

Dr. Shweta Sharma

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ACADEMIC QUALIFICATIONS

Ph.D	University of Delhi South Campus Department of Plant Molecular Biology	2012
M.Sc	Department of Botany, University of Delhi	2005
B.Sc Botany (H)	Maitreyi College, University of Delhi	2003

PRESENT POSITION

Assistant Professor Department of Botany, Maitreyi College University of Delhi South Campus New Delhi	Jan 2024-Till date
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PAST TEACHING EXPERIENCE

Assistant Professor (Ad-Hoc) Department of Botany, Maitreyi College, University of Delhi South Campus New Delhi	July 2017- Dec 2023
Assistant Professor (Ad-Hoc) Department of Botany, Gargi College, University of Delhi South Campus New Delhi	August 2015-April 2017
Guest Lecturer Department of Botany, Gargi College University of Delhi South Campus New Delhi	January 2015-April 2015

PAPERS TAUGHT

Plant Physiology and Metabolism, Economic Botany and Biotechnology, Plant Anatomy, Biostatistics, Cell and Molecular Biology, Biodiversity, Plant Ecology and Taxonomy

AREAS OF SPECIALIZATION

Molecular Virology, Promoter studies, RNA interference and Transgenic resistance against plant viruses, Medicinal Botany

PUBLICATIONS

Peer reviewed research:

1. Narula GB, Soni K, Vadakan AB, Sharma S, Notnani P, Ghai N, Gandhi K. Bio-organic approach for monitoring the Plant growth for Sustainable agriculture. Journal of Agriculture and Applied Biology. 2023 Dec 5;4(2):161-73.
2. Soni R, Prakash G, Sharma S, Sinha D, Mishra R. Role of microbes in alleviating abiotic stress in plants. Plant Science Today. 2023, 10(3), 160-187.
3. Chauhan, N., Chauhan, S., Garg, V. Sharma S and Sisodia R (2023) Efficacy of Priming Agents on Seed Germination and Plant Growth Under Salt Stress in *Vigna radiata*. Legume Research-An International Journal, 46 (7):1225-1232.
4. V Garg, N Chauhan, S Chauhan, I Mallick, S Sharma, R Sisodia (2023) Efficacy of Seed Priming Technique on Seed Germination and Plant Growth Under Salt Stress in *Oryza sativa*. Current World Environment 18 (2), 674-682.
5. Sharma, S., Sharma, S., Rai, A., Singh, S., Pandey, A., and Sisodia, R. (2022). Therapeutic potential of plant secondary metabolites in treatment of respiratory viral diseases: A review Medicinal Plants Vol. 14 (1), March 2022, 1-16 ISSN: 0975-4261
6. Sharma S, Kaushik V, Chourasia A, Nandi G, Bhatia J and Sisodia R (2022) Enhancing therapeutic efficacy of *Eclipta alba* for improved antioxidant potential using chemical and biological elicitors. Medicinal Plants Vol. 14 (1), March 2022, 178-182
7. Sharma, S., Chourasia, A., Kaushik, V., Nandi, G., Bhatia, J., & Sisodia, R. (2021). Effect of chemical and biological elicitors on antioxidant potential of *Ocimum sanctum*. International Journal of Ayurvedic Medicine, 12(3), 559–564. ISSN: 0976-5921
8. S. Sharma, G. Nandi, A. Chourasia, V. Kaushik, J. Bhatia, S. Waikhom, R. Meena and R. Sisodia Comparison of Antioxidant Potential of Fresh and marketed samples of medicinal

