

THIS ISSUE

- LegumeLegacy training event in Denmark
- Chamber experiment - progress from Sophia
- Talk on Legumes in Science and Practice 3 conference by Raniel

The LegumeLegacy Training Event in Denmark

From June 16th to 19th, the MSCA LegumeLegacy Doctoral Network held its bi-annual training event in Aarhus, Denmark, hosted by the Danish team. The event brought together Doctoral Researchers from across the network for an intensive week of skills development, collaborative exchange, and scientific discussion. The training focused on a range of topics essential to both doctoral research and future academic careers, including: root cleaning and scanning techniques, agricultural governance, application of Multivariate Diversity-Interactions (DI) models, research proposal writing and funding strategies, and experimental design in biodiversity. In addition to the scientific training, the event fostered meaningful networking and communication opportunities, paving the way for future collaborations and joint journal publications.

Die Hu



Highlights from the LegumeLegacy Training Event in Denmark

Field visit to the Denmark LegumeLegacy site

As part of their ongoing training, the Doctoral Researchers visited the LegumeLegacy experimental site at Aarhus University's research station in Foulum. The field, currently planted with spring barley, is being used to assess the legacy effects of previously grown multispecies grassland mixtures. During the visit, the Doctoral Researchers evaluated the development and vigour of the spring barley in relation to the preceding grassland compositions.



In addition, the Doctoral Researchers received a hands-on demonstration of how root traits of the grassland mixtures are being assessed. This included the use of mini-rhizotrons and root scanning techniques to distinguish root characteristics across different grassland communities. These root trait data will ultimately help explain the observed outcomes in both the grassland and legacy crop phases, deepening our understanding of belowground contributions to sustainable cropping systems.

Julian Nyaga

Statistics training

A key focus of the training was enhancing the Doctoral Researchers' capacity to design and analyse complex biodiversity experiments. Through a series of hands-on sessions in R, participants gained experience in:

- fitting and selecting Multivariate DI models, which allow for the simultaneous evaluation of multiple ecosystem functions
- exploring the sampling effect in ecological studies
- applying the additive partitioning approach to evaluate biodiversity effects

These tools are essential for designing robust, data-driven experiments that reflect the complexity of real-world ecosystems.

Research proposal writing: preparing for the next step

Beyond technical training, the Doctoral Researchers also learned about the process of searching for and writing postdoctoral research proposals. This component was especially valuable, offering insight into an essential step in the academic path beyond the PhD.

Die Hu

RANIEL PRESENTS AT A CONFERENCE AND SECOND LAB EXPERIMENT STARTED

From field to future: Raniel presents LegumeLegacy at Reading

From the 3rd to the 4th of June, the University of Reading hosted the Legumes in Science and Practice 3 conference, organized by the Association of Applied Biologists, bringing together researchers, practitioners, and industry experts to explore innovations in legume science.

As part of the program, attendees visited ongoing field trials at the University, where I (Raniel, the doctoral researcher at Reading, UK) presented our work on the LegumeLegacy project, which investigates the long-term benefits of diverse legume-rich forage mixtures.

At our site, we are currently assessing the legacy effects during the follow-on wheat crop phase, focusing on nitrogen availability, crop performance, and sustainability. The event was a valuable opportunity to share insights and connect with others tackling similar challenges in sustainable agriculture.

Raniel Valencia



Progress from Lab Experiments: Second growth chamber experiment begins

In parallel with LegumeLegacy's multi-site field research, our project continues to advance understanding through controlled laboratory experiments. These trials allow us to simulate environmental stressors, such as droughts and heatwaves, that are difficult to simulate in the field.

Following the successful completion of the first growth chamber experiment at the University of Hohenheim, a second phase is now underway. While the initial study explored how individual functional groups (grasses, legumes, and herbs) establish under stress, the new experiment shifts focus to the performance and resilience of species mixtures.

This time, we are testing grassland leys with varying proportions of legumes to assess their responses to compound drought-heatwave events. Key questions include: Do diverse mixtures outperform monocultures under extreme conditions? And does increasing the legume proportion enhance resilience?

Sophia Philadelphi



LegumeLegacy is an MSCA Doctoral Network

<https://legumelegacy.scss.tcd.ie/>

This newsletter was edited by Doctoral Researchers Prasanth Bendalam,
Die Hu, Julian Nyaga and Sophia Philadelphi.



Funding LegumeLegacy



This project has received funding from the European Union's Horizon 2021 doctoral network programme under the Marie Skłodowska-Curie grant agreement No. 101072579.

Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union. The European Union can't be held responsible for them.



This work has received funding from UK Research and Innovation (UKRI) under the UK government's Horizon Europe funding guarantee [grant number EP/X028003/1] to the University of Reading.



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
**State Secretariat for Education,
Research and Innovation SERI**

This work has received funding from the Swiss State Secretariat for Education, Research and Innovation (SERI).



The Canadian sites of this project were funded by the Living Laboratories Initiative (or Agricultural Climate Solutions – Living Labs) of Agriculture and Agri-Food Canada.