1. Record Nr. UNINA9910743271903321

Titolo	Plant Responses to Biotic and Abiotic Stresses: Crosstalk between Biochemistry and Ecophysiology
Pubbl/distr/stampa	MDPI - Multidisciplinary Digital Publishing Institute, 2023
Descrizione fisica	1 online resource (362 p.)
Soggetti	Biology, life sciences Research and information: general
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	Amid challenging environmental conditions throughout their life cycle, plants display an extraordinary ability to sense, process, and respond to a diverse array of stimuli with adaptability. The complexity of their stress responses unfolds across various levels-physiological, biochemical, transcriptomic, and cellular-demanding a profound comprehension of the intricate mechanisms at work. These stresses intertwine, triggering cellular damage and initiating a cascade of responses within plants. Critical growth phases under severe stress encounter mechanical damage and alterations in cellular macromolecule synthesis. While plants possess inherent defense mechanisms against oxidative damage, excessive oxygen production overwhelms their detoxification capacity, leading to detrimental reactions like loss of osmotic responsiveness, wilting, and necrosis. This reprint undertakes a comprehensive analysis, exploring multiple perspectives such as gas exchange, metabolomics, proteomics, isotopic, and genomic approaches, to unveil the drivers and specific strategies that empower plants to adapt to stressful growth conditions. By examining trait selection, phenotypic plasticity, and other factors, this reprint uncovers the physiological and molecular mechanisms underlying plant resilience amidst adversity. A valuable resource for scientists, academics, and professionals, this reprint unveils the

mysteries of plant resilience and productivity, fostering innovative strategies for sustainable agriculture in our ever-changing world.