

# BURLEIGH DODDS SERIES IN AGRICULTURAL SCIENCE

BURLEIGH DODDS SERIES IN AGRICULTURAL SCIENCE

## Advances in seed science and technology for more sustainable crop production

Edited by Dr Julia Buitink, INRAE, France

Professor Olivier Leprince, L'Institut Agro – Agrocampus Ouest, France



 burleigh dodds  
SCIENCE PUBLISHING

## AVAILABLE NOW

### About the book

This collection reviews the wealth of recent research on advances in seed science and technology, including key developments in seed phenotyping and seed treatments, and their role in contributing to a more sustainable agriculture.

### About the editors

**Dr Julia Buitink** is a Research Director at IRHS (the Research Institute of Horticulture and Seeds) within INRAE. Dr Buitink is President of the International Society for Seed Science (ISSS).

**Dr Olivier Leprince** is Professor of Plant Physiology at L'Institut Agro - Rennes Angers, France. He is ISSS Regional Representative for Western Europe and Scandinavia and Associate Editor of *Seed Science Research*.

### Advances in seed science and technology for more sustainable crop production

Available in print and digital formats:

ISBN - print 978-1-78676-917-6

Pages 368

Pub. Date July 2022

Price £140/\$180/€170/C\$240

Series No AS120

**Order via our online bookshop at**

**<https://bdspublishing.com>, your usual book supplier, or pass to your librarian.**

Enquiries to [info@bdspublishing.com](mailto:info@bdspublishing.com)

**For a complete list of titles visit [www.bdspublishing.com](http://www.bdspublishing.com)**

T: +44 (0) 1223 839365

E: [info@bdspublishing.com](mailto:info@bdspublishing.com)

[www.bdspublishing.com](http://www.bdspublishing.com)

 @bdspublishing

 Burleigh Dodds Science Publishing

 burleigh dodds  
SCIENCE PUBLISHING

# Advances in seed science and technology for more sustainable crop production

Edited by: Dr Julia Buitink, INRAE, France and Professor Olivier Leprince, L'Institut Agrocampus Ouest, France

## Part 1 Understanding seeds: from biology to the field

1. Seed dormancy and germination: a critical update: *Henk W. M. Hilhorst, Wageningen University & Research, The Netherlands and University of Cape Town, South Africa*
2. Understanding the effects of maternal environment in controlling seed dormancy: *Roberto L. Benech-Arnold, Cátedra de Cultivos Industriales, IFEVA-Facultad de Agronomía (CONICET/UBA), Argentina; M. Verónica Rodríguez, Cátedra de Fisiología Vegetal, IFEVA-Facultad de Agronomía (CONICET/UBA), Argentina; Diego Batlla, Cátedra de Cerealicultura, IFEVA-Facultad de Agronomía (CONICET/UBA), Argentina; and Rocío Fernández Farnocchia, Cátedra de Cultivos Industriales, IFEVA-Facultad de Agronomía (CONICET/UBA), Argentina*
3. Applying population-based threshold models to quantify and improve seed quality attributes: *Kent J. Bradford and Pedro Bello, University of California-Davis, USA*
4. Biotic sources of seed losses influencing germination and emergence success in crop plants and agricultural weeds: *James W. Dalling and Adam S. Davis, University of Illinois Urbana-Champaign, USA*
5. Advances in understanding the genetic and environmental factors determining seed longevity: *Julia Buitink and Olivier Leprince, Institut Agro, Univ Angers, INRAE, IRHS, France*

## Part 2 Seed quality control and treatment

6. Advances in seed phenotyping using X-ray imaging: *Sherif Hamdy, Aurélie Charrier and Laurence Le Corre, GEVES, France; Pejman Rasti, Université d'Angers and École d'ingénieur Informatique et Environnement (ESAIP), France; and David Rousseau, Université d'Angers, France*
7. Advances in testing seed health: *Peter Bonants, Wageningen University & Research, The Netherlands*
8. Advances in preservation of seed vigour during storage: *Fiona R. Hay, Aarhus University, Denmark*
9. Enhancing seed defence mechanisms against pathogens: *John Hampton, Bio-Protection Research Centre, Lincoln University, New Zealand*
10. Advances in seed priming techniques: *Henry Bruggink, Incotec Europe, The Netherlands*