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Training Programme on Analysis Tools for Association and QTL Mapping in Fruit Crops

Dates: 10-14th February 2025

Mode of the program - Online
Organizing institute: ICAR-National Research Centre for Grapes, Pune, Maharashtra, India

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About the Programme

ICAR-National Research Centre for Grapes is organising a five day training programme on "Analysis Tools for Association and QTL Mapping in Fruit Crops" during 10-14th February 2025.

Background

Fruits are an important component of nutritional food security. The development of improved fruit varieties is crucial for addressing the challenges of food and nutrition security, climate change, and sustainable production. However, complex nature of traits, long juvenile phase, heterozygosity poses challenges for fruit breeders. Recent advancements in genomics and bioinformatics have opened new opportunities for understanding the genetic architecture of traits of interest in perennial fruit crops.

Association mapping and quantitative trait loci (QTL) analysis are powerful genetic approaches that allow the identification of loci linked to specific traits. These approaches use molecular markers, statistical models, and phenotypic data to understand genetic basis of complex traits. While association mapping uses natural genetic variation within populations, QTL mapping focuses on segregating populations to identify marker-trait associations.

Objective of the training program

The objectives of the training programme are to introduce the participants to the concepts and methodologies of association and QTL mapping along with the practical training on the use of bioinformatics tools and statistical software for genetic analysis.

Major topics to be covered

- Basics of association mapping and QTL analysis
- Phenotypic and genotypic data collection and preprocessing
- Tools and software for genetic data analysis (e.g., R, STRUCTURE, TASSEL, GAPIT, BGLR, JoinMap, MapQTL)
- Case studies from perennial fruit crops
- Practical sessions on marker-trait association and QTL mapping

Who can apply?

The training will be useful to researchers and scientists working in the field of genetics, genomics, and breeding; postgraduate and doctoral students in agricultural and biological sciences and professionals from the horticulture sector.

Resource Persons

The programme will be conducted by experienced scientists and experts in plant genetics, genomics, and bioinformatics from ICAR-NRCG and collaborating institutes.

Registration Details

Registration Fee: Scientist/faculty – 2000+18% GST, Ph.D scholars/research fellows - 1500+18%GST.

Mode of Payment: Online transfer (details will be provided upon confirmation)

How to Register:

Interested participants are requested to fill the attached registration form and send by 31st January 2025. Seats are limited and will be allocated on a first-come, first-served basis.

Contact Information

For further details, please contact:

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Training Programme on Analysis Tools for Association and QTL Mapping in Fruit Crops

Registration Form

1.	Name of the Applicant (in block letters)	
2.	Designation	
3.	Academic qualification	
4.	Present employer/supervisor with affiliation and address	
5.	Address for correspondence	
6.	Telephone/mobile	
7.	Email id	
8.	Date of birth	
9.	Gender	
10.	How this programme is likely to be useful for your ongoing research work?	
11.	What is your motivation to attend this training programme?	
12.	Have you attended similar kind of programme earlier elsewhere? If yes, give details.	Yes / No
	Signature of the applicant Date Place	
	Recommendation of supervisor/forwarding authority Signature with seal Date Place	Recommended/not recommended

Submit the application to
Programme director, email: aupadhyay.nrcg@gmail.com; (subject line should contain application for training programme "Analysis tools")