

CURRICULUM VITAE

DR. PIYUSH MATHUR
ASSISTANT PROFESSOR



OFFICIAL ADDRESS

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ACADEMIC QUALIFICATIONS

Ph.D. in Botany (Year- 2016)

Department of Botany
University of Delhi

Title of thesis: Effect of Elevated CO₂ on Plant-Pathogen Interactions in *Brassica juncea* (L.) Czern. & Coss.

Master of Science in Botany (Year- 2010)

Department of Botany
University of Delhi

Bachelors in Science (Honours) in Botany (Year-2008)

S.G.T.B. Khalsa College
University of Delhi

COURSES/ SUBJECT TEACHING

M.Sc. (Botany): **Microbiology**

Ph. D. Coursework (Botany); **Microbial World**

RESEARCH AREAS OF SPECIALIZATION

Microbial diversity and genome analysis; Climate change and plant-pathogen interactions; Fungal endophyte biology and bioprospecting

THESIS SUPERVISED

Ph.D (ongoing): 2

M.Sc. Dissertation: 14 (completed)

5 (ongoing)

FELLOWSHIPS AND AWARDS

- ❖ **Foreign travel grant by Research Council, University of Delhi** for attending and participating 14th International Rapeseed Congress held at **The Convention Centre, 35-22nd Street East, TCU Place Saskatoon, Saskatchewan Canada** from 5-9th July, 2015
- ❖ **Best Oral Presentation Award** in a “**National Conference on Plant Science Research: Looking beyond 21st Century for Environmental and Agricultural Revolution**” held at Department of Botany, University of Delhi, Delhi- Year-2016.
- ❖ **Foreign travel grant by International Travel Support Scheme, SERB, DST, GOI** for attending and participating in **3rd Agriculture and Climate Change Conference** held at **Budapest, Hungary** from 24-26th March 2019.

PUBLICATIONS IN PEER REVIEWED JOURNALS

1. Subba R, Mathur P (2022). Functional attributes of microbial and plant based biofungicides for the defense priming of crop plants. Theoretical and Experimental Plant Physiology. <https://doi.org/10.1007/s40626-022-00249-x>

2. Mathur P, Tripathi DK, Baluška F, Mukherjee S. (2022). Auxin-mediated molecular mechanisms of heavy metal and metalloids stress regulation in plants Environmental and Experimental Botany 196:104796
3. Mathur P, Roy S, Khan NM, Mukherjee S 2022. Hydrogen sulphide (H₂S) in the hidden half: Role in root growth, stress signalling and rhizospheric interactions. Plant Biology <https://doi.org/10.1111/plb.13417>
4. Toppo P, Subba R, Roy K, Mukherjee S, Mathur P (2022) Elucidating the Strategies for Isolation of Endophytic Fungi and Their Functional Attributes for the Regulation of Plant Growth and Resilience to Stress Journal of Plant Growth Regulation <https://doi.org/10.1007/s00344-022-10638-w>
5. Roy S, Mathur P 2021. Delineating the mechanisms of elevated CO₂ mediated growth, stress tolerance and phytohormonal regulation in plants. Plant Cell Reports 40 1345-1365.
6. **Mathur P**, Sharma E, Kapoor R 2021. Role of Nitrogen and Sulphur Fertilization for Sustaining the Growth, Physiology and Defence of *Brassica juncea* L. (Indian Mustard) Plants Exposed to Enhanced CO₂ Concentration. Journal of Soil Science and Plant Nutrition (<https://doi.org/10.1007/s42729-021-00688-6>) Electronic ISSN 0718-9516; Print ISSN 0718-9508 (I.F.- 3.872)
7. Roy S, **Mathur P** 2021. Delineating the mechanisms of elevated CO₂ mediated growth, stress tolerance and phytohormonal regulation in plants. Plant Cell Reports 40 (8), 1345-1365. (<https://doi.org/10.1007/s00299-021-02738-w>) Electronic ISSN 1432-203X Print ISSN 0721-7714 (I.F.- 4.570)
8. **Mathur P**, Roy S 2021. Insights into the plant responses to drought and decoding the potential of root associated microbiome for inducing drought tolerance. Physiologia Plantarum. 172 (2), 1016-1029. (<https://doi.org/10.1111/ppl.13338>) Online ISSN:1399-3054 (I.F.-4.5)
9. **Mathur P**, Roy S 2020. Nanosilica facilitates silica uptake, growth and stress tolerance in plants. Plant Physiology and Biochemistry 157: 114-127. (<https://doi.org/10.1016/j.plaphy.2020.10.011>) ISSN: 0981-9428 (I.F.-4.270)
10. Sagar A, Kaur I, **Mathur P**, Mukherjee A, Dhama S, Singh V, Kaur V 2019. A New Concept in Organic Farming: Efficacy of Brassinosteroids as Foliar Spray to Ameliorate Growth of Marigold Plants. Environment & We: An International Journal of Science & Technology, Publisher name: Society for Environment and Development, (India) 14, 25-36
11. Sharma E, Tayal P, Anand G, **Mathur P**, Kapoor R 2018. Functional analysis of diacylglycerol O-acyltransferase 2 gene to decipher its role in virulence of *Botrytis*

cinerea. *Current Genetics* 64(2):443-457. (<https://doi.org/10.1007/s00294-017-0752-1>)
Electronic ISSN 1432-0983 Print ISSN
0172-8083 (I.F.-3.886)

