



Plant Tolerance to Environmental Stress

Global climate change affects crop production through altered weather patterns and increased environmental stresses. Such stresses include soil salinity, drought, flooding, metal/metalloid toxicity, pollution, and extreme temperatures. The variability of these environmental conditions paired with the sessile lifestyle of plants contribute to high exposure to these stress factors. Increasing tolerance of crop plants to abiotic stresses is needed to fulfill increased food needs of the population.

This book focuses on methods of improving plants tolerance to abiotic stresses. It provides information on how protective agents, including exogenous phytoprotectants, can mitigate abiotic stressors affecting plants. The application of various phytoprotectants has become one of the most effective approaches in enhancing the tolerance of plants to these stresses. Phytoprotectants are discussed in detail including information on osmoprotectants, antioxidants, phytohormones, nitric oxide, polyamines, amino acids, and nutrient elements of plants.

Features:

- Compiles recent updates of the effects and mechanisms of various abiotic and biotic agents on plant tolerance to major stress elements.
- Focuses on using exogenous protectants in mitigating stress-induced damages and their potential use in developing abiotic stress tolerance.
- Covers multiple abiotic stresses associated with plants including drought, salinity, extreme temperature, flooding, and toxic metals.
- Includes information on advanced biotechnological tools, genetic engineering, and discovering the newer sources of tolerance in developing the next generation of crop varieties.
- Providing a valuable resource of information on phytoprotectants, this book is useful in diverse areas of life sciences including agronomy, plant physiology, cell biology, environmental sciences, and biotechnology.

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ISBN: 978-1-138-55917-2



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