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Collana	Books in Soils, Plants, and the Environment
Altri autori (Persone)	PessarakiMohammad <1948->
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Nota di contenuto	Cover; Half Title; Title Page; Copyright Page; Dedication Page; Contents; Preface; Acknowledgments; Editor; Contributors; Section I: Soil Salinity and Sodicity Problems; 1: Soil Salinity and Sodicity as Particular Plant/Crop Stress Factors; 1.1 Introduction; 1.2 The Significance of Soils with Respect to Crop Stress; 1.3 The Place and Role of the Soil in Nature; 1.4 Extent and Global Distribution of Salt-Affected Soils; 1.5 Development and Grouping of Salt-Affected Soils and Particular Plant/Crop Growth Stress Factors 1.6 Reclamation of Salt-Affected Soils and Relief or Elimination of Particular Plant/Crop Stress Factors; 1.7 Concluding Remarks; References; Section II: Plants/Crops Tolerance Mechanisms and Stressful Conditions; 2: Roles and Mechanisms of Rhizobacteria in Regulating Plant Tolerance to Abiotic Stress; 2.1 Introduction; 2.2 Plant Growth-Promoting Rhizobacteria; 2.3 Biological Roles and Mechanisms of PGPR Regulation of Plant Growth and Stress Tolerance; 2.3.1 PGPR Regulation of Plant Nutrition; 2.3.2 Interactions of PGPR and Abiotic Stress Involving Exopolysaccharides 2.3.3 Promotive Effects on Plant Growth and Stress Tolerance through Hormonal Regulation; 2.3.4 Hormonal Crosstalk Involved in PGPR

Regulation of Plant Growth; 2.4 Conclusions and Future Research Perspectives; Bibliography; 3: Physiological, Biochemical and Molecular Mechanisms Regulating Post-Drought Stress Recovery in Grass Species; 3.1 Introduction; 3.2 Carbohydrate Accumulation and Remobilization; 3.3 Osmolyte Accumulation and Protective Benefits; 3.4 Oxidative Stress and Antioxidant Protection; 3.5 Hormone Metabolism and Plant Growth Regulation
3.6 Conclusions and Future Research Perspectives; References; 4: Regulatory Mechanisms for Stress-Induced Leaf Senescence; 4.1 Introduction; 4.2 Chlorophyll Metabolism Associated with Stress-Induced Leaf Senescence; 4.3 Reactive Oxygen Species and Membrane Peroxidation Related to Stress-Induced Leaf Senescence; 4.4 Amino Acid and Protein Metabolism Associated with Stress-Induced Leaf Senescence; 4.5 Hormone Metabolism and Abiotic Stress-Induced Leaf Senescence; 4.6 Approaches to Suppress or Alleviate Stress-Induced Leaf Senescence; 4.7 Conclusions; References
5: Mechanisms of Salt Tolerance in Submerged Aquatic Macrophytes; 5.1 Introduction; 5.2 Stress Concept and Salinity Stress; 5.2.1 Concept of Stress; 5.2.2 Salinity Stress; 5.3 Aquatic Macrophytes; 5.3.1 Distribution and Importance; 5.3.2 Salinity Stress in Aquatic Macrophytes; 5.3.2.1 Effect on Growth; 5.3.2.2 Effect on Photosynthesis and Respiration; 5.3.2.3 Induction of Osmotic Stress and Ion Imbalance; 5.3.2.4 Induction of Oxidative Stress; 5.4 Salinity Tolerance Mechanism in Aquatic Macrophytes; 5.4.1 Ionic Regulation and Interaction; 5.4.2 Osmotic Adjustment or Regulation

Sommario/riassunto

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 material, and the remaining 20% has been updated and revised substantially. This volume presents 10 comprehensive sections that include information on soil salinity and sodicity problems; tolerance mechanisms and stressful conditions; plant/crop responses; plant/crop responses under pollution and heavy metal; plant/crop responses under biotic stress; genetic factors and plant/crop genomics under stress conditions; plant/crop breeding under stress conditions; empirical investigations; improving tolerance; and beneficial aspects of stressors. Features: Provides exhaustive coverage written by an international panel of experts in the field of agriculture, particularly in plant/crop stress areas Contains 40 new chapters and 10 extensively revised and expanded chapters Includes three new sections on plant breeding, stress exerted to weeds by plants, and beneficial aspects of stress on plants/crops Numerous case studies With contributions from 100 scientists and experts from 20 countries, this Handbook provides a comprehensive resource for research and for university courses, covering soil salinity/sodicity issues and plant/crop physiological responses under environmental stress conditions ranging from cellular aspects to whole plants. The content can be used to plan, implement, and evaluate strategies to mitigate plant/crop stress problems. This new edition includes numerous tables, figures, and illustrations to facilitate comprehension of the material as well as thousands of index words to further increase accessibility to the desired information.
