CURRICULUM VITAE

Dr. Reema Mishra

Maiden Name: Dr. Reema Khurana
Assistant Professor
Department of Botany
Gargi College, University of Delhi
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New Delhi-110049, India
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Educational Qualifications		
Degree	Institution	Year
Ph.D.	University of Delhi, DPMB, South campus	2011
M.Phil	University of Delhi, DPMB, South campus	2005
M.Sc. Botany	University of Delhi, Miranda House	2004
B.Sc. Botany (Hons)	University of Delhi, Miranda House	2002

Present Position

Assistant Professor, Department of Botany, Gargi College, University of Delhi (May 2015- till date)

Past Experience

- Assistant Professor, Department of Botany, Maitreyi College, University of Delhi (September 2014- January 2015)
- D. S. Kothari Postdoctoral fellow, Department of Plant Molecular Biology, University of Delhi, South Campus (2013-2015)
- Research Associate, Department of Plant Molecular Biology, University of Delhi South Campus (2011-2013)

Awards & Honours

- Recipient of Panchanan Maheshwari medal for securing highest marks in M.Sc. Botany
- Recipient of Lakshmi Krishnaswami Award (For highest marks in B.Sc. (H) Botany I and II year), Miranda House, DU.

Research Projects Awarded

2020-2021: Faculty research program, IOE scheme, University of Delhi

2022 (Sanctioned) : Biotechnology Research And Development Project

Project Title: Proposal for Workshop/Training in Bioinformatics

Project as Co-Principal Investigator, PI: Professor Aparajita Mohany

Total funding: Rs 17,49,920/-

Funded by Department of Biotechnology

Institutional Grant Awarded

Creation of Bioinformatics Infrastructure Facility (BIF) under the Biology Teaching through Bioinformatics Scheme of BTISnet, DBT

2019-2020: Co-PI

Funded by: Department of Biotechnology, Ministry of Science and Technology, Govt. of India

Publications

1. Sinha, D., Datta, S., **Mishra, R**., Agarwal, P., Kumari, T., Adeyemi, S. B., Kumar Maurya, A., Ganguly, S., Atique, U., Seal, S., Kumari Gupta, L., Chowdhury, S., & Chen, J. T. (2023). Negative impacts of arsenic on plants and mitigation strategies. *Plants*, *12*(9). https://doi.org/10.3390/plants12091815
2. Soni, R., Prakash, G., Sharma, S., Sinha, D., & **Mishra, R**. (2023). Role of microbes in alleviating abiotic stress in plants. *Plant Science Today*. https://doi.org/10.14719/pst.2215
3. Agarwal, P., Soni, R., Kaur, P., Madan, A., **Mishra, R**., Pandey, J., ... & Singh, G. (2022). Cyanobacteria as a promising alternative for sustainable environment: Synthesis of biofuel and biodegradable plastics. *Frontiers in Microbiology*, *13*, 939347.
4. Srivastava, S., Mishra, A., **Mishra, R**., & Mohanty, A. (2022). Biopesticidal potential of cyclotides: An insight. *Phytochemistry Reviews*, 1–21.
5. Mendiratta, A., Mendiratta, S., Sharma, A., Agarwal, P., **Mishra, R**., Soni, R., (2023). Myths and Misinformation on Social Media: Insights int. Journal of Scientific Research, 67(2).
6. Kaula, B. C., **Mishra, R**., Geeta, , Kumar, S., & Mohanty, A. (2022). Phytoconstituents and ethnopharmacological activities of *Abrus precatorius* L. (Fabaceae): A review. *Vegetos*, 35(4), 869–879. https://doi.org/10.1007/s42535-022-00397-0
7. Soni, R., Gupta, R., Agarwal, P., & **Mishra, R**. (2022). Organic farming: A sustainable agricultural practice. Vantage. *Journal of Thematic Analysis*, *3*(1), 21–44.
8. Singh, G., Sahu, P., Sharma, A., Butool, B., Sarkar, R., **Mishra, R**., & Soni, R. (2022). Public awareness about the usage of medicinal herbs found in the kitchen and their potential against COVID-19 disease. *Plant Archives*, *22*(1), 288–296.
9. Mohanty, A., & **Mishra, R**. (2022). Impact of anthropogenically-disturbed environmental parameters on arbuscular mycorrhizal fungi. *Microbial Science Archives*, *2*(2), 14–20. https://doi.org/10.47587/MSA.2022.2201
10. Agrawal, H., Vashishtha, H., Debnath, I., Agarwal, P., Soni, R., & **Mishra, R**. (2022). Public perceptions and experiences with the on-going COVID-19 immunisation programme in India: A survey based study. *Journal of Scientific Temper*, *10*(3). https://doi.org/10.56042/jst.v10i3.57765
11. Grover, T., **Mishra, R**., Gulati, P.,….Mohanty, A. (2021). An insight into biological activities of native cyclotides for potential applications in agriculture and pharmaceutics. *Peptides*, *135*, 170430. https://doi.org/10.1016/j.peptides.2020.170430

