

PLANT BIODIVERSITY FOR CLIMATE – THE TWINWIN PROJECT



TWINWIN field experiment. Photo: Rashmi Shrestha

TWINWIN project explores how much agricultural soil carbon sequestration can be increased by increasing plant diversity and how greenhouse gas (GHG) emissions are affected. In the experiment, 0-8 cover crop species are grown under barley and over winter, alone or in different combinations.

The main focus is to discover which diversity-related processes are essential for soil carbon accumulation and GHG emissions.

The aim is to provide empirical and modelled data to support decision-making in the agricultural sector.

Greenhouse gases exchange

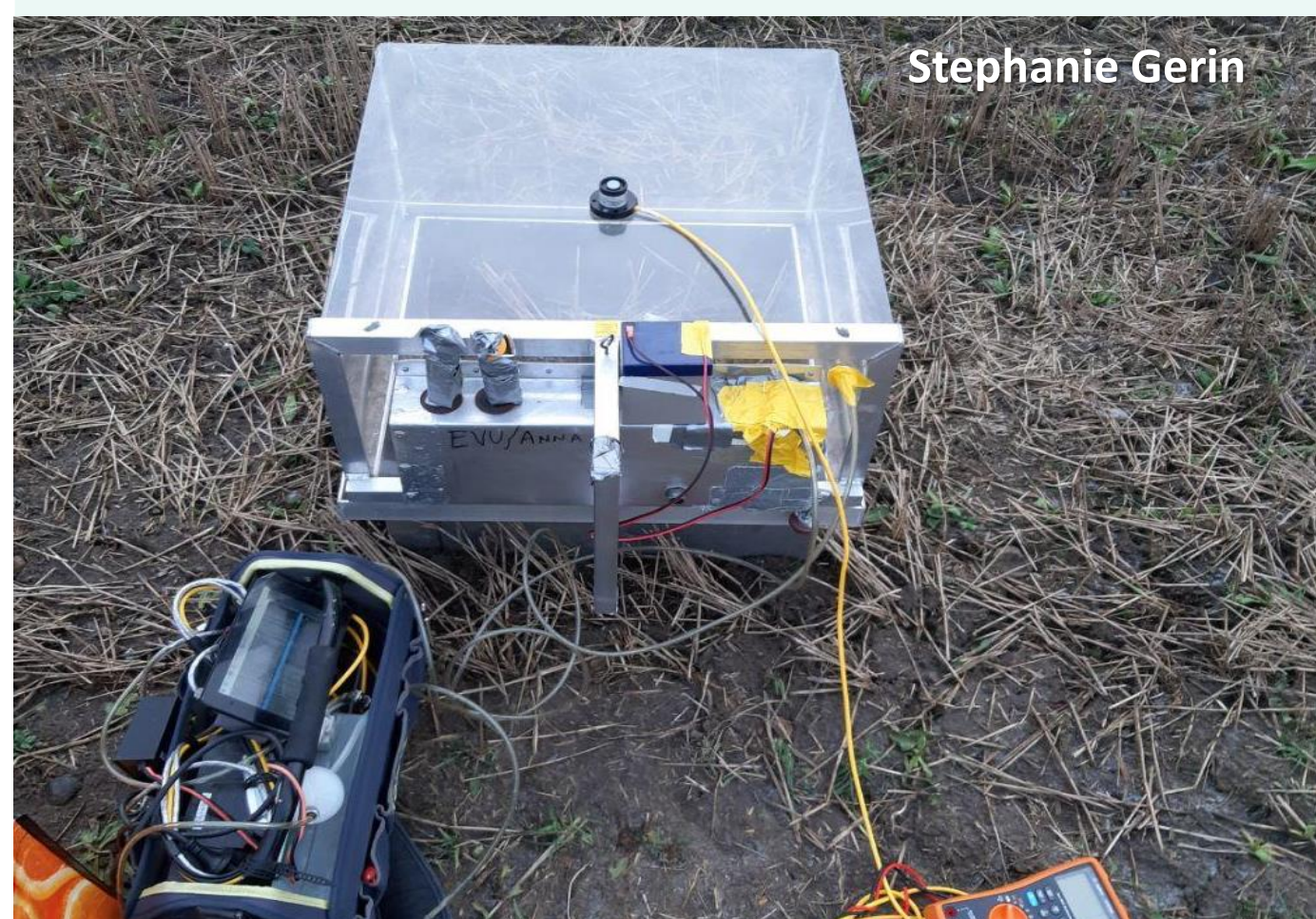
We wish to understand how diversity affects plant respiration and photosynthesis. CO₂, N₂O and CH₄ fluxes are being measured with the chamber technique, along with various soil and vegetation parameters.

Root-soil-microbe interactions

Soil microbes are pivotal in building up of soil organic matter and carbon sequestration. We study how plant diversity impacts soil and root associated microbial biodiversity and microbial activity related to soil carbon.

Biodiversity-Disease

Diversity has also been shown to reduce disease pressure. We use TWINWIN to study by which mechanisms this occurs and whether it can be used to reduce disease pressure in an agricultural setting.



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TWINWIN homepage:
<https://carbonaction.org/twinwin-hanke/>