Bachelor or Master thesis BIOVIT 2023/24

Topic/Title (Norwegian)
Målinger av N-opptak, avling og proteininnhold i bygg

Topic/Title (English)
Assessments of N-uptake, grain yield and grain protein content in barley

Summary

Barley is the most widely grown cereal in Norway and used mainly for animal feed. In the newly funded ProteinBar project we will investigate both genetic solutions and Nitrogen (N) fertilization strategies to increase the protein content of barley grains. In this master thesis topic, the student will be involved in testing different methods to measure N-uptake in a field trial of selected barley cultivars that will be subjected to different N-fertilization regimes. Measurements during the season will include soil samples, and measurements of N-uptake by use of hand-held sensors (Yara N-sensor) and UAV multispectral imaging. After harvest, grain yield and grain protein content will be measured and analyzed together with the in-season data to compare the effects of the different N-fertilization treatments. Alongside this activity, a large field trial of 250 barley genotypes will be tested at two N-fertilization levels and used for genome-wide association mapping. Involvement in either one or both field trials is possible, depending on interest.

There is also a possibility for a summer job as a part of this thesis!

Subject area (keywords): Plant breeding, crop physiology, phenotyping, N-fertilization

Language thesis: English

Bachelor or Master thesis: Master thesis

Credits: 60 ECTS

Project/company

ProteinBar (NFR 336315) - Increased protein production from Norwegian barley for animal feed

Please contact

Morten Lillemo, IPV: morten.lillemo@nmbu.no

Tomasz Mroz, IPV, tomasz.mroz@nmbu.no