Relation Of Salinity To The Calcium Carbonate Content Usgs

Soil salinity and sodicity problems; Plants, crops, and stressful condiyions. Plant and crop response to salt, water, and other envirommental stress conditions; Molecular bilogy and microbiological aspects of plant responses under salt, water, and other envirommental stress conditions. Empirical investigations of specific plants and crops grown under saline, drought, and other environmental stress conditions; Future promise: plants and crops for cultivation under stressful conditions; Irrigating crops with low-quality water; Benefical aspects of stress.

Under contract between the University of Utah and the U.S. Atomic Energy Commission, the writer has carried on a field and laboratory investigation of the uranium deposits in the Salt Wash sandstone of the Colorado Plateau.

Environmental conditions and changes, irrespective of source, cause a variety of stresses, one of the most prevalent of which is salt stress. Excess amount of salt in the soil adversely affects plant growth and development, and impairs production. Nearly 20% of the world’s cultivated area and nearly half of the world’s irrigated lands are affected by salinity. Processes such as seed germination, seedling growth and vigour, vegetative growth, flowering and fruit set are adversely affected by high salt concentration, ultimately causing diminished economic yield and also quality of produce. Most plants cannot tolerate salt-stress. High salt concentrations decrease the osmotic potential of soil solution, creating a water stress in plants and severe ion toxicity. The interactions of salts with mineral nutrition may result in nutrient imbalances and deficiencies. The consequence of all these can ultimately lead to plant death as a result of growth arrest and molecular damage. To achieve salt-tolerance, the foremost task is either to prevent or alleviate the damage, or to re-establish homeostatic conditions in the new stressful environment. Barring a few exceptions, the conventional breeding techniques have been unsuccessful in transferring the salt-tolerance trait to the target species. A host of genes encoding different structural and regulatory proteins have been used over the past 5–6 years for the development of a range of abiotic stress-tolerant plants. It has been shown that using regulatory genes is a more effective approach for developing stress-tolerant plants. Thus, understanding the molecular basis will be helpful in developing selection strategies for improving salinity tolerance. This book will shed light on the effect of salt stress on plants development, proteomics, genomics, genetic engineering, and plant adaptations, among other topics. The book will cover around 25 chapters with contributors from all over the world. ??

The potential use of salt tolerant plants in the context of future agriculture strictly requires a good knowledge of species that might be used as crops or other resources; understanding their salt tolerance mechanisms and ecology also would be a sine qua non condition for introducing these taxa in agricultural practices.

This title published in two volumes containing 181 papers is based on the proceedings of the Seventh Symposium on Salt held in Kyoto, Japan in April 1992. It covers a broad spectrum of science, engineering, technology, medicine, economics and history concerning salt and other evaporites. It should be of particular interest to industrial engineers, mining and mineral technologists and geotechnical engineers.

Responses of Plants to Environmental Stresses, Second Edition, Volume II: Water, Radiation, Salt, and Other Stresses focuses on the effects of stresses on plants. This book discusses how stresses produce their damaging effects and how living organisms defend themselves

against stresses. Organized into six parts encompassing 12 chapters, this edition starts with an overview of the various responses of plants to the severities of all the other environmental stresses, with emphasis on the physical and biological stresses and strains. This text then describes water stress in plants, which arise either from an excessive or from an insufficient water activity in the plant's environment. Other chapters consider the resistance to drought stress of plants. This book discusses as well the effects of flooding, which replaces gaseous air by liquid water. The final chapter deals with the comparative stress responses of plants. This book is a valuable resource for plant biologists.