12. Bharadwaj, B., Sahu, K., Kumari, N., Sharma, S., Tamanna, G., **Mishra, R**., & Soni, R. (2021). Morphological, physiological and biochemical facets of *Ricinus communis* and *Ficus racemosa* plants grown at three different sites. *HANS SHODH SUDHA, 1*, 50–63.
13. Saini, A., Saini, A., Sachdev, L., Kumari, N., Goel, P., Gupta, P., Jain, R., Shukla, Y., Geeta, **Mishra R**., & Soni, R. (2019). Identification of common food adulterants in selected food items collected from local grocery stores and supermarkets. *Journal of Agricultural Engineering and Food Technology (JAEFT)*, 79–82.
14. Ranjan, R., **Khurana, R**., Malik, N., Badoni, S., Parida, S. K., Kapoor, S., & Tyagi, A. K. (2017). bHLH142 regulates various metabolic pathway-related genes to affect pollen development and anther dehiscence in rice. *Scientific Reports*, *7*, 43397. https://doi.org/10.1038/srep43397
15. **Khurana, R**., Kapoor, S., & Tyagi, A. K. (2013). Spatial and temporal activity of upstream regulatory regions of rice anther-specific genes in transgenic rice and *Arabidopsis*. *Transgenic Research*, *22*(1), 31–46. https://doi.org/10.1007/s11248-012-9621-3
16. **Khurana, R**., Kathuria, H., Mukhopadhyay, A., Kapoor, S., & Tyagi, A. K. (2013). A 286 bp upstream regulatory region of a rice anther-specific gene, *OSIPP3*, confers pollen-specific expression in Arabidopsis. *Biotechnology Letters*, *35*(3), 455–462.. https://doi.org/10.1007/s10529-012-1100-7
17. **Khurana, R**., Kapoor, S., & Tyagi, A. K. (2012). Anthology of anther-specific promoters and transcription factors. *Critical Reviews in Plant Sciences*, *31*(5), 359–390. https://doi.org/10.1080/07352689.2012.664986
18. Swapna, L., **Khurana, R**., Vijaya Kumar, S. V., Tyagi, A. K., & Rao, K. V. (2011). Pollen-specific expression of *Oryza sativa indica* pollen allergen gene (*OSIPA*) promoter in rice and *Arabidopsis* transgenic systems. *Molecular Biotechnology*, *48*(1), 49–59. (* equal contribution). https://doi.org/10.1007/s12033-010-9347-5
19. Gupta, V., **Khurana, R**., & Tyagi, A. K. (2007). Promoters of two anther-specific genes confer organ-specific gene expression in a stage-specific manner in transgenic systems. *Plant Cell Reports*, *26*(11), 1919–1931. https://doi.org/10.1007/s00299-007-0414-8

Book chapters

1. **Mishra, R**., Agarwal, P., & Mohanty, A. (2023). Applications of Genome Editing Techniques for the Improvement of Medicinal Plants. In: Swamy, M.K., Kumar, A. (Eds) *Phytochemical Genomics*, pp. 545-569). Springer, Singapore. ISBN: 978-981-19-5778-9. https://doi.org/10.1007/978-981-19-5779-6_22.
2. **Mishra, R**., Soni, R., Agarwal, P. & Mohanty, A. (2022). Utility of Probiotics in Aquaculture. In: M. Singh, G. P. Singh & S. Tyagi, (Eds.) *Microbial Products*, (pp149). CRC press. ISBN: 9781003306931. https://doi.org/10.1201/9781003306931
3. Mittal, M., Agarwal, P., Mohanty, A., & **Mishra, R**. (2022). Potential Immunity Boosting Plant Candidates Effective against SARS-CoV-2. In: A. Sharma, G. Malik & S. Kumar, (Eds) *Medicinal Plants: Ethnomedicine, Pharmacognosy and Therapeutic Values* (pp. 43) ANU BOOKS ISBN: 978-93-90879-31-1

