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Descrizione fisica	1 online resource (382 pages)
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Soggetti	Stress (Physiology) Plants Bioclimatology Agriculture Plant physiology Plants - Development Hormones Plant Stress Responses Climate Change Ecology Plant Physiology Plant Development Hormone
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Livello bibliografico	Monografia
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Nota di contenuto	1. Role of phytohormones in plant responses to acid rain -- 2. The complex interaction between elevated CO2 and hormones on the control of plant growth -- 3. Role of plant hormones in plant response to elevated CO2 concentrations – above- and below-ground interactions -- 4. The intriguous roles of phytohormones in plant response to ozone interacting with other major climate-change stressors -- 5. Role of phytohormones in plant responses to acid rain -- 6. The role of plant hormones in fruit response to photo-oxidative and heat stress -- 7. Phytochrome and hormone signaling crosstalk in response to abiotic stresses in plants -- 8. Phytohormone-mediated regulation of heat stress response in plants -- 9. Phytohormones and

cold stress tolerance -- 10. Drought stress: involvement of plant hormones in perception, signaling and response -- 11. Involvement of phytohormones in flooding stress tolerance in plants -- 12. Roles of long-distance signals in nitrogen, phosphorus, and sulfur uptake and sensing in plants -- 13. Phytohormone involvement in plant responses to soil acidity -- 14. Plant response to toxic metals: emerging sources, phytohormone role and tolerance strategies.

Sommario/riassunto

This book provides new insights into the mechanisms of plant hormone-mediated growth regulation and stress tolerance covering the most recent biochemical, physiological, genetic, and molecular studies. It also highlights the potential implications of plant hormones in ensuring food security in the face of climate change. Each chapter covers particular abiotic stress (heat stress, cold, drought, flooding, soil acidity, ozone, heavy metals, elevated CO2, acid rain, and photooxidative stress) and the versatile role of plant hormones in stress perception, signal transduction, and subsequent stress tolerance in the context of climate change. Some chapters also discuss hormonal crosstalk or interaction in plant stress adaptation and highlight convergence points of crosstalk between plant hormones and environmental signals such as light, which are considered recent breakthrough studies in plant hormone research. As exogenous application or genetic manipulation of hormones can alter crop yield under favorable and/or unfavorable environmental conditions, the utilization of plant hormones in modern agriculture is of great significance in the context of global climate change. Thus, it is important to further explore how hormone manipulation can secure a good harvest under challenging environmental conditions. This volume is dedicated to Sustainable Development Goals (SDGs) 2 and 13. The volume is suitable for plant science-related courses, such as plant stress physiology, plant growth regulators, and physiology and biochemistry of phytohormones for undergraduate, graduate, and postgraduate students at colleges and universities. The book can be a useful reference for academicians and scientists involved in research related to plant hormones and stress tolerance.