Comparison of Activity Partitioning in 1st, 2nd, and 3rd/4th Lactation Dairy Cows*

C. Beck, K. Chorna, K. Nichiporik, C. Riczu, J. Feddes, and L. Doepel

Dairy Research and Technology Centre, University of Alberta, Edmonton AB T6G 2P5
E-mail: lorraine.doepel@ualberta.ca

Most behavioural research has examined cows of similar ages; however there are numerous physiological changes that may affect behaviour as cows age. The objective of this study was to determine if cows alter their behaviour patterns as they mature. Twelve lactating Holstein cows, housed in tie-stalls, were divided into 3 groups: young (1st lactation), medium (2nd lactation), and old (3rd or 4th lactation), and their behaviour was monitored continuously for 5 days.

Old cows spent more time lying down, and reciprocally, less time standing, than young cows. Daily lying time was 582, 696, and 765 minutes for young, medium, and old cows, respectively. First lactation cows had fewer but longer lying bouts (9 bouts/d, 64 min. each) while older cows had shorter, more frequent lying bouts (14 bouts/d, 52 min. each). It was observed that as milking time approached the majority of cows decreased their lying time; this may be related to discomfort associated with increased udder pressure. It may also be related to the anticipation of milking and the learned behaviour of the cows.

Daily eating time decreased with age, while feed intake increased. Eating time (min/d) and intake (kg/d) averaged 403 and 18.6 for young cows, 374 and 20.2 for medium aged cows, and 318 and 22.9 for old cows. Drinking time (35 min/d) and grooming time (12 min/d) were highly variable within and across age groups; no relationships could be established between these behaviours and cow age.

Take Home Message: The cows in this experiment were housed in a tie-stall barn; therefore, the data obtained should be interpreted with caution for free-stall barns because cow behaviour may be different in that type of housing. However, the fact that young cows spent more time eating suggests that they may require different nutritional management to optimize their productivity. More elaborate studies, with a larger sample size and more sophisticated technology, will allow us to more accurately monitor the behaviour of different aged cows, and possibly incorporate management practices based on those behaviours.

**This was an undergraduate student project supported by the Alberta Livestock Industry Development Fund*