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Special Issue Reprint

Responses of Crops to Abiotic Stress

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During recent years, agriculture has been undergoing a significant transformation in response to contemporary economic pressures and the escalating impact of climate change. Global climate change is recognized as a critical threat to the stability and sustainability of natural ecosystems. It represents a complex and multifactorial process involving shifts in key environmental parameters, including elevated atmospheric CO_2 concentrations, temperature fluctuations, intensified heat waves, and changes in precipitation patterns. These alterations contribute to the emergence and proliferation of novel pests, weeds, and pathogens, thereby exerting additional stress on agricultural systems. Climate change exerts profound effects on plant physiology through abiotic stressors that often interact synergistically to induce morphological, physiological, biochemical, and molecular alterations, ultimately leading to yield reductions. This Reprint explores crop responses to abiotic stress, covering tolerance mechanisms, physiological and molecular adaptations, and strategies for enhancing resilience, offering valuable insights for sustainable agriculture under changing climatic conditions

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