

Summer school

SOIL BIODIVERSITY AND ECOSYSTEM SERVICES IN AGRICULTURE

17-20 September 2019

USAMV Cluj-Napoca, Romania

Agriculture-Department of Environment and
Plant Protection



SoilMan

Ecosystem services of soil biota in agriculture



Background / Scope

Belowground biodiversity is immense. It is comparable to the species diversity of a tropical rainforest. This is surprising since the soil as a habitat looks quite uniform and even disturbed soils like those in agriculture host numerous organisms. It is still a challenge of soil biology and soil ecology research to describe and to explain such a high variety of life forms. We have hardly come to understand what these organisms do in the soil and what they need to thrive well. This is, however, very crucial because soil organisms are the drivers of soil functions and thereby maybe one of the most important actors for maintaining soil fertility and soil quality in agricultural land use.

What to expect?

This summer school aims to explore the interrelation of soil biodiversity, ecosystem services, and agricultural production using an interdisciplinary approach. The school is hosted and organized by the European BiodivERsA-SoilMan-Project which has the hypothesis that biodiversity will support agricultural production under the premises that agricultural practice is 'soil biodiversity-friendly'.

In this framework, the summer school will address three subjects. First, we will explore biodiversity of soil fauna in typical agricultural soils of Transylvania, Romania, and will also give examples for methods to investigate functional microbial diversity. Second, we will focus on the functional impacts of soil organisms. How can we quantify functions and services provided by soil biota? How is soil biodiversity connected to soil quality and fertility? Third, we will place the aspects above in an agricultural context aiming to identify agro-ecological levers that can support both soil biota and farmers' needs.

Take home message and course objectives

The participants will develop a conceptual model for the interaction of soil biodiversity, soil ecosystem services, and agricultural practices. They will increase their competence in soil biota ecology and interdisciplinary and transdisciplinary communication while getting an insight in the concerns of farmers in agricultural production.

Programme

Lectures + seminars

Soil biodiversity: The poor man's jungle (Martin Potthoff)

How to sample and quantify biodiversity (Guénola Pérès, Mignon Sandor, Martin Potthoff and more)

Trophic interactions in soil food webs (Astrid Taylor)

Ecosystem services belowground: Agriculture for Biodiversity = Biodiversity for Agriculture (Martin Potthoff, Ilka Schmoock)

Which agricultural practices can restore, maintain or improve soil biodiversity and the associated ecosystem services? (Guénola Pérès)

Social ecology of soil biodiversity; economic aspects (Rebekka Schütte, Morgane Herve, Annegret Nicolai, Martin Potthoff)

Practical activity (laboratory, field)

Identification of several taxonomic groups of soil fauna

Microbial biomass measurements

Soil function measurements

Excursion to different farms and field sites

Requirements

The summer school is addressed to Master, graduate and Ph.D. students, early Post-Doc fellows and researchers in the field of soil science and ecology.

Fees

The summer school costs 50 € per participant. Accommodation can be organized and costs around 120-150 € per person.

Location

University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca

Biodiversity Center

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400372 Cluj-Napoca, Romania

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Deadline for registration

July 26th 2019, please use the contact email addresses above for registration

Scientific committee

Mignon Sandor, Martin Potthoff, Guénola Pérès, Astrid Taylor, Deborah Linsler