has to pay non-refundable registration fee of Rs. 50/- in the form of a Demand Draft or Indian Postal Order drawn in favour of 'the Comptroller, UHS Bagalkot' payable at Bagalkot. The online filled application should be printed out and do respective competent authority of the organization approve the same. Duly approved application form along with registration fee should be sent to the Course Coordinator before the closing date (20.12.2017). If required, an advanced copy of the application may be sent to the Course coordinator: however, their selection will be subjected to receiving approved application only. The selected candidates will be informed by e-mail. Selected candidates should confirm the acceptance through return e-mail within two days (22.12.2017).

Travelling allowance and accommodation

The travel fare to and fro for journey will be provided as per ICAR norms. The reimbursement will be limited to AC II Tier / AC bus by the shortest route for attending the summer school. Travel by air is not permissible. Photocopy of train/bus tickets need to be produced for reimbursement. For out station participants the accommodation will be arranged on sharing basis. Meals and refreshments will be provided as per the ICAR rules of the summer course. The local participants will be provided with lunch and intersession tea only.

Weather in Bengaluru

The weather will be pleasant with average temperature of 28° C with cooler nights during January month.

How to reach College of Horticulture, UHS campus

The College of Horticulture, UHS campus is situated on the western side of the University of Agricultural Sciences, Bengaluru (UAS-B), GKVK campus. It is about 14 km away from Bengaluru city railway station / central bus terminal (Majestic) and 21 km from Kempegowda International Airport, Bengaluru with two approach, one on Bengaluru-Hyderabad highway (NH-7) and another on Major Sandeep Unnikrishnan road on the western side of the campus.

Important dates

Last date for receiving applications: 20.12.2017
Intimation of selection: 22.12.2017
Training: 04.01.2018 to 24.01.2018

Address for correspondence

Course Coordinator

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Course Associate - Coordinators

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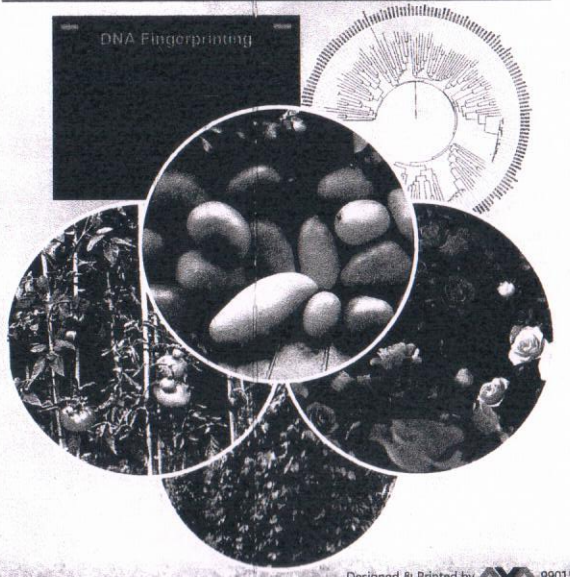

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University of Horticultural Sciences Bagalkot

ICAR Sponsored Centre for Advanced Faculty Training on

Recent Developments in Conservation and Characterisation of Horticulture Plant Genetic Resources

4–24th January 2018

Course Director
Dr. K. M. Indiresh
Registrar, UHS, Bagalkot

Course Co-ordinator
Prof. B. Fakrudin

Associate Course Coordinators
Dr. G. K. Halesh
Dr. R. K. Ramachandra

Organized by
College of Horticulture
University of Horticultural Sciences Bagalkot, Campus
GKVK post, Bengaluru-560 065
Karnataka, India

Background

Horticultural crops provide vitamins, minerals and other essential substances besides regular calories in the food basket. Horticultural crops are very diverse, including vegetables, fruit crops, spices, ornamentals, etc. and they exhibit great variation from region to region in the world. The higher genetic variation in horticultural crops has promoted their localized importance and involvement of local communities in their development and conservation. The variable degree of genetic enhancement, significant differences among the horticultural crops in their economic importance & regional relevance and differences among the crops for the aspects that characterize horticultural crops is real challenge to conserve this wealth of genetic resources in a rational manner. An effective assessing, collection, conservation and utilization approaches of Plant Genetic Resources (PGR) in horticultural crops is the need of the hour.

