

1. Record Nr.	UNINA9910456497803321
Autore	Aitken Jonathan
Titolo	Pride and perjury / / Jonathan Aitken
Pubbl/distr/stampa	London, [England] ; ; New York : , : Continuum, , 2004 ©2000
ISBN	1-282-45260-6 9786612452604 1-4411-3101-9
Descrizione fisica	1 online resource (392 pages)
Disciplina	941.0858092
Soggetti	Political corruption - Great Britain Politicians - Great Britain Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.

2. Record Nr.	UNINA9911019993403321
Autore	Singh Jaspal
Titolo	Biotechnology in Environmental Remediation
Pubbl/distr/stampa	Newark : , : John Wiley & Sons, Incorporated, , 2023 ©2023
ISBN	9783527839063 3527839062 9783527839049 3527839046
Edizione	[1st ed.]
Descrizione fisica	1 online resource (307 pages)
Altri autori (Persone)	BajpaiRajesh GangwarRavi Kumar
Disciplina	628.5
Soggetti	Bioremediation Microbial ecology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cover -- Title Page -- Copyright -- Contents -- Preface -- Chapter 1 Biotechnology and Various Environmental Concerns: An Introduction -- 1.1 Introduction -- References -- Chapter 2 Plant Biotechnology: Its Importance, Contribution to Agriculture and Environment, and Its Future Prospects -- 2.1 Where do Environment and Biotechnology Meet? -- 2.1.1 Introduction -- 2.1.2 Chief Applications -- 2.2 Understanding Agricultural Biotechnology -- 2.2.1 Introduction -- 2.2.2 Main Components of Agricultural Biotechnology -- 2.2.3 Applications of Agricultural Biotechnology -- 2.3 Animal and Plant Biotechnology -- 2.3.1 Animal Biotechnology -- 2.3.2 Plant Biotechnology -- 2.3.2.1 Introduction -- 2.3.2.2 Traditional Breeding and Genetic Modification -- 2.3.2.3 Creating GMOs -- 2.3.2.4 Applications of GM Plants -- 2.3.2.5 GMO Controversy -- 2.3.2.6 Conclusion -- References -- Chapter 3 Recent Advances in the Remediation of Petroleum Hydrocarbon Contamination with Microbes -- 3.1 Introduction -- 3.2 Sources of Petroleum Hydrocarbons -- 3.3 Composition of Petroleum Pollutants -- 3.4 Toxic Effects of Petroleum Hydrocarbons -- 3.4.1 Hydrocarbon Toxicity to Microorganisms --

