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Nota di contenuto	Physiological responses of legume Nitrogen fixation to water limitation -- Salinity: physiological impacts on legume Nitrogen fixation.- How does high temperature affect legume nodule symbiotic activity -- Will elevated CO2 level amplify the benefits of symbiotic Nitrogen fixation in legumes -- Nodule physiological implications associated with soil acidity.

Sommario/riassunto

Global climate change is increasingly recognized as a critical challenge with which the world is facing. This big issue has been globally viewed as an alarming threat to future sustainable agricultural development. Stresses of plants, caused by various climatic variables, are the principle factors behind the remarkable reductions in legume production. Over last decade, our understanding of plant adaptation to various environmental stresses has grown considerably. The threat of global environmental variability has made development of elite new varieties that could withstand the future expected harsh climatic conditions highly important. Much progress has been achieved in the identification and characterization of the underlying mechanisms that help symbiotic legumes overcome the negative impact of various abiotic stresses. We realize the necessity for evaluating the impact of these major stresses on the legumes performance. The present volume is an attempt to reach this goal. Recent interest in understanding legume responses to climate change makes this volume timely. The “Legume Nitrogen Fixation in a Changing Environment - Achievements and Challenges” volume brings together the state-of-the-art overview of the legume-rhizobia interaction in the context of a changing global environment. This volume focuses on the major environmental factors, namely drought, elevated temperature, salinity, soil acidity and rising carbon dioxide that substantially limit legume growth and productivity. Five chapters written by five internationally recognized research groups provide comprehensive coverage of the physiological, biochemical and molecular mechanisms that enable legume adaptation to these abiotic stressors. We believe that the knowledge included in this endeavor will be useful in building critical strategies to counter unfavorable conditions by leguminous plants. We enjoyed working on this volume in collaboration with the contributing authors. We hope that this volume will be of great value to legume researchers, and to people working with non-leguminous crop species as well. .