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2014

Temperature Activity Monitoring as Predictors for Ovulation and Estrus Parameters

Project Lead: Ronaldo Cerri and Tracy Burnett

Collaborating Partners: Westgen (\$10K), BCDA, NSERC

Total Project Funding: \$30,000

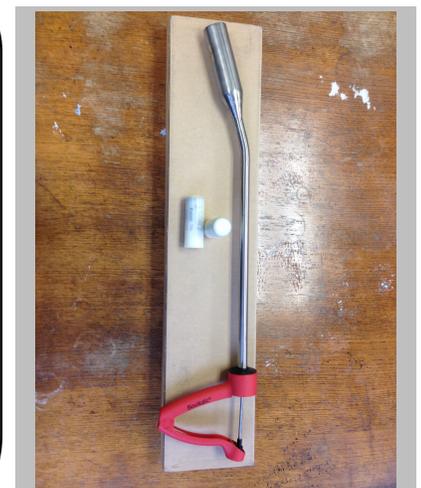
Contribution from DIREC: \$ 12,000

Objectives:

- Determine if a change in rumen-reticular temperature (RRT) can be found at estrus and around the time of ovulation in lactating dairy cows
- Determine if RRT at the time of estrus and ovulation differs depending on the intensity of estrous expression as measured by an automated activity monitor (AAM)
- Determine if RRT at the time of estrus is impacted by body condition or lameness.

Activity Description:

- 200 estrus events from 106 cows were used within this study
- Temperature data was collected using rumen-reticular boluses
- Estrous expression was measured using collar-mounted AAM (Heatime)
- Animals were enrolled by AAM alert and BCS and gait score were collected
- Ovulation time was determined by ultrasonography every 12 hr



Results:

- Change in RRT from baseline was found to be higher at estrus than around ovulation.
- Change in RRT at estrus was influenced by estrous expression, where cows with more intense estrous expression had higher changes in RRT than those that expressed estrus at a lower magnitude.
- At ovulation, change in RRT was found to decrease rapidly for those with high estrous expression, but was quite constant for those with low estrous expression.
- BCS and lameness had an interaction with estrous expression. Thin cows had large changes in RRT regardless of estrous expression. Lame cows with low estrous expression had very small RRT changes.

Key Messages:

- Changes in rumen-reticular temperature can be seen at the time of estrus.
- Rumen-reticular temperature may be more predictive of ovulation in animals with high estrous expression because reductions in RRT change at ovulation are only observed in those events.
- The physical health of the cow must be taken into consideration as BCS and lameness were found to impact changes in RRT depending on the intensity of estrous expression.
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Acknowledgements:



DIREC Mission Statement:

The BC Dairy Association actively funds research and education projects. Our objective is to facilitate, encourage and financially support projects and programs that have been identified by the BCDA to benefit the BC dairy industry.