4. **Mishra, R.,** Grover, T., Gulati, P., & Mohanty, A. (2021). Rhizosphere Engineering: An Effective Approach for Sustainable Modern Agriculture. In: Verma A, Saini JK, Hesham AL, Singh HB (Eds) *Phytomicrobiome Interactions and Sustainable Agriculture*, (pp. 91-117, Wiley-Blackwell Publications, ISBN-9781119644620
5. Chugh, S., Geeta, Agarwal, P., & **Mishra, R.** (2021). Common Indian Medicinal Plants with Antidiabetic Potential In D. Sinha (Ed.), *Handbook of Agriculture and Plant Sciences*, pp258-283, ABS publishers, ISBN 978-93-91002-25-1.
6. Agarwal, P., **Mishra, R.,** Chugh, S., & Geeta. (2021). Plant Nutraceuticals: An Emerging Approach for Better Health Management. In D. Sinha (Ed.), *Handbook of Agriculture and Plant Sciences*, pp 92-117, ABS publishers, ISBN 978-93-91002-25-1.
7. Kawatra, A., **Mishra, R**., Mohanty, A., & Gulati, P. (2021). Plants as Antiviral Agents. In D. Sinha (Ed.), *Handbook of Agriculture and Plant Sciences*, pp171-186, ABS publishers, ISBN 978-93-91002-25-1.
8. Mallik, G., **Mishra, R.,** Prakash, G., & Agarwal, P. (2021). Genomics, Physiology And Molecular Breeding Approaches For Improving Crop Productivity Under Salt Stress: Progress And Prospects. In (P. K. Srivastava, J. Kumar, & S. M. Prasad, Eds.) *Salt Stress Responses in Plants: Perception, Signaling, Omics and Tolerance Mechanisms*, pp*179*, Nova Science Publishers. ISBN: 978-1-53619-889-8.
9. Prakash, G., Soni, R., Mishra, R., Sharma, S. (2019). Role of plant-microbe interaction in phytoremediation. *In In vitro plant breeding towards novel agronomic traits* (pp. 83–118) Springer,. ISBN:
10. Geeta, & **Mishra, R**. (2018). Fungal and bacterial biotrophy and necrotrophy. In A. Singh & I. K. Singh (Eds.), *Molecular aspects of plant–pathogen interaction*, (pp. 21-42) Springer nature, ISBN: 978-981-10-7370-0
11. Kapoor, S., **Khurana, R**., Baranwal, V., Agarwal, P., Ray, S., & Tyagi. (2011). A Genome-wide strategies for genetic enhancement of rice. In K. Muralidharan & E. A. Siddiq (Eds.), *Genomics and crop improvement: Relevance and reservations* (pp. 11–25).
12. Tyagi, A. K., Khurana, J. P., Khurana, P., Kapoor, S., Singh, V. P., Singh, A. K., Thakur, J. K., Gupta, V., Anand, S., Vij, S., Jain, M., Ray, S., Agarwal, P., Arora, R., Sharma, P., Mukherjee, S., Nijhawan, A., Giri, J., & **Khurana, R**. (2007). Expression and functional analysis of rice genes involved in reproductive development and stress response. *Rice genetics, 301–334*. IRRI. https://doi.org/10.1142/9789812708816_0021

Research Guidance

Research Associate

Topic: Analysis of diversity of cyclotides and their bioactivities, 2019-2020

M.Sc. Dissertation

2019: Title: *In silico* analysis and subsequent screening of cyclotides for their putative role as biopesticides

Candidate: Ms Rajitha Amity University

2020: Title: Bioinformatics analysis of cyclic miniproteins: cyclotides and knottins in Fabaceae

Candidate: Sunanda Gautam, Amity University

2020: Title: Genome-wide identification of *Asparaginyl Endopeptidases* (*Vacuolar Processing Enzymes*) genes in *Oryza sativa, Sorghum bicolor and Zea mays*

