

BURLEIGH DODDS SERIES IN AGRICULTURAL SCIENCE

Developing drought-resistant cereals

Edited by Professor Roberto Tuberosa, University of Bologna, Italy



 burleigh dodds
SCIENCE PUBLISHING

AVAILABLE NOW!

About the book

This collection explores the challenge of achieving improved drought tolerance in key cereal crops such as wheat and barley and reviews key research and strategies which address how to overcome this challenge in order to mitigate the effects of climate change on cereal production.

About the editor

Dr Roberto Tuberosa is Professor of Plant Biotechnology and Breeding in the Department of Agriculture and Food Science at the University of Bologna, Italy. Professor Tuberosa is internationally renowned for his genomic studies to dissect the genetic basis of drought resistance in cereals and how to leverage this knowledge toward the release of climate-resilient cultivars. He is on the editorial board of several leading journals and has been involved in many European and international research projects in cereal breeding,

Developing drought-resistant cereals

Available in print and digital formats:

ISBN - print 978-1-78676-985-5

Pages 408

Pub. Date January 2024

Price £150/\$195/€180/C\$255

Series No AS124

For a complete list of titles visit www.bdspublishing.com

T: +44 (0) 1223 839365

E: info@bdspublishing.com

www.bdspublishing.com

 @bdspublishing

 Burleigh Dodds Science Publishing

 burleigh dodds
SCIENCE PUBLISHING

Developing drought-resistant cereals

Edited by: Professor Roberto Tuberosa, University of Bologna, Italy

Part 1 Understanding mechanisms of drought tolerance

1. What is 'drought stress' and what are options to increase crop yield?: *Thomas R. Sinclair, North Carolina State University, USA; and Michel E. Ghanem, Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), France and Mohammed VI Polytechnic University, Morocco*
2. The role of plant hormones in adaptation to drought stress in cereals: *Arnauld A. Thiry, Lancaster Environment Centre, UK; Matthew P. Reynolds, International Maize and Wheat Improvement Center (CIMMYT), Mexico; and William J. Davies and Ian C. Dodd, Lancaster Environment Centre, UK*
3. Genetics of drought tolerance in cereals: *Ambra Viviani, Roberto Tuberosa and Marco Maccaferri, Department of Agricultural and Food Sciences (DISTAL) – University of Bologna, Italy*
4. The role of drought-induced proteins in regulating drought tolerance in cereals: *Mitiku A. Mengistu and John C. Cushman, University of Nevada – Reno, USA*

Part 2 Techniques for improving resistance

5. Advances in phenotyping to identify drought-resistance traits in cereal roots: *John (Jack) Christopher, University of Queensland QAAFI, Australia*
6. Identifying and exploiting genes controlling root system architecture for improving drought tolerance in cereals: *Eric S. Ober and Anya Heathcote, NIAB, UK*
7. Identifying and exploiting photosynthetic genes in improving drought resistance in cereals: *Weiguo Chen, Daizhen Sun and Runzhi Li, Shanxi Agricultural University, China; and Ruilian Jing, Chinese Academy of Agricultural Sciences, China*
8. Genomic selection, gene editing and genetic engineering for drought tolerance in cereals: *Rodomiro Ortiz, Swedish University of Agricultural Sciences (SLU), Sweden*
9. Identifying genes for yield-related traits under drought stress conditions in durum wheat: *Ilaria Marcotuli and Agata Gadaleta, University of Bari Aldo Moro, Italy; Osvin Arriagada, Samantha Reveco and Andrés R. Schwember, Pontificia Universidad Católica de Chile, Chile; Marco Maccaferri, Matteo Campana and Roberto Tuberosa, University of Bologna, Italy; Christian Alfaro, Instituto de Investigaciones Agropecuarias (INIA), Chile; and Iván Matus, Instituto de Investigaciones Agropecuarias (INIA), Chile*
10. Developing corn hybrids with improved performance under water deficits: *Elhan Ersoz, University of Illinois at Urbana-Champaign and Umbrella Genetics, USA; and Robert J. Bensen, Umbrella Genetics, USA*