BIODATA

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Academic Qualifications:

Degree	University /College	Year of passing	Subject
Ph. D.	Kurukshetra University, Kurukshetra, Haryana	2007	Botany (Plant Biotechnology)
M. Sc.	Kurukshetra University, Kurukshetra, Haryana	2001	Botany (Plant Biotechnology)
B. Sc.	Kurukshetra University, Kurukshetra, Haryana	1999	Botany, Zoology, Chemistry

Total Research/Teaching Experience : 17+ Years
Research Scholars Supervised (Guided) :

Ph.D. Students: 04 (Awarded)
M.Sc. Dissertations: 70+ (Awarded)

List of Publications

1 . Lath, A., Boora, S., Sharma, J. K., Chand, K., Singh, S., Santal, A. R., & **Singh, N. P.** (2024). Exploring the Therapeutic potential of Purified *Alternanthera pungens* Plant Extract. Research Journal of Pharmacy and Technology, 17(8), 3869-3873.

2 . Chand, K., Yadav, A., **Singh, N. P**. & Santal, A. R. (2024) Analysis of the drug-resistance profiles and prevalence of *Pseudomonas aeruginosa* obtained from various clinical samples. *Indian Journal of Public Health*, 68(1):149-150. **IF 0 . 9**

3. Chand, K., Lath, A., Yadav, A., Sharma, M., **Singh, N. P.**, Kumar, S., Yadav, R., Singh, S., & Santal, A. R. (2024). Phenotypic and genotypic detection of Beta-lactamase producing *Pseudomonas aeruginosa* isolated from Haryana, India. *Journal of Applied Biology & Biotechnology* 12(4):81-88.

4. Chand, K., Yadav, A., Sharma, M., Santal, A. R., **Singh, N. P.**, Kumar, S., ... & Yadav, R. (2023). Prevalence and antimicrobial susceptibility profile of *Pseudomonas* species isolated from blood cultures from a tertiary care hospital of Haryana, India. Pravara Medical Review, 15(3):28-38.

5. Yadav, R., Singh, G., Santal, A. R., & **Singh, N. P.** (2023). Omics approaches in effective selection and generation of potential plants for phytoremediation of heavy metal from contaminated resources. *Journal of Environmental Management*, 336, 117730. **IF 8.0**

6. Sharma, J. K., Kumar, N., **Singh, N. P.,** & Santal, A. R. (2023). Phytoremediation technologies and its mechanism for removal of heavy metal from contaminated soil: An approach for a sustainable environment. *Frontiers in Plant Science*, 14, 78. **IF 4.1**

7. Satyapal, G.K., Kumar, R., Kumar, S., Singh, R.S., Ranjan, R.K., Kumar, K., Jha, A.K., **Singh, N.P**., Haque, R., Shanker, A. and Kumar, N. (2023). Cloning and functional characterization of arsenite oxidase (aoxB) gene associated with arsenic transformation in *Pseudomonas* sp. strain AK9. *Gene*, 850, 146926. **IF 2.6**

8. Sihmar, M., Sharma, J. K., Santal, A. R., & **Singh, N. P.** (2023). Assessment of salinity stress effect on six contrasting wheat genotypes during grain filling in simulated field growing conditions. *Cereal Research Communications*, 1-13. **IF 1.6**

9. Santal, A.R., Bisla, I., Rani, R., **Singh, N.P.** (2022). Probiotic potential and antimicrobial activity of bacteria isolated from fermented foods. *Research Journal of Biotechnology 17* (3), 13-19.

