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Altri autori (Persone)	LalMilan Kumar Rawindara Kumara AltafMuhammad Ahsan
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Nota di contenuto	1. Prominent Role of Melatonin in Plant: Experimental Evidences and Advancements in Phytomelatonin Research -- 2. Omics-Based Strategies to Unravel the Role of Melatonin in Biotic and Abiotic Amelioration -- 3. Melatonin and reactive species signalling in alleviating drought stress -- 4. Melatonin: A defense Molecule in heat stress amelioration of crop plants -- 5. Insights into the Role of Melatonin in Regulating Ionic Homeostasis and Redox Networks under Salinity Stress -- 6. How melatonin regulates ion chelation, immobilization, and cellular functions under heavy metal stress? -- 7. Melatonin interplay with phytohormones and signaling molecules under waterlogging stress -- 8. Melatonin as an emerging antiviral agent in plants -- 9. Melatonin Involvement in PAMP Triggered Immunity (PTI)

and Effector Triggered Immunity (ETI) against Fungal Diseases -- 10. Melatonin functional role in protease activities, biofilm formation, and mRNA expression to combat bacterial diseases -- 11. Enhancing Biotic stress defense: Melatonin and its synergy with other compounds -- 12. The Emerging Role of Melatonin in Insect Behavior, Parasitology, and Plant-Insect Interactions: Ecological Implications and Applications -- 13. Mechanistic understanding of the crucial role of melatonin in enhancing the shelf life of perishable food products -- 14. How melatonin emerges as a prominent strategy to tackle recent episodes of combined stress? -- 15. Genomic Insights on Seed Priming Effects of Melatonin -- 16. Melatonin-induced defense to mitigate the adverse effects of ozone damage in plants -- 17. Metabolomics-centered mining of melatonin induced metabolic diversity and function in plant.

Sommario/riassunto

This edited volume presents cutting-edge insights into the multifaceted roles of melatonin in improving plant resilience to both biotic and abiotic stresses. It brings together recent advances in understanding how melatonin regulates intricate signal transduction pathways to bolster plant growth and development under challenging environmental conditions. The chapters explore melatonin's involvement in reactive oxygen and nitrogen species signaling, its interaction with heat shock proteins, regulation of ionic homeostasis, and its cross-talk with key phytohormones. The book also examines its efficacy in mitigating drought, salinity, heat, and heavy metal stress. A valuable resource for researchers, agronomists, and policymakers, this book combines scientific depth with practical relevance. It bridges the gap between theoretical research and practical applications, making it an essential resource for those seeking to enhance crop performance and resilience in the face of climate change and environmental pressures.