Candidate: Viola Raina, Amity University

Contributed as Resource person

- Resource person in the workshop for development of audio/video resource in Biology and Chemistry at Higher Secondary stage, organized by Department of Education in Science and Mathematics, NIE, NCERT, on 21.09.2021.
- Resource person in the workshop for development of Learning outcome based resources in Biology Higher Secondary stage, organized by Department of Education in Science and Mathematics, NIE, NCERT, on 15.09.2021, 04.10.2021 and 06.10.2021.
- Resource person in the workshop for the project ' Development of Learning Outcomes based resources under Road Map in Biology, Biochemistry at Higher Secondary Stage organized by Department of Education in Science and Mathematics, NIE, NCERT, from 17.01.2022 to 19.01.2022.
- Resource person in the workshop to review infographics developed based on Learning Outcomes in Biology at the Higher Secondary stage to be held in DESM, NCERT from February 21-25, 2022.
- Resource person in the workshop to review infographics developed based on Learning Outcomes in Biology at the Higher Secondary stage to be held in DESM, NCERT from March 15-17, 2022.
- Resource person in the workshop for development of audio video resource on experiments of Biology at Higher Secondary stage, organized by Department of Education in Science and Mathematics NCERT, from March 22, 2021 to March 26, 2021.
- Delivered a talk in three days National seminar by Commission of Scientific and Technical Terminology (CSTT), MHRD, Govt. of India entitled "Use of scientific & technical terminologies in sustainable environment development, its challenges, computational analysis and opportunities" held on 14-16 March, 2019 at Gargi College, University of Delhi
- Delivered an invited lecture in the Departmental Colloquium organized by Department of Botany, Miranda House held on August 9, 2018.
- Delivered an invited lecture entitled 'Basics of Microsoft Excel' in the Workshop on "Basic Skills in Computer Applications" held on 7th and 8th June, 2018 at Department of Botany, Gargi College, University of Delhi.
- Resource person in the workshop titled 'Mapping of QR Codes in Textbook of Biology Class XII with e-Content' organized by department of Education in Science and mathematics, NIE, NCERT, Delhi.

Events organized

- Convener cum resource person of an Inter-college add on course entitled "Advances in Plant Sciences" organized by Department of Botany, Gargi College, University of Delhi for the session 2022-2023.

- Member of organizing committee, Alumni Interaction 2023 held on February 02, 2023 organized by Department of Botany, Gargi College, University of Delhi.
- Organized a webinar on May 18, 2022; Topic: Diversity, Perception and Awareness in Plants on the occasion of fascination of Plants day by Dr. Sudhir K Sopory, organized by Department of Botany Gargi College, University of Delhi association with FoPD society.
- Convener of the Alumni lecture series organized by Department of Botany, Gargi College, University of Delhi.
- Organized a webinar on 28th January 2022; Topic: Modulation of Innate Immunity Through Host-sensing Pathogen by Dr. Ayub Qadri, National Institute of Immunology, under the aegis of Science Setu program (an initiative by Department of Biotechnology, Ministry of Science and Technology).
- Convener cum resource person of the E-student Enrichment Program on "Mathematics for Biologists" from 09.07.2021 to 19.07.2021, organized by Department of Botany Gargi College, University of Delhi.
- Member of organizing committee for the national webinar on "User Education Program on How to Navigate Online Services" held on 13.08.2021 organized by Library Committee, Gargi College, University of Delhi.
- Member of organizing committee for Botany Alumni meet 2021 held on 14.08.2021 organized by Department of Botany Gargi College, University of Delhi.
- Member of organizing committee for the workshop on "Academic E-resources" held from 09.02.2021 to 15.02.2021, organized by Library Committee, Gargi College, University of Delhi.
- Convener cum resource person of the E-student Enrichment Program on "Multidisciplinary Facets of Science" from 08.07.2020 to 29.07.2020, organized by Department of Botany Gargi College, University of Delhi.
- Organized online National Webinar on "Virtual Classes Tools: Google Classroom, Google Meet and YouTube on 11.05.2020.
- Organized Workshop on "Basic Skills in Computer Applications" held on June 7th and 8th, 2018 at Department of Botany, Gargi College, University of Delhi.
- Co-Convenor of the Lecture cum Demonstration Workshop on 'Adulteration in Food and Preparation of Herbal Cosmetics' held on January 09, 2019 at Gargi college, University of Delhi.
- Co-Convener and Resource person in the Lecture cum Demonstration Intercollege Workshop for lab staff on 'Laboratory Methods and Techniques' on 10.12.2019, held at Department of Botany, Gargi College, University of Delhi.
- Organized Skill Enhancement Workshop on "Why to Grow and How to Multiply Plants"" held on September 26, 2017 at Department of Botany, Gargi College, University of Delhi.
- Organized Workshop on "Analytical Techniques in Biochemistry" held on August 30 and 31, 2017 at Department of Botany, Gargi College, University of Delhi.
- Organized Golden Jubilee Lecture series (2016-2017), Gargi College, Department of Botany, University of Delhi

