



MSc. Defence

**The Use of Probiotic and Synbiotic Supplements in Mice Models and Poultry: Effects on Behavioural Management**  
Gillian Hughes

Date: April 28th 2023 at 9:30am

The MSc Defence for Gillian Hughes has been scheduled for April 28th, 2023 at 9:30am. The defence will be held online via Teams: [https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_ZGY2ZWQ5ZjYtMjUwYy00NmI1LTk2NTYtZDMwN2ZIYWYyYUlm%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%22bd28915-dda5-478f-8ecb-a3682dcf0c3a%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZGY2ZWQ5ZjYtMjUwYy00NmI1LTk2NTYtZDMwN2ZIYWYyYUlm%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%22bd28915-dda5-478f-8ecb-a3682dcf0c3a%22%7d)

**The exam committee will consist of:**

Examining Chair: Dr. Dan Tulpan

Advisor: Dr. Alexandra Harlander

Adv. Committee Member: Dr. Nienke Van Staaveren

Additional Graduate Member: Dr. Jen Ellis

**Abstract:**

Probiotics influence mood and social behaviour, and could help manage gentle and severe feather pecking (GFP and SFP) in hens. While GFP is considered beneficial, SFP damages feather cover over time. In previous research, single-strain *Lactobacillus rhamnosus* reduced SFP under stressed conditions, and increased GFP overall, and multi-strain synbiotics could reduce SFP while providing other benefits. This thesis aims to assess the effect of a synbiotic containing *Lactobacillus* and *Bifidobacterium* on GFP, SFP, productivity, and body condition in hens. We first conducted a meta-analysis of *Bifidobacterium*'s impact on stress response in mice. The synbiotic was then evaluated by supplementing stressed and non-stressed hens over four weeks. While *Bifidobacterium* reduced anxiety-like behaviour in mice in response to stress, the synbiotic did not reduce SFP in hens regardless of stress treatment. The synbiotic did change GFP's relationship to stress, which could play a role in hen's social behaviour and stress management.