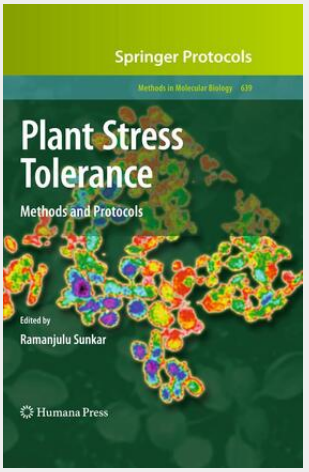
Sunkar

Plant Stress Tolerance

Methods and Protocols



A number of abiotic factors such as drought, salinity, extreme temperatures, low or high light intensity, and deficiency or toxic levels of nutrients have huge impacts on crop productivity, and a furthering of our understanding of the molecular, biochemical, and physiological basis of stress tolerance has been widely recognized as critical. In Plant Stress Tolerance: Methods and Protocols, expert researchers cover the most important widely-used techniques, including cutting-edge strategies, in a manner that ensures effective results. Beginning with reviews on dehydration, salinity, and cold tolerance as well as on oxidative stress, the volume then continues with methods involving topics such as describing the identification of stress-regulated genes, proteins, and microRNAs using diverse approaches, measurement of osmotic adjustment, proline levels, enzymes involved in proline metabolism, and sugars as well as determination of ROS levels, lipid peroxidation, ion leakage, and the enzymes involved in ROS detoxification. Written in the highly successful Methods in Molecular Biology™ series format, chapters include introductions to their respective subjects, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Comprehensive and up-to-date, Plant Stress Tolerance: Methods and Protocols provides a wide range of easy-to-follow protocols catering to the needs of plant physiologists, biochemists, and molecular biologists interested in probing this vital area of study.

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