



M.Sc. Defence
Effect of Dietary Source of Selenium on Absorption, Retention, Performance, Selenium Status, and Immune Function in Lactating Dairy Cattle

Keira Michele Cruickshank

Date: April 15th, 2021 at 9:00am

The MSC Defence for Keira Cruickshank has been scheduled for Wednesday April 15th, 2021 at 9:00 am. The defence will be held online via Teams: https://teams.microsoft.com/l/meetup-join/19%3ameeting_OGIzOWY1Y2EtNmJiYi00MzA1LWIyODUtYzFkMjZlODc2NzVj%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%22fbd28915-dda5-478f-8ecb-a3682dcf0c3a%22%7d

The exam committee will consist of:

Examining Chair: Julang Li

Advisor: Michael Steele

Adv. Committee Member: John Cant

Additional Committee Member: Katie Wood

Abstract:

The objective of this thesis was to investigate the impact of dietary selenium (Se) source on absorption, retention, performance, Se status, and immune function. Twenty-four mid-lactation Holstein cows were randomly assigned to receive 0.3 mg/kg DM of either an inorganic or organic Se premix. Following an 11-week dietary adaptation period, cows received simultaneous intra-ruminal (Se⁷⁷) and intravenous (Se⁸²) isotope infusions followed by a 4-day total collection. On week 13, a subset of cows (n=20) received an intramammary infusion of 50 µg of lipopolysaccharides (LPS). Results revealed no differences in apparent absorption or retention of Se⁷⁷, but the organic Se dose was excreted in lower amounts in urine and higher amounts in milk. Following the LPS infusion, antioxidant status and animal performance were unaffected by Se source, but the organic treatment had higher milk Se concentrations. Source of Se had a mild impact on inflammatory markers.