GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN

Faculty of Agricultural Sciences
Department of Crop Sciences

We are hiring

MultiStress
Interactions in Maize
Impacts and Mechanisms

PhD position in „Process-based crop modelling of biotic–abiotic stress interactions in maize"

The Division of Tropical Plant Production and Agricultural Systems Modelling (TROPAGS) at the Faculty of Agricultural Sciences, Georg-August University of Göttingen, Germany, in cooperation with the KAAD, is pleased to announce a four-year PhD scholarship position, pending final approval by the funding source by 11.12. This position is directed toward East African students to support their doctoral research and strengthen academic collaboration between Germany and East Africa. This position is open to all qualified individuals (m/f/d) who are eager to engage in cutting-edge, interdisciplinary research at the interface of crop modelling, plant–pathogen interactions, and ecological dynamics, contributing to the DFG-funded Research Unit MultiStress.

Project context: The DFG-funded Research Unit MultiStress investigates how maize responds to multiple, interacting abiotic (e.g., drought, nitrogen deficit) and biotic (e.g., Setosphaeria turcica) stress factors. Through an integrated experimental–modelling approach, the project aims to improve our understanding and prediction of crop performance under complex stress environments.

This PhD scholarship will focus on extending and applying the envisaged process-based MultiStress crop model to represent and analyse the effects of Setosphaeria turcica on maize growth, yield, and quality, and its interactions with water and nutrient stress across environments.

Main Tasks

- Develop and implement new routines describing disease effects on maize physiological processes
- Integrate and test these routines within the MultiStress crop model.
- Calibrate and validate the model using experimental data from field trials.
- Analyse model outputs to explore how biotic and abiotic stresses jointly affect yield and quality under varying environmental conditions and future climate scenarios.
- Collaborate closely with other subprojects within the Research Unit, linking experimental, modelling, and synthesis activities.
- Publishing your research in international peer-reviewed journals

Required Qualifications:

- Master's degree (or equivalent) in **Crop Science, Agronomy, Agricultural or Environmental Sciences, Plant Pathology, Systems Biology, or a related field**
- Strong interest in **quantitative crop modelling** and the interaction between plant physiology, environment, and disease.
- Solid skills in **programming and data analysis** (e.g., R, Python).
- Experience with **process-based models**, experimental datasets, or parameter estimation is an advantage.
- Ability to work independently and collaboratively in an **interdisciplinary and international team**.
- Very good command of **English**, both written and spoken.

We offer:

- A dynamic, interdisciplinary, and internationally leading research environment within the DFG Research Unit MultiStress.
- Excellent supervision and training opportunities in model development, data interpretation, and scientific communication.
- Access to unique multi-stress experimental datasets and high-performance computing infrastructure.
- Opportunities for international collaboration and conference participation.
- a four-year PhD scholarship

Please send your application to reimund.roetter@uni-goettingen.de in the form of ***one single pdf*** (motivation letter, CV, certificates) ***until 04.01.26***.

Interviews will take place on the 15. or 19. or 20.01.2026 for which you will receive an invitation on the 12.01.2026.

For further information, please contact:
Prof. Dr. Reimund Rötter, TROPAGS, University of Goettingen, Germany, E-mail: reimund.roetter@uni-goettingen.de or Dr. Munir Hoffmann, TROPAGS, University of Goettingen, Germany, Email: mhoffma@gwdg.de