

## MSc Defence

Effects of black soldier fly meal and its components on the growth performance, nutrient retention, gut histology and gut microbiome of rainbow trout

Ilan Riesenbach

Date: August 7th 2024 at 1:00pm

The MSc Defence for Ilan Riesenbach has been scheduled for August 7th, 2024 at 1:00pm. The defence will be held online via Teams and in room 141: [https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_M2RiNzY4NTctOTdINS00M2MzLTgyZWmtNzFmNTI5NDk2OGM3%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%2216c71763-4b6c-4f9d-baeb-9957d8bc75dc%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_M2RiNzY4NTctOTdINS00M2MzLTgyZWmtNzFmNTI5NDk2OGM3%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%2216c71763-4b6c-4f9d-baeb-9957d8bc75dc%22%7d)

**The exam committee will consist of:**

Examining Chair: Dr. Julang Li

Advisor: Dr. David Huyben

Advisory Committee Member: Dr. Niel Karrow

Additional Member: Dr. Neil Rooney

**Abstract:**

Insects, such as black soldier flies (BSF), have garnered attention in the aquaculture industry as a sustainable protein and lipid alternative to fishmeal and fish oil. However, research is lacking in understanding the beneficial effects of insect diets on fish growth and health. The aim of this thesis was to investigate the effects of feeding BSF and BSF components, such as oil and chitin, on growth performance, nutrient utilization, plasma biochemistry, gut histology and gut microbiome of juvenile rainbow trout (*Oncorhynchus mykiss*). Two 12-week feeding trials were performed where rainbow trout were fed with fishmeal and soybean-based diets, respectively, where fishmeal and fish oil were replaced with 5 and 10% full-fat BSF, 5 and 10% defatted BSF, 4% BSF oil and 1% BSF chitin. Growth performance and nutrient retention were slightly better in fish fed the BSF oil and chitin supplemented diets, which also had changes in gut histology and the microbiome.