- plant- *Eclipta alba*. (2021) International Journal of Pharmaceutical Science and Research, Vol. 12(8): 4476-4484. ISSN: 0975-8232
9. **Sharma S**, Kumar G and Dasgupta I (2018) Simultaneous resistance against two viruses causing Rice tungro disease using RNA interference, *Virus Research* vol 255, 157-164. ISSN: 0168-1702 (**Impact factor-2.74**).
 10. Borah, B. K., **Sharma, S.**, Kant, R., Johnson, A. M. A., Saigopal, D. V. R., and Dasgupta, I (2013) Bacilliform DNA-containing plant viruses in the tropics: commonalities within a genetically diverse group. *Molecular Plant Pathology* 14(8):759-771 [Published by Wiley, **Impact factor: 4.485**] ISSN: 1364-3703
 11. **Sharma, S.**, and Dasgupta, I. (2012) Development of SYBR Green I based Real-time PCR assays for quantitative detection of *Rice tungro bacilliform virus* and *Rice tungro spherical virus*. *Journal of Virological Methods* 181(1):86-92. [Published by Elsevier, **Impact factor: 1.883**] ISSN: 0166-0934
 12. Tyagi, H., **Sharma, S.**, and Dasgupta, I. (2012) Interactions between rice tungro viruses and rice: using RNA-interference to achieve viral resistance. *Science and Culture* 78(5-6):211-216 [Published by Indian Science News Association, Taylor & Francis]
 13. Verma, V., **Sharma S.**, Vimla Devi, S., Rajasubramaniam, S., and Dasgupta I. (2012) Delay in virus accumulation and low virus transmission from transgenic rice plants expressing *Rice tungro spherical virus* RNA. *Virus Genes* 45(2):350-359. [Published by Springer, **Impact factor: 1.837**] ISSN: 0920-8569 (Print version), ISSN: 1572-994X (Electronic version)
 14. **Sharma, S.**, Rabindran, R., Robin, S., and Dasgupta, I. (2011) Analysis of the complete DNA sequence of *Rice tungro bacilliform virus* from southern India indicates it to be a product of recombination. *Archives of Virology* 156:2257–2262. [Published by Springer, **Impact factor: 2.282**] ISSN: 0304-8608 (Print version), ISSN: 1432-8798 (Electronic version)
 15. Purkayastha, A., Mathur, S., Verma, V., **Sharma S.**, and Dasgupta I. (2010) Virus induced Gene Silencing in rice using a vector derived from a DNA virus. *Planta* 232 (6):1531-40. [Published by Springer, **Impact factor: 3.376**] ISSN: 0032-0935 (Print version), ISSN: 1432-2048 (Electronic version)
 16. Purkayastha, A., **Sharma S.**, and Dasgupta I. (2010) A negative element in the downstream region of the *Rice tungro bacilliform virus* promoter is orientation- and position-independent and is active with heterologous promoters. *Virus Research* 153 (1):166-71. [Published by Elsevier, **Impact factor: 2.827**] ISSN: 0168-1702

Papers in Conference proceedings:

1. Sharma, S., Tyagi, H., Verma, V., Vimla Devi, S., and Dasgupta, I. (2011) Genetic Engineering of Rice for Resistance to Rice Tungro Disease. In: Genomics and Crop Improvement: Relevance and Reservations. Muralidharan K and Siddiq EA (Eds). Institute of Biotechnology, Acharya NG Ranga Agricultural University, Rajendranagar, Hyderabad, pp 230-236. [Published by Acharya NG Ranga Agricultural University, Rajendranagar, Hyderabad]
2. Sharma, S., Banerjee, A., Roy, S., Tarafdar, J., Rabindran, R., and Dasgupta, I (2010) Cloning and sequence analysis of two complete genomic sequences of *Rice tungro bacilliform virus* from India. In: Abstracts of the Papers Presented in the XIX National Conference of Indian Virological Society, "Recent Trends in Viral Disease Problems and Management", on 18–20 March, 2010, at S.V. University, Tirupati, Andhra Pradesh. VirusDisease 21, 1-58. [Published by Springer, Impact factor: 0.364] ISSN:2347-3584 (Print version), ISSN: 2347-3517 (Electronic version).

