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Importance of microbial resource centres and bio-banking of microorganisms for biotechnology and sustainable environment

Om Prakash Sharma
National Centre for Cell Science, India

Culture independent omics studies have demonstrated immense uncultured microbial diversity in different habitats and triggered the microbiologists to apply novel methods and approaches to bring them in culture for research and biotechnological exploitation. Consequently, publications related to novel taxa are continuously increasing in microbiological literature in recent time. Cultivation and characterization of novel taxa must require their appropriate preservation in microbial resource centres (MRCs) for future reference, research and exploitation. Therefore, concept of bio-banking/seed-banking of microorganisms should be promoted by microbiologists, microbiological societies and funding agencies to protect the valuable microbial diversity of our planet. In addition microbiological journals should also insist on deposition of microorganisms before their publication and to make them accessible to public and protect them from extinction. At present most MRCs are just focusing on *ex situ* preservation. Concept of ecosystem and habitat preservation is in infancy in microbiology and now it is necessary to start thinking about preservation of microorganisms at ecosystem or habitats level to protect them from extinction. Furthermore, in addition to culture preservation and authentication MRCs should engage in research related to causes of genetic changes and induction of cell dormancy during preservation. Microbial Culture Collection (MCC) located at National Centre for Cell Science (NCCS) Pune, India maintains more than 1,50,000 strains of bacteria from diverse ecological niches of India. I would like to focus in my presentation on the issues mentioned above but also on strategies and approach we are using here to isolate, characterize, preserve and exploit our own microbial resources for biotechnological purposes.

Biography

Om Prakash Sharma has completed his PhD from University of Delhi, India and Postdoctoral studies from Florida State University and Georgia Institute of Technology under Professor Joel E Kostka. Currently he is working as a Scientist in Microbial Culture Collection division of National Centre for Cell Science, India. He has contributed 27 research papers, 6 review articles and 3 book chapters in reputed journals and books. He is Life Member of Association of Microbiologist of India and Bergeys Manual Trust and mentored about 10 MSc dissertations.

prakas1974@gmail.com

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