

One Day Research Training Programme under SERB-DST Project entitled “Shoot transcriptome based understanding of molecular mechanism for *Fusarium* wilt resistance in Chickpea”

**On 8th January 2024
(10:30 am to 5:00 pm)**

REGISTRATION FORM

Name:

Designation:

Organization:

Correspondence Address:

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Email:.....

Mobile No.:

(No registration fee)

Eligibility: Ph.D. scholars and faculties (20 seats)

Registration: There is no registration fee, interested candidates can register (on or before 5pm of 31st December 2023) using the Google link given below;

Link: <https://forms.gle/BiEPiYQXQjL75rDR7>

Or send filled registration form to klbhutia@rpcau.ac.in



Science and Engineering Research Board (SERB)
Department of Science and Technology (DST)
Government of India

SERB Sponsored One Day Research Training Programme
on

**Gene expression analysis using
Real Time PCR (qPCR)
approach**

**8th January 2024
(10:30 am to 5:00 pm)**

SERB-DST: Scientific Social Responsibility (SSR) policy

Organizing Secretary

**Dr. K.L. Bhutia
Assistant Professor and PI
Dept. of AB&MB, CBS&H,
RPCAU, Pusa-848125, Bihar**



About RPCAU, Pusa

Dr. Rajendra Prasad Central Agricultural University (RPCAU) is recognized as an institution of national significance for the advancement of agricultural research and development, as well as for the improvement of learning in agriculture and allied sciences. The headquarter of RPCAU is located in Pusa, Bihar, which holds the distinction of being the birthplace of agricultural education and research in the nation. The institution has made a name for itself in the eastern part of the nation by providing facilities for research, education, and extension in the fields of agriculture and related disciplines. With its emphasis on high-quality education, cutting-edge research, and technology dissemination to achieve environmentally sustainable agriculture and to give the agricultural community a respectable living, it has become a thriving organization.





सत्यमेव जयते

About SERB-DST



Science and Engineering Research Board (SERB) is a statutory body of the Department of Science and Technology (DST) established in 2011, serves as a major national funding agency for planning, promoting, and funding internationally competitive research in emerging areas of Science and Engineering. The institution is instrumental in building a sustainable research ecosystem in the country through its diverse programme portfolio that includes research grant funding, fostering young researchers, recognising and rewarding research excellence, promoting scientific networks and partnerships, and enhancing gender, equity, and social inclusiveness. Through its programmes, policies, procedures, and practices, SERB strides ahead in its mission to advance scientific research in the country

About SERB-DST Scientific Social Responsibility (SSR) Policy: SERB-DST has adopted SSR policy to imbibe a culture of social commitment among SERB grantees. The policy intends to effectively utilize scientific infrastructure and expertise of SERB grantees to benefit other S&T stakeholders, especially the less-endowed researchers and the society. SERB grantees need to undertake some SSR activities during their project period. SSR activities to be chosen during the project proposal submission process. Depending on the activities chosen, additional budget would be provided under separate head to carry out the chosen activities.

About the Project

Project ID: EEQ/2020/000535

The project entitled “*Shoot Transcriptome Based Understanding of Molecular Mechanism for Fusarium Wilt Resistance in Chickpea*” was designed to analyze the shoot transcriptome of chickpea under *Fusarium* wilt infection using RNAseq and qRT-PCR based approaches, respectively. Both approaches helped in identification of the differentially expressed genes under wilt condition. From the identified differentially expressed genes, candidate gene based markers were designed for marker trait association study. The findings of the proposed project helped in better understanding of the molecular mechanism of *Fusarium* wilt resistance in Chickpea and identified novel genes. The findings will help the breeders and researchers working in chickpea crop improvement program against the *Fusarium* wilt. The markers specific to identified novel genes which are identified as significantly associating with yield attributing traits including *Fusarium* wilt resistance could be use in breeding program of chickpea for developing genotypes that are better yielding and resistance to *Fusarium* wilt.

Objectives

- i. Shoot transcriptome analysis for *Fusarium* wilt resistance in chickpea using RNAseq approach
- ii. Expression analysis of Chickpea ERF transcription factor family under *Fusarium* wilt infection using qRT-PCR approach
- iii. Marker trait association studies with respect to yield attributing traits and *Fusarium* wilt resistance in Chickpea

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Training topic:

Gene expression analysis using Real Time PCR (qPCR) approach

Topics to be covered:

- i. Plant RNA isolation: Principles and Procedure
- ii. cDNA synthesis from the isolated mRNA
- iii. Primer designing
- iv. Real Time PCR
- v. Data analysis for identification of differential gene expression
- vi. Graphical presentation of the expression data using MS excel or heatmap generation using online tool

Organizing Committee

- Dr. V.K. Sharma (Dean, CBS&H and Head, Dept. of AB&MB)
- Dr. Karma L. Bhutia (PI and Assistant Professor, Dept. of AB&MB)
- Dr. Rajeev Kumar (Associate Professor, Dept. of AB&MB)
- Dr. Kumari Anjani (Assistant Professor, Dept. of AB&MB)
- Dr. Sarita Kumari (Assistant Professor, Dept. of AB&MB)