

PhD Position (m/f/d) in Agroecology, Microbial and Chemical Ecology & Toxicology

“Toxicity of *Epichloë* endophytes in agricultural grass species on pastures”

Rationale

Unlike gene editing and GMO, modifications of crops with endophytes received little attention in agroecological studies. Endophytic fungi of the genus *Epichloë* occur in many grass species and can protect their host plant by the production of numerous alkaloids. These alkaloids can be toxic for insect pests but also for livestock and can be used by seed companies to enhance the hosts fitness. In Germany such *Epichloë* – grass associations occur frequently in native grass species in natural habitats. However, it is unknown, if endophyte infection rates and alkaloid profiles differ between natural grasslands and sown pastures. It is also unknown, how frequently *Epichloë* infected seeds occur on the German seed market and if the infected plants produce alkaloids above the toxicity levels for livestock. This project aims to provide a scientific background to an emerging discussion about the distribution of symbiotically modified organisms on German pastures.

The PhD position will be supervised by Prof. Dr. Jochen Krauss and is located at the *Department of Animal Ecology and Tropical Biology* <https://www.biozentrum.uni-wuerzburg.de/zoo3/team/krauss/>. Cooperation partners for chemical analyses will be Prof. Dr. Nicole van Dam (iDiv, Jena, HPLC-MS) <https://www.idiv.de/de/profile/121.html> and Prof. Dr. Thomas Schmitt (Würzburg, GC-MS) <https://www.biozentrum.uni-wuerzburg.de/zoo3/team/schmitt/>.

Requirements

Applicants should have a MSc degree (or equivalent) in ecology, biology, agricultural sciences, toxicology, veterinary science or related disciplines. A strong interest in ecology, endophytic fungi and intoxications of animals is required. Laboratory skills in GC-MS, HPLC-MS and multiplex PCR are beneficial, as well as basic knowledge of field survey campaigns, field experiments and statistics (preferable in R). Good communication skills are helpful, too. This project answers applied scientific questions with multidisciplinary approaches and will raise public awareness. Backgrounds in grass species identification, seed breeding and toxications of livestock will be helpful, but are not a priori compulsory. English speaking and writing skills are expected. German skills are helpful for the fieldwork and for public relations. A driving license valid in Germany is compulsory, as study sites are distributed throughout Germany.

Salary and conditions

Salaries will be according to the wages-agreement (TV-L) for part-time 65%. The University of Würzburg is an equal opportunity employer. Female scientists are particularly encouraged to apply. Disabled applicants will be preferentially considered in case of equivalent qualification. Start date: **1st April 2022** (negotiable). The position is for three years. The doctoral thesis will be done as a series of English manuscripts. We offer the membership in a friendly, enthusiastic and ambitious young research team, modern facilities and the cooperation with researcher across Germany and worldwide. The position will be placed in the student city of Würzburg in southern Germany. The student can join the Graduate School of Life Sciences of the University of Würzburg with many activities (http://www.graduateschools.uni-wuerzburg.de/life_sciences).

Applications

Please send your application preferable as a *single pdf file* per-email to j.krauss@uni-wuerzburg.de and michaela.jaeger@uni-wuerzburg.de latest until **27th January 2022**. Applications should include a cover letter, a short summary of research interests, CV, complete certificates (A-level, BSc, MSc), and the names (with email addresses and phone number) of two potential referees. Interviews of invited candidates will be held in Würzburg or online probably in the week **7th-11th of February 2022**.

For further information, please contact

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