



MSc. Defence

**Supplementation of omega-3 fatty acids as a strategy to regulate postpartum inflammation in dairy cows**

Bryn Van Winters

Date: January 11th 2023 at 8:00am

The MSc Defence for Bryn Van Winters has been scheduled for January 11th, 2023 at 8:00am. The defence will be held online via Teams and in 141: [https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_NzM3YzkxNDAtNzk0ZC00NDdjLWFmNmQtMDc1OTdhZTgzYWEw%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%22bd28915-dda5-478f-8ecb-a3682dcf0c3a%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_NzM3YzkxNDAtNzk0ZC00NDdjLWFmNmQtMDc1OTdhZTgzYWEw%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%22bd28915-dda5-478f-8ecb-a3682dcf0c3a%22%7d)

**The exam committee will consist of:**

Examining Chair: Dr. Wendy Pearson

Advisor: Dr. Eduardo Ribeiro

Adv. Committee Member: Dr. Stephen LeBlanc

Additional Graduate Member: Dr. Mike Steele

**Abstract:**

The objectives of this thesis were to 1) evaluate the impact of supplementing omega-3 (n3) fatty acids (FA) using calcium salts enriched in fish oil (Ca-FO) during the early postpartum period on the degree and resolution of inflammation using an induced acute inflammation model, and 2) test whether these effects were from an increased energy density of the diet or were due to the effects of n3 FA on immune cell biology. Supplementing Ca-FO was reflected by changes in the FA composition of plasma, milk, and peripheral blood leukocytes. Increased basal and endotoxin-induced concentrations of IFN $\gamma$  and MIP1 $\alpha$ , reduced body temperature response to the endotoxin challenge, and greater rumen activity one day after induced inflammation suggest that supplementation with n3 FA can modulate postpartum inflammation.