



ACHARYA N.G. RANGA AGRICULTURAL UNIVERSITY

S.V. AGRICULTURAL COLLEGE, TIRUPATI

Hands-on workshop on

Harnessing Genomic tools for Crop improvement

(23-01-2023 to 04-02-2023)

Organized by

Department of Molecular Biology and Biotechnology (MBB)

Course duration: Two weeks (Daily 10am to 4pm)

Targeted participants (25 No.): Faculty, Students, Research Scholars from various Colleges, Universities, Research Institutes and Industry persons

Registration Fee:

❖ Rs.10000/- for Teaching staff/Students of Government Institutes/Universities/Colleges and Students

❖ Rs.15000/- for Industry/Corporate employees

❖ **Note:** Registration fee is excluding accommodation and food. However, accommodation and food can be arranged on a payment basis.

Key Features :

- ❖ Certificate of participation
- ❖ Hands-on training
- ❖ Well experienced instructors
- ❖ Power point presentations
- ❖ Workshop manual

Registration link: <https://forms.gle/Rk1JUZJzwo7uTSvb6>

Last date for registration: 20-01-2023

Pay registration fee: M/s Administrative Officer, Union Bank of India, Thummalagunta branch, Tirupati; Acc. No. 209812010000013 (Savings); IFSC code: UBIN0820989

Hands-on workshop on

Harnessing Genomic tools for crop improvement

Objective: The main objective of this workshop is to provide exposure to the participants about the enormous potential and application of genomic tools in crop improvement. During this training, the participants will be provided with theory and hands-on practical sessions on several basic and advanced tools required for crop improvement.

Date	Background theory	Hands-on session
23-01-2023	Inaugural session and Potentiality of genomic tools for crop improvement	DNA isolation- CTAB and high-throughput methods, Quality, and Quantity assessment-Nanodrop spectrophotometer
24-01-2023	Molecular markers: PCR and sequence-based	Preparation of PCR reaction, handling PCR machine and multiplexing
25-01-2023	Genotyping methods	Agarose and Polyacrylamide gel electrophoresis and marker scoring
26-01-2023	DNA fingerprinting, QR codes, and Seed/hybrid purity analysis	Development of DNA fingerprints and QR codes, seed purity analysis
27-01-2023	Molecular genetic diversity analysis	Phylogeny software-DARWIN and MEGA
28-01-2023	QTL mapping- QTL-seq	QTL mapping software-MAPDISTO, Mapchart and QTL Cartographer
30-01-2023	Genome-wide association mapping	STRUCTURE and TASSEL/GAPIT Software
31-01-2023	Allele mining and Haplotype-based breeding	Haplotype analysis, DnaSP, PIC, Heterozygosity estimation
01-02-2023	Marker-assisted breeding	Estimation of recovery of recurrent parent genome and Graphical genotyping software (GGT)
02-02-2023	Transcriptomic analysis	RNA isolation, cDNA synthesis and qRT-PCR analysis
03-02-2023	Bioinformatics tools	Database and Literature search, BLAST, Primer designing using Primer 3
04-02-2023	Evaluation of participants	Valedictory function and Certificate distribution

Course Director:

Dr.V.L.N. Reddy

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Course Coordinator:

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Resource persons:

A.Govardhani – Ph.D. Student

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D. Sandeep Raja – Ph.D. Student

G.K. Srividya – Ph.D. Student

V. Leelavathi – M.Sc. Student

S. Sharmila – M.Sc. Student

B. Sudheer Naidu – M.Sc. Student

P. Jashua Paul – M.Sc. Student

M. Nikhil Chaitanya – M.Sc. Student