3.4.2 Petroleum Toxicity to Soil -- 3.4.3 Petroleum Toxicity and Plant Growth -- 3.4.4 Petroleum Toxicity and Human Health -- 3.5 Hydrocarbon Degrading Microorganisms -- 3.6 Mechanism of Petroleum Hydrocarbon Degradation -- 3.6.1 Enzymatic Degradation of Hydrocarbons -- 3.6.2 Degradation of Hydrocarbons by Biosurfactants -- 3.6.3 Petroleum Hydrocarbon Degradation by Immobilized Cells -- 3.7 Types of Hydrocarbon Degradation -- 3.7.1 Degradation of Hydrocarbons Under Aerobic Condition -- 3.7.2 Hydrocarbon Degradation Under Anaerobic Condition -- 3.8 Factors Affecting Hydrocarbon Degradation by Microorganisms -- 3.8.1 Hydrocarbon Biodegradation and Temperature. 3.8.2 Hydrocarbon Biodegradation and pH -- 3.8.3 Microbial Population, Microbial Efficiency, and Catabolism -- 3.8.4 Hydrocarbon Biodegradation and Consortium of Microbes -- 3.8.5 Hydrocarbon Content and Soil -- 3.8.6 Salinity and Hydrocarbon Biodegradation -- 3.8.7 Presence of Dissolved Oxygen in Soil -- 3.8.8 Nutrient Status of Soil -- 3.9 Conclusion -- References -- Chapter 4 Remediation of Heavy Metals: Tools and Techniques -- 4.1 Introduction -- 4.2 Bioremediation -- 4.3 Organism of Bioremediation -- 4.3.1 Factors Affecting Microbial Bioremediation -- 4.3.2 Biotic Factors -- 4.3.3 Abiotic Factors -- 4.4 Techniques of Bioremediation -- 4.4.1 Solid Phase Bioremediation -- 4.4.2 Slurry Phase Bioremediation -- 4.5 Types of Bioremediation -- 4.5.1 Biopile -- 4.5.2 Windrows -- 4.5.3 Land Farming -- 4.5.4 Bioreactor -- 4.5.4.1 Techniques for In Situ Bioremediation -- 4.5.4.2 Types of In Situ Bioremediation -- 4.5.5 Bioventing -- 4.5.6 Bioslurping -- 4.5.7 Biosparging -- 4.5.8 Phytoremediation -- 4.5.9 Permeable Reactive Barrier (PRB) -- 4.6 Prospects of Bioremediation -- 4.7 Advantages and Disadvantages of Bioremediation -- 4.7.1 Bioremediation's Drawbacks -- 4.8 Conclusion -- Acknowledgment -- References -- Chapter 5 Soil Biodiversity and Environmental Sustainability -- 5.1 Introduction -- 5.1.1 Biodiversity in the Soil -- 5.1.2 Environmental Sustainability -- 5.2 Importance of Soil Biodiversity in Supporting Terrestrial Life and Diversity -- 5.2.1 Nutrient Acquisition and Retention -- 5.2.2 Pest and Disease Control -- 5.3 Soil Biodiversity and Climate Change -- 5.4 Soil Biodiversity and Hydrological Cycle -- 5.5 Soil Biodiversity and Environmental Remediation -- 5.6 Conclusion -- References -- Chapter 6 Plant Growth Promoting Rhizobacteria: Role, Applications, and Biotechnology -- 6.1 Introduction -- 6.2 Functions and Role of PGPR. 6.3 Range and Different Diversity of PGPR -- 6.3.1 Rhizosphere: Focal Point of PGPR -- 6.3.2 Characteristics of an Ideal PGPR -- 6.3.3 Growth Enhancing Activities -- 6.3.4 PGPR Over the Period of Time -- 6.4 Mechanisms of Plant Growth Promotion by PGPR -- 6.5 Biotechnological Effects of PGPR -- 6.5.1 Biological Fixation of Nitrogen -- 6.5.2 Solubilization of Phosphorus -- 6.5.3 Antagonistic Activity and Biocontrol Agents -- 6.5.4 Synthesis of Hydrolytic Enzymes -- 6.5.5 Production of Siderophores -- 6.5.6 Production of Antibiotics -- 6.5.7 Production of Ethylene -- 6.5.8 Production of Gibberellins and Cytokinin (Stimulators of Plant Growth) -- 6.5.9 Production of Bacteriocins -- 6.5.10 Induced Systemic and Systemic Acquired Resistance (ISR and SAR) -- 6.6 PGPR Cometabolism -- 6.7 Classification and Assortment of PGPR Strains -- 6.8 Commercial Significance of PGPR -- 6.8.1 Restrains with PGPR -- 6.9 Future Prospects of PGPR -- 6.10 Concluding Remarks of PGPR -- References -- Chapter 7 A Green Approach for CO₂ Fixation Using Microalgae Adsorption: Biotechnological Approach -- 7.1 Introduction -- 7.2 Effect of CO₂ Emissions on Environment -- 7.3 Advanced CO₂ Capturing Methods -- 7.3.1 Absorption -- 7.3.2 Adsorption -- 7.3.3 Membrane

