UNIVERSITY of GUELPH

ONTARIO AGRICULTURAL COLLEGE

DEPARTMENT OF ANIMAL BIOSCIENCES

MSc. Defence

The effects of natural monthly variations in environmental conditions on select serum and plasma electrolyte concentrations in healthy adult outdoor housed dogs and horses at rest.

Connor McCorkell

Date: April 18th 2023 at 9:00am

The MSc Defence for Connor McCorkell has been scheduled for April 18th 2023 at 9:00am. The defence will be held online via Teams and in 141: https://teams.microsoft.com/l/meetup-join/19%3ameeting_OTQxMTdjYTEtNmRlMS00NzdhLTkzMDQtNDYyMmJlMTA1NmZl%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. Kate Shoveller

Adv. Committee Member: Dr. Vern Osborne

Additional Graduate Member: Dr. Luis Arroyo Castro

Abstract:

This thesis investigated the influence of seasonal changes in ambient conditions on electrolyte status in outdoor housed sedentary dogs and horses over multiple months. While the effect of season on various hematological and biochemical parameters is well recognized in human and veterinary medicine, little is known about its impact on electrolyte status in these animals. The findings of these investigations revealed that dogs fed a commercial kibble and horses provided with ad libitum forage maintained their serum and plasma electrolyte concentrations with minimal monthly variation when hydrated, acclimated to their environment, and provided with free-choice shelter access. However, for animals that are exercising, not adequately hydrated, or not acclimated to their environment, seasonal variations in electrolyte concentrations across months and environmental conditions may have significant biological implications. Hence, animal practitioners may need to consider seasonal or monthly variations when interpreting electrolyte concentrations from different periods of the year or when caring for animals at risk of electrolyte imbalance.