



Abiotic stresses in plants

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Electronic books

Monografía

Much of Europe has been complaining recently of unseasonal weather- disastrous floods in Eastern Europe, temperatures reaching over 40°C in Central Europe, no decent rain for months in parts of the Balkans, coupled with unusually long and severe frosts in winter. Indeed, wheat yields in Serbia for 2003 are expected to be reduced by over 30% because of the combination of a long frost during winter with insufficient protective snow cover, very low rainfall in the spring months and sudden high temperatures reaching over 30°C at the time of flowering. So, with this background, it is very timely that this volume on Abiotic Stresses in Plants has been put together. Each of the eight chapters focuses on a different aspect of abiotic stress, presenting reviews of recent advances in the subject. Rather than summarise the contents of each chapter, I'll focus on some of the advances in technologies presented here for elucidating the molecular, genetic and biochemical mechanisms that regulate plant responses to stresses and which also provide opportunities for improving plant performance under abiotic stresses. The last 20 years has seen a revolution in the availability of technologies for this, starting with the development of transformation technologies to study the role of an individual gene, then came molecular marker technologies to study the genetic control of stress responses, and in recent years the '-omics' (genomics, proteomics and metabolomics) have been developed to create an integrated picture of how the plant responds to a particular stress

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Título: Abiotic stresses in plants edited by Luigi Sanità di Toppi and Barbara Pawlik-Skowronska

Editorial: Dordrecht, [Netherlands] Springer-Science+Business Media, B.V. 2003 ©2003

Descripción física: 1 online resource (XVIII, 233 p.)

Nota general: Bibliographic Level Mode of Issuance: Monograph

Bibliografía: Includes bibliographical references at the end of each chapters and index

Contenido: 1 Plant Tolerance to Heat Stress: Current Strategies and New Emergent Insight -- 2 Chilling and Freezing Stresses in Plants: Cellular Responses and Molecular Strategies for Adaptation -- 3 Salt Tolerance: Placing Advances in Molecular Genetics into a Physiological and Agronomic Context -- 4 Unravelling the Genetic

Basis of Drought Tolerance in Crops -- 5 Anoxia: The Role of Carbohydrates in Cereal Germination -- 6 Response to Heavy Metals in Plants: a Molecular Approach -- 7 Plant Response to Elevated Carbon Dioxide -- 8 Ozone: a Novel Plant Pathogen

Lengua: English

ISBN: 94-017-0255-1

Materia: Crops- Effect of stress on Crops- Physiology

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Enlace a formato físico adicional: 1-4020-1648-4 90-481-6434-6

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