

PhD Position (w/m/d, 65 %, EG 13 TV-L, 3 years)

Genetic Basis of Drought Adaptation in *Brassica rapa*

Institute for Plant Ecology and Evolution, Heinrich Heine University Düsseldorf (HHU)

The Institute for Plant Ecology and Evolution invites applications for a PhD position investigating the ecological and genetic mechanisms of rapid adaptation to climate change. Our group combines ecological studies and resurrection approaches with quantitative genetics and ecological genomics to study evolutionary responses in natural plant populations and the genetic basis of adaptive traits.

Project Description: The project examines two Californian *Brassica rapa* populations that show parallel phenotypic shifts under drought but differ genetically. Using common gardens, quantitative genetic approaches, and genomic analyses (SNP data, GWAS, QTL mapping), the PhD student will quantify trait variation and covariation, identify the genetic architecture of drought-adaptive traits, and assess how environmental and genetic factors shape trait correlations.

YOUR TASKS

- Set up and analyze resurrection-based common garden experiments at HHU
- Process and analyze phenotypic, environmental, and genomic datasets
- Conduct GWAS, QTL mapping and quantitative genetic analyses
- Present results at conferences and publish in peer-reviewed journals
- Supervise students and contribute to teaching activities within the institute

YOUR PROFILE

Required

- MSc in biology, ecology, evolutionary biology, population/quantitative genetics, or related
- Strong background in evolutionary ecology and quantitative/evolutionary genetics
- Experience with NGS data processing or population genomic analyses
- Strong organizational, solution-focused, and team-working skills
- Excellent English communication skills

Preferred

- Experience with plant experiments (e.g., common gardens/greenhouse)
- Proficiency in statistical data analysis and programming (R, Python, bash)
- Experience with GWAS and QTL mapping workflows
- Demonstrated scientific writing experience
- Good German skills
- Lawful ability to work in the EU

WE OFFER

- A DFG-funded position in a growing research institute with strengths in plant ecology, evolution, and genomics
- Potential association with [TRR 341](#) and close links to [CEPLAS](#)
- Structured doctoral training ([iGRAD](#), [JUNO](#), [HeRA](#))
- An international, supportive, and family-friendly working environment

TO APPLY

Submit **one PDF** including: (i) Cover letter (max. 2 pages) summarizing your experience, research interests, as well as motivation and fit for the position; (ii) CV including publication list and contact details of two references; (iii) BSc and MSc certificates and transcripts.

Send applications by **02.03.2026** to elena.hamann@hhu.de, subject line: **Application PhD Genetics**.

Expected starting date: **as early as possible**.

For questions contact Prof. Elena Hamann and see <https://www.plantecoevo.hhu.de>.