SHORT-TERM EFFECTS OF REGROUPING ON BEHAVIOR OF PREPARTUM DAIRY COWS

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In modern dairy production systems regrouping of cows is a common management practice and many cows experience 4 or more regroupings per lactation. The majority of the regrouping events, usually based on stage of lactation, reproductive status and dietary requirements, take place around the dry period. Each regrouping results in a changing group composition and contributes to social turmoil. Little work has looked at the impact of regrouping on social behavior of far-off dry cows. The objectives of this study were to determine the effect of regrouping cows during the dry period on feeding, social, rumination and lying behavior for cows that were moved to a new group in a new pen and cows that remained in their own pen but where new cows were introduced. A total of 48 prepartum Holstein dairy cows were housed in groups of 6 and regrouped in groups of 3 (16 triads) with one triad moving to another pen and one triad staying in the same pen. For 7 d before and 8 d after regrouping, cows were individually and continuously monitored for feeding, rumination and lying behavior by means of an electronic feeding system, a rumination logger on each cow's neck and a data logger attached to one of the hind legs, respectively. Video recording was used to monitor displacements at the feeder for 3 hours following the afternoon fresh feed delivery before regrouping and 2 afternoon feed deliveries after regrouping. The triad was considered the experimental unit. Statistical analyses were performed in SAS using a mixed model that included triad as random effect, replicate as block, type of triad as a fixed effect, time period relative to regrouping as a repeated measure and the interaction between type of triad and time period. Baseline values were tested against each of the 3 days immediately following regrouping, where response to regrouping was clearest. Cows that were moved to a new pen after regrouping decreased DMI by approximately 9 % on the day of regrouping compared to baseline values (14.5 ± 0.4 kg vs. 13.2 ± 0.4 kg/day; P = 0.04). Both treatments showed reduced feeding rate after regrouping (remained: 64.5 ± 2.1 vs. 57.5 ± 2.1 g/min; P = 0.01; moved: 62.9 ± 2.1 vs. 57.6 ± 2.1 g/min; P = 0.01). Cows that remained in the pen decreased time spent ruminating on the day of regrouping (530 ± 11 vs. 498 ± 11 min/day; P = 0.03); whereas, cows that were moved to a new pen showed the greatest decline in rumination time on the day after regrouping (510 ± 19 vs. 481 ± 19 min/d; P = 0.03). Cows that were moved to a new pen also showed an increase in the number of displacements initiated at the feeder in the 3 h following the afternoon fresh feed delivery (5.7 ± 1.5 vs.12.0 ± 1.5 displacements initiated/3hrs; P = 0.05) and a modest increase in the number of lying bouts after regrouping (7.2 ± 0.5 vs. 8.2 ± 0.5 bouts/day; P = 0.02). These results suggest regrouping can affect behavior of prepartum dairy cows, with the effects greatest for those cows that are moved to a new pen.