

Topic (Norwegian):

Effekten av temperatur på oppbygning av spiretregghet og aksgroingsresistens i hvete

Topic (English):

The effect of temperature on seed dormancy and pre-harvest sprouting in wheat



Summary

Pre-harvest sprouting is a serious quality issue in the wheat production, and occurs when seeds of cultivars with insufficient seed dormancy starts to germinate in the heads before harvest due to rainy weather. We have identified a Norwegian breeding lines with very high level of seed dormancy and developed a mapping population to study its pre-harvest sprouting resistance. In this topic we are looking for a student to be involved in field and laboratory testing of seed dormancy in this mapping population, develop linkage maps and conduct QTL mapping. For the coming field season (2022) we will also be able to test the mapping population under two different temperature regimes in polytunnels to study the effect of temperature on the buildup of seed dormancy.

The objectives of this project are to (1) evaluate seed dormancy and pre-harvest sprouting resistance based on field trials; (2) develop linkage maps and identify genetic loci responsible for the trait using QTL mapping (3) evaluate the effect of temperature on the buildup of seed dormancy by running field trial in the polytunnels

Subject area (keywords): genetics, seed dormancy, pre-harvest sprouting, QTL-mapping

Language thesis: English

Bachelor or Master thesis: Master thesis

Credits: 60 ECTS

Project/company:

SproutResist (NFR 321436): Genomic-based breeding technology for the improvement of pre-harvest sprouting resistance in spring wheat under Norwegian climate

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