

MSc Defence

The effect of dietary lysine supply on mammary gland development during
late gestation in gilts and multiparous sows
Caroline Gillies

Date: July 8th 2023 at 10:00am

The MSc Defence for Caroline Gillies has been scheduled for July 8th, 2024 at 10:00am. The defence will be held online via Teams and in room 141: https://teams.microsoft.com/l/meetup-join/19%3ameeting_MGM4OTEyMjgtMzBhOS00ZGMzLTlmNTQtNDhjYzk5MzgyN2Vh%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. Lee-Anne Huber

Advisory Committee Member: Dr. Chantal Farmer

Additional Committee Member: Dr. Julang Li

Abstract:

The breeding of hyper-prolific sows has resulted in lower piglet birthweights, increased piglet pre-weaning mortality, and has negatively impacted future reproductive potential of the sow. Insufficient milk production for large litters can be combatted by increasing mammary gland development during gestation, thereby increasing the amount of milk available per piglet and improving growth. The overall objective of this thesis was to investigate the effects of dietary lysine quantity and source for improvement of mammary gland development in late gestating gilts and multiparous sows. When multiparous sows were provided dietary lysine 40 % above current NRC (2012) recommendations via soybean meal in late gestation, there were no improvements in mammary parenchymal mass, mammary parenchymal composition, or fetal weights. This suggests that multiparous sows do not require additional lysine for mammary gland development, unlike what was reported previously for late-pregnant gilts. Gilts fed dietary lysine up to 30 % below NRC (2012) recommendations via soybean meal, casein, or crystalline lysine did not experience detrimental effects to mammary development, regardless of lysine source. Therefore, parity and specific goals of the herd should be considered when assessing the lysine quantity in gestating sow diets.