



MSc. Defence

Relationships between Feed Efficiency and Gas Emissions in Beef Cows in Dry Lot and Pasture

Lauren Finlay

Date: June 16th 2022 at 9:00am

The MSc Defence for Lauren Finlay has been scheduled for June 16th, 2022 at 9:00am. The defence will be held online via Teams: [https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_MjhhkNjNlZlRtYlRjNC00ZDEyLWFIZWUtNTY0OTljOTU3MWIz%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](https://teams.microsoft.com/l/meetup-join/19%3ameeting_MjhhkNjNlZlRtYlRjNC00ZDEyLWFIZWUtNTY0OTljOTU3MWIz%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: Dr. Elijah Kiarie

Advisor: Dr. Katie Wood

Adv. Committee Member: Dr. John Cant

Additional Graduate Member: Dr. Ira Mandell

**Abstract:**

Estimating feed efficiency and emissions of mature beef cows on pasture faces technical challenges, with little information on the consistency of enteric emissions between the dry lot and pasture. This research examined relationships between feed efficiency, enteric methane (CH<sub>4</sub>), and carbon dioxide (CO<sub>2</sub>) of beef cows in the dry lot and pasture. The trial first monitored feed intake, CH<sub>4</sub> and CO<sub>2</sub> production, weight, and backfat depth every 28 days for 10 weeks in 64 pregnant multiparous beef cows in the dry lot. Post-calving, cows were randomly assigned to paddocks, twice measuring emissions and performance. Results demonstrated animals with low RFI and RFI adjusted for backfat depth had lower intake per kg BW, methane and heat production calculated from the respiratory quotient in the dry lot. Strong correlations were seen between gas emissions in the dry lot and on pasture, demonstrating that dry lot emissions could be predictive of emissions on pasture.