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2016

Use of Probiotics to Reduce Metritis and Modulate Uterine Inflammation

Project Lead: Ronaldo Cerri and Sandra Genís

Collaborating Partners: BCDA, NSERC, IRTA

Total Project Funding: \$29,700

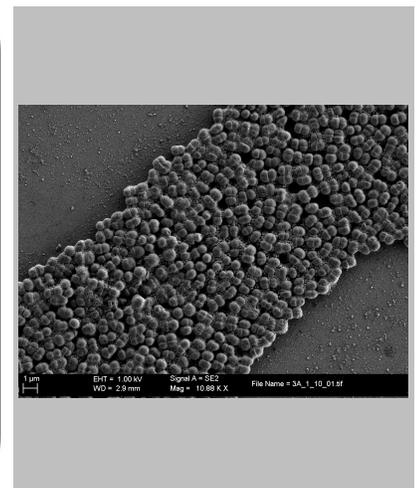
Contribution from DIREC: \$14,000

Objectives:

- To reduce metritis prevalence in dairy cows using intravaginal or intrauterine probiotics.
- To correlate non-sterified fatty acids (NEFA; measure of body fat mobilization) concentration in blood with neutrophil gene expression.
- To regulate uterine inflammation after calving.

Activity Description:

- 135 cows were enrolled 3 wk before calving until 3 wk after calving.
- Combination of 3 lactic acid bacteria (probiotics).
- Treatments: Control; Vaginal (6x/pre-calving); Uterine (1x/post-calving).
- Blood samples d -10, +1, +3, +6 for neutrophil gene expression and NEFA.
- Uterine biopsies from cows at d +1, +3, +6 post-calving.



Results:

- Vaginal treatment (13%) reduces metritis prevalence by HALF compared with Control cows (31%).
- Uterine treatment (30%) does not reduce metritis prevalence compared with Control cows (31%).
- No correlation between concentration of NEFA in blood and neutrophil gene expression were observed.
- Uterine treatment is not able to regulate uterine inflammation.

Key Messages:

- Lactic acid bacteria combination appears to be a promising strategy to prevent metritis in dairy cows.
- Applying the lactic acid bacteria combination 2x/week during the 3 weeks before calving intra-vaginally reduces metritis prevalence.
- Applying the lactic acid bacteria combination once intra-uterine one day after calving does not modify metritis prevalence nor regulate uterine inflammation.
- These results are promising as reducing cases of metritis means reducing the use of antibiotics and possibly antibiotic resistance.

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.

