**Internship – Plant Breeding for Resistance to Biotic and Abiotic Stresses in Pulses/Cereals**

**Target Start of Internship**

Flexible

**Organizational Setting**

Department: Nuclear Sciences and Applications

Division: Joint FAO/IAEA Centre for Nuclear Techniques in Food and Agriculture

Section: Plant Breeding and Genetics Section

Unit: Plant Breeding and Genetics Laboratory in Seibersdorf

**Main Purpose**

The main purpose of the internship is to provide research and development support to the Plant Breeding and Genetics Laboratory, which develops/adapts technologies to assist Member Nations to develop improved crop varieties using mutation breeding and related *in vitro* and molecular technologies to enhance food security and climate-smart agriculture.

The intern will support one or two Coordinated Research Projects on mutation breeding for resistance to biotic stress in lentil and the parasitic weed *Striga Spp*. in sorghum.

**Tasks / Key Results Expected**

* Assist in the development/adaptation of ongoing screening protocols for resistance to Stemphylium blight in lentil and Striga in Sorghum.
* Assist in digital data recording of ongoing glass house and field experiments.
  + Participate in and contribute to the ongoing development of mapping populations in lentil and sorghum through crossing, selfing, phenotyping and data analysis.
  + Participate in ongoing marker development experiments for resistance to Stemphylium blight in lentil and Striga in sorghum which include DNA extraction, purification, Sanger sequencing and related analysis.
  + Assist in routine glass house and field mutation breeding operations.

**Knowledge, Skills and Abilities**

* Knowledge of agricultural and plant sciences.
* Routine plant breeding (phenotyping, crossing etc.) and molecular biology techniques (PCR, gel electrophoresis etc.).
* Knowledge of statistical software packages for data analysis is an asset.
* Familiarity with agronomic practices and handling of plants under field and greenhouse conditions is an asset.
* Understanding of DNA marker technologies for plant breeding is an asset.

**Qualifications and Experience**

* University degree in Agricultural Sciences or related areas.
* Knowledge in agriculture, plant growth and development.

**Internships**

The IAEA accepts a limited number of interns each year. The internships are awarded to persons studying towards a university degree or who have recently received a degree (see Internship web pages for further details).

The purpose of the programme is:

* To provide interns with the opportunity to gain practical work experience in line with their studies or interests, and expose them to the work of the IAEA and the United Nations as a whole;
* To benefit the IAEA's programmes through the assistance of qualified students specialized in various professional fields.
* The duration of an internship is normally not less than three months and not more than one year.

**Applicant Eligibility**

* Candidates must be a minimum of 20 years of age and have completed at least three years of full-time studies at a university or equivalent institution towards the completion of a first degree.
* Candidates may apply up to one year after the completion of a bachelor's, master’s, or doctorate degree.
* Candidates must not have previously participated in the IAEA's internship programme.
* Good written and spoken English essential; fluency in any other IAEA official language (Arabic, Chinese, French, Russian, Spanish) an asset.
* Candidates must attach two signed letters of recommendation to their application.