

Practice module, Bachelor or Master thesis

"Investigation of microbial consortia (MC) and their application in peat-free substrates"

Background:

In practical horticulture, the term “sustainability” is becoming increasingly important for the progress of appropriate strategies to counteract to the climate change. Especially, the development of peat-free substrates is of crucial importance. In this study, beneficial rhizosphere-associated and endophytic microorganisms could be used to close functional gaps of peat free substrates. The aim of this research is on the one hand the compilation of different microbial consortia and on the other hand the investigation of the microbe-microbe/plant interaction in consideration of the prevailing soil physics/ chemistry of peat-free substrates/ substitutes by using different plant species.

Work packages:

- Compilation of different MC depending on their plant-growth-promoting properties
- Physico(chemical)/ physical characterization of peat-free substrates
- Isolation & cultivation of specific plant-growth-promoting-bacteria/ fungi
- Investigation of tolerance/ resistance to abiotic/ biotic stressors
- Examination of microorganism-microorganism/ plant interactions via *in vitro*- systems & greenhouse experiments
- Evaluation of the impact of MC on different peat-free substrates/ peat substitutes on plant health



We are looking for:

- A highly motivated student with strong interest in microbiology basic techniques, plants, molecular biology and/or microscopy.
- Good command of English (oral and written).
- A positive attitude towards interacting with colleagues from different backgrounds and cultures.

The work place is located at the Forschungsstelle für gartenbauliche Kulturpflanzen (FGK), Fachhochschule Erfurt, Kühnhäuser Straße 101, 99090 Erfurt.

The thesis can be prepared in English or German language.

If you are interested, then please contact Prof. Dr. Philipp Franken (philipp.franken@fh-erfurt.de) or Katja Burow (katja.burow@fh-erfurt.de).

Further information is available at:

<https://www.fh-erfurt.de/forschungsstelle-fuer-gartenbauliche-kulturpflanzen-fgk>