Record Nr. UNINA9910298333703321 Improvement of crops in the era of climatic changes . Volume 1 // **Titolo** Parvaiz Ahmad [and three others], editors Pubbl/distr/stampa New York:,: Springer,, 2014 **ISBN** 1-4614-8830-3 Edizione [1st ed. 2014.] 1 online resource (xvii, 397 pages): illustrations (some color) Descrizione fisica Collana Gale eBooks Disciplina 550 570 571.2 571.6 Soggetti Crop improvement Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Citrus Rootstocks for Improving the Horticultural Performance and Physiological Responses under Constraining Environments -- Role of Silicon in Enrichment of Plant Nutrients and Protection from Biotic and Abiotic Stresses -- Transgenic Approaches for Phytoextraction of Heavy Metals -- Using an Allometric Model for the Accumulation of Mineral Nutrients in Crops Under Saline-Water Stress: A Field Experience in Fertigation -- Control of Biotic and Abiotic Stresses in Cultivated Plants by the Use of Biostimulant Microorganisms -- Cyclic Nucleotides and Nucleotide Cyclases in Plants under Stress -- Breeding and Transgenic Approaches for Development of Abiotic Stress Tolerance in Rice --Mineral Bioavailability Through Mutation Breeding In Pulse Crops: A Review -- Abiotic Stress and Control of Yield in Cereals --Improvement of Crop Production under Saline Stress by a Bio-Hydraulic Approach -- Induced Mutagenesis for the Improvement of Pulse Crops with Special Reference to Mungbean-A Review Update -- Crop Improvement through Tissue Culture -- Agricultural Pollution: An Emerging Issue. Sommario/riassunto Current trends in population growth hint that global food production is

unlikely to gratify future demands under predicted climate change scenarios unless the rates of crop improvement are accelerated. Crop

production faces numerous challenges, due to changing environmental conditions and evolving needs for new plant-derived materials. These challenges come at a time when the plant sciences are witnessing remarkable progress in understanding fundamental processes of plant growth and development. Drought, heat, cold and salinity are among the major abiotic stresses that often cause a series of morphological, physiological, biochemical and molecular alterations which adversely affect plant growth, development and productivity, consequently posing a serious challenge for sustainable food production in large parts of the world, particularly in emerging countries. This emphasizes the urgency of finding better ways to translate new advances in plant science into concrete successes in agricultural production. To overcome the pessimistic influence of abiotic stresses and to maintain the food security in the face of these challenges, new, improved and tolerant crop varieties, contemporary breeding techniques, and cavernous understanding of the mechanisms that counteract detrimental climate changes are indubitably needed to sustain the requisite food supply. In this context, Improvement of Crops in the Era of Climatic Changes, Volume 1 provides a state-of-the-art guide to recent developments that aid in the understanding of plant responses to abiotic stresses and lead to new horizons vis-à-vis prime strategies for translating current research into applied solutions to create strong yields and overall crop improvement under such unfavourable environments. Written by a diverse group of internationally famed scholars, Improvement of Crops in the Era of Climatic Changes, Volume 1 is a brief yet all-inclusive resource that is immensely advantageous for researchers, students, environmentalists, soil scientists, professionals, and many others in the quest of advancement in this flourishing field of research.