

Bio Sketch – Dr. B. S. Manisha Singh

Dr. B. S. Manisha Singh is an Assistant Professor in Applied Microbiology, P.G. Department of Botany, Utkal University. She joined as a faculty member of the Applied Microbiology Department in 2025 and continues to serve in this role. She obtained her Ph.D. in Biological Sciences from the Academy of Scientific and Innovative Research (AcSIR) at CSIR–Institute of Minerals and Materials Technology (CSIR-IMMT), Bhubaneswar. Her doctoral research was carried out under a multidisciplinary project funded by the Atomic Energy Regulatory Board (AERB), Mumbai, in collaboration with the Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam. The research focused on the phytoremediation of radioactive contaminants (^{137}Cs and ^{90}Sr) from contaminated soil and water and the development of site-specific remediation strategies for Indian nuclear power plant sites including Narora, Kudankulam, and Kalpakkam. She has extensively investigated the physiological and biochemical responses of plants exposed to radionuclide stress, including changes in growth attributes, photosynthetic pigments, antioxidant defense systems, and nutrient dynamics. Her studies have identified promising hyperaccumulator and rhizofiltration plant species for the remediation of contaminated environments and contributed to the development of eco-friendly remediation strategies for long-term environmental sustainability. In addition to phytoremediation research, Dr. Singh has also worked on plant growth-promoting rhizobacteria, arbuscular mycorrhizal associations, soil aggregation processes, phosphate solubilization, and the role of beneficial microorganisms in restoring degraded ecosystems. Her interdisciplinary research integrates microbiology, plant sciences, soil ecology, and environmental management to address contemporary challenges related to pollution mitigation, ecosystem restoration, and sustainable resource management. Dr. Singh has published several research papers and book chapters in reputed national and international journals and edited volumes, contributing to the fields of environmental biotechnology, radioecology, phytoremediation, and microbial ecology. Her research continues to focus on developing nature-based solutions for remediation of contaminated environments, restoration of degraded lands, and enhancement of ecosystem resilience through innovative plant–microbe-based technologies.