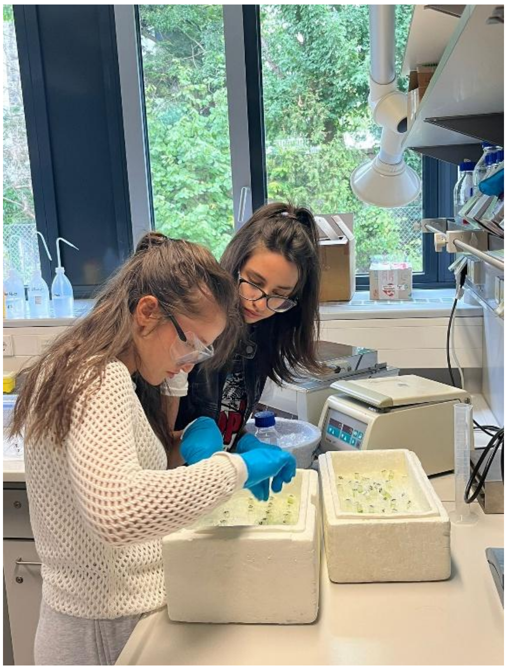
REPORT

about the internship at the Institute of Botany at Leibniz University Hannover, Hannover, Germany

From 01.07.2025 to 31.08.2025, I, Daryna Terekh, participated in an internship at the Institute of Botany at Leibniz University Hannover within the DAAD Programme Eastern Partnership 2025. The purpose of the internship was to deepen my knowledge in plant biology, to acquire practical laboratory skills, to master new methodologies in molecular biology, and to gain experience of working in an international scientific team. The internship was also aimed at learning to cooperate with foreign colleagues, attending seminars, and taking part in cultural and academic events.



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During the internship, I worked under the supervision of Prof. Dr. Jutta Papenbrock and together with assistants and students of the laboratory. My main focus was mastering methodological and practical approaches in molecular biology. I successfully performed DNA extraction from plant material, learned how to extract RNA, and subsequent evaluation of its quality and concentration using specialized equipment. In addition, I worked with electrophoresis, learned how to measure proline, cDNA synthesis, and qPCR, as well as preparation of plant material for ICP-OES measurements. I also gained experience in conducting ORAC assays and studied laboratory software used for data analysis.

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A significant part of the internship was working with liquid nitrogen for plant tissue homogenization. Plant samples of *Delphinium consolida*, *Medicago truncatula*, *Strombocarpa strombulifera* and quinoa were processed for DNA and RNA isolation, which allowed me to improve my experimental techniques and understand the specifics of handling delicate plant tissues. I also collaborated with fellow students from the laboratory, namely Pascal, Zahra, and Aylin, which helped me integrate into the international scientific environment and develop teamwork skills.

In addition to the research work, I attended two student seminars (July–August 2025), where I listened to presentations on current topics in plant biology. I also participated in the Niedersachsen.next & German-Ukrainian Academic Society conference, which was dedicated to the development of academic cooperation between Germany and Ukraine. Furthermore, I took part in an internal cultural activity of the laboratory – a barbecue event – which contributed to building informal connections with colleagues.

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The internship gave me the opportunity not only to acquire new skills but also to contribute to the scientific atmosphere of the laboratory. I demonstrated a high level of motivation and interest in the tasks, and at the end of the internship, I was able to apply the obtained knowledge in planning my own research activities.

In conclusion, the internship allowed me to master important methods in plant molecular biology:

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- work with liquid nitrogen and homogenization of plant tissue;
- DNA extraction from *Delphinium consolida*, RNA extraction from quinoa samples and *Strombocarpa strombulifera*;
- cDNA synthesis and qPCR;
- preparation of plant samples for ICP-OES measurements;
- ORAC assay and electrophoresis;
- quantity and quality analysis of RNA;
- proline extraction and determination from *Medicago truncatula*.

The acquired knowledge and skills will be further applied in my future scientific research in the field of plant biology and ecological studies. The experience of working in an international academic environment greatly improved my professional mobility and communication skills.

Special thanks are expressed to DAAD Programme Eastern Partnership for supporting this internship and to Natalia Butych, regional coordinator of DAAD Programmes for Eastern Europe, for her assistance in the organization.

31.08.2025

Daryna Terekh