

Master Thesis Position

Themen für Master- und Bachelorarbeiten (admin.ch)



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
Agroscope

Master thesis topic description

Research group Extension Arable Crops (Agroscope)



Formal supervision (i.e. "Main supervisor"/ "Referent")	Dr. Susanne Vogelgsang
Direct supervision (i.e. "2 nd examiner"/ "Ko-Referent")	Filippo Carmenati
Research area	Underutilised crops, Legume crops, Ecosystem services, Pollinators, Plant-Soil-Water interactions
Title	Ecosystems services delivered from underutilised crops as small-scale landscapes elements
Context	<p>The potential benefits of increasing legume and other niche crops' production in Europe by (re)introducing them to current cropping systems span from the field, the grower, the environment to the consumer. One of these benefits ecosystem services (ES), defined as services people obtain from the functioning of ecosystems, which support life on earth.</p> <p>Exploring ES delivery in more diverse cropping systems, including underutilised legume species, will contribute to break down barriers to legumes and other niche crops as a measure for crop diversification in Europe.</p> <p>Objective:</p> <p>To investigate the delivery of provisional and regulating ecosystem services. this study is structured using 4 underused crop species (narrow-leaved lupins, lentils, hull-less barley, buckwheat) in mixed cropping and in pure stands, together with two control treatments (wheat, commercial mixture of native plant species), representing the extremes for provisioning and regulating ecosystem services.</p>
Tasks and methods	<p>The fieldwork will be conducted between May and July 2023 and data will be collected at Agroscope Zurich-Reckenholz using a combination of visual assessments and physical measurements.</p> <p>Monthly vegetative surveys will be performed for native species mixtures and underutilised arable crops to investigate their support for pollinators and other target ecosystem services. Subsequent to the data collection, analyses of field data and data on yield biomass will be performed at Reckenholz.</p> <p><u>Assessment of regulating services</u></p> <p>(Biodiversity)</p> <ul style="list-style-type: none"> • Floral display cover and timing • Pollinators' counts <p>(Water retention)</p> <ul style="list-style-type: none"> • Canopy cover • Soil water content

Master Thesis Position

Themen für Master- und Bachelorarbeiten (admin.ch)



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Economic Affairs,
Education and Research EAER
Agroscope

Swiss Confederation

	Assessment of provisioning services <ul style="list-style-type: none"> • Yield • Land Equivalent Ratio • Labour Use Efficiency
Part of an ongoing EA research project	Horizon 2020 project CROPDIVA (Climate Resilient Orphan croPs for increased DIVERsity in Agriculture): https://cordis.europa.eu/project/id/101000847
Pre-requisites	<ul style="list-style-type: none"> - Enjoying field work and endurance - Scientific curiosity - Interest to obtain new skills - Knowledge or interest in plant science and entomology - Driving license
Language	English (basic knowledge of German is an asset)
Starting time	End of April – beginning of May 2023
Date of announcement	January 2023
IF YOU ARE INTERESTED	Contact me at the following email address filippo.carmenati@agroscope.admin.ch with your <u>CV</u> and a <u>short cover letter</u> telling me a bit about your interests in the topic.

