

Public Competition
for the admission to the PhD programmes
42nd cycle
Academic year 2026/27
Faculty of Agricultural, Environmental and Food Sciences
PhD Programme in
Mountain Environment and Agriculture

Research projects and supervisors		
Curriculum 1 Sustainable agricultural production systems		
Title	Supervisor(s)	Notes
1. Alpine Slurry: Circular Nutrient Management with Biogas-Derived Fertilizers Project description: This project looks at how processed slurry-derived products from local biogas plants can be used in an innovative, safer, and more sustainable way in alpine agriculture. We will evaluate their effects on soil and plant health, and environmental quality. These innovative products will be considered in comparison with conventional slurry and other fertilization strategies, with particular attention to soil chemical, physical, and biological indicators in line with the new EU Soil Monitoring Law. Required qualifications: The ideal candidate should have a background in soil science, agronomy, environmental sciences or a related field. Experience in soil and plant sampling, sample preparation and laboratory analyses of soil chemical, physical or biological properties is highly desirable. Knowledge of nutrient cycling, organic fertilisers, soil health assessment and environmental monitoring would be an advantage. Proficiency in data analysis and statistical software, particularly R, is also desirable.	Prof. Tanja Mimmo	One Health im alpinen Raum

2. Alpine Slurry: Regional Feed Additives and Breeding Programs to Curb Methane Emissions in Cattle Project description: This project addresses a central and innovative research field within the context of European climate and agricultural policy: the reduction of enteric methane emissions in alpine dairy farming. By acquiring an innovative GreenFeed measurement system, the Free University of Bozen will be able to scientifically evaluate emission-reducing feeding and breeding strategies under real-world alpine conditions. Required qualifications: The ideal candidate should have a scientific background in animal science livestock production systems. Practical expertise in collecting field data as well as proficiency in data analysis using the R or SAS software is highly desirable.	Dr. Thomas Zanon	One Health im alpinen Raum
3. Vectors, Plant Pathogens, and Biological Control in Plant Protection Project description: This project investigates whether <i>Wolbachia</i>, a naturally occurring bacterium found in many insects, can be used as an innovative tool to block the transmission of plant diseases, using phytoplasmas and psyllids as a study system. The project integrates artificial transmission experiments in the laboratory and semi-field experiments, studying <i>Wolbachia</i> and pathogen interaction using innovative molecular genetic and genomic approaches. The project offers an innovative, environmentally friendly strategy for crop protection and serves as a model for managing other insect-borne diseases. Required qualifications: The ideal candidate should have experience with molecular genetic approaches. Practical expertise in collecting and handling of insects as well as proficiency in data analysis using the R is highly desirable.	Prof. Hannes Schuler	One Health im alpinen Raum
4. Soil Microbial Processes and Environmental Risks of Biogas-Derived Fertilizers Project description: This project investigates how processed slurry-derived fertilizers influence soil microbial activity, organic matter transformation and nutrient-release processes in Alpine agricultural soils. The research will focus on the biological mechanisms regulating nitrogen and carbon cycling, as well	Prof. Tanja Mimmo	Without scholarship

as on potential environmental risks associated with nutrient losses and greenhouse-gas emissions. Laboratory incubations and targeted field measurements will be used to compare different slurry-derived products and conventional fertilization practices. The results will contribute to the development of environmentally sound strategies for recycling nutrients from local biogas production. Required qualifications: The ideal candidate should have a background in soil science, soil biogeochemistry, environmental biology or a related field. Experience with laboratory incubations, microbial or enzymatic analyses, greenhouse-gas measurements, or the assessment of carbon and nitrogen transformations is highly desirable. Familiarity with molecular or biochemical methods, experimental design and the handling of environmental datasets would be an advantage. Experience with statistical analysis, preferably in R, is also desirable.		
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