

# WINTER SCHOOL

on

## Genomics and Phenomics Assisted Crop Breeding: Principles and Practices

November 18 to December 8, 2015



*Sponsored by:*

**Indian Council of Agricultural Research**



*Organized by:*

**Division of Genetics**

**ICAR-Indian Agricultural Research Institute  
New Delhi-110 012**

### IMPORTANT DATES

Last date for receipt of application	: 18-09-2015
Intimation of selection	: 24-09-2015
Confirmation of participation by candidates	: 30-09-2015

<http://www.iari.res.in>

## INTRODUCTION

Global agriculture is facing the challenge of feeding 9 billion people by 2050. To meet this challenge, food grain production has to be increased in a pace achieved never before. Ironically, increased production has to come from limited land, water and energy resources with little or no further harm to the environment. Changing climate is the other hurdle in this venture. Therefore, the greatest need of the hour is to develop and apply newer and efficient crop improvement techniques including 'Omics' technologies in agriculture.

Use of genomic tools in plant breeding have been remarkable. With the advancement in technology, the speed of genome sequencing has gone up with corresponding reduction in the cost facilitating easy and quick genotyping of the genetic resources. However, accurate and efficient phenotyping remains a big task to accomplish. To achieve this target, newer and advanced phenotyping technology called 'phenomics' has been developed. In simple term, plant phenomics is the study of plant growth, performance and composition. It eases understanding of physiological or biochemical processes and linking it to the gene(s). Therefore, it is important for the plant breeders to get acquainted with these modern tools and techniques for its adoption and wider application in plant breeding programs.

## OBJECTIVE

The objective of the course is to impart training in genomics and phenomics approaches so as to develop personnel capable of carrying out molecular crop breeding independently and efficiently. It further envisages providing meeting ground for the trainees and subject-experts for effective discussion and updating with latest information in the field of molecular plant breeding.

## ABOUT THE COURSE

The course has been designed to give the trainees complete exposure to the basic principle of genomics, molecular crop breeding, phenomics and their practical applications. To provide hands-on training, more time

will be given for practical classes. Participants will also be taken to experimental field and molecular biological laboratories for wider exposure and experience. Provision has also been kept for Interim Review and Group Discussion to assess progress. Thus, the training is expected to develop a contingent of trained personnel capable of carrying out crop breeding activities with great confidence.

## **ABOUT THE INSTITUTE**

Indian Agricultural Research Institute (IARI) is the country's premier institute of agricultural research and education. It has been serving the society by developing widely adapted crop varieties, situation specific technologies and generation of competent human resources. The Division of Genetics has been the harbinger of the Green Revolution. It has also been successful in utilizing the genomics-assisted breeding approaches to develop improved crop varieties with higher yield and improved qualities.

## **LOCATION & WEATHER CONDITION**

IARI (popularly known as Pusa Institute) is located in East Patel Nagar, New Delhi, which is ~10 K.M. from Inter-State Bus Terminus -ISBT, ~ 8 K.M. from New Delhi railway station, ~12 K.M. from Hazrat Nizamuddin Railway station and ~15 K.M. from the IGI Airport, and can be accessed easily by City Bus, Taxi and Auto and Metro Rail (Blue Line) services. The nearest Delhi Metro Stations are Patel Nagar and Rajendra Place.

During November-early December, the weather of Delhi remains cool and pleasant. Light warm garments would make the stay more comfortable.

## **TRAVEL ALLOWANCES**

Participants shall be reimbursed the travel fare by shortest rail/road route as per ICAR norms on production of valid travel documents. Outstation participants shall be provided free boarding & lodging (shared) during the training program.

## ELIGIBILITY OF PARTICIPANTS

Young active researchers/teachers not below the rank of Assistant Professor or equivalent working in SAUs/ CU/ DUs/ ICAR/ National institutes having a minimum of 2 years of research/teaching experiences in the field of Genetics, Plant Breeding, Biotechnology or any other related disciplines are eligible to apply. Only 25 participants shall be selected for the course by a Screening Committee following ICAR guidelines.

## HOW TO APPLY

The interested and eligible candidates should apply **online** through Capacity Building Program (CBP) Portal (<http://proj.iasri.res.in/cbp/>). Detail procedure of applying online is available in the portal. However, hard copy of the application in the given format and forwarded by competent authority of the institute should be scanned and uploaded in the CBP portal and then sent to the Course Director at the address given below. Application not forwarded by the competent authority shall be rejected. A **Postal Order/DD of Rs. 50/-** (non refundable) drawn in favor of the **Director, IARI, payable at IARI Post office, New Delhi-12** must be sent along with the application. **Last date of receiving application is 18-09-2015.** Once selected, candidates will be intimated through **e-mail** to which they should reply with firm acceptance immediately. The list of selected candidates will also be made available at the CBP portal.

## EVALUATION

The participants will evaluate the course programme through well designed questionnaire. Similarly, the participants will be assessed through Quiz, Presentation and Group Discussions, etc. Five best performing candidates will be selected for awarding “Outstanding Participants” certificate.

*All correspondence should be addressed to:*

**Dr. AKSHAY TALUKDAR**

Principal Scientist & Course Director

**Division of Genetics**

**ICAR-Indian Agricultural Research Institute**

**New Delhi-110 012**

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**REGISTRATION FORM FOR PARTICIPATION IN  
WINTER SCHOOL ON  
Genomics and Phenomics Assisted Crop Breeding:  
Principles and Practices**

**November 18 to December 8, 2015**

1. Full name (in BLOCK letter):
2. Designation:
3. Present employer and address:
4. Address to which reply should be sent  
(in BLOCK letter):

Mobile No. .... E-mail: .....

5. Permanent address:
6. Date of birth:
7. Sex: Male/ Female:
8. Teaching/ research/ professional experience :  
(mention post held during the last 5 years and number of  
publication)

Sl. No.	Post held	Period with dates

**Publications (best 5):**

- i.
- ii.
- iii.
- iv.
- v.

9. Marital status: Married/ Un-married:
10. Mention if you have participated in any research  
seminar, Summer/ Winter School/ Short course, etc.,  
during the previous years under ICAR/ other organizations:

11. Postal order DD/No. \_\_\_\_\_ Dated\_\_\_\_\_ of  
Rs. 50/- (NON REFUNDABLE) for registration  
of application (in favor of Director, IARI, New  
Delhi-12)

12. Academic record: (Degree onwards)

Examination passed	Subjects main/ subsidiary	Year of passing	Class ranks, distinctions etc.	University or Institution	Other information
Bachelor					
Master					
Doctorate					
Post-doctorate					

Signature of the applicant with date & place

13. Recommendations of forwarding institute:

Signature with date, designation and address.  
(Office seal)

## CERTIFICATE

It is certified that the information furnished was  
compared with office records and was found correct.

Signature with date and designation of the sponsoring  
authority  
(Office seal)

To,  
Dr. AKSHAY TALUKDAR  
Principal Scientist & Course Director  
Division of Genetics  
ICAR-Indian Agricultural Research Institute  
Pusa, New Delhi 110 012