中央研究院生物多樣性研究中心
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02-2789-9621

Microbial Diversity and Bioinformatics

Steering Soil Microbiomes with Plant-Soil Feedbacks to Restore Aboveground Biodiversity

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Time: 2023. 04. 17 Mon. 10:00

Venue: Auditorium, 1st Floor,
Institute of Cellular and Organismic Biology
細胞與個體生物學研究所1樓演講廳

Host: Dr. John Wang 王忠信副研究員

~Attendee are suggested to wear mask~
~與會者建議配戴口罩~

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Abstract

A considerable part of the world's biodiversity is situated below ground as soils house an overwhelming abundance and diversity of living (micro)organisms, the soil microbiome. A major challenge is to understand and manage these soil microbiomes. Plants as primary producers provide the resources for the soil microbiome, but plant species differ in the amount and quality of the resources they provide. As a result, the composition and diversity of microorganisms in the soil is influenced by the plants that grow in the soil. In turn, the growth and survival of plants can be greatly influenced by the organisms in the soil. Hence, a plant via its effect on the soil microbiome can influence another plant that grows later in the soil, a phenomenon called plant-soil feedback. In this presentation, I will show temporal dynamics of these plant-induced effects on the soil microbiome, and discuss one of the basic assumptions of plant-soil feedbacks: the malleability of the soil microbiome. I will also present results from field experiments and nature restoration initiatives in grasslands, to exemplify how we can steer soil microbiomes and use plant-soil feedback principles to restore biodiversity of plant communities.