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Nota di contenuto	1 Growth and development of sugarcane (Saccharum spp. hybrid) and its relationship with environmental factors -- 2 Impact of climate change on sucrose synthesis in sugarcane varieties -- 3 Impact of salinity stress on sugarcane yield and quality: management approaches for higher cane sugar productivity -- 4 Potential parents for developing climate-resilient sugarcane varieties in India- A breeding perspective -- 5 Bioactive silicon: approach to enhance sugarcane yield under stress environment -- 6 Anatomy of tolerance mechanisms in sugarcane crop to abiotic stresses -- 7 Interaction of plant growth-

promoting rhizobacteria with sugarcane plants for alleviating abiotic stresses and improving crop yields -- 8 Morpho-physiological, biochemical and ultrastructural modifications on sugarcane to prolonged water deficit -- 9 Impact of heavy metal toxicity on sugarcane growth, development and productivity -- 10 Defense-related proteins in sugarcane andtheir role in disease resistance: molecular advancements and beyond -- 11 Impact of green and organic fertilizers on soil fertility and sugarcane productivity -- 12 Silicon-induced mitigation of low temperature stress in sugarcane -- 13 Agro-technologies to sustain sugarcane productivity under abiotic stresses -- 14 Biotechnological approaches to improve sugarcane quality and quantum under environmental stresses -- 15 Biotic stresses in sugarcane plants and its management -- 16 Weeds management in sugarcane: recent developments and future perspectives -- 17 Synergistic integration of sugarcane - proteogenomics to decipher the mechanism of disease resistance in sugarcane -- 18 The metabolic interaction of potassium salt of active phosphorus (PSAP) and its stimulatory effects on the growth and productivity of sugarcane under stressful environment.

Sommario/riassunto

This edited volume focuses on the core aspects of sugarcane production-management under stressful environments as well as innovative strategies for augmenting crop growth & productivity through intrinsic and extrinsic manipulations. The various chapters aim at bringing out comprehensive and advance information on different aspects of sugarcane cultivation under stress environments and impact of climate change on the sustainability of sugarcane production. The book encompasses information about crop production management, physiological & nutritional requirements, ratooning, ripening and post-harvest losses management. It also delineates various technologies that support the continued use and improvement of sugarcane as renewable source of food, fiber and bio-energy. The manipulations at cellular and molecular levels, molecular breeding approaches and post-harvest technologies are also included. The area under sugarcane cultivation is gradually increasing because of its diversification potential. The high productivity and biomass of the cane crop also makes it a key source for use as bio-energy crop and a promising raw material for bio-based agro-industries. However, poor crop & biomass productivity due to abiotic stress is the foremost constraint in its future commercial exploitation as sustainable feed-stock for bio-based industries. It is therefore imperative to understand the cellular-molecular modulation responsible to productivity barrier under specific stress situation(s) for better sugarcane quality and quantum under field condition. Some of these innovative approaches are delineated in this book. This book is of interest to progressive sugarcane growers, millers, industrial entrepreneurs, sugarcane scientists, cane development and extension officers, sugar industry managers and valuable source of reference worldwide.