

## COMPARING PEAK OF LACTATION FROM AUTOMATIC MILKING SYSTEMS AND CONVENTIONAL MILKING SYSTEMS

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Automatic milking systems (AMS) allows for variable milking frequency for individual cows within a herd, which is not the case for most other milking systems. A more frequent milking is desired at the beginning of the lactation to stimulate the mammary gland to produce more milk during the peak of lactation. The objective of this study was to evaluate the effect of more frequent milkings, as in the AMS, on milk yield at lactation peak. Lactation records were obtained from the Lactanet (Canadian Network for Dairy Excellence) database. A total of 7,706,954 records from herds with AMS and conventional milking systems (i.e., 2 milkings per day) during 4 years (2017-2021) were used for the analysis. Data was grouped by milking system and by parity (primiparous and multiparous). For the analysis the mean of milk production was calculated by 10 days in milk interval (e.g., 10, 20, 30...etc) and the effect of the milking system was evaluated by a regression analysis. Results showed that at the beginning of the lactation (i.e., 10 days in milk) cows milked in AMS had a significantly lower milk production (10.5 kg;  $P < 0.0001$ ) than the cows in conventional milking systems. However, when these cows attained the peak of lactation (70 days in milk) they reach the same milk production than those milked in conventional milking systems. During the first 60 days in milk (from 10 to 70 days in milk) cows milked in AMS increased milk production by  $12.06 \pm 0.6$  kg, whereas the increase in the same period was of  $7.7 \pm 0.58$  for cows milked in conventional milking systems. This indicates that for these 60 days period cows in AMS produced an extra of  $4.36 \pm 0.59$  kg of milk ( $P < 0.001$ ) compared with the cows in conventional milking systems. Furthermore, the increase during this period was found for both primiparous and multiparous cows. These findings highlight the importance of monitoring the peaks of lactation in AMS, to adjust the available energy of the diets at the beginning of the lactation to ensure a high milk production by reducing the negative risks in health and reproduction, as it has been reported that the incidence of ketosis is 1.45 times greater in AMS compared with other milking systems.