Prof. Kahkashan Perveen, Ph.D.

Department of Botany and Microbiology
College of Science, King Saud University, Riyadh-11495, Saudi Arabia
Email: kperveen@ksu.edu.sa

SPECIALIZATION: Plant Pathology

RESEARCH INTERESTS: Identifying and managing plant problems caused by biotic and abiotic stresses using traditional methods, molecular techniques, and bioinformatics. Exploring eco-friendly approaches, such as nanoparticles, microorganisms, and essential oils, to combat human and plant pathogens. Plant-microbe interactions and environmental microbiology to enhance plant health and resilience.

EMPLOYMENT HISTORY

OCTOBER 2021– TO DATE
PROFESSOR, KING SAUD UNIVERSITY, RIYADH, SAUDI ARABIA
SEPTEMBER 2015 – OCTOBER 2021
ASSOCIATE PROFESSOR, KING SAUD UNIVERSITY, RIYADH, SAUDI ARABIA
JUNE 2008 – SEPTEMBER 2015
ASSISTANT PROFESSOR, KING SAUD UNIVERSITY, RIYADH, SAUDI ARABIA

SUMMARY OF RESEARCH WORK

• Number of research papers published	145
• Number of book and book chapter	02
• Number of paper presented at seminar/conference	19
• Master thesis supervised	04
• Ph.D. thesis supervised	06

TITLE OF THE THESIS OF THE GRADUATE STUDENTS UNDER MY SUPERVISION

PH.D. THESIS

- Molecular characterization of *Trichoderma* spp. that promote plant growth isolated from some regions of Saudi Arabia
- In vitro and in vivo management of *Fusarium* spp. causing the root disease of tomato *Solanum lycopersicum* with some medicinal plants
- Characterization and purification of xylanase enzyme produced from fungi isolated from the soil of Jeddah city in Saudi Arabia
- Biochemical and Molecular Response to *Salvia officinalis* treated by extracts of Nanoparticles under Salt stress
- Taxonomie and Phylogentic analysis of species of *Barleria* L in Saudi Arabia

- Evaluation of the anticandidal activity and transcriptomic impact of silver, titanium dioxide nanoparticles and their synergy with fluconazole on *Candida albicans* and *Candida auris*

MSC THESIS

- Effect of Green Algae Extract on Local Wheat Genotypes (*Triticum aestivum* L.) under salinity stress
- Molecular phylogenetic analysis and evaluation of bioactive natural products of endangered plant *Calligonum tetrapterum*
- Antibacterial activity and morphological changes in the human pathogenic bacteria caused by silver nanoparticles biosynthesized from some plants
- In vitro role of silver nanoparticles in elimination of contamination and callus induction in *Rumex nervosus*

COMMITTEES

SEPTEMBER 2018 ONWARDS

COORDINATOR, ACADEMIC AND ACCREDITATION COMMITTEE OF THE GRADUATE BOTANY PROGRAM, DEPARTMENT OF BOTANY & MICROBIOLOGY, KING SAUD UNIVERSITY

Role: Supervision of the preparation of the annual report, self-study report, and course file documentation at the end of each semester as well as coordination with other departmental committees to gather data.

SEPTEMBER 2018 ONWARDS

MEMBER, ACADEMIC AND ACCREDITATION COMMITTEE OF THE UNDERGRADUATE BOTANY PROGRAM, DEPARTMENT OF BOTANY & MICROBIOLOGY, KING SAUD UNIVERSITY

Role: Documentation and report preparation.

SEPTEMBER 2018 -2022

COORDINATOR, ACADEMIC AND ACCREDITATION COMMITTEE OF THE UNDERGRADUATE BOTANY PROGRAM, DEPARTMENT OF BOTANY & MICROBIOLOGY, KING SAUD UNIVERSITY

Role: Supervision of the preparation of the annual report, self-study report, and course file documentation at the end of each semester as well as coordination with other departmental committees to gather data.

SEPTEMBER 2016 - 2018

MEMBER, ACADEMIC AND ACCREDITATION COMMITTEE OF THE UNDERGRADUATE BOTANY PROGRAM, DEPARTMENT OF BOTANY & MICROBIOLOGY, KING SAUD UNIVERSITY

Role: Documentation and report preparation.

SEPTEMBER 2016 - 2017

MEMBER, SELF STUDY REPORT PREPARATION COMMITTEE OF THE UNDERGRADUATE BOTANY PROGRAM, DEPARTMENT OF BOTANY & MICROBIOLOGY, KING SAUD UNIVERSITY

Role: Documentation and report preparation.

