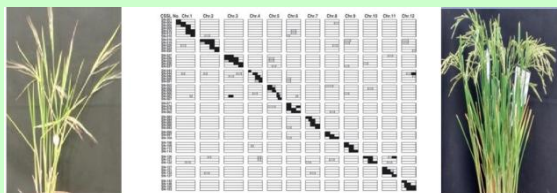




Short Training Course
on
Pre breeding using wild species for
sustainable yield in crops
Jan 16, 2017 to Jan 26, 2017



Director : Dr V. Ravindra Babu
Course Director : Dr N. Sarla
Course Coordinators : Dr B. Divya
Dr P. Muthuraman

Sponsored by
Indian Council of Agricultural Research (ICAR)
New Delhi-110012

Organized by
ICAR- Indian Institute of Rice Research
Rajendranagar, Hyderabad-500 030

Introduction

Crop wild relatives (CWR) have a high level of genetic diversity that enabled them to survive in natural and adverse environments. The value of CWR was recognised by the Russian botanist NI Vavilov and the geographical centres of origin and diversity of crops were identified in 1920s. Since then CWR have been used to increase adaptability of several crops, but largely for disease and pest resistance. Though efforts to conserve CWR worldwide have increased, their use in breeding has not kept pace largely because of undesirable linkage drag and the long time taken to release varieties when CWR are used. The integration of molecular marker techniques in breeding has the potential to increase the efficiency of transfer of useful alleles from wild species and accelerate crop improvement. This is valid for food, fodder, fibre or commercial crops. The need to tap diversity for adaptability in CWR is all the more essential considering population growth, shrinking land and water resources and projected impact of climate change on agriculture and food production in general and food security in particular.

This training course is designed to raise awareness and emphasis about how important CWR are for any crop and that molecular markers can be used to help increase their efficient use in crop improvement. The trainees are expected to understand the potential benefits of CWR and get the confidence that these benefits are easily achievable based on the examples provided in the training.

Objective

The objective of the program is to encourage the trainees to use wild species in breeding programs and show how simple molecular marker techniques have helped in crop improvement using wild species. This should enable the trainees to plan and apply for prebreeding projects, forge collaborations and also to strategically accelerate breeding of crops for sustainable yield using wild species.

Course content

The course consists of both lectures and hands-on practical classes. IIRR has well equipped laboratories for molecular work. Lecture notes and presentations will be provided to all the participants. The faculty consists of eminent researchers working in different crops and in the area of germplasm resources, prebreeding, molecular breeding and gene discovery. The topics in the course include: value of crop wild relatives (CWR), collection, characterization, evaluation and conservation of wild

species, pre-breeding for crop improvement, problems and prospects of using wild species in breeding, ploidy and cross compatibility, prebreeding in rice, wheat, maize, millets, legumes, oilseeds, vegetables, CWR and weediness, CWR to improve yield, tolerance to biotic, abiotic and nutritional stresses, molecular markers and their application in CWR conservation, selection, trait transfer, gene discovery and editing, development of mapping populations using CWR, QTL mapping and allele mining for yield and other complex traits from CWR, development and use of chromosome segment substitution lines as a national resource.

Target group

The training course is for researchers working in breeding of **any crop** and with a strong interest in plant breeding, genetics, and plant genetic resources. An understanding of use of molecular markers is desirable. Researchers in physiology and biotechnology may also apply if they are associated in crop breeding activities. He/ she should be working in a position not below the rank of assistant professors/ scientists in breeding / genetics/ biotechnology/ concerned subject in State Agricultural Universities/CAU/ ICAR institutes.

Course date and duration

The duration of the Winter School is **10 days** from **January 16 - 26, 2017**. Outstation participants are required to arrive latest by the evening of **15th January 2017**.

Venue and other details

The programme will be conducted at IIRR. The programme is residential and participants are required to stay at the IIRR campus, Rajendranagar, Hyderabad. Accommodation will be provided on twin-sharing basis at the Guest House/Hostel at IIRR. Candidates should bring relieving letter from their Institute. Selected participants will be paid travel fare to and fro for the journey only by AC II Class train fare as per their entitlement or bus or other means of transport. Actual TA will be paid on production of train/ bus ticket(s) by the participants. TA will be paid from the place of duty to the Winter School location and back by the shortest route. Free boarding and lodging will be provided to the participants during the training programme as per ICAR's guidelines on winter school. No DA is admissible to the participants. The participants are advised not to bring family members with them. The climate will be pleasant and the day temperature during January ranges from 15 to 30°C.

How to reach IIRR

Hyderabad is well connected to all parts of India by Air, Train and Road. IIRR is located on the Himayatsagar Road at Rajendranagar, Hyderabad 500030. It is located about 20 km from Rajiv Gandhi International Airport (Hyderabad), 17 km from Nampally or Kacheguda Railway Stations, 23 km from Secunderabad Railway Station and 15 km from Mahatma Gandhi Bus Station (MGBS). IIRR can be reached by local bus (94H, 94R, 94L, 95R, 95L, 92 and 92R) or taxi.

How to apply

Scientists should apply through proper channel in the form given at the end of this brochure. They should submit their application online using CBP Portal (<http://cbp.icar.gov.in>). For this, first register at CBP Portal (follow the instructions given in-How to apply menu), fill the online application, take a printout of the application and get it **approved by the competent authority of the organization**. Upload the scanned copy of application through CBP portal. The duly filled in application form forwarded through proper channel must reach Course Director on or before **Dec 15, 2016**. The application form can be downloaded from the website <http://www.drricar.org> and sent in advance through email to prebreedingiirr@gmail.com. Only 25 applicants will be selected based on their applications assessed by a selection committee. Final selection will be intimated individually by **Dec 20, 2016** through e-mail/ regular mail. The list of selected participants will also be displayed in IIRR website. The selected candidates should confirm their participation by **30th December 2016**.

Registration fee

A registration fee of Rs. 50/- (Fifty rupees only) per participant fixed as per ICAR guidelines, should be sent through Postal Order in favour of Director, IIRR, payable at Hyderabad along with the application form.

Contact details

Course Director

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Course coordinators

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Application form to participate in winter school “Prebreeding using wild species for sustainable yield in crops” (Jan 16, 2017 to Jan 26, 2017) at IIRR

(to be sent to the Course Director)

Full name (in block letters) :
Designation :
Present employer and address :
Address for Correspondence (in block letters) :
Telephone :
Mobile :
Email ID :
Fax :
Permanent Address :
Date of Birth :
Sex :
Marital status :
Academic qualification :

Teaching/research experience (mention post held) during the last 5 years and list of publications.

Please mention, if you have participated in any research seminar, summer/winter/short course during the previous 5 years under ICAR/other organizations.

Please mention your motivation to undergo this training course and how would you utilize the knowledge gained during the training

Registration fee

Payment details:

Postal order No. _____ dated
_____ of 50/- (Not refundable) for registration of
application.

Signature of the applicant

Date:

Place:

Recommendation of the forwarding authority

Date:

Signature with official Seal

A relieving order from institute is also required