PROJECT 2013-2018

INNOVATIVE FEEDING AND BEST MANAGEMENT PRACTICES FOR THE VERY YOUNG DAIRY CALF TO IMPROVE CALF PERFORMANCE, WELFARE, AND FUTURE PRODUCTIVITY

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Number of students trained (MSc, PhD, Post-Doc):	**7**
TOTAL BUDGET	**$381,714**

INVESTMENT PARTNERS

Agriculture and Agri-Food Canada

DAIRY FARMERS OF CANADA

OBJECTIVE:

With many producers making the transition from individual to group housing of dairy calves, the objectives were to examine labor requirements, potential welfare benefits for calves, and the ability to accelerate performance of pre-weaned calves housed in groups with automated feeders. The studies that comprise this particular project incorporate a number of different research approaches to meet our stated objectives, including a nation-wide survey of dairy farmers, on-farm epidemiological studies and deliberate experimental approaches.

KEY OUTCOMES:

- In an experiment in which calf activity was monitored with accelerometers and voluntary milk intake from automated feeders was measured, calves that drank the largest amounts in the first days of life had greater long-term growth rates and experienced less illness. It was concluded that early milk intake was a better indicator of early calf vigour than activity levels.
- When 2 to 4 days old, individually housed calves were offered milk in nipple pails mounted at either ground level or 1.5 meters higher, those offered milk from the elevated pails consumed 0.5 L more milk per day.
- There were large differences between calves in how quickly they learn to use automated milk feeders. Housing calves in pairs rather than individually for 6-14 days after birth had no effect on time taken to subsequently begin unassisted drinking from automatic feeders. Younger calves at the time of introduction were more likely to take longer to begin than older calves but many 6 days old calves adapt quickly, especially those that show high vigour in the first week after birth.
- For calves that were relatively easily trained to use an automated liquid feeder, feeder stalls with solid side walls promoted shorter times to first unassisted visit to the feeder compared with stalls having open side walls constructed with steel bars.
- A comparison of introducing calves to an automated liquid feeder within 24 hours after birth versus after 4 days in an individual pen revealed that although the early-introduced calves consumed less milk during the first days of life, there was no difference in the 2 treatment groups after 8 days on the automated feeder. Although the early-introduced calves required more assistance to use the automated feeder, total farm labour required for milk feeding tasks was less for these calves.
- An observational cross-sectional study on 17 Ontario dairy farms feeding group-housed calves with automated liquid feeders revealed that the prevalence of diarrhea and respiratory disease was lower when calf housing was isolated from older animals and pens and feeders were cleaned frequently.

LINK TO KTT TOOLS

VIDEOS:

Association between management practices and calf health on dairy farms using group housing and automated milk feeders. My Research in 180 Seconds, 2018 DFC Dairy Research Symposium. youtube.com/watch?v=NnegY9Kb4xA

Innovative practices for very young dairy calf: Improving calf performance, welfare and future productivity: youtube.com/watch?v=2mZ_PV59DJE