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Nota di contenuto	Front Cover; Chilling, Freezing, and High Temperature Stresses; Copyright Page; Table of Contents; Preface; Preface to the First Edition; PART I: STRESS CONCEPTS; Chapter 1. Stress and Strain Terminology; A. Physical Stress and Strain; B. Biological Stress and Strain; Chapter 2. The Nature of Stress Injury and Resistance; A. Stress Injury; B. Stress Resistance; C. Kinds of Stress Tolerance; Bibliography; PART II: CHILLING TEMPERATURES; Chapter 3. Chilling Injury and Resistance; A. Chilling Stress; B. Chilling Injury; C. Chilling Resistance; Bibliography; PART III: FREEZING TEMPERATURES Chapter 4. Limits of Low-Temperature Tolerance A. Dehydrated Protoplasm; B. Hydrated Protoplasm; C. Cryoprotectants; Chapter 5. The Freezing Process; A. The Freezing Stress; B. Extracellular versus Intracellular Freezing; C. Freezing, Undercooling, and Eutectic Points; D. Freeze-Dehydration; E. Measurement of Ice Formation in Plants; Chapter 6. Freezing Injury; A. Occurrence; B. Primary Direct Freezing Injury; C. The Time Factor in Relation to Injury; D. The Moment of Freezing Injury; E. Primary Indirect Freezing Injury; F. Secondary Freezing Injury Chapter 7. Freezing Resistance-Types, Measurement, and Changes A. Possible Types of Resistance; B. Measurement of Freezing Tolerance; C. Changes in Freezing Tolerance; D. The Nature of Freezing Tolerance; Chapter 8. Factors Related to Freezing Tolerance; A. Morphology,

Anatomy, Organelles; B. Physiological Factors; C. Resistance Induced by Applied Substances; Chapter 9. Theories of Freezing Injury and Resistance; A. Primary, Direct (Intracellular) Freezing Injury; B. Secondary, Freeze-Induced Dehydration Injury; Chapter 10. Molecular Basis of Freezing Injury and Tolerance  
A. Evidence for a Molecular Basis B. Membrane Damage as the Initial Injurious Strain; C. The SH Hypothesis of Freezing Injury; D. Mechanism of Freeze-Induced Membrane Damage; E. Freezing Resistance and the Hardening Mechanism; F. Metabolic Control of the Hardening Process; Bibliography; PART IV: HIGH-TEMPERATURE STRESS; Chapter 11. High-Temperature or Heat Stress; A. Quantitative Evaluation of Stress; B. Limit of High-Temperature Survival; C. The Time Factor; D. Occurrence of High-Temperature Stress and Injury in Nature; E. Nature of the Injury; F. Protective Substances  
Chapter 12. Heat Resistance A. Heat Avoidance; B. Heat Tolerance; C. Molecular Aspects of Thermotolerance; D. Relationship between Thermotolerance and Low-Temperature Tolerance; Bibliography; Index

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Sommario/riassunto

Responses of Plants to Environmental Stresses, Second Edition, Volume I: Chilling, Freezing, and High Temperature Stresses encompasses essentially all the environmental stresses that have been intensively investigated. However, this edition does not include mineral deficiencies, which comprise too broad and involve a field to be incorporated with other stresses. This book attempts to analyze the possibilities of developing unified concepts of stress injury and resistance.

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