12. **Mathur P**, Singh VP, Kapoor R 2018. Interactive effects of CO₂ concentrations and *Alternaria brassicae* (Berk.) Sacc. infection on defense signalling in *Brassica juncea* (L.) Czern. & Coss. *European Journal of Plant Pathology*. 151 (2), 413–425 (Online ISSN :01573-8469) Print ISSN 0929-1873 (I.F. 1.9)
13. **Mathur P**, Sharma E, Singh SD, Bhatnagar AK, Singh VP, Kapoor R 2013. Effect of elevated CO₂ on infection of three foliar diseases in oilseed *Brassica juncea*. *Journal of Plant Pathology* 95: 133-142. Electronic ISSN 2239-7264 Print ISSN 1125-4653 (I.F.-1.7)

BOOKS PUBLISHED

1. Roy S, **Mathur P**, Chakraborty AP, Saha SP 2022 *Plant Stress: Challenges and Management in the New Decade*, Springer, Cham

BOOK CHAPTERs IN EDITED BOOK

2. Toppo P, **Mathur P** 2022. Deep Insights into the Role of Endophytic Fungi in Abiotic Stress Tolerance in Plants In: *Plant Stress: Challenges and Management in the New Decade*, (Eds.) Roy S, Mathur P, Chakraborty AP, Saha Springer, Cham
3. Sarkar MM, **Mathur P**, Roy S 2022. Silicon and nano-silicon: New frontiers of biostimulants for plant growth and stress amelioration In: *Silicon and Nano-silicon in Environmental Stress Management and Crop Quality Improvement Progress and Prospects* (Eds. Etesami H, Al Saeedi A, El-Ramady H, Fujita M, Pessaraki M, Hossain Academic Press
4. **Mathur P**, Mukherjee S 2021. Dynamic Pool of Nitric Oxide (NO) in Rhizosphere Modulates Root Architecture, Nutrient Acquisition and Stress Tolerance in Plants In: *Rhizobiology: Molecular Physiology of Plant Roots* (Eds.) Mukherjee S, Baluška F Springer, Cham
5. Kapoor R, Evelin H, **Mathur P**, Giri B 2013 Arbuscular Mycorrhiza: Approaches for Abiotic Stress Tolerance in Crop Plants for Sustainable Agriculture. In: *Plant Acclimation to Environmental Stress*, (eds.) Tuteja N, Gil SS. pp 359-401. Springer USA. (eBook ISBN-978-1-4614-5001-6).
6. **Mathur P**, Pramanik S 2020. Prospective Role of Melatonin in Signaling and Alleviation of Stress in Plants In: *Neurotransmitters in Plant Signaling and Communication*, (eds.)

CONFERENCE PAPERS

Oral Presentation

1. **Piyush Mathur** and Rupam Kapoor Elevated CO₂ Modulates the Transcript Expression of Genes Involved in Defense Signalling via Changes in Phytohormone Levels in *Brassica juncea*-*Altenaria brassicae* Pathosystem in International Seminar on Current Avenues in Microbial & Plant Sciences (CAMPS-2019), University of Gour Banga, Malda, West Bengal, India from 23-25th February, 2019.
2. **Piyush Mathur** and Rupam Kapoor Effect of elevated CO₂ and pathogen infection on phytohormone levels and transcript expression of genes involved in defense signalling in *Brassica juncea* in **3rd Agriculture and Climate Change Conference held at Budapest, Hungary** from 24-26th March 2019.

TRAININGS/WORKSHOPS/SEMINARS/ E-CONFERENCES

1. Two days “**National e-conference on Plant Science Research: Relevance, Funding, Challenges and Opportunities**” from January, 16-17, 2021 organised by Department of Botany, Hansraj College in collaboration with Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi
2. Workshop on “**Recent Advances in Environmental Biotechnology**” from October 5- 9, 2020 January, jointly organized by the Department of Civil Engineering and School of Environmental Science & Engineering, IIT Kharagpur
3. Workshop on “**MOOCs, Online Courses & Open Educational Resources on the theme ‘ICT Tools for Online Teaching’**” held from May 23-29, 2020 organised by Centre for Professional Development in Higher Education (CPDHE) UGC-Human Resource Development Centre University of Delhi
4. Faculty development programme on “**Advance course in Bioinformatics**” held from May 10-16, 2021 organized by Department of Biotechnology and Electronics & ICT academy, National Institute of Technology, Warangal

FACULTY INDUCTION PROGRAMME ATTENDED

- **UGC SPONSORED FACULTY INDUCTION PROGRAMME Faculty Induction Programme (FIP-02) from November 25, 2020 to December 24, 2020 and obtained Grade A+ at UGC-HRDC, University of North Bengal**

INVITED LECTURES

- Invited Speaker at “Environment Friendly Teaching Learning Practices” delivered a talk via google meet on June 20, 2021 on the topic entitled “**Elevated CO₂ and Modulation of Plant Defense**”
 - Invited lecture cum hands on workshop on "**Bioinformatics: resources, tools and its application**" at Zakir Husain Delhi College held on 19th-27th July, 2021
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PROFESSIONAL EXPERIENCE

Organizing Secretary

TWO DAYS NATIONAL SEMINAR (ONLINE MODE) on “**Advancement Of Plant Sciences For Food Diversity and Nutritional Security**” held on **30th September, 2021** and **1st October, 2021** organized by Department of Botany in collaboration with UGC-Human Resource Development Center, University of North Bengal

MEMBERSHIP WITH ASSOCIATIONAL BODIES

- **Life Member:** Delhi University Botanical Society, University of Delhi
- **Life Member:** Society of Rapeseed Mustard Research (SRMR), Bharatpur, Rajasthan