

Mayur Mukut Murlidhar Sharma

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EDUCATION

Kangwon National University

Chuncheon, South Korea

MS Agriculture

August, 2020

- Related subjects- Plant Genetics, Plant Genomics, Plant tissue culture, Crop Science, and Crop cultivation
- Awarded with the BEST-KNU Scholarship for pursuing master's degree

CCS Haryana Agricultural University

Hisar, India

B.Sc. (Hons.) Agriculture

May, 2018

- Related subjects: Genetics, Biotechnology, Biochemistry, Plant Breeding, Entomology, Agronomy, Pathology, Nematology, Horticulture, Vegetable Science, Biochemistry, and Microbiology.
- Awarded with the HAU Merit scholarship for being one of the top candidates who excelled in the university entrance examination.

RESEARCH EXPERIENCE

MBU, CAS, Centre Algatech

Trebon, Czech Republic

Researcher (Laboratory of Photosynthesis)

Dec 2024-Present

- I've joined the Radek Kana's group in the OPJAK-PHOTOMACHINES project and have started working on the bioenergetics of the cyanobacterium using model organism *Synechocystis*

University of Illinois at Chicago

Chicago, USA

Research collaborator (Cancer biology Lab)

June 2023-May 2024

- During my tenure as a research collaborator in a Cancer Biology Lab, I actively contributed to two significant research projects.
- In my main project, I was involved in research endeavor focused on Hepatocellular carcinoma (HCC). Our work involved inducing and studying its development. My role involved maintenance and treatment of mice model and use its tissue for studying HCC development.
- In another project I worked on development of Liver fibrosis model. My work involved feeding different type of high fat diets and then study different liver fibrosis markers on the liver tissues.

Kangwon National University

Chuncheon, South Korea

Researcher (Plant Molecular Biology Lab)

Sep 2020-Jan 2023

- After my masters, I worked as a Researcher in the same laboratory for 2.5 years, where I contributed to multiple projects involving molecular biology and tissue culture.
- In major project I studied the pathways and genes involved in sugar content of waxy corn. This involved working with different corn lines with variable sugar content influencing the related gene expression.
- Additionally I worked on studying the Single nucleotide polymorphism (SNP) variations generated phenotypic difference in maize drought tolerance and transformed the SNP variation alleles in waxy corn line.

Kangwon National University

Chuncheon, South Korea

Master's Researcher (Plant Molecular Biology Lab)

Sep 2018-Aug 2020

- During my Master's program I worked on the role of transcription factors behind cold tolerance in *Brassica napus* for my thesis project.
- In another project I exclusively studied GATA transcription factors, a category untargeted earlier regarding cold tolerance.

PUBLICATIONS

1. Sharma MM, Ramekar RV, Park NI, Choi IY, Choi SK, Park KC (2021). Characterization of transcription factor genes related to cold tolerance in *Brassica napus*. *Genomics & Informatics*. Dec;19(4). <https://doi.org/10.5808/gi.21055>
2. Sharma M.M., Sharma P., Kapoor D., Beniwal P., Mehta S. (2021). Phytomicrobiome community: an agrarian perspective towards resilient agriculture. In: Husen A. (ed) *Plant Performance Under Environmental Stress*. Springer, Cham. https://doi.org/10.1007/978-3-030-78521-5_20
3. Sharma M.M., Kapoor D., Rohilla R., Sharma P. (2023). Nanomaterials and Their Toxicity to Beneficial Soil Microbiota and Fungi Associated Plants Rhizosphere. In: Husen A. (ed) *Nanomaterials and Nanocomposites Exposures to Plants: Response, Interaction, Phytotoxicity and Defense Mechanisms* Springer Nature Singapore. https://doi.org/10.1007/978-981-99-2419-6_18
4. Sharma M.M., Kapoor D., Loyal A., Sharma P. Turmeric Rhizome and Leaves (*Curcuma longa*). In: Husen A. (ed) *Medicinal Spice and Condiment Crops 2024* (pp. 362-374). CRC Press. Taylor and Francis Group LLC USA <https://doi.org/10.1201/9781003387046>
5. Sharma P., Sharma M.M., Patra A., Vashisth M., Mehta S., Singh B., Tiwari M., Pandey V. (2020). The role of key transcription factors for cold tolerance in plants. In: Wani S.H. (ed) *Transcription factors for abiotic stress tolerance in plants*. Academic Press.

