HOW TO APPLY

The complete application form in the prescribed format forwarded by Head of the institute or Department authority should reach the **Course Director, NAHEP-Centre for Advanced Agricultural Science and Technology (CAAST), Division of Plant Physiology, ICAR-IARI, New Delhi** on or before **18th November 2019.** Application form can be downloaded from www.nahep-caast.iari.res.in Selected candidates will be intimated by email on or before 20th November 2019.

WHO CAN PARTICIPATE

MSc and PhD students of ICAR-Deemed to be universities/SAUs/CAUs/CUs/ other UGC recognized Universities and Research Institutes are eligible to apply. A maximum of **25 participants** will be selected for participation in the training programme.

REGISTRATION FEES

No registration fee is to be paid; the programme is fully sponsored by NAHEP-CAAST

IMPORTANT DATES (Rescheduled)

Last Date for applications: 30th Nov 2019
Duration of Training: 27 Dec 2019-8 Jan 2020
Intimation of Selection: 5th Dec 2019

TRAVEL

Travelling allowances will be provided by the organizers as per the norms. Participants should produce a certificate that they have not been given TA/DA by their host institute (Head of the Department/Institute). Selected trainees are entitled for III AC tickets.

FOOD and ACCOMMODATION

Food and accommodation will be arranged in IARI-guest house. Tea and snacks will be served during the programme and expenditure will be met from the training budget.

Course Director

Dr. Viswanathan Chinnusamy
Principal Investigator, NAHEP-CAAST &
Head (Acting), Division of Plant Physiology,
ICAR-IARI, Pusa Campus, New Delhi-110012
Email: V.Chinnusamy@icar.gov.in
Phone:91-11-25842815, 09013885245

Course Coordinators

Dr. RC Bhattacharya
Principal Scientist,
ICAR-National Institute for Plant Biotechnology,
Pusa Campus, New Delhi-110012
Email: rcbhattacharya1@gmail.com;
Ram.Bhattacharya@icar.gov.in
Phone: 09868357986

Dr. A Roy
Principal Scientist, Division of Plant Pathology,
ICAR-IARI, Pusa Campus, New Delhi-110012
Email: anirbanroy75@yahoo.com
Phone: 09560083999

Venue

Lectures: G.S. Sirohi Hall, Division of Plant Physiology, ICAR-Indian Agricultural Research Institute, New Delhi-110012.

Practical: PG laboratory, National Institute for Plant Biotechnology & Division of Plant Physiology, ICAR-Indian Agricultural Research Institute, Pusa Campus, New Delhi-110012.

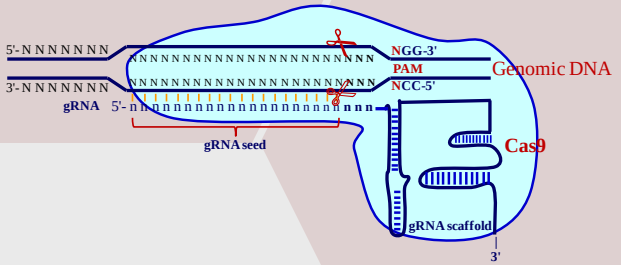
National Agricultural Higher Education Project (NAHEP)

Sponsored

Training Programme

ON

GENOME EDITING OF CROPS: METHODS & APPLICATIONS



Dec 27, 2019 – Jan 8, 2020

Organized by
Center for Advanced Agricultural Science and Technology (CAAST)

ICAR- National Institute for Plant Biotechnology &
ICAR-Indian Agricultural Research Institute,
New Delhi-110012

About NAHEP-CAAST

Centre for Advanced Agricultural Science and Technology (CAAST) is a new initiative and student centric sub-component of World Bank sponsored National Agricultural Higher Education Project (NAHEP) granted to IARI to provide a platform for strengthening educational and research activities of post graduate and doctoral students. CAAST theme for IARI is Genomic assisted crop improvement and resource management that specifically aims at inculcating genomics skills among the students.

BACKGROUND OF THE TRAINING

Enhancing nutritive quality, resource use efficiency, stress tolerance and yield of agriculturally important crops is necessary to meet the demand of growing population. This challenge is daunting due to dwindling natural resources and global climate change. Therefore, it is imperative to infuse new technologies in agriculture.

Scientific contributions in the field of genomics has propelled research in the forward direction and have enabled development of disease resistant, climate resilient and high yielding crops. Recently, Genome Editing is emerged as a major technology that is set to revolutionize the field of function genomics and precision breeding.

Genome editing has successfully been used to create desired alleles precisely to improve crops for better resource use efficiency, stress tolerance, quality and yield. To harness the benefit of this new breeding tool, it is necessary to develop trained human resource, which is the aim of the proposed training program.

OBJECTIVE OF THE TRAINING

The purpose of the training programme is to inculcate skills related to genome editing technologies and its various platforms amongst the M.Sc. And Ph.D. students.

The programme consists of lectures by eminent scientists in the area and extensive hands on training on genome editing techniques during the practical sessions.

About the Organizing Institutes

The ICAR-National Institute for Plant Biotechnology, New Delhi has made striding contributions in the field of agricultural research for crop improvement in India.

The institute has core strength in the field of genomics and transgenic development for conducting advanced research in plant biotechnology. International and national genome sequencing projects on rice, wheat, tomato, pigeonpea, mango, *Mesorhizobium, Puccinia and Magnaporthe* have been successfully executed.

The ICAR-Indian Agricultural Research Institute (IARI), New Delhi is the seat of green revolution in India, and continues to contribute to the food and livelihood security of the Nation. Besides, it enormous research contributions, IARI is the premier Institute for higher education in Agriculture in the Country. IARI was ranked as A^+ Institute by NAAC, and was given Special Institution Status by IoE Committee of UGC, Ministry of HRD, Govt of India.

With this background, the **Centre for Advanced *Agricultural Science and Technology* (CAAST) proposes a training programme sponsored by National Agricultural Higher Education Project** (NAHEP) on "**Genome Editing of Crops – Methods and Applications**" for the benefit of the post graduate and doctoral students.

COURSE OUTLINE

A. Lectures on Genome Editing Technology and its application in Plant Genetic Engineering

The lectures will be delivered in the forenoon sessions of the training period where application of genome editing in genetic engineering will be discussed.

B. Hands on training session and visit to various facilities

Active hands on training sessions on genome editing – Guide RNA design, development of gene constructs, validation of the gene constructs, methods of delivering genome editing machinery in to the cells, molecular analysis genome edited lines, analysis of off targets, obtaining transgene free mutants, etc.

Arrangements will also be made to visit the National facilities such as Genomics Centre, Genome sequencers, TEM, SEM & Confocal Microscope facilities, Bioinformatic Data Center, Phenomics facility, etc.

C. Group activities for case studies

Student groups will be assigned developing research proposals utilizing genome editing in their ongoing research.

D. Interactive discussions, presentations and Quiz

Each student is expected to make a short presentation of their present work and future work plan on application of genome editing in their ongoing research. Presentation will be facilitated by coordinators during evening hours on all days during the programme. Students are also encouraged to bring their own biological material to work with**.**

Prevailing weather condition during the training period: Mostly dry with temperature ranging between 16-20°C

The programme is coordinated by
PG School, IARI & ICAR-NIPB, IARI Campus