Separation -- 7.4 Biological Methods for CO₂ Capturing -- 7.5 Earlier Technologies of Carbon Dioxide Capturing -- 7.6 Natural Carbon Capture Technology: Photosynthesis -- 7.7 Microalgae as the Modern Tool to Capture CO₂ -- 7.8 Biology of Microalgae as Photosynthetic Organisms and CO₂ Absorbers -- 7.9 Conclusion -- References -- Chapter 8 Assessment of In Vitro Culture as a Sustainable and Eco friendly Approach of Propagating Lichens and Their Constituent Organisms for Bioprospecting Applications -- 8.1 Lichens and Their Structural Organization -- 8.1.1 Structural Organization. 8.1.2 Role of Mycobionts and Phycobionts in the Symbiotic Association -- 8.2 Lichens and Bioprospection -- 8.3 Lichens as Sources of Unique Metabolites -- 8.4 Need of In Vitro Culture of Lichen and Lichen Components and Its Utility in Environment Conservation -- 8.5 In Vitro Culture of Lichens/Constituent Organisms -- 8.5.1 Efforts Carried Out on Lichen Culture -- 8.5.2 Mycobiont Culture -- 8.5.3 Endolichenic Fungal Culture -- 8.6 Use of In Vitro Lichen Culture for Bioprospecting -- 8.6.1 lichen Symbiont/Mycobiont Culture -- 8.6.2 Endolichenic Fungal Culture -- 8.7 Challenges Associated -- 8.8 Conclusion -- Acknowledgment -- References -- Chapter 9 Bioprospection Potential of Indian Cladoniaceae Together with Its Distribution, Habitat Preference, and Biotechnological Prospects -- 9.1 Introduction -- 9.2 Materials and Methods -- 9.3 Results and Discussion -- 9.4 Conclusions -- Acknowledgments -- References -- Chapter 10 Biotechnological Approach for the Wastewater Management -- 10.1 Introduction -- 10.1.1 Sources of Water Pollution -- 10.1.2 Water Pollutants -- 10.1.2.1 Sewage Pollutants -- 10.1.2.2 Industrial Pollutants -- 10.1.2.3 Agriculture Pollutant -- 10.1.3 Physical Pollutants -- 10.1.3.1 Radioactive Waste -- 10.1.3.2 Thermal Sources -- 10.1.3.3 River Streams and Mountain Springs Sediments -- 10.1.3.4 Petroleum Products -- 10.2 Effects of Water Pollution -- 10.3 Role of Biotechnology to Control Water Pollution -- 10.3.1 Genetically Engineered Microorganisms (GEMs) in Remediation of Pollution -- 10.3.1.1 Biotechnological Approaches for Water Pollution Remediation: -- 10.3.1.2 Aerobic Biological Treatment -- 10.3.1.3 Activated Sludge Process -- 10.3.1.4 Constructed Wetlands -- 10.3.1.5 Biological Filters Fixed Film Systems -- 10.3.1.6 Rotating Biological Contactors -- 10.3.1.7 Fluidized Bed Reactor -- 10.3.1.8 Expanded Bed Reactor (EBR). 10.3.2 Anaerobic Biological Treatment -- 10.3.2.1 Membrane Bioreactors (MBRs) -- 10.3.2.2 Bioremediation -- 10.3.2.3 Bioremediation of Industrial Effluent Using Biotechnology -- 10.3.2.4 Bioremediation of Pulp and Paper Mill Effluent -- 10.3.2.5 Bioremediation of Spilled Oil and Grease Deposits -- 10.3.2.6 Bioremediation of Textile Industry Effluent Through Biotechnology -- 10.3.2.7 Bioremediation of Distillery Effluent Using Biotechnology -- 10.3.2.8 Phytoremediation -- 10.4 Role of Biotechnology in Phytoremediation -- 10.4.1 Bioaugmentation -- 10.4.2 Biosorption -- 10.4.3 Advantages -- 10.5 Conclusion -- References -- Chapter 11 The Application of Biotechnology in the Realm of Bioenergy and Biofuels -- 11.1 Introduction -- 11.2 Bioenergy (Biomass Energy) -- 11.2.1 Biomass and Its Sources -- 11.2.2 Biomass to Energy -- 11.2.2.1 Biomass to Biogas -- 11.2.2.2 Biomass to Biofuels -- 11.2.3 Agribiomass (Biochar) to Energy -- 11.3 Conclusions -- References -- Chapter 12 Nanotechnological Approach for the Abatement of Environmental Pollution: A Way Forward Toward a Clean Environment -- 12.1 Introduction -- 12.2 Nanoparticles: Properties, Types, and Route of Synthesis -- 12.2.1 Properties of Nanoparticles -- 12.2.2 Classification of Nanoparticles -- 12.2.3 Synthesis of Nanoparticles -- 12.2.3.1 TopDown Approach -- 12.2.3.2 BottomUp Approach --

12.2.4 Environmental Applications of nanoparticles -- 12.3 Nanoremediation for Environment Cleanup -- 12.3.1 Nanoremediation of Air -- 12.3.1.1 Nanoadsorption -- 12.3.1.2 Degradation by Nanocatalysis -- 12.3.1.3 Nanofiltration -- 12.3.2 Nanoremediation of Water -- 12.3.2.1 Adsorption -- 12.3.2.2 Membrane Process -- 12.3.2.3 Photocatalysis -- 12.3.3 Nanoremediation of Soil -- 12.3.4 Nanomaterial for Control of Environmental Pathogens -- 12.4 Challenges in Nanoremediation of the Environment and Solution. 12.5 Conclusion and Future Prospects.

Sommario/riassunto

This book, edited by Jaspal Singh, Rajesh Bajpai, and Ravi Kumar, explores the applications of biotechnology in environmental remediation. It covers various topics, including the use of plants, microbes, and lichens in addressing environmental concerns such as pollution and contamination. The book provides insights into recent advances in the remediation of petroleum hydrocarbons, heavy metals, and the role of biotechnology in bioenergy and biofuels. It also examines green approaches for CO₂ fixation and wastewater management. The work is intended for environmental scientists, ecologists, botanists, policymakers, and researchers looking for comprehensive strategies in environmental restoration using biotechnology.