10. Lath, A., Santal, A. R., Kaur, N., Kumari, P., & **Singh, N. P.** (2022). Anti-cancer peptides: their current trends in the development of peptide-based therapy and anti-tumor drugs. *Biotechnology and Genetic Engineering Reviews*, 1-40. **IF 6.5**

11. Santal, A. R., Rani, R., Kumar, A., Sharma, J. K., & **Singh, N. P.** (2022). Biodegradation and detoxification of textile dyes using a novel bacterium *Bacillus* sp. AS2 for sustainable environmental cleanup. *Biocatalysis and Biotransformation*, 1-15. **IF 1.4**

12. Yadav, R., Santal, A. R., & **Singh, N. P.** (2022). Root protein interactomics of salt stress-induced proteins of wheat genotypes KH-65 (salt-tolerant) and PBW-373 (salt-susceptible). *Journal of Applied Biotechnology Reports*, *9*(2), 632-639.

13. Sharma, J. K., Sihmar, M., Santal, A. R., Prager, L., Carbonero, F., & **Singh, N. P.** (2021). Barley melanoidins: key dietary compounds with potential health benefits. *Frontiers in Nutrition*, *8*, 708194. https://doi.org/10.3389/fnut.2021.708194 **IF: 4.0**

14. Rani, R., Rathee, J., Kumari, P., **Singh, N.P.**, & Santal, A.R. (2021). Biodegradation and detoxification of low-density polyethylene by an indigenous strain *Bacillus licheniformis* SARR1. *Journal of Applied Biology & Biotechnology*, *10*(1), 9–21.

15. Rani, R., Jitender, **Singh, N. P.**, & Santal, A. R. (2021). Isolation, characterization and optimization of bacterial isolate SARR1 for biodegradation of pretreated low density polyethylene. *Journal of Applied and Natural Science*, *13*(2), 561–570.

16. Sharma, J. K., Sihmar, M., Santal, A. R., & **Singh, N. P.** (2021). Seed storage protein variation in Indian barley using 2-D diagonal gel electrophoresis approach. *Research Square*. https://doi.org/10.21203/rs.3.rs-816544/v1

17. Sharma, J. K., Sihmar, M., Santal, A. R., & **Singh, N. P.** (2021). Physiological and biochemical responses of seedlings of six contrasting barley (*Hordeum vulgare* L.) cultivars grown under salt-stressed conditions. *Journal of Applied and Natural Science*, *13*(3), 1020–1031.

18. Yadav, R., Santal, A.R., & **Singh, N.P.** (2021). Proteomic analysis of some salt responsive biological processes in wheat (*Triticum aestivum* L.) under salt stress. *Annals of Biology*, *37*(2), 140–147.

