Master Thesis at FiBL Plant Breeding Group

Title
Marker Assisted Selection in white lupin (Lupinus albus L.) breeding for increased tolerance against Colletotrichum lupini, the causal agent of anthracnose

Context
The high protein content and low nutrient requirements of white lupins (Lupinus albus) make them a suitable local alternative to soy imports. However, lupin cultivation is severely impaired by a disease called anthracnose, caused by the seed-borne fungus Colletotrichum lupini.

Objectives
The aim of the MSc project is (1) to apply MAS on white lupin breeding lines and (2) to validate in controlled conditions and/or field trials the efficiency of marker-assisted selection in the improvement of anthracnose tolerance in white lupin breeding material.

Methods
- DNA extraction and PCR/qPCR
- Fluidigm chips and/or KASP markers application
- Application of stem inoculation-based disease phenotyping under controlled conditions (and/or)
- Field disease phenotyping to validate the marker assisted selection for anthracnose tolerance

Requirements
- BSc in biotechnologies, biology, agronomy or related sciences
- Motivation and interest for laboratory work

Contact
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Starting period
From June 2022 or upon agreement

Location
FiBL, Frick, Kanton Aargau, Switzerland, www.fibl.org

Language
English or German