Job Description for Professional Posts

Reference: NA2024/13

Position and Grade:	Associate Plant Precision Geneticist, P2
Organizational Unit:	Plant Breeding and Genetics Laboratory Plant Breeding and Genetics Section Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture
Duty Station:	Seibersdorf
Type/Duration of Appointment:	FT – JPO, 1 year

Organizational Setting

The Department of Nuclear Sciences and Applications implements the IAEA's major programme on nuclear techniques for development and environmental protection (Major Programme 2). This major programme comprises individual programmes in food and agriculture, human health, water resources, environment and radiation technologies. These programmes are supported by laboratories in Seibersdorf, Monaco and Vienna. The major programme's objective is to enhance the capacity of Member States to meet basic human needs and to assess and manage marine and terrestrial environments using nuclear and isotopic techniques in sustainable development programmes.

The Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture is in the Department of Nuclear Sciences and Applications of IAEA in Vienna. The Joint Centre assists Member States of the Food and Agriculture Organization of the United Nations (FAO) and IAEA in using nuclear techniques and related technologies to improve food security, to alleviate poverty and to promote sustainable agriculture. It does so by coordinating and supporting applied research, providing technical and advisory services, laboratory support and training, and collecting, analysing and disseminating information. The Joint Centre consists of five sections in the areas of: animal production and health; plant breeding and genetics; insect pest control; soil and water management and crop nutrition; and food safety and environmental protection. Each section has an associated laboratory, as part of the FAO/IAEA Agriculture & Biotechnology Laboratories (ABL) located in Seibersdorf, 45 km southeast of Vienna.

The Plant Breeding and Genetics Section and its Laboratory (PBGL) assist Member States with the development, dissemination and transfer of plant mutation breeding and related technologies for sustainable intensification of agricultural production systems with the objective of supporting FAO and IAEA Member States to improve food and nutrition security and climate-smart, sustainable agriculture.

Main Purpose

The Associate Plant Precision Geneticist will contribute to the development of methods of exploring and confirming the nature of candidate genes underlying quantitative and major gene traits mutation-assisted plant breeding. The Associate Plant Precision Geneticist will contribute to the development of innovative technologies to develop superior crop varieties for Member States, thereby contributing to food and nutrition security and sustainable, climate- smart agriculture.

Role

The Associate Plant Precision Geneticist is: (i) a researcher who conducts experiments following scientific methods and principles; (ii) an analyst who maintains records, collates and analyses the resulting data, and (iii) a writer who documents the scientific findings in technical report, protocols or journal articles to relevant audiences, as appropriate. The activities will provide the incumbent with a unique learning experience in applied R&D in the context of international development cooperation.

Partnerships

Reporting to the Laboratory Head, the Associate Plant Precision Geneticist will work closely with other members of the PBG Laboratory (staff, visiting scientists, fellows, interns), with the members of the PBG Section, Member States' institutions and relevant international organizations as appropriate, to leverage implementation of sub-Programme activities and facilitate programme delivery.

Functions / Key Results Expected

The Associate Plant Precision Geneticist will carry out conventional and innovative genetic and phenotypic screening assays, with the goal to identify candidate mutation controlling trait of interest in sorghum. He/She will carry out laboratory bench, glasshouse, and field activities including NGS and high-throughput genotyping technologies and identification of candidate genes/mutation affecting traits of interest. The objective is to develop or adapt technology packages that integrate mutation induction with efficiency enhancing methods for improved evaluation and selection of major mutant traits relevant to Member States.

Specifically, he/she will be involved in one or more of the following:

- Participate in mutant population development, genetic and phenotypic analysis of mutant populations.

- Participate in the adaptation or development of traditional or phenomics tools and screening assays for improved mutant evaluation / selection.

- Participate in the adaptation or development of innovative molecular approaches to accelerate the breeding cycle and/or for targeted, gene-based selection.

- Contribute to the writing and publishing of protocols and scientific results relating to above and to the production of other internal and external information materials highlighting the activities of the Laboratory.

- Carry out other duties as assigned in support of the sub-Programme's activities including the introduction of new skills in the Laboratory and the training of other staff members and trainees on specific themes.

Competencies and Expertise (do not revise or edit)

Core Competencies		
Competence	**Occupational Role**	**Behavioural Indicator**
Communication	Individual Contributor	Communicates orally and in writing in a clear, concise and impartial manner. Takes time to listen and understand the perspective of others and proposes solutions.
Achieving Results	Individual Contributor	Takes initiative in defining realistic outputs and clarifying roles, responsibilities and expected

		results in the context of the Department/Centre's programme. Evaluates his/her results realistically, drawing conclusions from lessons learned.
Teamwork	Individual Contributor	Actively contributes to achieving team results. Supports team decisions.
Planning and Organizing	Individual Contributor	Plans and organizes his/her own work in support of achieving the team or Section's priorities. Takes into account potential changes and proposes contingency plans.

Functional Competencies		
Competence	**Occupational Role**	**Behavioural Indicator**
Analytical Thinking	Associate	Gathers and analyses information, identifying critical relationships and patterns among data and proposes workable solutions.
Knowledge sharing and learning	Associate	Actively seeks opportunities to learn by formal and informal means; learns from others, adopting and sharing best practice.
Technical/ Scientific Credibility	Associate	Acquires and applies new skills to remain up to date in his/her area of expertise. Reliably applies knowledge of basic technical/ scientific methods and concepts.

Expertise	
Expertise	**Description**
Plant Breeding and Genetics, Functional genomics	Knowledge of principles of plant breeding and genetics, Familiar with molecular biology techniques (DNA, RNA extraction, PCR), preparation of library for DNA/RNA sequencing. Familiar with NGS and high-throughput genotyping technologies
Biostatistics and Biometry	Knowledge of statistical analysis principles and software as applied to plant breeding, genetics and field experiments.

Education, Experience and Language Skills

- University degree in Plant Breeding, Genetics or related field.
- Minimum of two years of work experience in plant breeding and genetic analysis.
- Excellent oral and written command of English. Knowledge of other official IAEA languages (Arabic, Chinese, French, Russian and Spanish) is an asset.