

Rachana Singh Vipul Verma

# Utilization of stress tolerant bacteria for reclamation of sodic soil



# **Utilization Stress Tolerant Bacteria Reclamation**

Raoudha Abdellaoui, Esmaeil Bakhshandeh, Fayçal Boughalleb, Ali El-Keblawy, Amr Adel Elkelish, Hedi Mighri

#### **Utilization Stress Tolerant Bacteria Reclamation:**

Utilization of Stress Tolerant Bacteria for Reclamation of Sodic Soil Rachana Singh, Vipul Verma, 2015-12-18 Drought and salt stress are the major problems all over the world High salt contents in soils make the soil sodic and affect crop cultivation in large areas of both developed and developing countries A sodic soil contains high concentration of sodium content associated with the negatively charged clay particles Abundance of Na and Cl ions decreases the activity of other essential elements in the soil and can lead to reduction in uptake of growth support by the plants The direct effects of salt stress on plant growth involves plant nutrient deficiency growth and yield To overcome the problem of fertility in sodic soils microbes could be used to replenish the nutrients and create a balance soil Soil bacteria support and protect plants against abiotic stresses and enhance yield both directly and indirectly Use of salt tolerant bacteria is definitely a boon for the reclamation of sodic soil to provide unstressed environment for plants This book is an effort to prove the concept by research

Mitigation of Plant Abiotic Stress by Microorganisms Gustavo Santoyo, Ajay Kumar, Mohd Aamir, Sivakumar Utandhi, 2022-04-30 The microbial ecosystem provides an indigenous system for improving plant growth health and stress resilience Plant microbiota including isolated microbial communities have been studied to further understand the functional capacities ecological structure and dynamics of the plant microbe interaction Due to climatic changes there is an urgent need to bring microbial innovations into practice Mitigation of Plant Abiotic Stress by Microorganisms Applicability and Future Directions is a comprehensive review of the different strategies available to improve the plant microbiome Chapters include key topics such as harnessing endophytic microbial diversity microbial genes for improving abiotic stress tolerance and microbial bioformulations Putting these strategies into practice can have varying success in the field so it is crucial that scientists are equipped with the knowledge of which microorganisms are needed as well as the use and suitability of delivery approaches and formulations This title will be an essential read for researchers and students interested in plant microbial technologies and plant bio stimulants plant pathology biocontrol agronomy and environmental mediation Discusses adaptive mechanisms of plant against multiple stresses Highlights diversity of symbiotic microorganisms associated with insects and their impact on host plants Provides functional genomics tools for studying microbe mediated stress tolerance Improving Stress Resilience in Plants Mohammad Abass Ahanger, Javaid Akthar Bhat, Parvaiz Ahmad, Riffat John, 2023-11-23 Improving Stress Resilience in Plants Physiological and Biochemical Basis and Utilization in Breeding addresses the urgent need for improved understanding of major plant stress tolerance mechanisms the identification of the genes and gene products that are key to improving those mechanisms and means of optimizing those genes through molecular approaches With a focus on plant physiological and biochemical attributes at both cellular and whole plant levels this book includes the latest information on crosstalk between the various signaling molecules and quantitative trait locus QTL Further it explores the extension of these mechanisms to breeding approaches confirming overall understanding and inspiring further research Written by a