Book Chapters:

1. Anjana Rustagi, Samira Chugh, Shweta Sharma, Punam Kumari, and Deepak Kumar (2021) "Plant-Insect Interaction: A Proteomic Approach in Defence Mechanism" In: Plant Pest Interactions: From Molecular Mechanisms to Chemical Ecology; pp 57-72 ISBN 978-981-15-2466-0, ISBN 978-981-15-2467-7 (eBook); Springer Nature Singapore Pte Ltd.
2. Miglani V, Yadav D, Sharma S. (2021) "Pharmaceutical patenting in India: Issues and Challenges" In- Intellectual Property Rights: Issues and Challenges ed. Singh D; Baweja P, 105-111, Imperial Publications, Mumbai ISBN No 978-81-949439-8-3
3. Geeta Prakash, Renu Soni, Reema Mishra, and Shweta Sharma (2019) "Role of Plant-Microbe Interaction in Phytoremediation" In- In Vitro Plant Breeding towards Novel Agronomic Traits-Biotic and Abiotic stress tolerance, 83-118, Springer Nature Singapore Pte Ltd. ISBN-978-981-32-9823-1
4. Gaurav Kumar, Shweta Sharma and Indranil Dasgupta (2018) "Viruses infecting rice and their transgenic control" In: Genes, Genetics and Transgenics for Virus Resistance in Plants (ed: Patil, B.L), Caister Academic Press, UK. ISBN: 978-1-910190-82-1
5. Sharma S., Kumar G., Mangrauthia S., Neeraja C.N., Krishnaveni D., Dasgupta I. (2017) Characteristics of Tungrovirus Occurring in India. In: Mandal B., Rao G., Baranwal V., Jain R. (eds) A Century of Plant Virology in India. Pp 475-486 Springer, Singapore DOI https://doi.org/10.1007/978-981-10-5672-7_21; ISBN: 978-981-10-5671-0.

6. Samira Chugh, **Shweta Sharma**, Anjana Rustagi, Pratibha Kumari, Aayushi Agrawal and Deepak Kumar (2018) Enhancing Cold Tolerance in Horticultural Plants Using In Vitro Approaches. In: S.M.Zargar, M.Y.Zargar (eds) *Abiotic Stress-mediated Sensing and Signaling in Plants: An Omics Perspective*. Pp 225-241 ISBN: 978-981-10-7478-3.
7. Kant, R., **Sharma S.**, and Dasgupta I. (2015) Virus Induced Gene Silencing (VIGS) for Functional genomics in Rice using Rice tungro bacilliform virus (RTBV) as a vector. In Kirankumar S Mysore and Muthappa Senthil-Kumar (ed.), *Plant Gene silencing, Methods in Molecular Biology*, vol-1287; 201-17 Humana press. [Published by Springer] doi; 10.1007/978-4939-2453-0_15 ISSN: 1064-3745, ISBN: 978-1-4939-2452-3 (Print), ISBN: 978-1-4939-2453-0 (online)
8. Purkayastha, A., **Sharma S.**, and Dasgupta I. (2013) Virus Induced Gene Silencing for rice using agroinoculation. In Annette Becker (ed.), *Virus-Induced Gene Silencing: Methods and Protocols*, *Methods in Molecular Biology*, vol. 975, 33-45, Humana press. [Published by Springer] ISSN: 1064-3745, ISSN: 1940-6029 (Electronic version), ISBN: 978-1-62703-277-3, ISBN: 978-1-62703-278-0 (eBook).
9. Dasgupta I., and **Sharma S.** (2014) Site directed in-vitro mutagenesis and protein engineering. In “Gene and its Engineering” ed. H. K. Das, 470-476. [Published by Wiley India Pvt. Ltd.] ISBN: 978-81-265-4928-3
10. **Sharma S.**, and Dasgupta I. (2014) General strategies for expression of introduced genes in a foreign host. In “Gene and its Engineering” ed. H. K. Das, 304-310. [Published by Wiley India Pvt. Ltd.] ISBN: 978-81-265-4928-3
11. **Sharma S.**, and Dasgupta I. (2014) Techniques for the study of regulation of a cloned gene. In “Gene and its Engineering” ed. H. K. Das, 480-486. [Published by Wiley India Pvt. Ltd.] ISBN: 978-81-265-4928-3

