

Fungal Biology

Ajar Nath Yadav *Editor*

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Applications of Myconanoparticles in Remediation: Current Status and Future Challenges



Suyog A. Joshi, Sagar P. Salvi, Chanda Parulekar- Berde,
and Vikrant B. Berde

9.1 Introduction

Bioremediation is a biological mechanism of recycling waste into another form that can be used and reused by other organisms. Bioremediation is involved in degradation, eradication, immobilization or detoxification of diverse chemical waste and physical hazardous materials from the surrounding by the action of microorganisms. The main principle followed is degrading and transforming pollutants such as hydrocarbons, oil heavy metal, pesticides and dyes. Ex situ bioremediation methods require excavation of contaminated material or toxic substances before they can be treated. There are different examples of pollutants which affect human and animal health like chlorinated hydrocarbons that mostly affect the respiratory tract and cause irritation in eyes; phenols that affect the skin and become chronic by affecting the central nervous system and kidneys; arsenic exposure that causes hyperkeratosis and lung cancer; lead exposure that causes blood toxicity; chromium exposure that causes epigastric pain, diarrhea and chronic ulcer; cadmium that causes renal tubular damage and affects bones (Xie et al. 2016).

Nanotechnology is the branch that deals with the dimension and tolerance of less than 100 nm (Mukherjee et al. 2010; Gholami-Shabani et al. 2016a, b, c). While nanoparticles are considered as a development of new science, nanoparticles were used by craftsmen as far back as the nineteenth-century Mesopotamia, for

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