UNIVERSITY of GUELPH

ONTARIO AGRICULTURAL COLLEGE

DEPARTMENT OF ANIMAL BIOSCIENCES

MSc. Defence

FEEDING VALUE OF CUP PLANT (*SILPHIUM PERFOLIATUM SP*) SILAGE

Juan Rivera

Date: December 22nd 2021 at 2:00pm

The MSc Defence for Juan Rivera has been scheduled for December 22nd, 2021 at 2:00pm. The defence will be held online via Teams: https://teams.microsoft.com/l/meetup-join/19%3ameeting_Yjc1M2NiNGYtMjAxMC00ZGE3LWE4ZjktZmRjNDI3MDc2Zjg2%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. Katie Wood

Advisor: Dr. John Cant

Adv. Committee Member: Dr. Gail Carpenter

Additional Graduate Member: Dr. Vern Osborne

Abstract:

Cup plant (*Silphium perfoliatum Sp.*) is characterized by high biomass yields and the ability to grow on marginal lands where common dairy forage sources are unable to thrive. The objective of this research was to assess its feeding value for dairy cows by comparative evaluations of DM degradability *in vitro* and *in situ,* and lactational performance *in vivo* when fed in partial replacement (13% of ration DM) of corn and alfalfa silages. *In vitro* results showed that cup plant silage only had lower DMD than the alfalfa silages, and lower pH than corn silage. *In situ* results showed a smaller DMD than corn and alfalfa silages, also smaller soluble and potentially degradable fractions . Lactational results showed decreased DMI and milk protein percentage, also cows sorted more against long particles. Altogether, cup plant inclusion showed no adverse health effects, sustained high milk yields, and warrants further research of its inclusion in dairy rations.