



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Terms of Reference for Intern

Name:	
Job Title**:	Plant breeding for resistance to biotic and abiotic stresses in cereals
Division/Department:	Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture (AGE)
Programme/Project Number:	
Duty Station:	Seibersdorf, Austria
Expected Start Date of Assignment:	1Q2019
Duration:	11 months
Reports to: Name:	Mr Qu Liang
Title:	Director AGE

GENERAL DESCRIPTION OF TASK(S) AND OBJECTIVES TO BE ACHIEVED

The Plant Breeding and Genetics Laboratory develops/adapts technologies to assist member states to develop improved crop varieties using mutation breeding and related *in vitro* and molecular technologies for food security. The laboratory is currently running two main coordinated research projects on mutation breeding for resistance to drought and the parasitic weed *Striga Spp.* in sorghum and rice.

The intern will assist in the development/adaptation, verification and validation of screening protocols for drought and Striga resistance in sorghum and/or rice. The ongoing R&D activities include screening in glass-house and laboratory using standard material and mutant populations. Putative mutants are being verified and mapping populations are under development for genetic analysis of the mutations and development of molecular markers for marker-assisted selection. The intern will be involved in various activities in the field, glass-house and laboratory based on the interest and the basic skills. These activities will provide the intern with a unique learning experience in agronomy, plant breeding & genetics and related *in vitro* and molecular techniques

Tasks

- Assist in the development/adaptation of ongoing screening protocols for resistance to drought and Striga in cereals.
- Participate in and contribute to the ongoing development of mapping populations in sorghum and rice through crossing, selfing, phenotyping and data analysis
- Participate in on going marker development experiments for resistance to drought and Striga in sorghum and rice which include DNA extraction, purification, sequencing and related analysis.
- assist in on going marker assisted backcrossing for terminal drought resistance (stay-green) trait in sorghum.

KEY PERFORMANCE INDICATORS

Expected Outputs:	Required Completion Date:
<ul style="list-style-type: none"> • Contribution to development/adaptation of at least one of the ongoing screening protocols for drought and Striga resistance in cereals • Contribution to advancement of at least one backcrossing generation for transfer of drought tolerance (stay-green) in sorghum • Contribution to development and phenotyping of at least one of the ongoing mapping populations stated above. 	As required by the supervisor and by the end of the contract.