AWARDS & HONOURS

1. Awarded with “Certificate of Appreciation in poster presentation competition” for “Weaving into the tapestry of superfood through multi-omics approaches and genetic interventions” in International Conference on Bioinformatics in Biology: from pre-requisite to post-requisite by Department of Botany, Gargi College, University of Delhi held March 2-3, 2024.

2. Awarded with “First prize in paper presentation competition” for “Exploring Spatial Variation in Antioxidant Profile of Medicinal Plant - Piper longum” by Centre for Research, Maitreyi College, University of Delhi held on August 24-25, 2023
3. Awarded with Best Summer Internship Project by Centre for Research, Maitreyi College, University of Delhi for Summer Internship Programme in 2021.
4. Awarded with Best Oral presentation prize for “To monitor growth of plants using bio-organic approach for sustainable agriculture” in International e-conference on Recent trends in drug discovery and development held in October 2021
5. Awarded ERASMUS MUNDUS Action 2 Post-Doc scholarship (European Union) through the BRAVE project to join Martin Luther University Halle-Wittenberg, Germany in November 2015 (did not avail).
6. Awarded with Best poster prize in poster presentation Competition at National conference on ‘Recent trends in viral disease problems and management’ organized by Sri Venkateshwara University, Tirupati, India March 2010.
7. Awarded with Senior Research Fellowship from Council of Scientific and Industrial research, Government of India 2008-2011.
8. Awarded with Junior Research Fellowship from Council of Scientific and Industrial research, Government of India 2006-2008.
9. Qualified National eligibility test conducted by CSIR-UGC for Lecturership in life sciences June 2005.
10. Qualified National eligibility test conducted by CSIR-UGC for Junior Research fellowship and Lecturership in life sciences in December 2005.
11. Awarded with certificate of merit from Maitreyi College, UDSC for standing first in the Undergraduate course in botany during the academic session 2002-2003.
12. Awarded with certificate of merit from Maitreyi College UDSC for standing first in college & third in UDSC in the Undergraduate course in botany during the academic session 2001-2002.
13. Awarded with certificate of merit from Maitreyi College, UDSC for standing first in the Undergraduate course in botany during the academic session 2000-2001.
14. Awarded with certificate of merit from CBSE for being among the top 0.1% of successful candidate of All India Senior School Certificate Examination 1998 in Hindi core in July 1998.

Summer Internship Projects undertaken

1. Exploring spatial variation in chemical composition of selected medicinal plants (Mentored 4 students of B.Sc. (Prog) Life Sciences II Yr, Maitreyi College University of Delhi under SIP 2022-23) (Manuscript under preparation)
2. Efficacy of Selected Seed Priming Agents on Seed Germination and Plant Growth Under Salinity Stress in *Vigna radiata* and *Oryza sativa* (Mentored 4 students of B.Sc. (Prog) Life Sciences II Yr, Maitreyi College, University of Delhi under SIP 2021-22). **(Published)**
3. To monitor the growth of plants using bio-organic approach for sustainable agriculture (Mentored 7 students of B.Sc. (Prog) Life Sciences II Yr, Maitreyi College, University of Delhi under SIP 2020-21). **(Published)**
4. Review of Therapeutic Potential of Plant Secondary Metabolites in Treatment of Respiratory Viral Diseases under the Summer Internship Programme (Mentored 4 students of B.Sc. (Prog) Life Sciences II Yr, Maitreyi College under 2019-20). **(Published)**
5. Assessment of antioxidant potential of selected medicinal plants in response to chemical and biological adjuvants (Mentored 6 students of B.Sc. (Prog) Life Sciences II Yr, Maitreyi College, University of Delhi under SIP 2018-19). **(Published)**

