

## Effects of the soil biome on the persistence SOC storage and its drivers (CM5)

### Convener

- Jens Leifeld (Agroscope)
- Alessandra Trincherà (CREA)
- Anke Hermann (SLU)

### Programme outline

Introduction of topic and speakers by chair Jens Leifeld	5'
Conveners keynotes: Anke Hermann + Alessandra Trincherà (10' each + 10' Q&A)	30'
<b>Brief presentations of participants on research questions and approaches</b> (5' each, including time for questions)	20'
Discussion	30'
Wrap-up and next steps	5'

### Description

During microbial decomposition, organic carbon is partitioned between respiratory production and substrate assimilated into soil. This partitioning is often referred to as microbial carbon use efficiency (CUE), and it is an important physiological feature in determining the fate of C during organic matter decomposition in soil. Recent research showed that CUE is regulated by various factors such as temperature, composition of microbial communities as well as nutrient availability and substrate quality, incl. stoichiometry. It is therefore very likely that agroecological farming practices, e.g. crop diversification, fertilization strategies, cover crop/intercropping, agroforestry, will have an impact on community composition, the physiology of microorganisms, and the stability of SOC.

The session aims to

1. present our current understanding of the impact of agroecological farming practices on controlling CUE of the soil microbiome
2. identify the impact of agroecological farming practices on plant diversity and soil microbial community composition, evaluating the effect of beneficial plant-microbe-interactions on enhancing carbon sequestration in soils.

Contributions using labeling methods, molecular markers, assessment of plant diversity, geno- and phenotypic profiling of soil microbial community, soil soluble C pools, GHG emission, making use of long-term experiments from crop- and grasslands as well as application of modeling approaches are welcome.

### Instructions for participants

We expect inputs from colleagues of any member state who would like to work on this topic. We invite you to provide suggestions for method approaches and specific research questions, experimental sites, etc. on max. 2 slides per participant.

To participate, please submit an abstract not exceed 200 words, including the title, authors, affiliations, max 3 keywords. At the end of the abstract, insert one/two sentence/s as starting points of discussion.