

The ICAR-Indian Agricultural Research Institute, New Delhi, invites applications from faculty members, and researchers of ICAR institutions/ State Agricultural Universities/ Central Agricultural Universities under NARES system for a 21-day advanced training programme on, "Genomics-Assisted Breeding for Crop Improvement" sponsored by the Indian Council of Agricultural Research, New Delhi under its HRM programme scheduled from 1st to 21st March, 2018.

About the Institute:

The ICAR-Indian Agricultural Research Institute (ICAR-IARI) is the country's premier institution for agricultural research, education and extension. It has been serving the cause of science and society with distinction through development of appropriate agricultural technologies and human resources. The Division of Genetics at ICAR-IARI, widely regarded as the "Seat of Green Revolution" in India, is one of the important pillars of this institute. Since its inception in 1960, the Division has been making significant contributions to basic, strategic and applied research in genetics and plant breeding of various crops as well as model genetic organisms.

Background:

Significant efforts have been made in genetic improvement for resistance/ tolerance to biotic and abiotic stresses, yield and quality traits in different crops, as a result of which, a number of improved high yielding stress tolerant and nutrient enriched high yielding crop varieties have been developed which are being grown commercially across the country. However, various biotic- and abiotic- stresses remain the leading cause of fluctuations in the area and production of crops. Further, inadequate consumption of micronutrients and presence of anti-nutritional factors in the diet affect growth and development of millions of people worldwide. Unbalanced diet has emerged as one of the major factors of malnutrition, which warrants urgent attention. To stabilize the production, and produce balanced nutritious food, development of climate smart, nutritionally enriched cultivars through advanced breeding strategies holds immense significance due to sustainability and cost-effectiveness. Technological advancement in the area of genomics and development of genomic resources, dense genetic linkage maps and molecular mapping of QTL/ gene coupled with high throughput genotyping assays in crops has made genomics-assisted breeding a cost-effective and time saving option for crop improvement .

Objective:

- To provide information on basic concepts, rational strategies and applied aspects of research that can effectively be utilized in developing crop varieties using genomics-assisted breeding.
- To provide hand-on experience in undertaking genomics-assisted breeding programme.

Duration:

21 days training would be during March 1-21, 2018

Venue:

Division of Genetics, ICAR-Indian Agricultural Research Institute, New Delhi

Important dates:

- Last date for receipt of application : **15th January 2018**
- Intimation of selection : **25th January 2018**
- Confirmation of participation by candidates : **31st January 2018**

Eligibility

25 participants

- 1) Scientist or higher grade in any ICAR Institute, SAU and CAU
- 2) M.Sc. or Ph.D. in crop genetics, breeding and biotechnology

Desirable: Basic knowledge on genetics and plant breeding, crop improvement

Applicant from SAU / CAU required to pay a nominal course fee of Rs. 5000 (Rupees five thousand only) in the form of Demand Draft in favor of the Director, ICAR - Indian Agricultural Research Institute, New Delhi, payable at New Delhi-110012

Topics:

- *Revisiting Mendel's legacy and laws of inheritance*
- *Evolving concept of gene: from Mendel to modern era*
- *Molecular markers: Introduction and application in plant breeding*
- *Genome sequence: applications in plant breeding*
- *Bioinformatics in plant breeding*
- *Diversity analyses and phylogenetic relationships*
- *Fingerprinting of germplasm: methods and applications*
- *Linkage analyses and mapping function*
- *Mapping population: basic concepts and development*
- *Mapping genes and QTLs*
- *Association mapping in crops*
- *Marker-assisted selection in crop improvement*
- *Application of DH technology in genomics-assisted breeding*
- *Genomic selection in plant breeding*
- *Phenomics in plant breeding*

Hands-on sessions:

- *Designing of markers through bioinformatics tools*
- *DNA isolation from leaf and seed samples*
- *PCR reactions and electrophoresis*
- *Bioinformatics software tools and their application in breeding*
- *Softwares applications on diversity analyses and fingerprinting, development of linkage map, mapping genes/ QTLs, association mapping and MAS/MARS*
- *Phenomics in crop improvement: visit to Phenomics Facilities*
- *Demonstration of MAS in rice, wheat, maize, pearl millet, chickpea, mustard & soybean*

Accommodation:

- Accommodation at IARI Guest Houses is not available during the training period, however, accommodation will be arranged in nearby hotels on payment basis @ Rs. 1500-2000/ per person/ per day on twin sharing basis. Selected participants need to confirm at the earliest.
- Tea and working lunch will be provided by the organizer.
- TA and DA should be borne by the sponsoring Institute of the trainee.
- Participants should make arrangement to reach to ICAR-IARI.

Contact:



Programme Director:

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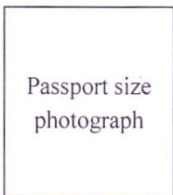
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- Please send scanned copy of completed application and all other correspondence to gabci2018@gmail.com

ICAR-HRM Training Programme for Scientific Staff 2017-18 on 'Genomics-Assisted Breeding for Crop Improvement' (March 1 - 21, 2018)

Application Form

1. Name of the applicant (in block letters):
2. Designation:
3. Present employer address:
4. Address to which reply should be sent:
Phone: Office _____ Residence _____
Mobile: _____ Fax: _____ E-mail: _____
5. Permanent Address:
6. Age and Date of Birth:
7. Sex:
8. Marital status:
9. Educational qualifications (graduation onwards):



Degree	Subject	Year	Percentage of Marks/grade	Name of the University/ Institution

10. Teaching/Research/Professional experience (mention post held):
 - a) Area of research
 - b) Publications during last five years (please attach list)
 - c) Indicate the future plans on utilizing the technical expertise gained from the training programme in your research (attach separate sheet, if necessary):
11. Indicate whether you have attended any Summer/ Winter school/ Short course/ training programme during last five years under ICAR or any other organization

Signature of the Applicant

12. Recommendations of the forwarding authority

Date:

Signature and seal