PAPER/POSTER PRESENTATION IN INTERNATIONAL/NATIONAL CONFERENCE/ SEMINAR/ SYMPOSIA

1. Presented a paper titled "Exploring Spatial Variation in Antioxidant Profile of Medicinal Plant - Piper longum in the Conference on Research, Development and Social Transformation organized by the Centre for Research, Maitreyi College from August 23 -25, 2023 (Awarded Best Oral presentation prize)
2. Presented paper titled "Efficacy of Selected Priming Agents on Seed Germination and Plant Growth Under Salinity Stress in *Vigna radiata* and *Oryza sativa*" in conference on The Expanding Frontiers of Knowledge organized by the Centre for Research, Maitreyi College from August 11 -13, 2022.
3. Presented paper titled "To monitor the growth of plants using bio-organic approach for sustainable agriculture" in International e-conference on Recent trends in drug discovery and development organized by Department of chemistry under the aegis IQAC on 8-9th October, 2022. (Awarded Best Oral presentation prize)
4. Presented poster on "Amplification and sequence analysis of a flower specific promoter (OsLPS4) from rice" at National conference on "Inter-disciplinarity: prospects &

challenges" held in April 2017 at Maitreyi college, University of Delhi (Presenting author)

5. Presented poster on "Transgenic rice against rice tungro disease: designing, construction and testing of transgenic rice lines for resistance against rice tungro viruses" at 'The International Dialogue on Designer Rice for Future: Perceptions & Prospect' held on July 2012 at ICRISAT, Hyderabad, India. (Presenting author)
6. Presented poster on "Cloning and sequence analysis of two complete genomic sequences of Rice tungro bacilliform virus from India" at the National conference on 'Recent trends in viral disease problems and management' held on March 2010 at Sri Venkateshwara University, Tirupati, India. (Presenting author, Awarded best poster prize)

FACULTY DEVELOPMENT PROGRAMME/ ORIENTATION PROGRAMMES/WORKSHOPS ATTENDED

1. Faculty Development Programme on "NEP 2020 Orientation & Sensitization Programme" organized by Centre for Professional Development in Higher Education (UGC-MMTTC) held from February 2024.
2. Four-week **Induction/ Orientation Program** for "Faculty in Universities/Colleges/Institutes of Higher Education" organized by Teaching Learning Centre, Ramanujan College, University of Delhi, University of Delhi under PMMMNMTT scheme of MHRD organised from 21st February to 19th March 2024.
3. Faculty Development Programme Faculty Development Programme on "Open Source Tools for Research" organized by Teaching Learning Centre, Ramanujan College, University of Delhi from 8 to 14 June, 2020.
4. Four-week **Induction/Orientation Program** for "Faculty in Universities/Colleges/Institutes of Higher Education" organized by Teaching Learning Centre, Ramanujan College, University of Delhi under PMMMNMTT scheme of MHRD on 26 June to 24 July 2020.
5. FDP on 'Managing Online Classes and Co-Creating MOOCs 3.0' organised by Teaching Learning Centre, Ramanujan College, University of Delhi under PMMMNMTT scheme from 25 Jul to 10 Aug, 2020.
6. Faculty Training programme on 'Google applications' organized by Department of Computer Science, Maitreyi College, University of Delhi from 16 July to 14 August, 2020.

7. Two weeks National Interdisciplinary Refresher course on “Research methodology and Data analysis (sharpening skills through MS Excel, SPSS, MATLAB and R)” organised by Teaching Learning Centre, Ramanujan College, University of Delhi under PMMMNMTT scheme from 24 March to 7 April, 2021.
8. Two days National Virtual Hands-On Workshop entitled "Tools Used in Biostatistics Research and Teaching" organised by the Department of Botany, Ramjas College, University of Delhi on 13th-14th, August 2021.

