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Role of root hairs in soil C sequestration in a 5 years maize monoculture

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Plant roots modulate functional traits of the rhizosphere microbial community, which process and transform organic matter in soil. To address the question: how root morphology affects the process of carbon storage in soil, two maize genotypes - a wild-type, and mutant deficient in root-hairs, were grown 5 consecutive years in excavated plots filled with two homogenized soil substrates - loam and sand. We observed an essential 19% increase in soil C content under root hair deficient mutant in loamy substrate, which was accompanied by remarkable 41% increase in N content. We are going to discuss the potential of microbial functional traits to indicate the process of C sequestration, marginally affected by the presence of root hairs.

Presenters: ROLDÁN, María Martín; GHADERI, Negar; IBRAHIM, Zeeshan; TARKKA, Mika T.; VETTERLEIN, Doris; BLAGODATSKAYA, Evgenia

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