Microbiome research at FiBL

Microbial diversity and biological soil quality after 12 years of organic and conventional cocoa production

Speaker: Hans-Martin Krause

Soil quality in the SysCom field trial Bolivia was assessed by incubation techniques and amplicon sequencing of the 16S rRNA and ITS gene regions. The field trial compares organic and conventional management practices for monoculture and agroforestry systems and is located in the Alto Beni region (Bolivia)

Utilising plant-microbiome interactions to enhance resistance breeding against pathogen complexes

Speaker: Pierre Hohmann

Plant breeding has made substantial progress to improve crop resistance against individual pathogens, but is challenged by diseases of multiple, interacting pathogens. The Plant Breeding group at FiBL aims to untangle the causal agents of such pathogen complexes and determine the role of the plant genetics in shaping its own detrimental or beneficial microbiome. The goal is to utilise holobiont genetic markers and complement classical phenotype- and genotype-based selection strategies to enhance resistance breeding programmes

The Compost Microbiome - Source of Diverse Actors in Plant Protection

Speakers: Barbara Thürig & Thomas Oberhänsli

Composts are known for their disease suppressive activity, and this effect is mainly based on microorganisms. However, disease suppressiveness varies among composts, rendering the success of a targeted application in plant protection difficult to predict. In this project, metabarcoding was used to investigate systematically the microbial community in composts differing in suppressiveness, with the aim of finding microbial markers for this trait.

Microbiome diagnostics for a sustainable agriculture

Speaker: Natacha Bodenhausen

Inoculation with arbuscular mycorrhizal fungi can increase yield while reducing nutrient leaching and nitrous oxide emissions. However, inoculation success depends on the context, for example soil properties and local biodiversity. In this project, our goal is to predict under which conditions inoculation will be successful.