RESOURCE PERSON & ORGANIZING COMMITTEE MEMBER

1. Resource person and Organizing Committee member of National Workshop on “Intellectual Property Rights (IPR): Current Status and Future Prospects” held in Maitreyi College, University of Delhi, Delhi 3rd October, 2018.
2. Organizing committee member in National Conference on “Biotechnology in Present Era-Impact on Human Life an Environment”, organized by Maitreyi College in collaboration with Department of Biotechnology held on 23rd August, 2019.
3. Organizing committee member in National Conference on “Trends in Life Sciences & Biotechnology: Innovative Paradigms”, organized by Department of Botany, Maitreyi College, University of Delhi, held on 19-20th February, 2019.
4. Organizing Committee member in Avgaahan-Annual Interdisciplinary Academic Fest organized by Maitreyi College, University of Delhi, held from 4 February to 25 February, 2020.
5. Organizing Committee member in International webinar on COVID-19 and 3Ls: Lives, Livelihood and Lockdown organised under e-Saanidhy:2020, the Annual Alumni Meet held on 26th April, 2020.
6. Member of the organizing committee in National webinar on ‘Cybercrimes: Prevention and mitigation in the Digital era’ organized by Short Term Committee, Maitreyi College on 22nd October 2020.
7. Organizing Committee member in One Week National Online Faculty Development Program ‘Digital pedagogy to enhance teaching and learning Experience, jointly organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College and Maitreyi College, University of Delhi on 15-21st December 2020
8. Organizing committee member in webinar on ‘The Splendour of Orchids’ organized by Department of Botany, Maitreyi College on 25th September, 2020.

9. Co-convenor and Organizing board member in International e-conference on 'Sustainable Future for Humanity: The New Learning Curve' organized by Maitreyi College, University of Delhi held on 24 February, 2021
10. Member of organizing committee in Workshop on 'Hidden Challenges of Fast Fashion and Nature- Based Solutions for Environmental Justice' organized by Department of Botany, Maitreyi College on 17 July, 2021
11. Member of the organizing committee in webinar on 'Personality development' organized by Department of Botany, Maitreyi College on 04 September, 2021
12. Member of the organizing committee of the webinar on 'How to read scientific literature and introduction to MANAV-the human atlas initiative' organized by Department of Botany, Maitreyi College held on 11th September, 2021
13. Resource person in National Workshop on "Statistical Analysis of Biological Data" organized by Zakir Hussain Delhi College held from 17-21 January, 2022.
14. Resource person in Inter-Disciplinary Training Programme for Laboratory Staff organised by Maitreyi College, University of Delhi held from 23-29 August, 2022.
15. Co-ordinator in Intellectual Property Awareness programme under National Intellectual Property Awareness mission on organized on 04th February 2022.
16. Resource person in One-day workshop on "Contemporary Methods in Plant Sciences" organised by Short Term Courses Committee in collaboration with Blossom, the Botanical Society, Maitreyi College on 15th September 2022.
17. Convenor in "Career counselling session" organised by Botanical Society Blossom, Maitreyi college on 11th October 2023.
18. Resource person in Intellectual Property Rights: Inventions, Patents and Copyrights" organised by Botanical Society Blossom, Maitreyi college on 27th October 2023.

ADMINISTRATIVE RESPONSIBILITIES

1. Member Alumnae Committee (2017-till date)
2. Member Garden Committee (2022-till date)
3. Member Admission Committee (2023-24)

4. Member Avgaahan Committee (2020-2023)
5. Member Criteria IV data compilation for NAAC SSR (2021-22)
6. Departmental Co-ordinator for compilation of data for Department of Botany during second cycle of NAAC accreditation (2021-22)
7. Member ISO Certification Committee (2023-24)