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Nota di contenuto	Crosstalk between autophagy and hormones for abiotic stress tolerance in plants -- Abscisic acid and plant response under adverse environmental conditions -- Auxins and plant response to adverse environmental conditions -- Jasmonic acid for sustainable plant growth and production under adverse environmental conditions -- Salicylic acid for vigorous plant growth and enhanced yield under harsh environment -- Strigolactones for sustainable plant growth and

production under adverse environmental conditions -- Polyamines for sustainable plant growth and production under adverse environmental conditions -- Plant performance and defensive role of proline under environmental stress -- Plant performance and defensive role of -amino butyric acid under environmental stress -- Plant performance and defensive role of -gamma amino butyric acid under environmental stress -- Nitric oxide: A key modulator of plant responses under environmental stress -- Functions of hydrogen sulfide in plant regulation and response to abiotic stress -- Silicon and plant responses under adverse environmental conditions -- Nanofertilizers as tools for plant nutrition and plant biostimulation under adverse environment -- Biostimulants and plant response under adverse environmental conditions: a functional interplay -- Biofertilizers-mediated sustainable plant growth and production under adverse environmental conditions -- Seed priming: A cost-effective strategy to impart abiotic stress tolerance -- Significance of cyanobacteria in soil-plant system and for ecological resilience -- Phytomicrobiome community: An agrarian perspective -- Adverse environment and pest management for sustainable plant production -- Eco-friendly approaches of using weeds for sustainable plant growth and production.

Sommario/riassunto

Global climate change is bound to create a number of abiotic and biotic stresses in the environment, which would affect the overall growth and productivity of plants. Like other living beings, plants have the ability to protect themselves by evolving various mechanisms against stresses, despite being sessile in nature. They manage to withstand extremes of temperature, drought, flooding, salinity, heavy metals, atmospheric pollution, toxic chemicals and a variety of living organisms, especially viruses, bacteria, fungi, nematodes, insects and arachnids and weeds. Incidence of abiotic stresses may alter the plant-pest interactions by enhancing susceptibility of plants to pathogenic organisms. These interactions often change plant response to abiotic stresses. Plant growth regulators modulate plant responses to biotic and abiotic stresses, and regulate their growth and developmental cascades. A number of physiological and molecular processes that act together in a complex regulatory network, further manage these responses. Crosstalk between autophagy and hormones also occurs to develop tolerance in plants towards multiple abiotic stresses. Similarly, biostimulants, in combination with correct agronomic practices, have shown beneficial effects on plant metabolism due to the hormonal activity that stimulates different metabolic pathways. At the same time, they reduce the use of agrochemicals and impart tolerance to biotic and abiotic stress. Further, the use of bio- and nano-fertilizers seem to hold promise to improve the nutrient use efficiency and hence the plant yield under stressful environments. It has also been shown that the seed priming agents impart stress tolerance. Additionally, tolerance or resistance to stress may also be induced by using specific chemical compounds such as polyamines, proline, glycine betaine, hydrogen sulfide, silicon, -aminobutyric acid, -aminobutyric acid and so on.
This book discusses the advances in plant performance under stressful conditions. It should be very useful to graduate students, researchers, and scientists in the fields of botanical science, crop science, agriculture, horticulture, ecological and environmental science.