

Does Age or Lactation Affect the Expression of Mounting Behaviour in Dairy Cattle?

C.A. Felton¹, M.G. Colazo², C.J. Bench¹, D.J. Ambrose^{1,2}

¹Department of Agricultural, Food and Nutritional Science, University of Alberta, 4-10 Agriculture/Forestry Centre, Edmonton, AB, T6G 2P5, Canada

²Alberta Agriculture and Rural Development, Livestock Research Branch, 307, 7000 - 113 Street NW, Edmonton, AB, T6H 5T6, Canada

Email: cafelton@ualberta.ca ¹ divakar.ambrose@gov.ab.ca ²

The objective of this study was to determine if age or lactation affected estrus-related mounting behaviours in dairy cattle. Animals (8 virgin heifers, 8 non-lactating mature cows, 8 lactating mature cows) were induced (Day 1) into estrus and observed together in a straw-bedded pen for 30 min, 2x daily, from Day 0-6. Blood progesterone confirmed that all animals responded to the estrus-induction treatment. Results are reported as overall mean activity per animal from Day 0-6. To test the age effect, observations from heifers were compared to that of non-lactating cows. We found no differences in mounting or standing estrus events between heifers and non-lactating cows but heifers were ridden (brief unaccepted mounting event without standing) more often than non-lactating cows (12.2 vs 6.3; $P < 0.01$). Attempting-to-mount (front feet lifted off ground without completion of the mounting event) occurred less in heifers compared to non-lactating cows (2 vs 7.5; $P < 0.01$). To test the lactation effect, observations were compared between non-lactating and lactating cows. The average number of mounting did not differ between non-lactating and lactating cows (1.9 vs 2.4) but attempting-to-mount was lower in non-lactating cows than in lactating cows (7.5 vs 10.8; $P < 0.01$). Non-lactating cows were ridden more (6.3 vs 2.6; $P < 0.01$) and had more standing estrus events (3.2 vs 0.2; $P < 0.01$) compared to lactating cows, whereas, lactating cows displayed a higher number of chin-resting behaviour (9.5 vs. 6.2; $P < 0.01$) compared to non-lactating cows. Heifers were the most ridden group and made the least number of attempted mounts, indicating that mature cows may have had a hierarchical advantage over heifers. Lactating cows had the highest number of chin-resting but the lowest number of standing estrus which suggests that although they had the urge to mount herdmates, they were the least-sought-after group.

Implications: Lactation reduces standing estrus events increasing the difficulty to accurately detect estrus; therefore, it is important to increase the amount of time spent on estrus detection and watch for cues such as chin-resting and attempting-to-mount to improve estrus detection efficiency.

We thank Malou Gosselink, Amy Kachurowski, Jamie Kratchkowski, Natasha Kutryk, Breana Weiss, and Dr Patricio Ponce-Barajas for their assistance and Alberta Agriculture and Rural Development for funding support.