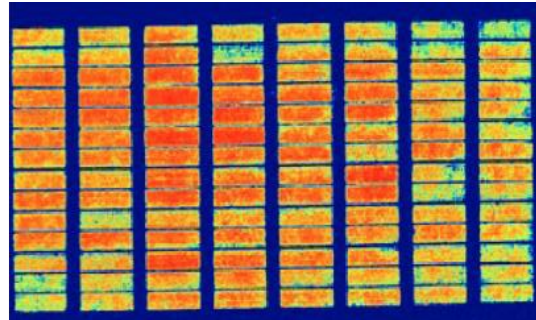


Topic/Title (Norwegian)

**Bruk av multispektrale dronebilder for avlingsprediksjon i norsk vårhvete**

Topic/Title (English)

**Use of drone time-series multispectral imaging for trait prediction in Norwegian spring wheat**



### Summary

The physiological and physical properties of the crops change according to growing conditions and time of measurement which can be observed by changes in the spectral reflectance of the plants. Captured drone imagery data over time can provide detailed information about plant growth and development. However, the challenge here is the increased data volume and data variability. Exploiting multispectral time-series data is promising but still relatively underexplored in plant phenotyping due to the complexity of analyzing jointly spatial, spectral, and temporal information. In this master thesis, the student will compare different strategies to deal with multispectral time-series data and apply different machine-learning approaches to analyze the data. The student will be involved in multispectral data capturing with drones in our field trials during the growing season, orthophoto assembly, feature extraction, and trait prediction. No previous experience with those techniques is required but elementary scripting skills in Python are an asset! There is also a possibility for a summer job in the framework of this master thesis.

**Subject area** (keywords): Spring wheat, Trait prediction, Time series, Multispectral.

**Language thesis:** English

**Bachelor or Master thesis:** Master thesis

**Credits:** 60 ECTS

### Project/company:

PhenoCrop (NFR 320090) - Phenotyping for healthier and more productive wheat crops

NOBALwheat (Baltic Research Program): Breeding toolbox for sustainable food system of the NOrdic BALtic region

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