

Bachelor or Master thesis BIOVIT 2023/24



Topic (Norwegian):

Finkartlegging og funksjonell karakterisering av et viktig Fusariumresistensgen i vårhvete

Topic (English):

Fine-mapping and functional characterization of an important Fusarium head blight resistance gene in spring wheat

Fusarium head blight (FHB) is an important wheat disease, as it not only reduces grain yield, but also leads to the contamination of the grains with harmful mycotoxins.

Based on field experiments, we have mapped one major FHB resistance QTL on the long arm of wheat chromosome 2D. In addition, we have also developed near-isogenic lines (NILs) and large fine-mapping populations to fine-map this FHB 2D QTL. The master student will do greenhouse point inoculation with *Fusarium graminearum* on the NILs and a subset of the fine-mapping population to score the disease severities. Also, run an RNA extraction experiment of the NILs which show distinct phenotypes to inoculation. The final goal is to identify the mechanisms behind this important FHB resistance QTL on chromosome 2D.



Subject area (keywords): genetics, plant pathology, disease resistance, genomics

Language thesis: English

Bachelor or Master thesis: Master thesis

Credits: 60 ECTS

Project/company: NFR 320090 Phenotyping for healthier and more productive wheat crops

Please contact:

Morten Lillemo, IPV morten.lillemo@nmbu.no

Min Lin, IPV min.lin@nmbu.no