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Atoms for Peace and Development

الوكالة الدولية للطاقة الذرية
国际原子能机构
International Atomic Energy Agency
Agence internationale de l'énergie atomique
Международное агентство по атомной энергии
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In reply please refer to: TN-RER5024-2001712
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National Liaison Officers /

National Coordinators

2020-06-26

Subject: Regional Training Course on Plant Mutation Breeding and Efficiency Enhancing Techniques to Increase Resilience to Climate Change, Seibersdorf and Vienna, Austria, from 19 to 30 October 2020

Dear National Liaison Officer / National Coordinator,

I am pleased to inform you that the International Atomic Energy Agency (IAEA) is organizing the above event under the IAEA technical cooperation project RER5024, "Enhancing Productivity and Resilience to Climate Change of Major Food Crops in Europe and Central Asia".

The purpose of the event is to strengthen Member States' understanding and research laboratory capacities in basic aspects of crop mutation breeding, specifically in mutation induction, mutant population development and phenotyping methods. Furthermore, the training course will introduce applications of in vitro plant cell and tissue culture, as well as basic and advanced molecular and bioinformatics tools for mutant trait discovery and marker-assisted selection.

The attached Information Sheet provides further details, including technical and administrative aspects of the event. Selection of participants will be in accordance with IAEA procedures. Member States are strongly encouraged to identify suitable women participants.

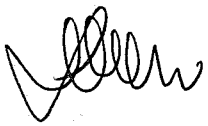
The IAEA will provide non-local participants with a round-trip air ticket based on the most direct and economical route between the airport nearest the participant's residence and Seibersdorf and Vienna. Travel details will be agreed with the participants upon receipt of their official nomination. Participants will also receive an allowance from the IAEA sufficient to cover their costs of lodging, daily subsistence and miscellaneous expenses for the duration of the event in line with IAEA rules and procedures.

We would appreciate receiving your country's nominations by **5 August 2020** through the IAEA's InTouch+ platform (https://Intouchplus.iaea.org). Should this not be possible, applicants may download the Nomination Form for the course from the IAEA's webpage. Completed forms must be endorsed by the relevant government authority and may be sent to the IAEA, preferably by email to Official Mail - IAEA Mail address Official.Mail@iaea.org, with copy to Ms Ludmila Wiszczor L.Wiszczor@iaea.org. Please be advised that late nominations or replacements of participants after the closing date for

nominations will not be accepted.

We look forward to receiving your early response.

Yours sincerely,



Ludmila Wiszczor
Programme Management Officer
Division for Europe
Department of Technical Cooperation

Enclosure: Information Sheet

IAEA
International Atomic Energy Agency
Atoms for Peace and Development

Regional Training Course on Plant Mutation Breeding and Efficiency Enhancing Techniques to Increase Resilience to Climate Change

Seibersdorf and Vienna, Austria

19 to 30 October 2020

Ref. No.: TN-RER5024-2001712

Information Sheet

Purpose

The purpose of the event is to strengthen Member States' understanding and research laboratory capacities in basic aspects of crop mutation breeding, specifically in mutation induction, mutant population development and phenotyping methods.

Furthermore, the training course will introduce applications of in vitro plant cell and tissue culture, as well as basic and advanced molecular and bioinformatics tools for mutant trait discovery and marker-assisted selection.

Working Language

The working language of the event will be **English.**

Deadline for Nominations

Nominations received after **5 August 2020** will not be considered.

Project Background

The project RER5024 is aimed at increasing production of main crops (legumes, cereals and other important food crops) in agricultural sector in Europe and Central Asia. Nuclear technology will be used for generating new beneficial mutations followed by mutation breeding to develop improved lines and varieties. Increasing drought and salt tolerance is the target of the project, together with increase of productivity and other traits available.

The overall objective of the project is to support the production of major food crops with higher yields, improved quality and better resilience to climate change through mutation breeding and combined biotechnologies to contribute to food security in Europe and Central Asia. The expected outcome is the enhanced productivity and resilience to climate change of major food crops in the region.

Scope and Nature

The course will comprise practical and theoretical sessions on

i. induced mutagenesis in plants and its use for crop improvement (types of mutations, natural and induced mutagenesis, mutation spectra, types of propagules, radio sensitivity testing)

ii. development of mutant population and phenotyping methods (handling mutated populations in vivo and in vitro; phenotyping for biotic and abiotic stresses)

iii. Utilization of appropriate in vitro technologies for accelerated breeding in cereals (double haploids, embryo culture)

iv. Marker-assisted breeding and molecular marker/genotyping applications in mutation breeding

v. Principles of genetic mapping (recombination, linkage and segregation analysis)

vi. Next Generation Sequencing (NGS) and bioinformatics tools for mutation breeding.