LIST OF PUBLICATION: Google scholar https://shorturl.at/bjzJ9

SELECTED RECENTLY PUBLISHED RESEARCH ARTICLES

- **Perveen, K**, Khan, F., and Khan, S. (2025). Evaluating the antibacterial properties of essential oils from Arugula, Thyme, Cinnamon, Mint, and Myrrh against pathogenic bacteria. *Journal of Advanced Microbiology*. 2025 (5):1-7.
- Podder, S., Shaha, R.K., Haque, A., **Perveen, K.,** Alsayed, M.F., Murali, M., Shilpa, N., Yeasmin, T. and Sayyed, R., 2025. Entrapment of Cellulase of Snail Gut Bacillus amyloliquifacience for converting Sugarcane Bagasse to Bioethanol Using Saccharomyces cerevisiae. Waste and Biomass Valorization, pp.1-12.
- Jabborova, D., Jabbarov, Z., Abdrakhmanov, T., Fayzullaev, O., Saharan, B.S., **Perveen, K**., Zaka, S.M., Mastinu, A. and Sayyed, R., (2025)**.** Assessing the synergistic effects of biochar, hydrogel and biofertilizer on growth and physiological traits of wheat in saline environments. *Functional Plant Biology*, 52(4).
- Bright, J.P., Maheshwari, H.S., Thangappan, S., **Perveen, K.,** Bukhari, N.A., Mitra, D., Sayyed, R. and Mastinu, A., (2025). Biofilmed-PGPR: Next-Generation Bioinoculant for Plant Growth Promotion in Rice under Changing Climate. ***Rice Science, 32*(1), pp.94-106.**
- Sharma, S., Kumari, P., Shandilya, M., Thakur, S., **Perveen, K.,** Sheikh, I., Ahmed, Z., Sayyed, R. and Mastinu, A., (2025). The Combination of α-Fe2O3 NP and Trichoderma sp. Improves Antifungal Activity Against Fusarium Wilt. *Journal of Basic Microbiology*, p.e2400613.
- Vijayakumar, P., Appusami, S., Anbazhagan, S.A., Rajendran, R., Shanmugam, K., **Perveen, K.,** Bukhari, N.A. and Sayyed, R., (2025). Harnessing *Trichoderma asperellum*: Tri-Trophic Interactions for Enhanced Black Gram Growth and Root Rot Resilience. *Journal of Basic Microbiology*, *65*(3), p.e2400569.
- Alwadai, A.S., Al Wahibi, M.S., Alsayed, M.F. Alshaikh, N.A., **Perveen, K.,** & Elsayim, R.(2024). Molecular characterization of plant growth-promoting *Trichoderma* from Saudi Arabia. ***Scientific Reports*** 14, 23236.
- **Perveen, K.,** Bukhari, N.A., Alshaikh, N.A., Kondaveeti, S.B., Alsulami, J.A., Debnath, S. and Kumarasamy, V., (2024). A novel front in sustainable microbial management: computational analysis of curcumin and mangiferin's synergistic action against *Bacillus anthracis*. ***Frontiers in Microbiology***, 15, p.1304234.
- **Perveen, K.,**, Debnath, S., Alshaikh, N. A., Khan, F., Suyal, D. C., Alsulaimi, J. A., & Parikesit, A. A. (2024). Exploring the inhibitory potential of Lupenone against *Fusarium circinatum*: An empirical in silico study utilizing molecular docking and dynamics simulations for novel antifungal agents in canker disease control. ***Physiological and Molecular Plant Pathology***, 102180.
- Dave,A., Ingle, S., **Perveen, K.,** Najat A. Bukhari, Riyaz Sayyed, Andrea Mastinu (2024). Harnessing Plant Growth–Promoting and Wilt-Controlling Biopotential of a Consortium of Actinomycetes and Mycorrhizae in Pigeon Pea. ***Journal of Phytopathology***, 2024; 172:e13399
- Nithyapriya, S., Sundaram, L., Eswaran, S.U.D., **Perveen, K**, Alshaikh, N.A., Sayyed, R.Z. and Mastinu, A., 2024. Purification and Characterization of Desferrioxamine B of Pseudomonas fluorescens and Its Application to Improve Oil Content, Nutrient Uptake, and Plant Growth in Peanuts. Microbial ecology, 87(1), pp.1-13. 17.

