



Dr Shikha Srivastava

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Professional Summary:

I have been working in the field of Botanical research since 2010 continuously. At present, I am teaching young students about the intricacies of Botany in a simplified manner using various ICT tools. My academic journey started with M.Sc. from Lucknow University which further propelled me for M. Phil from University of Delhi. I worked as Women Scientist for revival of one endangered plant, first in CIMAP Lucknow and then in University of Delhi. I am passionate about Botany in general and Medicinal Plant in particular. In fact, I brought out the medicinal property of the plant, on which I completed my work as women scientist.

I have keen interest in Tissue culture, Phytochemical investigations, Anti-Microbial properties of the compounds isolated and other applied aspects of Botany. Apart from various achievements, I love to learn and share everything about plant world to the best of my ability. I always try to apply my knowledge to find out practical ways to save the natural resources including plants. I have also passion for learning pedagogical skills. Recently, I played a role as member of NAAC task force team and worked for criteria VII for my college where I am working presently as Assistant professor.

Key Technical Skills:

Computational Biology

- **Phylogenetic Analysis:** Sequence Alignment (ClustalW, MUSCLE, MEGA 5.2, 6.0), Sequence Similarity Search (BLAST, PSI-BLAST, FASTA), phylogenetic tree construction (MEGA 6.0).
- **Statistical Packages:** Microsoft Excel, SPSS, ANOVA
- **Molecular Docking Techniques:** MD techniques especially to obtain the potential molecule for drug designing.
- **Genomics, Proteomics and Metabolomics.**

Experimental Biology

- **Tissue Culture Techniques:** Well versed in the various techniques used in plant tissue culture.
- **Micropropagation Techniques:** Expertise in *in vitro* establishment of medicinal and aromatic plants, removal of browning from media, acclimatization, bioprimering and hardening techniques.
- **Microbiological Techniques:** Culture media preparation, Isolation of microorganisms, Microbial culture preparation, *in vitro* and *ex vitro* elicitation techniques, antimicrobial activity of natural products (secondary metabolites).
- **Molecular Biology Techniques:** Plant and microbial DNA isolation, Gel Extraction, Gel Electrophoresis, PCR amplification, Cloning and marker studies.
- **Chromatographic Techniques:** Thin layer chromatography, High performance liquid chromatography, Gas chromatography-mass spectrometric techniques, Liquid chromatography- mass spectrometric techniques.

Computational Skills

- **Working Platforms:** Microsoft Windows, Mac OS and proficient in MS office

Work experience:

- Teaching presently as Assistant Professor (Adhoc) in Bhaskaracharya college of applied sciences University of Delhi (23/07/19 - till date).
- Taught as guest faculty in Kalindi college (15/09/18 - 22/04/19).
- Worked as DST-Woman Scientist in CSIR-CIMAP, Lucknow (04/12/12 – 30-06-2014).
- Continued as DST-Woman Scientist in Department of Botany, University of Delhi (01/07/2014 – 17-02-2015).

Delivered Talks:

- Delivered online lecture on the topic “**Basics of Tissue Culture Techniques: with special emphasis on medicinal plants**” to PG students at All India Institute of Ayurveda. (12/03/2021)
- Delivered online lecture on the topic “**Wonders of Nutrition: with special emphasis on importance of first thousand days in human beings’ life**” to Undergraduate and PG students of Savitri Bai Phule Pune University. (24/09/2021)
- Delivered online lecture on the topic “**History of Indian Food**” as one of the chapters, **under NEP, Value added Courses-1: Ayurveda and Nutrition** at University of Delhi for the Delhi University Teachers Peer Group (19/11/2022)

- **Special Achievements:**

- Attended several FDP's and Refresher course in Teaching skills/ pedagogical tools with special emphasis on attaining skills for 21st century blended learning and NEP, achieved grade A+ in maximum.

Education:

- **Ph.D. (2014-2017)** from Department of Botany, University of Delhi, on topic "Acclimatization of *in vitro* raised *Decalepis aryalpathra* KMA 05 clones and assessment of antibacterial properties of secondary metabolites produced".
- **DST Woman Scientist project (2012-2015)** in Plant Biotechnology on topic entitled, "Tissue culture and Secondary metabolite production studies in *Janakia aryalpathra* (A Critically endangered medicinal and aromatic plant of southern forests)" 04-12-2012 to 30-06-2014 (CSIR-CIMAP, LUCKNOW). 01-07-2014 to 17-02-2015 (University of Delhi).
- **M.Phil. (2010-2011)** in Applied Microbiology and Biotechnology on dissertation entitled, "Degradation of Aflatoxin B₁ By fungal Peroxidase, from the Department of Botany, University of Delhi, Delhi (84%) marks.
- **M.Sc. (2008-2010)** in Plant Science from University of Lucknow, Lucknow (68.5% marks).
- **B.Sc. (1995-1998)** from Dr. B. R. Ambedkar University, Agra (64.3% marks).