The Indian subcontinent is extremely diverse in its climate and physiography. India is endowed with more than 160 major and minor crop species and 325 of their wild relatives. Around 1,500 wild edible plant species are widely exploited by native people: these include 145 species of roots and tubers, 521 of leafy vegetables/ greens, 101 of buds and flowers, 647 of fruits and 118 of seeds and nuts. Over 70 cultivated species of major and minor fruits are currently grown representing native diversity and a few exotic tropical fruits. Both indigenous and well-adapted exotic sets of materials constitute a well-balanced matrix of horticulture crop diversity in India.

Massive loss of valuable plant species in the past centuries and its effect on global level requires appropriate identification and characterization of plant materials, which is essential for the successful conservation of plant resources and to ensure their sustainable use. Molecular characterization has brought about a revolution in the way that plant genetic resources can be utilized. Molecular tools developed in the past few years provide low assay cost, affordable hardware, throughput, convenience and ease of assay development, easy automation and less laborious means for assigning known and unknown plant taxa. Many of these techniques have been successfully used to study the extent and distribution of variation in species gene-pools and to answer typical evolutionary and taxonomic questions, which were not previously possible with only phenotypic methods.

Molecular techniques such as DNA barcoding that include molecular markers such as RAPD, AFLP, SCARs, SSRs, SNPs, etc. have recently been used for plant diversity studies. Sequencing based molecular techniques provide better resolution at intra-genus and above level, while frequency data from molecular markers provide the means to classify individuals into nominal genotypic categories and are mostly suitable for intra-species genotypic variation studies in the crop. Further, next generation sequencing (NGS) technologies such as Illumina/GA, Roche/GS FLX, Applied Biosystems/SOLiD and cPAL sequencing have been applied in a variety of contexts, in order to re-sequencing candidate genes, entire transcriptomes or entire plant genomes more efficiently and economically also identifies the pattern of genetic diversity, map quantitative traits (QTLs) and mine novel alleles from the vast amount of genetic resources maintained in gene banks around the world.

Recent advances in DNA sequencing have enabled us to enumerated, compared and grouped by sequence similarity into families, yet an understanding of their biochemical functions of genes is lacking. Genomics provides that rare opportunity in science where the boundaries of current knowledge can be clearly defined. This development is likely lead to new applications and new progress in agriculture, horticulture, environment and the healthcare, besides impacting many commercial enterprises including food and related industries.

The success in application of conventional pre-genomics scientific characterization horticulture germplasm is largely due to systematic experimental approach. The combination of conventional germplasm characterization techniques with genomic tools and approaches is leading to new genomics-based germplasm characterization and its use in crop improvement. The high-throughput DNA sequencing and other technical revolutions provided genome-wide molecular tools in terms of large collections of markers, high-throughput genotyping strategies, high density genetic maps, etc. that can be incorporated into existing germplasm characterization and crop improvement efforts. These developments are improving and accelerating the crop improvement process including assessment of genetic diversity. Availability of large-scale public genomic databases and bioinformatics tools has potential to benefit many horticultural crops. This training has been designed to gain both theoretical and practical hands-on experience of preparation nucleic acids; DNA marker systems; SSR, EST-SSR, SNP and haplotype discovery by leveraging EST and whole genome databases to characterize germplasm sets of horticulture crops.

About the course

There will be series of lectures covering above topics *vis-à-vis* hands-on practical sessions on related techniques. Various molecular techniques, bioinformatics tools and statistical methods relevant to the topics will be covered with hands-on practical sessions. Guest faculty from UAS Bengaluru, IIHR Bengaluru, UAS Dharwad, NCBS, C-CAMP, TDU and other institutions will be invited to deliver niche specific lectures and to have extended discussion.

Date and venue

This CAFT training will be for 21 days from 4th to 24th January 2018 at the College of Horticulture, UHS campus, GKVK Post, Bengaluru-560 065, Karnataka, India.

Eligibility

Participants from State Agriculture and Horticulture Universities, Central Agricultural Universities / ICAR institutions, KVKs, ICAR deemed Universities are invited. The participants with Master's/Doctoral degrees horticulture / agriculture / basic sciences not below the rank of Assistant Professor / Scientist / SMS or equivalent are eligible to apply.

Registration

The interested candidates have to apply online through Capacity Building Programme (CBP) portal at the URL: http://cbp.icar.gov.in/apply Details.aspx Applicant