

MOLECULAR MECHANISMS IN PLANT ADAPTATION

Plants are forced to adapt for a variety of reasons— protection, reproductive viability, and environmental and climatic changes. Computational tools and molecular advances have provided researchers with significant new insights into the molecular basis of plant adaptation. *Molecular Mechanisms in Plant Adaptation* provides a comprehensive overview of a wide variety of these different mechanisms underlying adaptation to these challenges to plant survival.

Molecular Mechanisms in Plant Adaptation opens with a chapter that explores the latest technological advances used in plant adaptation research, providing readers with an overview of high-throughput technologies and their applications. The chapters that follow cover the latest developments on using natural variation to dissect genetic, epigenetic, and metabolic responses of plant adaptation. Subsequent chapters describe plant responses to biotic and abiotic stressors and adaptive reproductive strategies. Emerging topics such as secondary metabolism, small-RNA-mediated regulation as well as cell-type-specific responses to stresses are given special precedence. The book ends with chapters introducing computational approaches to study adaptation and focusing on how to apply laboratory findings to field studies and breeding programs.

Molecular Mechanisms in Plant Adaptation interest plant molecular biologists and physiologists, plant stress biologists, plant geneticists, and advanced plant biology students.

- Provides broad coverage of an increasingly important subsection of plant biology
- Explores adaptations adopted for protection, reproduction, and adjusting to climatic and environmental stressors
- Covers emerging and growing topics of research such as epigenetics, secondary metabolism, and small-RNA-mediated regulation of stress responses.
- Provides practical information on developing models based on new computational research techniques

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