



UNIVERSITÀ
DEGLI STUDI
FIRENZE

Dipartimento di Scienze e
Tecnologie Agrarie, Alimentari,
Ambientali e Forestali



LEGUMINOSE
the way to a green transition

LEGUMINOSE Summer School

Understanding Contemporary Plant-Soil Feedback in Intercropping



19-21 May 2026



University of Florence, Italy



About the Summer School

The summer school aims to bring together young researchers, graduate students, and professionals interested in sustainable cropping systems and soil ecology. The program will focus on the mechanisms of **plant-soil feedback** and its role in improving productivity, nutrient cycling, and soil health in **legume-cereal intercropping systems**.

Participants will gain both **theoretical knowledge** and **hands-on experience** in assessing soil biological properties, exploring microbial communities, and interpreting the ecological processes driving soil fertility and plant performance.

Who Should Attend

Master's and PhD students, early-career researchers in agronomy, soil/ecosystem science, or related fields; practitioners and advisors interested in intercropping and soil health. No prior intercropping experience needed.

Program Details

Theoretical sessions will be complemented by hands-on, practical sessions and roundtable discussions. The following topics will be covered:

- Principles of plant-soil feedback (PSF) in legume-cereal systems
- Nutrient dynamics & biological N fixation
- Linking microbial communities to crop performance
- Hands-on: soil sampling, soil fertility assessment, molecular techniques for soil microbial analysis
- Field visit with farmer discussion and on-site demos
- Roundtable discussions on turning research into practice

Organisers and Lecturers

- Shamina Imran Pathan (*University of Florence, Italy*)
- Norman Gentsch (*Leibniz Universität Hannover, Germany*)
- Bruno Steinkraus (*SOILYTIX, Germany*)
- Luiz A. Domeignoz-Horta (*INRAE, France*)
- Paolo Nannipieri (*University of Florence, Italy*)
- Silja Emilia Hannula (*Leiden University, Netherlands*)

Participant Requirements

- Participants are expected to attend all sessions and actively contribute to discussions and group exercises.
- Basic laboratory and field safety training will be provided; adherence is mandatory.
- Proficiency in English language

Registration Details

- Participation is limited to a maximum of 30 people.
- Registration deadline: **31st March 2026**.
- A short abstract (max. 250 words) describing the participant's research interest or background in soil-plant systems should be submitted with the application.
- Fees: **€300 per person** to cover course materials, refreshments, lunches, and one social dinner. The fee **does NOT cover travel and accommodation costs**.

Contact information

For more information, please contact Dr Shamina Imran Pathan (shamina.pathan@unifi.it)



Funded by
the European Union



UK
Research
and Innovation

This work has received funding from UK Research and Innovation (UKRI) under the UK government's Horizon Europe funding guarantee [grant numbers 10057156 and 10039837] to the Soil Association and the University of Reading.