19. Yadav, R., Santal, A. R., & **Singh, N. P.** (2021). Comparative root proteome analysis of two contrasting wheat genotypes Kharchia-65 (highly salt-tolerant) and PBW-373 (salt-sensitive) for salinity tolerance using LC–MS/MS approach. *Vegetos*. https://doi.org/10.1007/s42535-021-00292-0.
20. Sihmar, M., Sharma, J. K., Santal, A. R., & **Singh, N. P.** (2020). Seed storage protein phylogenetics of Indian wheat genotypes belong to *Triticum aestivum*, *T. dicoccum* and *T. durum*. *Indian Journal of Biotechnology*, *19*(1), 17–27. **IF: 0.324**
21. Yadav, R., **Singh, N. P.**, & Santal, A. R. (2020). Evaluation of physiological and biochemical parameters of some wheat (*Triticum aestivum*) genotypes under salinity stress. *Indian Journal of Agricultural Research*, 55:137-143
22. Sihmar, M., Sharma, J., Santal, A., & **Singh, N.P.** (2020). Electrophoretic evaluation of major seed storage protein fraction, gliadins and glutenins of eighty-six indian wheat genotypes. *Agricultural Science Digest*, *40*(2), 115–121.
23. Sharma, J. K., Sihmar, M., Santal, A. R., & **Singh, N. P.** (2019). Impact assessment of major abiotic stresses on the proteome profiling of some important crop plants: a current update. *Biotechnology and Genetic Engineering Reviews*, *35*(2), 126–160. https://doi.org/10.1080/02648725.2019.1657682 **IF: 6.5**
24. Santal, A. R., **Singh, N. P.**, & Singha, T. K. (2019). Characterization of extracellular polymeric substance producing isolates from wastewaters and their antibacterial prospective. *Journal of Applied Biology and Biotechnology*, *7*(6), 56–62. https://doi.org/10.7324/JABB.2019.70609
25. Santal, A. R., **Singh, N. P.**, & Saharan, B. S. (2016). A novel application of *Paracoccus pantotrophus* for the decolorization of melanoidins from distillery effluent under static conditions. *Journal of Environmental Management*, *169*, 78–83. https://doi.org/10.1016/j.jenvman.2015.12.016 **IF: 8.0**
26. **Singh, N. P.**, & Matta, N. K. (2016). Phylogenetic relationship and germplasm evaluation of different taxa of the genus *Cucurbita* using seed storage protein profiling. *Plant Biosystems*, *150*(6), 1200–1207. **IF: 1.6**
27. Jha, B., Singh, N. P., & Mishra, A. (2012). Proteome profiling of seed storage proteins reveals the nutritional potential of *Salicornia brachiata* Roxb., an extreme halophyte. *Journal of Agricultural and Food Chemistry*, *60*(17), 4320–4326. **IF: 5.7**
28. Santal, A. R., **Singh, N. P.**, & Saharan, B. S. (2011). Biodegradation and detoxification of melanoidin from distillery effluent using an aerobic bacterial strain SAG 5 of *Alcaligenes faecalis*. *Journal of Hazardous Materials*, *193*, 319–324. https://doi.org/10.1016/j.jhazmat.2011.07.068 **IF: 12.2**
29. **Singh, N. P.**, & Matta, N. K. (2010). Levels of seed proteins in *Citrullus* and *Praecitrullus* accessions. *Plant Systematics and Evolution*, *290*(1), 47–56. https://doi.org/10.1007/s00606-010-0347-5 **IF: 1.5**
30. **Singh, N. P.**, & Matta, N. K. (2008). Variation studies on seed storage proteins and phylogenetics of the genus *Cucumis*. *Plant Systematics and Evolution*, *275*(3–4), 209–218. https://doi.org/10.1007/s00606-008-0063-6 **IF: 1.5**

Book chapters published

1. Sinha, L., Sharma, J.K., Lath, A., Gulia, J., Santal, A.R. and **Singh, N.P.** (2025). Novel Tools in Phytoremediation Technology: Proteomics and in silico tools. In: Green