- Anbalagan, S.A., Appusamy, S., Kumaresan, P.V., Chellappan, G., Narayanan, S., Rangasamy, A., **Perveen, K.,** Bukhari, N.A. and Sayyed, R., 2024. Deciphering the Biocontrol Potential of *Trichoderma asperellum* (Tv1) Against Fusarium-Nematode Wilt Complex in Tomato. Journal of Basic Microbiology, p.e2400595
- Vinothini, K., Nakkeeran, S., Saranya, N., Jothi, P., Richard, J.I., **Perveen, K.,** Bukhari, N.A., Glick, B.R., Sayyed, R.Z. and Mastinu, A., (2024). Rhizosphere Engineering of Biocontrol Agents Enriches Soil Microbial Diversity and Effectively Controls Root-Knot Nematodes. ***Microbial Ecology***, 87(1), p.120.
- Alfagham, A.T., Debnath, S., **Perveen, K.,** Paul, A., Alsayed, M.F. and Khanam, M.N., 2024. Computational Analysis of Albaflavenone Interaction with SlMAPK1 for Drought Resistance in Tomato. ***Molecular Biotechnology***, pp.1-12.
- Alshaikh, N.A., **Perveen, K.,** Debnath, S., Paul, A., Hock, O.G. and Sayyed, R.Z., (2024). In silico analysis of LPMO inhibition by ethylene precursor ACCA to combat potato late blight. ***Journal of King Saud University-Science***, p.103436.
- Sagar, A., Rai, S., Sharma, S., **Perveen, K.,** Bukhari, N.A., Sayyed, R.Z. and Mastinu, A., (2024). Molecular Characterization Reveals Biodiversity and Biopotential of Rhizobacterial Isolates of *Bacillus* Spp. ***Microbial Ecology***, *87*(1), p.83.
- Tomer, S., Khati, P., Suyal, D.C., **Perveen, K.,** Khan, F. and Barasarathi, J., (2024). Relative multi-beneficial effect of MOs on plant health of chickpea (*Cicer arietinum* L. var. PG-186). ***Frontiers in Microbiology***, *15*, p.1452553.
- Suriani, N.L., Suprapta, D.N., Suarsana, I.N., Resiani, N.M.D., **Perveen, K.,** Bukhari, N.A., Ei Enshasy, H.A., Ho, T.S. and Sayyed, R.Z., (2024). Biopotential of rhizobacteria to improve growth and phytochemical content in Javanese ginseng (*Talinum paniculatum*) herbal plant. ***Frontiers in Sustainable Food Systems***, *8*, p.1384700.
- Eswaran, S.U.D., Sundaram, L., **Perveen, K.,** Bukhari, N.A. and Sayyed, R.Z., (2024). Osmolyte-producing microbial biostimulants regulate the growth of *Arachis hypogaea* L. under drought stress. ***BMC microbiology***, 24(1), p.165. May 15 2024
- **Perveen, K.,** Sandip Debnath, Brijesh Pandey, Sumanta Prasad Chand, Najat A. Bukhari, Pradipta Bhowmick, Najla A. Alshaikh, Shaista Arzoo, and Shanzeh Batool (2023). Deep learning-based multiscale CNN-based U network model for leaf disease diagnosis and segmentation of lesions in tomato. ***Physiological and Molecular Plant Pathology***: 102148.
- Gangola, Saurabh, Samiksha Joshi, Geeta Bhandari, Pankaj Bhatt, Garima Pant, **Perveen, K.,** Najat A. Bukhari, Ranjana Rani, and Anita Sharma (2023). Exploring Microbial Diversity Responses in Agricultural Fields: A Comparative Analysis under Pesticide Stress and Non-Stress Conditions. ***Frontiers in Microbiology*** 14: 1271129.
- Kumar, Naresh, Vikas Sharma, Gurpreet Kaur, Charu Lata, Hemant Dasila, **Perveen, K.,** Faheema Khan, Vijay K. Gupta, and Mehrun Nisha Khanam (2023). Brassinosteroids as promoters of seedling growth and antioxidant activity under heavy metal zinc stress in mung bean (*Vigna radiata* L.). ***Frontiers in Microbiology*** 14: 1259103.
- Kadam, S. K., V. V. Chandanshive, A. D. Watharkar, G. D. Vyavahare, A. A. Kadam, **Perveen, K.,** Y. S. Choo, S. P. Govindwar, and J. H. Pak. (2023). Composting textile sludge using plant growth-promoting rhizobacteria in a solid-state bioreactor: a step towards zero discharge. ***International Journal of Environmental Science and Technology*** (2023): 1-8.
- Parashar M, Dhar SK, Kaur J, Chauhan A, Tamang J, Singh GB, Lyudmila A, **Perveen, K.,** Khan F, Bukhari NA, et al. (2023). Two Novel Plant-Growth-Promoting *Lelliottia amnigena* Isolates from *Euphorbia prostrata* Aiton Enhance the Overall Productivity of Wheat and Tomato. ***Plants***. 2023; 12(17):3081.