<https://doi.org/10.1016/B978-0-12-819334-1.00009-5>

6. Sharma P., Sharma M.M., Malik A., Vashisth M., Singh D., Kumar R., Singh B., Patra A., Mehta S., Pandey V. (2021). Rhizosphere, rhizosphere biology, and rhizospheric engineering. In: Mohamed H.I., El-Beltagi H.E., Abd-Elsalam K.A., (eds.) Plant growth-promoting microbes for sustainable biotic and abiotic stress management . Springer, Cham. https://doi.org/10.1007/978-3-030-66587-6_21
7. Sharma P., Sharma M.M., Kapoor D., Rani K., Singh D., Barkodia M. (2020). Role of microbes for attaining enhanced food crop production. In: Singh J., Vyas A., Wang S., Prasad R., (eds.) Microbial Biotechnology: Basic Research and Applications. Springer, Singapore. https://doi.org/10.1007/978-981-15-2817-0_3.
8. Goyat N., Singh S., Sharma MM, Sharma P. Biostimulants in sustainable management of phytoparasitic nematodes in plants. In Husen A. (ed) Biostimulants in Plant Protection and Performance 2024 Jan 1 (pp. 319-348). Elsevier. <https://doi.org/10.1016/B978-0-443-15884-1.00006-3>
9. Sharma P., Pandey V., Sharma M.M., Patra A., Singh B., Mehta S., Husen A., (2021). A Review on Biosensors and Nanosensors Application in Agroecosystems. Nanoscale Research Letters. <https://doi.org/10.1186/s11671-021-03593-0>.
10. Sharma P., Meyyazhagan A., Easwaran M., Sharma M.M., Mehta S., Pandey V., Liu W.C., Kamyab H., Balasubramanian B., Baskaran R., Klemeš J.J., (2022). Hydrogen Sulfide: A new warrior in assisting seed germination during adverse environmental conditions. Plant Growth Regulation. <https://doi.org/10.1007/s10725-022-00887-w>
11. Choi, J.K., Park, J.Y., Ryu, S.H., Namgung, M., Kim, M.J., Han, J.H., Sharma, M.M.M., Choi, S.K., Choi, I.K., Ramekar, R.V., Park, K.C., Genetic characterization of popcorn hybrids based on SNP genotyping and development of rapid ARMS based primers. <https://doi.org/10.1007/s12892-020-00079-w>

SKILLS

- Wet Lab Skills-
Cell culture , Genomic DNA extraction, Total RNA isolation, Protein extraction and estimation, cDNA synthesis, Allele-specific PCR, Tetra-ARMS PCR, Western blot , Agarose gel electrophoresis, qRT-PCR, MTT assay, Transfection , Vector designing, Molecular cloning, Plasmid transformation, Bacterial cell culture, Plasmid isolation, Tissue processing, Paraffin embedding, Microtomy, Immunohistochemistry, Immunofluorescence, HPLC, Embryo isolation and Plant tissue culture.
- Microscopy
Light microscopy, Bright-field microscopy
- Imaging Skills-
Chemiluminescent Imaging, Fluorescent Imaging, IVIS.
- Bioinformatics and Computational Skills-
Phylogeny construction, Primer designing, BLAST program, MS-Office (Excel, PowerPoint, Word), Bio Render, Adobe Photoshop, and Adobe Illustrator.
- Languages-
 - English- Proficient (TOEFL iBT Score: 104/120)
 - Hindi- Native Speaker
 - Korean- Basic proficiency

ACHIEVEMENTS

- BEST-KNU Scholarship (financial assistance for pursuing master degree)
- HAU Merit Scholarship (for excellence in bachelor's entrance exam)

EXTRA-CURRICULAR

- Won various inter-college competitions in different sports (Athletics, Badminton, Cricket and Football) 2014-2018
- Participated in Annual Training Camps under NCC during 2014-2016
- Participated in North-Zone inter university Cricket tournament 2017-18
- Participated in North-Zone inter university Badminton tournament during 2016-17
- Participated in 16th All India inter-agricultural youth festival 2015-16
- Participated in 16th All India inter-agricultural sports meet (Badminton) 2015-16
- Participated in All India inter-university tournament in Athletics during 2014-15

REFERENCES

Referee-1

Dr. Rahul Ramekar
Training and development Manager
Premas Life Sciences Pvt. Ltd.

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Referee-2

Dr. Akanksha Tyagi
Postdoctoral Research Assistant
Purdue Institute of inflammation, immunology and infectious diseases
Purdue University, IN (USA)
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