Univ.Prof. Dr. Joseph Strauss
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FEMtech Internship & Master Thesis

Microbial Communities for Humus Formation in Agricultural Soil

Description

Modern agriculture has led to a substantial decrease of soil organic carbon. Humus contributes, however, to carbon sequestration, improved plant nutrition and soil water retention. Sustainable agiculture therefore strives for humus formation in depleted soils. Besides approved management techniques like compost addition to soils and reduced tilling, it is generally accepted that soil microbial communities play a pivotal role in soil carbon dynamics. During the master thesis microbial communities from reference soils with and without successful humus formation will be analysed for their microbial communities by cultivation independent high-throughput amplicon sequencing of bacterial and fungal barcodes. Laboratory scale experiments for humus formation under different conditions will provide additional insight into short term processes.

The Master Thesis will be performed in a collaboration between the BOKU Fungal Genetics & Genomics Unit and the AIT Bioresources Unit at the UFT in Tulln.

General Information: Part of the Master Thesis from Sept. 2019 to Feb. 2020 will be financed by a FEMTech Internship (www.ffg.at/femtech-praktika) done at the AIT Austrian Institute of Technology

Start: earliest April 2019

Duration: 10-12 months

Applicants should be familiar with general microbial and molecular techniques from practical courses.

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