- Nayana, RU Krishna, S. Nakkeeran, N. Saranya, R. Saravanan, K. Mahendra, Suhail Ashraf, **Perveen, K.,** Najla A. Alshaikh, R. Z. Sayyed, and Pau Loke Show. (2023). Triamcinolone Acetonide Produced by *Bacillus velezensis* YEBBR6 Exerts Antagonistic Activity Against *Fusarium oxysporum* f. sp. Cubense: A Computational Analysis. ***Molecular Biotechnology*** (2023): 1-19.
- Shanthi, N., Al-Huqail, A. A., **Perveen, K.,** Vaidya, G., Bhaskar, K., Khan, F., Alfagham, A. (2023). Drought stress alleviation through nutrient management in *Cyamopsis tetrogonoloba* L. ***Journal of King Saud University-Science***, 102842.
- Debnath, S., Aisha, S., Malakar, A., **Perveen, K.,** Alfagham, A.T., Khanam, M.N., Pramanik, B. and Mohammed, Y.A., (2023). Understanding the cross-talk of major abiotic-stress-responsive genes in rice: A computational biology approach. ***Journal of King Saud University-Science,*** 35(7), p.102786.
- **Perveen, K.***, Alanoud Alfagham, S. Debnath, Najat A. Bukhari, Dongqing Wei, Najla A. Alshaikh and Aisha S. Wadai (2023). Enriching drought resistance in *Solanum lycopersicum* using Abscisic acid as drought enhancer derived from *Lygodium japonicum*: a new-fangled computational approach. ***Frontiers in Plant Science***
- Deep C. Suyal, Upasana Gola, Shilippreet Kour, Tanvirnvir Kaur, **Perveen, K.,** Najat A. Bukhari, Jamilah A. Alsulami, Damini Maithani, Hemant Dasila And Manali Singh (2023). Prokaryotic diversity and community structure in the rhizosphere of Lantana weed (*Lantana camara* L.). ***Frontiers in Plant Science***
- Dasila, Hemant, V. K. Sah, Vandana Jaggi, Arun Kumar, Lakshmi Tewari, Gohar Taj, Sumit Chaturvedi, **Perveen, K.,** Najat A. Bukhari, and Manvika Sahgal (2023). Cold tolerant Phosphate solubilizing *Pseudomonas* strains promote wheat growth and yield by improving soil phosphorous (P) nutrition status. ***Frontiers in Microbiology*** 14: 515.
- Kaur, J., Mudgal G, Kartar Chand, Gajendra B. Singh, **Perveen, K.,** Najat A. Bukhari, Sandip Debnath, Thotegowdanapalya C. Mohan, Rajulu Charukesi & Gaurav Singh (2022). An exopolysaccharide-producing novel *Agrobacterium pusense* strain JAS1 isolated from snake plant enhances plant growth and soil water retention. ***Scientific Reports*** 12, 21330.
- Alwadai, A.S.; **Perveen, K.,** Alwahaibi, M. (2022). The Isolation and Characterization of Antagonist *Trichoderma* spp. from the Soil of Abha, Saudi Arabia. ***Molecules*** **2022**, *27*, 2525. https://doi.org/10.3390/ molecules27082525.
- **Perveen, K.*,** Najat A. Bukhari, Luluah M. Al Masoudi, Amera Naser Alqahtani, Mashael W. Alruways, Fatimah S. Alkhattaf (2022). Antifungal potential, chemical composition of *Chlorella vulgaris* and SEM analysis of morphological changes in *Fusarium oxysporum.* ***Saudi J. Biol. Sci.,*** 29 (2022) 2501–2505.
- Abdullah H. Alsabhan, **Perveen, K.,** Aisha S. Alwadi (2022). Heavy metal content and microbial population in the soil of Riyadh region, Saudi Arabia. ***J. King Saud Univ. Sci., 34, 101671***

BOOK/BOOK CHAPTER

1. Debnath, S.; **Kahkashan Perveen**; Najat A. Bukhari, Rajan , N (2022). Principles of Genetics. (pp, 241), AGPH BOOKS. India.
2. Ganie, I. B., Shahzad, A., Ahmad, Z., Najat A. Bukhari, & **Kahkashan Perveen** (2021). Transgenic Approaches in Bamboo. In ***Biotechnological Advances in Bamboo*** (pp. 251-273). Springer, Singapore.

SEQUENCE (ITS SEQUENCES) SUBMITTED TO NCBI GENBANK DATABASE

Organism	NCBI Accession no.
Fusarium incarnatum	MT151383
Fusarium oxysporum	MT151384
Fusarium solani	MW265001
Calligonum tetrapterum	MK 616526
Calligonum tetrapterum	MK 616525
Trichoderma koningiopsis	OQ513249
Trichoderma lixii	OQ513250
Trichoderma koningii	OQ513251
Trichoderma harzianum	OQ513252
Trichoderma lixii	OQ513253
Trichoderma brevicompactum	OQ513254
Trichoderma harzianum	OQ513255
Trichoderma velutinum	OQ513256
Candida albicans isolates Ca1-Ca5	OQ513457-61
Candidozyma auris (Candida auris) isolates CAu6-CAu10	OQ513462 -66