



Combining Root contrasted Phenotypes for more resilient agro-ecosystem- Characterization of microbial communities in the rhizosphere

The Soil Biology group at the Institute of Soil Science and Land Evaluation of the University of Hohenheim conducts research to improve our understanding of microbial driven biogeochemical processes in terrestrial ecosystems. Specific studies focus on environmental controls on microbial activity and diversity, microbial degradation of organic pollutants and on the biogeography of soil microorganisms including hot spots of microbial activity. In our projects, we apply a combination of laboratory and field experiments together with biochemical, isotopic and molecular techniques. Our research contributes to the sustainable use of soils under global challenges like climate change and land-use change.

We are offering a

PhD position in soil microbial ecology

Your Job:

The work will be part of the program from the German Ministry for Education and Science (BMBF) "Plant roots and soil ecosystems: Importance of the rhizosphere for the bioeconomy" in the framework of the "National Research Strategy Bioeconomy 2030". The CROP project consists of 4 working groups, two at the Forschungszentrum Jülich and two at the University of Hohenheim. We aim at estimating the beneficial impact of combining contrasted root phenotypes within a single field. We will evaluate the benefit of this combination on water, carbon and nitrogen flow and cycling in the soil-plant system and link this to microbial activity and plant yield. To achieve this goal, we will use a set of complementary experimental and modelling tools. The PhD student will contribute to the field and laboratory (column) experiments and will use isotopic techniques to determine the flows of water, carbon, and nitrogen in the soil-microorganisms-plant continuum.

We will use non-destructive *in-situ* imaging methods (enzyme zymography) and molecular techniques to determine microbial activity and abundance. The PhD student will closely collaborate with the other three PhD students in Jülich and Hohenheim.

Your tasks in detail:

- Setup and run the experiments on the different platforms together with the PhD student in Jülich
- Collect and analyze the experimental data
- Exchange and discuss data with the two PhD students working on model development
- Present results at international conference and publish in peer reviewed journals

Your Profile:

- Master's degree in microbial ecology, environmental sciences, geocology, soil science or similar
- Experience in lab and field work
- Familiar with molecular biological methods and statistics
- Proficiency in English and very good writing skills
- Ability to work independently as well as collaboratively in an international, interdisciplinary team across institutes

Please do not let the lack of some skills make you feel you are ineligible for this position. If some skills are missing, they can generally be taught.

Our Offer:

- Competent and interdisciplinary working environment, as well as an excellent framework in the areas of experiments and modelling.
- Excellent work environment at one of the leading universities in agricultural sciences
- Attendance at national and international conferences and workshops
- Possibility for further scientific and technical training through international experts
- Pay in line with 75 % of pay group 13 of the Collective Agreement for the Public Service (TV-L) is offer to attract high-profile candidates
- A contract for the duration of 4 years

The University of Hohenheim is equal opportunities employer and places particular emphasis on fostering career opportunities for women. Qualified women are therefore strongly encouraged to apply. Disabled persons with equivalent aptitude will be favored. Please send your application with documents (**application letter, CV, copies of records of your BSc and MSc, documents showing research experience if applicable, contact information of references and a letter of motivation**) in electronic form as a single pdf-file to **Dr. Christian Poll (christian.poll@uni-hohenheim.de)**. Review of applications will start on **March 15, 2020**, and will continue until the position is filled.