

## WORKSHOP PROGRAM · TROPENTAG 2026

### Enhancing Resilience of Multi-Functional Maize Smallholder Systems in the Tropics

*A side event of the DFG Research Unit MultiStress RU 6101*

<b>Date &amp; Time</b>	Wednesday, 16 September 2026   08:30 – 11:30
<b>Venue</b>	University of Göttingen, Germany (room TBD by the Tropentag organizers)
<b>Open to</b>	All Tropentag 2026 participants

#### About the MultiStress Research Unit

the programme involves PhD students and postdoctoral researchers from University of Göttingen, Germany, Jaramogi Oginga Odinga University of Science and Technology (JOOUST), Kenya, and partner countries.

- Climate change is increasingly exposing crops to multiple stresses at the same time, yet most research and breeding efforts still address drought, nutrient limitation, pests, and diseases separately.
- The DFG Research Unit 6101 MultiStress workshop will bring together researchers, students, and practitioners interested in understanding how combined abiotic and biotic stresses shape maize performance across contrasting environments.
- The workshop will highlight how agronomy, plant physiology, metabolomics, genomics, root biology, and biotic stress ecology can be integrated to better understand crop resilience under realistic field conditions.
- Participants will gain insight into ongoing collaborative research between Germany, Kenya (Jaramogi Oginga Odinga University of Science and Technology, JOOUST), and international partners (CYMMYT), while discussing methodological approaches, early findings, and future opportunities for interdisciplinary collaboration.
- The workshop is especially relevant for researchers and students working on crop stress biology, climate-resilient agriculture, plant phenotyping, pest and disease ecology, and sustainable maize production.

We warmly invite participants to join this workshop to exchange ideas, build connections, and contribute to a broader discussion on how multi-stress research can support more resilient cropping systems in a changing climate.

#### Programme — Wednesday, 16 September 2026

Time	Session	Presenter
08:30– 08:40	<b>Welcome and introduction to the MultiStress Research Unit in Germany</b> Brief overview of DFG Research Unit 6101: objectives, dual-site design (Göttingen and Siaya), six sub-projects, and the multi-stress challenge, especially in the context of the maize production system in the tropics.	Prof. R. P. Rötter (TROPAGS) University of Göttingen
08:40– 09:00	<b>Introduction to the MultiStress Research Unit in Kenya (15 min + 5 min Q&amp;A)</b> Current state of Multistress FOR (RU6101); Facilities, activities, and team at JOOUST	Prof. D. O. Ochuodho (Plant Ecology), JOOUST, Kenya

09:00– 09:20	<b>Keynote Presentation: (15 min + 5 min Q&amp;A)</b> <b>Maize improvement for stress-prone environments in sub-Saharan Africa: breeding progress and variety deployment</b> Status and outlook of multi-stress tolerant maize breeding programmes in Africa: how are drought tolerance, nitrogen use efficiency, and biotic stress resistance being integrated in variety development pipelines, and how do improved varieties reach smallholder farmers?	Dr. Yoseph BEYENE Senior Maize Breeder at CYMMYT Kenya
09:20– 09:40	<b>INVITED PRESENTATION 2 (15 min + 5 min Q&amp;A):</b> <b>Maize improvement for stress-prone environments in Kenya: Current research and outlook</b>	Dr. Caleb Olweny (Plant Breeding and Biotechnology), JOOUST, Kenya
09:40– 10:00	<b>COFFEE BREAK</b>	15mins
10:00– 10:10	<b>STUDENT PRESENTATION 1 (6 min + 3 min Q&amp;A):</b> <b>Root physiology</b> Root architecture, mycorrhizal colonisation, and mucilage-mediated resource acquisition under combined drought and nitrogen deficit: evidence from the greenhouse screening experiment and field sites.	SP1 (Osman Mustafa)
10:10– 10:20	<b>STUDENT PRESENTATION 2 (7 min + 2 min Q&amp;A)</b> <b>Plant Physiology and Hyperspectral Imaging</b> Characterizing the physiological responses across tropical maize cultivars under drought stress	SP2 (Angura Louis)
10:20– 10:30	<b>STUDENT PRESENTATION 3 (6 min + 3 min Q&amp;A)</b> <b>Genomics and genetic architecture of multi-stress tolerance</b> GWAS, transcriptomics, and epigenomics approaches for dissecting the genetic basis of combined drought, nitrogen, and biotic stress tolerance in a tropical maize diversity panel.	SP3 (Cedric Koehler)
10:30– 10:40	<b>STUDENT PRESENTATION 4 (6 min + 3 min Q&amp;A)</b> <b>Biotic Stress Interactions</b> Stem borer population dynamics under combined abiotic and biotic stress	SP4 (Luisa Wimmer)
09:40– 10:00	<b>COFFEE BREAK</b>	<b>15mins</b>
10:40– 10:50	<b>STUDENT PRESENTATION 5 (8 min + 3 min Q&amp;A)</b> <b>Biotic stress interactions and disease ecology</b> Northern Leaf Blight progression and mycotoxin contamination under combined abiotic and biotic stress	SP5 (Anna Huß & Nora Adera)
10:50– 11:00	<b>STUDENT PRESENTATION 6 (6 min + 3 min Q&amp;A)</b> <b>Metabolomics and biochemical stress responses</b> Secondary metabolite profiles	ZP (Eunice Ofori)
11:00– 11:10	<b>STUDENT PRESENTATION 7 (6 min + 3 min Q&amp;A)</b> <b>Developing Modelling Routines for Multistress Model</b>	SP6 (Michael Mugarura)
11:10– 11:30	<b>OPEN DISCUSSION</b> Facilitated discussion with all participants: reactions to the findings,	Moderated by Dr. Ejaz, Dr.

	connections between the African context and the consortium research, and opportunities for collaboration.	Habib, & Dr. Abdulai
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### **Invited Speaker Profiles — For Confirmation**

#### **Organizers**

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