Research Experience:

- **September, 2010-2011:** M. Phil student at Department of Botany, University of Delhi, Delhi
- **December 2012-June 2014:** Woman Scientist-A at CSIR-CIMAP, Lucknow.
- **July 2014- February 2015:** Woman Scientist-A at Department of Botany, University of Delhi, Delhi, India
- **Accomplishments:** Published seven peer reviewed research articles and one book chapter.

Publications and Book Chapter:

- **Shikha Srivastava, Abhijit Debnath and Nalla Vijay Kumar (2024).** *Decalepis aryalpathra*: Ethnobotany, Scientific Interventions and Prospects, Open access journal of botanical insights 2 (1): 1-8

- Abhijit Debnath, Hema Chaudhary, Parul Sharma, Rajesh Singh and **Shikha Srivastava** (2024). A Deep Dive into PDE5 Inhibition: Innovative Discoveries via Virtual Screening, *Letters in Drug Design and Discovery* 21(16): 3425-3442
- Abhijit Debnath, **Shikha Srivastava**, Shalini Sharma(2023). Artificial Intelligence in Personalized Medicine. *Recent advances in Biosciences and Biotechnology* (33).
- Abhijit Debnath, Hema Chaudhary, Siddhartha Roy, **Shikha Srivastava** (2023). High-throughput virtual screening of novel CHK1 inhibitors. *Oncology and Radiotherapy*, 17 (1): 030-036
- Abhijit Debnath, Rupa Mazumder, Avijit Mazumder, Rajesh Singh, **Shikha Srivastava** (2023). In Silico Identification of HDAC Inhibitors for Multiple Myeloma: A Structure-based Virtual Screening, Drug Likeness, ADMET Profiling, Molecular Docking, and Molecular Dynamics Simulation Study. *Letters in Drug Design & Discovery*, 2023, 20, 000-000
- **Srivastava, S.**, Nalla, V. K., Singh, V. P., & Prasad, R. (2022). Optimization of in vitro micropropagation and root establishment through combinatorial approaches for enhanced production of secondary metabolites in the endangered species *Decalepis arayalpathra* KMA 05 clones. *Brazilian Journal of Botany*, 1-13.
- **Srivastava, S.**, & Singh, V.P. (2020). Characterization of biocontrol microorganisms from the rhizoplane of *Decalepis arayalpathra* and screening of secondary metabolites. *Vegetos: An International Journal of Plant Research and Biotechnology*, 33(2), 352-359.
- **Srivastava, S.**, Laisram, N. and Singh, V. P. (2018). *In vitro* secondary metabolite production from the roots of *Decalepis arayalpathra* KMA 05 clones and its antimicrobial potential using *Methylobacterium* sp. VP103 as an elicitor. *European Journal of Experimental Biology*. 8: 3-17.
- **Srivastava, S.**, Laisram, N., Ram, H. and Singh, V. P. (2017). Bio-priming of tissue culture raised *Decalepisarayalpathra* (J. Joseph & V. Chandras.) Venter, KMA 05 clones with the phyllospheric bacterium, *Methylobacterium* sp. VP103 and its biocontrol potential. *Vegetos* **30 (Special-1)**: 41-51.
- Singh, V. P., Kumar R., Singh I and **Srivastava S.** (2013) Microsome Technology as a Potential Bioremediation option for health and Environmental protection. *Journal of Environmental Research and Development*, 8 (1):27-32.

Presentation in Conferences, seminars and symposia:

- **Laisram, N.** and Srivastava, S. (2018) “Elicitors as a Tool for Production of Secondary Metabolites from Cell Cultures” (**Poster Presentation**), National Conference on “Challenges and Strategies to Improve Crop Productivity in Changing Environment: An Integrated Approach” at Zakir Hussain Delhi College (University of Delhi), January 12, 2018.
- **Srivastava, S.,** Laisram, N. and Singh, V. P. (2017) “Comparative *In Silico* Analysis for Assessing Antibacterial Properties of Compounds of Bacterial [Cyclo (leucyloprolyl)] and Plant (Alpha-amyrin) Origins Against *Helicobacter pylori* Through its Peptide Deformylase” (**Oral Presentation**), National Seminar on “Microbes and Human Welfare” at Jaipur National University, Jaipur, September 23-24, 2017.
- **Srivastava, S.,** Laisram, N., Ram, H. and Singh, V. P. (2017) “Bio-priming of Tissue Culture Raised *Decalepis arayalpathra* (J. Joseph & V. Chandras.) Venter, KMA 05 clones with the Phyllospheric Bacterium, *Methylobacterium* sp. VP103” (**Oral Presentation**), International Conference in “Technological advancement for rural development and agricultural sustainability” (TASARD) at National Academy of Agricultural Sciences, New Delhi, February 20-22, 2017 (**Best Paper Award**).
- **Srivastava, S.,** Laisram, N , Rahman, L. and Singh, V.P. (2016) “ Evaluation of 2H4MB (2-hydroxy 4-methoxy benzaldehyde) and its Antimicrobial Properties in the Roots of *Decalepis arayalpathra* (Joseph & Chandras) (KMA 05) Clones using Silver Nitrate Stress: An *in-vitro* Approach”(**Poster Presentation**), National Conference on “Plant Science Research: Looking beyond 21st Century for Environmental and Agricultural Revolution”, Department of Botany, Delhi University, February 5-7, 2016.
- **Srivastava, S.,** Velusamy, S., Zhang, T. and Rahman, L. (2015) “*In vitro* Establishment and Mitigation from Calcium Deficiency: A Comprehensive Study in *Decalepis arayalpathra*: A Lithophytic Plant from Southern Forests” (**Poster Presentation**), International Conference on “Medical Plants Resource for Affordable New Generation Healthcare”, CSIR-CIMAP, Lucknow, March 20-22, 2015.
- **Srivastava, S** and Alam, S. (2015) “Revealing The Therapeutic Activity of Secondary Metabolites of *Decalepis arayalpathra*: An *In-Silico* Approach” (**Poster presentation**), National Seminar on “Biotechnology and Molecular Biology for Industry and Common Man”, St. Aloysius college, Mangalore, January 29-31, 2015.
- **Srivastava, S.,** Rahman, L. and Velusamy, S. (2014) “Establishment of an Efficient Callus Induction and Direct Regeneration System in *Decalepis arayalpathra*”(**Oral presentation**)

National Symposium on “Advances in Plant Molecular biology & Biotechnology”, IISER, Pune, March 10-12, 2014.

- **Srivastava, S.**, Singh, V.P and Kumar, R. (2013) “Microsomal Degradation of Aflatoxin B₁”(Poster presentation)National Conference on “Microbes Promoting crop health, productivity & sustainability”, CSIR-CIMAP, Lucknow, October 26-27, 2013.

Scientific Workshops/Training Programmes:

- “**One day workshop on, Recent Trends in Plant Systematics and Future Prospects**”, held at Dyal Singh College, University of Delhi, March 12, 2019.
- **International Hands-on Workshop on “Transcript Profiling using Real Time PCR**”, Faculty of Life Sciences and Biotechnology (FLSB), November 1-2, 2018.
- “**One day workshop on, How, What and Where to Publish Research Articles?**”, held at Centre for Professional Development in Higher Education (CPDHE), University of Delhi, June 5th, 2018.
- “**Training Workshop on Advanced Techniques in Mycorrhizal Research**”, The Energy and Resources Institute (TERI), Gram, GualPahiri, Gurgaon, Haryana, February 21-23, 2018.
- “**Training On Commercial Cultivation of Aromatic Crops, its Processing and Marketing**”, Fragrance and Flavour Development Centre, Kannauj, Uttar Pradesh, April 09-13, 2018.
- “**Bioinformatics Workshop on Genomics, Proteomics, Drug Design &High-Performance Computing**”, Indian Institute of Technology Delhi, August 21-31, 2017.
- “**Energy Dispersive X-Ray Fluorescence Spectrometry (EDXRF) and its applications**”, from Advanced Instrumentation Research Facility, Jawaharlal Nehru University, New Delhi, July 12, 2017.
- “**Gas Chromatography-Mass Spectrometry: Principles and Applications**”, from Advanced Instrumentation Research Facility, Jawaharlal Nehru University, New Delhi, April 28, 2017.
- “**Fundamentals of GC-MS with GC-MS Solution Workstation**”, Shimadzu Analytical (India) Pvt. Ltd. New Delhi, November 17-18, 2016.
- “**MS Excel training programme**” organized by weekendr training centre by expert faculty of Delhi University (Dr. Supriya Chopra), July 30th to August 27th, 2016.
- “**SPSS training programme**” organized by weekendr training centre by expert faculty of Delhi University (Dr. V. Ravi), July 16th to August 30th, 2016.