Biotechnology for Herbal and Medicinal Plant Metabolites. CRC Press

2. Gulia, J., **Singh, N. P.** and Santal, A.R. (2025) Role of microfiltration in the treatment of wastewater. In Microbial Approach of Biofiltration in Industrial M,Wastewater Treatment for the Sustainability of Environment. ISBN 978-3-031-48149-9
3. Kumar, T., Gulia, J., Rani, Y., Lath, A., Kumari, P., **Singh, N. P.**, & Santal, A. R. (2025). Bioleaching of Laterites for the Extraction of Valuable Metal Ions: A Microbial Approach for Sustainable Recovery. In Advanced Bioseparation of Industrial Wastes (pp. 378-396). CRC Press.
4. Gulia, J., Lath, A., Saharan, B. S., **Singh, N. P.**, & Santal, A. R. (2024). Removal of Micropollutants from Industrial Wastewater: Conventional and Advanced Methods. In Bioremediation of Emerging Contaminants in Water. Volume 1 (pp. 33-47). American Chemical Society.
5. Kumar, V., Sharma, J. K., Gulia, J., **Singh, N. P.** and Santal, A.R. (2024) Metagenomic and proteomic approach for bioremediation of environmental pollutants. In applied technologies for clean up of environmental contaminants" published by Elsevier S&T Books, Netherlands. ISBN: 9780443136153
6. Gulia, J., Rani, Y., Lath, A., **Singh, N. P.** and Santal, A.R. (2024) Advanced Perspectives in Industrial Wastewater Treatment: A novel approach for a sustainable environment. In Trends in Biological Processes in Industrial Wastewater Treatment-IOP.
7. Gulia, J., Lath, A., Rani, Y., Chand, K., Rathee, J., Kumar, S., Sharma, J. K., **Singh, N. P.** and Santal, A.R. (2024). Prospects of Multi-Omics Approaches Deciphering for Characterization of Environmental Microorganisms. In Emerging Innovative Trend in App of Bio Process for IWT.
8. Sharma, J.K., Kumar, V., **Singh, N. P.** and Santal, A.R. (2024) Subsurface bioremediation of pollutants Role of soil and microbial subsurface. In Environmental Approach to Remediate Refractory Pollutants from Industrial Wastewater Treatment Plant. Elsevier. ISBN: 9780443138843
9. Rani, Y., Gulia, J., Lath, A., Kumar, S., **Singh, N. P.** and Santal, A.R. (2024) Aerobic and anaerobic treatment of textile wastewater using membrane technology. In Aerobic and Anaerobic Microbial Treatment of Industrial Wastewater. ISBN: 978-1-032-46358-2. CRC Press Taylor & Francis Group.
10. Rani, R., Rathee, J., **Singh, N. P**., & Santal, A. R. (2023). Isolation, Physiological Characteristics, Ecological Importance, and Chemotaxonomy of Nitrite-Oxidizing Bacteria with Their Associated Genes in Nitrogen Fixation. In Anammox Technology in Industrial Wastewater Treatment (pp. 101-117). Singapore: Springer Nature Singapore.
11. Rani, R., Rathee, J., **Singh, N. P**., & Santal, A. R. (2023). Constructed Wetlands for Remediating Organic Hydrocarbons: An Approach for the Sustainable Environmental Cleanup. In Recent Trends in Constructed Wetlands for Industrial Wastewater Treatment (pp. 71-90). Singapore: Springer Nature Singapore.
12. Sharma, J. K., Santal, A. R., & **Singh, N. P**. (2022). Improvement of Seed Protein Quality in Some Important Food Crops Using Genetic Engineering Approaches. In Biotechnology and Crop Improvement (pp. 107-119). CRC Press.
13. **Singh, N. P.**, Sharma, J. K., & Santal, A. R. (2016). Biotechnological approaches to remediate soil and water using plant-microbe interactions. *Phytoremediation: Management of Environmental Contaminants, Volume 4*, 131–152.

14. **Singh, N. P.**, & Santal, A. R. (2015). Phytoremediation of heavy metals: The use of green approaches to clean the environment. *Phytoremediation: Management of Environmental Contaminants, Volume 2*, 115–129. https://doi.org/10.1007/978-3- 319-10969-5_10
15. Santal, A. R., & **Singh, N. P.** (2013). Biodegradation of melanoidin from distillery effluent: role of microbes and their potential enzymes. In R. Chamy & F. Rosenkranz (Eds.), *Biodegradation of Hazardous and Special Products*. IntechOpen. https://doi.org/10.5772/56252

Sequences Submitted in the NCBI GeneBank

MT299809.1, OK094930.1, OK087333.1, OK037614.1, MZ672108.1, MZ672042.1, MT974150.1, GQ422441.1, GQ422442.1, GQ422443.1, GQ422444.1

Awards/fellowships.

i. 2010: Awarded with Dr. D. S. Kothari Postdoctoral Fellowship by UGC, New Delhi.
ii. 2002: Awarded with University Research Scholarship for Ph.D. degree from Kurukshetra University, Kurukshetra, Haryana.

Major Research Projects Completed

Sr. No.	Title of the project	Funding agency	Duration
1.	Impact Assessment of High Temperature Stress on Seed Protein Quality of Wheat.	UGC, New Delhi	2012-15
2.	Proteome mining of wheat for drought and salt stress induced proteins from Indian wheat lines.	DST-SERB, New Delhi	2014-17
3.	Proteome mining of barley: search for the salt and drought stress tolerant proteins.	DST-SERB, New Delhi	2016-18