Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Forschungsinstitut für biologischen Landbau
Institut de recherche de l'agriculture biologique
Research Institute of Organic Agriculture
Istituto di ricerche dell'agricoltura biologica
Instituto de investigaciones para la agricultura orgánica

PhD Project: Improving disease resistance of pea through selection at the plant-soil interface (resPEAct)

The **Forage Crop Genetics group of Prof. Bruno Studer** at the Institute of Agricultural Sciences (IAS) at ETH Zurich and the Plant Breeding group at the **Research Institute of Organic Agriculture** (FiBL) aim to improve disease resistance of pea through selection at the plant-soil interface. To strengthen our interdisciplinary team, we are currently offering a position per **July 1, 2016** (or upon agreement) for a

PhD candidate in Molecular Plant Breeding (100%)

The aim of the PhD project is to identify cultivars resistant to pathogen complexes under on-farm conditions using 200 SNP-genotyped pea accessions from international origin and 100 promising pea breeding lines from the Swiss organic breeder Peter Kunz. With an inter- and transdisciplinary approach, we will combine genome-wide association studies, quantitative real-time PCR and HPTLC technology to unravel the mechanisms involved in disease resistance at the plant-soil interface, taking account of interactions between plant genotypes, root exudates and pathogenic as well as beneficial soil microorganisms. Further, a soil-based screening tool will be developed in close collaboration with breeders and farmers.

A successful applicant will have a Master's degree (or equivalent) in Agricultural Sciences, Biology, Biochemistry or related fields. Experiences with design and statistical analysis of pot or field experiments are mandatory. Strongly advantageous are competencies in molecular genetics or biochemical methodologies. We offer a practice-oriented and scientifically ambitious PhD project within a young and motivated research group. The PhD candidate will be located at the Plant Breeding group of the Research Institute of Organic Agriculture in Frick (www.fibl.org), enrolled in the doctoral programme of the Department of Environmental Systems Science at ETH in Zurich. Proficiency in written and oral English and the ability to communicate with collaborators across a broad range of disciplines is also necessary. Self-motivation and the ability to work both independently and as a team player in a multi-disciplinary, international research environment are expected.

Applications with a letter describing your background and motivation, the CV (incl. publication list), two reference letters and copies of certificates should be submitted electronically until **May 29, 2016** to fcg@usys.ethz.ch.

For more information, please contact Dr. Pierre Hohmann: pierre.hohmann@fibl.org, +41 (0)62 865 0476.

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World Food System Center

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