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Sommario/riassunto

Genetic Enhancement of Crops for Tolerance to Abiotic Stress: Mechanisms and Approaches, Volume I provides a consolidated update of the approaches taken to deepen our understanding of plants' morphological, physiological and molecular responses to various abiotic stresses and progresses made in unraveling and understanding the regulatory mechanisms, signaling pathways and cross talk among mechanisms operating under abiotic stress situations in various crops. The book includes articles on the diverse tools and technological approaches the use of which has improved our understanding of the intricate mechanisms operating in crop plants under abiotic stress conditions. The chapters describe the use of various 'omics' platforms such as transcriptomics, metabolomics, proteomics, microRNA and heat shock proteins as molecular players, phytohormone (s) regulation of stress signalling pathways, and various functional genomics approaches adopted by scientists to collate a wealth of information to understand abiotic stress tolerance mechanisms for crop improvement. In addition, chapters have been contributed on the burning topic of the role of chromatin remodeling under stress conditions and on the epigenetic dynamics via histones modifications that can improve stress tolerance in crops by enhancing the stress memory. We are very hopeful that the topics will be useful to a broad community of scientists working in similar areas and the outcomes discussed can provide useful leads to build strategies to generate abiotic stress tolerant varieties. .