Expected Outputs:

At the end of the course, participants are expected to:

a. Understand principles of induced mutagenesis in plants using nuclear techniques and its use for crop improvement

b. Design a crop mutation breeding program including optimal propagule(s) for mutation induction, dose optimization, development of mutant populations and methods for phenotypic selection/screening

c. Enhanced awareness about new opportunities for crop mutation breeding arising from integration of traditional mutagenesis techniques with innovations in science and technology

d. Understand and apply basic in vitro plant cell culture techniques for accelerated mutation breeding in cereals

e. Understand and apply basic molecular genetic methods for mutant trait discovery with applications for accelerated (mutation) breeding

f. Understand advanced in vitro tissue culture, advanced DNA sequencing and bioinformatics tools in crop mutation breeding.

Participation

The Member States participating in the TC project RER5024 are invited to nominate up to two candidates with qualification/experience corresponding to the requirements described under "Participants' Qualifications and Experience"

The regional meeting is open to one participant per Member State

Participants' Qualifications and Experience

The participants of the training course should be currently engaged in mutation breeding and have basic knowledge in crop breeding and molecular techniques. Laboratory experience on molecular breeding is an advantage.

Participants should have a strong affinity and interest in modern plant breeding methods involving, induced mutation, mutation screening (high-throughput phenotyping and genotyping) and techniques that can facilitate the breeding process.

Application Procedure

Candidates wishing to apply for this event should follow the steps below:

2. Access the InTouch+ home page (https://intouchplus.iaea.org) using the candidate's existing Nucleus username and password. If the candidate is not a registered Nucleus user, she/he must create a Nucleus account (https://websso.iaea.org/IM/UserRegistrationPage.aspx) before proceeding with the event application process below.

3. On the InTouch + platform, the candidate must:

   a. Finalize or update her/his personal details, provide sufficient information to establish the required qualifications regarding education, language skills and work experience ('Profile' tab) and upload relevant supporting documents;

   b. Search for the relevant technical cooperation event (EVT2001712) under the 'My Eligible Events' tab, answer the mandatory questions and lastly submit the application to the required authority.

NOTE: Completed applications need to be approved by the relevant national authority, i.e. the National Liaison Office, and submitted to the IAEA through the established official channels by the provided designation deadline.

For additional support on how to apply for an event, please refer to the InTouch+ Help page. Any issues or queries related to InTouch+ can be addressed to InTouchPlus.Contact-Point@iaea.org.

Should online application submission not be possible, candidates may download the nomination form for the training course from the IAEA website.

NOTE: A medical certificate signed by a registered medical practitioner dated not more than four months prior to starting date of the event must be submitted by candidates when applying for a) events with a duration exceeding one month, and/or b) all candidates over the age of 65 regardless of the event duration.

Administrative and Financial Arrangements

Nominating authorities will be informed in due course of the names of the candidates who have been selected, and will at that time be informed of the procedure to be followed with regard to administrative and financial matters.

Selected participants will receive an allowance from the IAEA sufficient to cover their costs of lodging, daily subsistence and miscellaneous expenses. They will also receive either a round-trip air ticket based on the most direct and economical route between the airport nearest their residence and the airport nearest the duty station through the IAEA's travel agency American Express, or a travel grant, or they will be reimbursed travel by car/bus/train in accordance with IAEA rules for non-staff travel.

Disclaimer of Liability

The organizers of the event do not accept liability for the payment of any cost or compensation that may arise from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from or attending the course, and it is clearly understood that each Government, in approving his/her participation, undertakes responsibility for such coverage. Governments would be well advised to take out insurance against these risks.

Note for female participants

Any woman engaged by the IAEA for work or training should notify the IAEA on becoming aware that she is pregnant.

The Board of Governors of the IAEA approved new International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources. The Standards deal specifically with the occupational exposure conditions of female workers by requiring, inter alia, that a female worker should, on becoming aware that she is pregnant, notify her employer in order that her working conditions may be modified, if necessary. This notification shall not be considered a reason to exclude her from work; however, her working conditions, with respect to occupational exposure shall be adapted with a view to ensuring that her embryo or foetus be afforded the same broad level of protection as required for members of the public.

IAEA Contacts

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