

MSc Defence

Impacts of Feed Additives on the Growth Performance, Nutrient Utilization and Gut Microbiome of Rainbow Trout (*Oncorhynchus mykiss*) Using In Vivo and In Vitro Trials
Cody Anderson

Date: March 27th 2025 at 9:30am

The MSc Defence for Cody Anderson has been scheduled for March 27th, 2025 at 9:30am. The defence will be held online via Teams and in room 141: https://teams.microsoft.com/l/meetup-join/19%3ameeting_YmZmMWExYzUtNmRhYS00MjNiLTg2MTQtNjZkYWExYzQ1YmRj%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%22dfbebf32-99ae-4022-a68f-422f93e11c7f%22%7d

Examining Chair: Dr. Niel Karrow

Advisor: Dr. David Huyben

Advisory Committee Member: Dr. Emma Allen-Vercoe

Additional Member: Dr. Matthew Sorbara

Abstract:

Growing areas of concern in both aquaculture production are sustainability and welfare. Sustainability can be improved in aquaculture production by replacing fishmeal with alternative protein sources or other functional feeds. The first study presented was a 4-month feeding trial aimed to examine the effects of Black Soldier Fly (BSF) larvae as well as a probiotic and 2 levels of prebiotic inclusion on the growth performance, carcass composition and gut microbiome of rainbow trout. Growth performance was unaffected, but digestibility and microbiome composition were altered. The second trial presented was a chemostat trial aimed to simulate the rainbow trout gut microbiome. Vessels were inoculated faeces collected from rainbow trout and cultured for either 21 or 28 days. The vessels supported a bacterial population, however, the bacterial composition was not reflective of the gut rainbow trout microbiome. Both trials provide groundwork to continue to improve the sustainability and welfare of aquaculture industry.