team of global experts and presented in three thematic sections the book provides insights into physical adaptations metabolism and pathways and breeding techniques including CRISPR and conventional approaches to reduce the negative effects of stresses and improve crop yield even under stress conditions Improving Stress Resilience in Plants Physiological and Biochemical Basis and Utilization in Breeding is ideal for researchers academics and advanced students seeking to improve stress tolerance among crop plants and developing key future strategies for sustainable food production Explores key strategies including signaling molecules and Quantitative Trait Locus QTLs Highlights stress mitigating agents for improved crop yield Provides an integrated and holistic overview enabling and inspiring further research toward improved Halophytes: Salt Stress Tolerance Mechanisms and Potential Use Raoudha Abdellaoui, Esmaeil Bakhshandeh, Fayçal Boughalleb, Ali El-Keblawy, Amr Adel Elkelish, Hedi Mighri, 2023-07-10 **Microbes in Land Use Change Management** Jay Shankar Singh, Shashank Tiwari, Chhatarpal Singh, Anil Kumar Singh, 2021-08-20 Microbes in Land Use Change Management details the various roles of microbial resources in management of land uses and how the microbes can be used for the source of income due to their cultivation for the purpose of biomass and bioenergy production Using various techniques the disturbed and marginal lands may also be restored eco friendly in present era to fulfil the feeding needs of mankind around the globe Microbes in Land Use Change Management provides standard and up to date information towards the land use change management using various microbial technologies to enhance the productivity of agriculture Needless to say that Microbes in Land Use Change Management also considers the areas including generation of alternative energy sources restoration of degraded and marginal lands mitigation of global warming gases and next generation omics technique etc Land use change affects environment conditions and soil microbial community Microbial population and its species diversity have influence in maintaining ecosystem balance. The study of changes of microbial population provides an idea about the variation occurring in a specific area and possibilities of restoration Meant for a multidisciplinary audience Microbes in Land Use Change Management shows the need of next generation omics technologies to explore microbial diversity Describes the role of microbes in generation of alternative source of energy Gives recent information related to various microbial technology and their diversified applications Provides thorough insight in the problems related to landscape dynamics restoration of soil reclamation of lands mitigation of global warming gases etc eco friendly way using versatility of microbes Includes microbial tools and technology in reclamation of degraded disturbed and marginal lands mitigation of global warming gases Handbook of Plant and Crop Stress, Fourth Edition Mohammad Pessarakli, 2019-08-06 Since the publication of the third edition of the Handbook of Plant and Crop Stress continuous discoveries in the fields of plant and crop environmental stresses and their effects on plants and crops have resulted in the compilation of a large volume of the latest discoveries Following its predecessors this fourth edition offers a unique and comprehensive collection of topics in the fields of plant and crop stress This new edition contains more than 80% new

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traditional and modern techniques for sustainably improving the production of food crops and their nutritional quality aligning with the zero hunger goal Sustainable Development Goal 2 of the United Nations The book holistically includes the contributions of scientists and academicians working in the fields of Food and Nutrition Plant and Microbial Sciences Agriculture etc The book also offers insights into the strategies adopted worldwide for ensuring food availability and safety taking the aid of advanced technologies like climate smart agriculture along with nanotechnology and artificial intelligence in the event of climate change Above all the book transpires the subject matter using illustrative figures and outlines and therefore will be an asset for the post graduate students researchers and faculties Towards the rational use of high salinity tolerant plants Helmut Lieth, A.A. Al Masoom, 1992-11-30 The symposium on high salinity tolerant plants held at the University of Al Ain in December 1990 dealt primarily with plants tolerating salinity levels exceeding that of ocean water and which at the same time are promising for utilization in agriculture or forestry. The papers of the proceedings of this symposium have been published in two volumes This volume 1 deals with mangroves and inland high salinity tolerant plants and ecosystems and is divided into the following categories 1 Vegetation analyses and descriptions of mangroves 2 Ecosystem analyses 3 Physiological analyses 4 Utilization of mangroves and saltmarsh plants 5 Soil and water analyses Volume 2 deals with the improvement of salinity tolerance for traditional crops under marginal soils and irrigation water and is published in Tasks for Vegetation Science series TAVS Vol 28 The Biology and Utilization of Shrubs C. M. McKell, 1989 The biology and utilization of shrubs **The Reclamation Era** ... United States. Bureau of Reclamation, 1915 **Ecology Abstracts**, 1989 Indexes journal articles in ecology and environmental science Nearly 700 journals are indexed in full or in part and the database indexes literature published from 1982 to the present Coverage includes habitats food chains erosion land reclamation resource and ecosystems management modeling climate water resources soil and pollution

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Symposium on Surface Mining Hydrology, Sedimentology, and Reclamation, December 7-11, 1981 Donald Hubert

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