- **2ndPlant Proteomics Workshop / Training Programme**” organized by the Delhi University Botanical Society (DUBS), Department of Botany, University of Delhi, December 21-26, 2015.
- **“Bioinformatics Workshop on Genomics, Proteomics, Drug Design &High-Performance Computing”**, Indian Institute of Technology (IIT), Delhi, July 01-10, 2015.
- For more achievements 2019 onwards visit to www.bcas.du.ac.in in **Department of Botany, Annual Reports Section**

Memberships:

- **Lifetime membership** of International Society of Plant Morphologists, Department of Botany, University of Delhi.
- **Lifetime membership** of Nutrition Society of India, National Institute of Nutrition, Hyderabad.
- **Membership at Global Scientists and Technocrats Forum (GIST)**, Worked as volunteer in module preparations of Aahar Kranti during COVID times.

Miscellaneous:

- **Participated as Volunteer in Academic and Cultural Festival** (Antardhwani, 2015-2017) organized annually by Department of Botany, University of Delhi.
- **Participated in Botanical Quiz Competition** organized annually by Delhi University Botanical Society at Department of Botany, University of Delhi 2014-2015, (Got Appreciation Certificate).

Current Assignments at Bhaskaracharya College of Applied Sciences:

(VAC-Value Added Courses; SEC-Skill Enhancement Courses; BPG-Bryophytes, Pteridophytes, Gymnosperms; ATPS-Analytical Techniques in Plant Sciences; NEP-National Education Policy; CBCS-Choice based credit system; LOCF-Learning outcome-based curriculum framework; BCAS-Bhaskaracharya College of Applied Sciences)

Academic:

- Presently teaching Ayurveda and Nutrition (VAC paper) to first year (NEP second batch), Mushroom cultivation (SEC paper) and BPG (Core paper) to second year and ATPS to final year students of B.Sc. Botany (H) students.
- Taught (VAC-1) Ayurveda and Nutrition to first semester and Ethics and Culture (VAC-6) to second semester, NEP first batch last year.

- Taught Core papers of NEP, Plant Resources and Economic Botany and Microbiology and Plant Microbial Relations to NEP batch in second semester.
- Teaching Analytical techniques in Plant Sciences (ATPS) and Industrial Microbiology papers to final year students of B.Sc. (H), Botany students since 2019. (CBCS & LOCF)
- Teaching Economic Botany to third semester students of B.Sc. (H), Botany students since 2019. (CBCS & LOCF)

Phytomics Society:

- Coordinated several National and International scientific talks, workshops and educational visits for students which not only breaks the monotony of classroom teaching whereas helping them in giving the practical overview of application and better flavor of the subject.
(www.bcas.du.ac.in)

Extra-Curricular at BCAS:

- Holding the post of Music Club Convener and organized several competitive and non-competitive musical events for students since July 2021.
- Working actively as Garden committee member since 2019, taken many initiatives for the green campus of college e.g., Bio compost and preparations of leaf waste compost.
(https://www.youtube.com/watch?v=L1FgRjtW_Pw&t=24s&ab_channel=BhaskaracharyaCollegeofAppliedSciences)
- Working actively as member of women development cell since 2021.
- Working actively as member and department representative of Training and Entrepreneurship committee since 2021.
- Working as NAAC task force member for Criteria seven since 2022

Personal Information:

Date of Birth: 01 January 1978

Marital Status: Married

Nationality: Indian

Languages: Hindi, English

Residential Address: C/o Ajeet kumar Srivastava, CK-03/ 2A, Chanakya Rail Enclave, Near Bihar Niwas, opposite to CRIS Office, Chanakyapuri, New Delhi, Delhi 110 021.

Permanent Address: C/o Janardan lal, A/18, kamla Nehru Nagar, Khurram Nagar, Lucknow (U.P.), 226 022.

Mobile no: 09560167669

References:

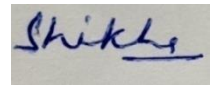
- Retired Chief Scientist, CSIR-CIMAP, Lucknow, presently serving a Private Commercial Plant Tissue Culture Laboratory in Mysore as Chief R&D advisor, Address: House No. 42, Sector 12, Vikas Nagar, Lucknow-226022

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Declaration:

I hereby declare that all the above information supplied is true in all aspects.



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