status in multiparous Holstein dairy cows in a competitive feeding environment.