- Every year Organize visit to Yakult Factory, for B.Sc.(Hons) Botany III year students.

Poster presentation

1. Debnath, I., **Mishra, R.,** & Mohanty, A. CRISPR technology for crop improvement An International Conference on Genetics and Genomics Technologies for Crop Improvement: GGTCI-2021 August 1st to 3rd, 2021 Organized by Department of Botany, Hansraj College, University of Delhi in association with International Wheat and Maize Improvement Centre (CIMMYT), Mexico.
2. Jain, R., Mohanty, A., & **Mishra, R**., *In silico* analysis of alpha/beta hydrolase gene family of *Oryza sativa.* An International Conference on Genetics and Genomics Technologies for Crop Improvement: GGTCI-2021 August 1st to 3rd, 2021 Organized by Department of Botany, Hansraj College, University of Delhi in association with International Wheat and Maize Improvement Centre (CIMMYT), Mexico.
3. Agrawal, H., Agarwal, P., **Mishra, R.,** & Renu Soni, R., Polyhydroxyalkanoates: A substitute for the conventional petro-based plastics. An International Conference on Genetics and Genomics Technologies for Crop Improvement: GGTCI-2021 August 1st to 3rd, 2021 Organized by Department of Botany, Hansraj College, University of Delhi in association with International Wheat and Maize Improvement Centre (CIMMYT), Mexico.
4. Saini A, Saini A, Sachdev L, Kumari N, Goel P, Gupta P, Jain R, Shukla Y, Geeta, **Mishra R**, Soni R "Identification of Common Food Adulterants In Selected Food Items Collected From Local Grocery Stores And Supermarkets" at International Conference On "Contemporary Issues in Integrating Health and Nutrition with the Emerging Areas of Food Technology, Agriculture, Environment and Allied Sciences" held at Shyama Prasad Mukherji College for Women, University of Delhi, New Delhi, on 06th April, 2019.
5. Bharadwaj B, Sahu K, Sharma N, Sharma S, Tammana, Geeta, **Mishra R**, Soni R "To Compare the Morphological, Anatomical, Physiological and Biochemical Characteristics of Medicinal Plants (*Ricinus communis* and *Ficus racemosa)* from Different Habitats" at National seminar on "Recent Trends of Research in Medicinal Plants and Applied Sciences", held at Ramjas College, University of Delhi, on March 27, 2019
6. Presented poster entitled 'Morphological and Anatomical Parameters of Plants as Indicator of Air Pollution in Delhi in National Conference on "Challenges and Strategies to Improve Crop Productivity in Changing Environment" held on January 12, 2018 at Zakir Husain Delhi College, University of Delhi.

Paper presentation

Targeting Covid-19 with medicinal plant based compounds. National conference on Realms of plant diversity: explorations with novel perspective. Organized by Maitreyi College, University of Delhi College, University of Delhi on August 24, 2021.

Administrative Responsibilities

Teacher in charge: Department of Botany (2023-till date)

Governing body teacher representative (2023-till date)

Convener-NIRF committee (2022-till date)

Co-convener- Library committee (2021-2023)

NAAC steering committee: Coordinator Criterion III (2020-2022)

Departmental coordinator- DBT Star College Scheme (2018-2019)

Member

Library committee (2015-2023)

Pathfinder committee (2015-till date)

Botany admission committee

Academic and Cultural Exchange (Arts, Science and Commerce) Committee (2015-2016)

Health and Hygiene committee (2015-2016)