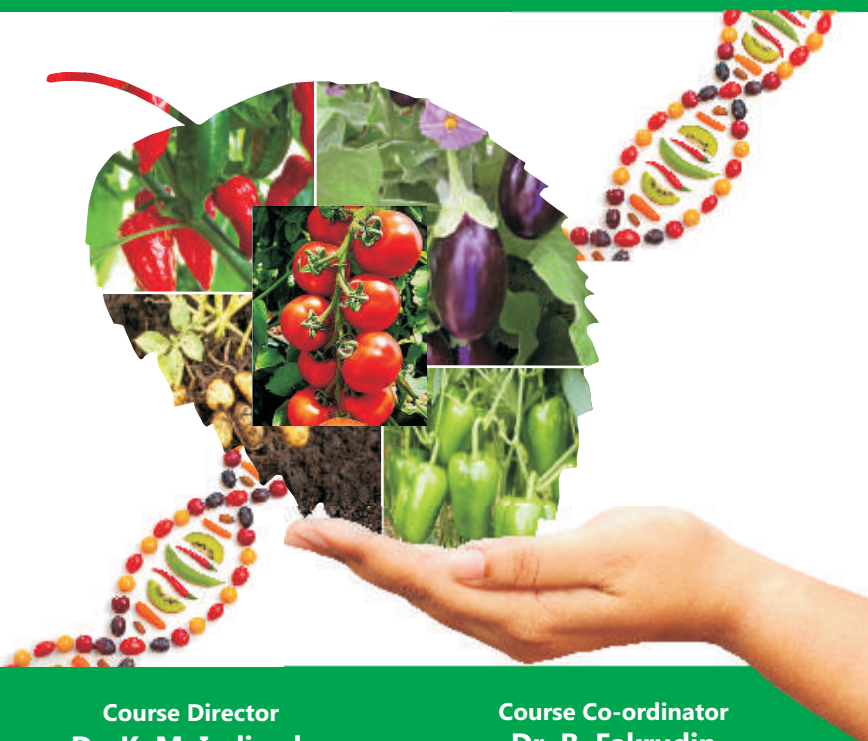




ICAR Sponsored Training Under CAFT Programme
on

Recent Advances in Comparative Genomics of Plant Genetic Resources for Trait Dissection and Utilisation in Solanaceous Crops

5 - 25th September 2019



Course Director
Dr. K. M. Indires
Vice Chancellor &
Director of Education
UHS, Bagalkot

Course Co-ordinator
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Associate Course Coordinators
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Organized by
Department of Biotechnology and Crop Improvement
College of Horticulture, UHS Campus
GKVK Post, Bengaluru - 560 065
Karnataka, India

horticulture / agriculture / basic sciences not below the rank of Assistant Professor / Scientist / SMS or equivalent in the related theme 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/applyDetails.aspx> Applicant 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 (20.08.2019). 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.

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. The local participants will be provided with lunch and intersession tea only.

Weather in Bengaluru

The weather will be pleasant with average temperature of 27°C with cooler nights during September month with intermittent rains.

Background

Plant Genetic Resources (PGR) are the most valuable and essential basic raw material to meet the current and future needs of crop improvement programmes to sustain the food and feed for ever increasing global population. Wider genetic base in PGR include landraces, elite cultivars, local selections and wild and weedy relatives of crop plants. Concerted efforts have been made for exploration, collection, exchange, conservation, evaluation and documentation of PGR of major crops in a systematic manner. However, utility of these resources is important in increasing the resilience and productivity of agri-horticulture systems. In the scenario of food sufficiency, food is being viewed for nutrition and health benefits. Horticultural crops are known for the nutritional and pharmaceutical properties and there is a need for improvement of these crops from these viewpoints.

In human diet, vegetables have been strongly associated with improvement of gastrointestinal health, good vision, and reduced risk of heart disease, stroke, chronic diseases such as diabetes, and some forms of cancer. Some phytochemical of vegetables are strong antioxidants and are known to reduce the risk of chronic diseases by protecting against free radical damage. Apart from the nutritional and health importance, vegetables have great export potential and a source of foreign exchange besides improving the socio-economic status of the farmers.

Among the major vegetable crops cultivated in India, solanaceous crops have a major share in terms of quantity and area under cultivation. The solanaceae consists of approximately 98 genera and about 2,700 species, with a great diversity in their habitats, morphology and ecology. The primary solanaceous food crops are found within several genera including *Solanum*, *Capsicum*, and *Physalis*. The genus *Solanum* contains three of the four leading crops - potato, tomato and eggplant, in the Solanaceae family, and is arguably the most economically important plant genus. Further, peppers (*Capsicum* spp.) are leading vegetable crops cultivated throughout the tropics.

How to reach the 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.



University of Horticultural Sciences, Bagalkot



College of Horticulture, Bengaluru



Over the past decade, there have been significant advances in DNA sequencing technologies, which are driving many areas of plant science. The advent of Next Generation Sequencing (NGS) technologies and the continuous decrease of the sequencing costs have allowed to develop genomic tools with a great benefit from model plants of same species or genera. Genetic homology (synteny) among widely different species and across species, genera, families, orders, and kingdoms unlocks genetic diversity in ways that enable diversity to be used in crop improvement with a precision never before achieved. Genomics revolution in solanaceous crops, if properly harnessed and vigorously applied, will take crop performance to new levels. Major solanaceous crops viz. tomato, potato, brinjal, chilli and capsicum have significant genetic diversity and present an excellent case to harness the power of comparative genomics for their further conservation and genetic enhancement.

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, generation and handling of NGS data sets, 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 5 to 25th September 2019 at the College of Horticulture, UHS Campus, GKVK post, Bengaluru 560065, Karnataka, India.

Eligibility

Participants from State Agriculture and Horticulture Universities, Central Agricultural Universities/ICAR institutions, KVKs and ICAR deemed Universities are invited. The participants with Master's/Doctoral degrees

Important dates

Last date for receiving applications
20.08.2019

Intimation of selection
25.08.2019

Training
05.09.2019 to 25.09.2019

Address for correspondence

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