Understanding and minimising fungicide resistance

Edited by: Dr Francisco J. Lopez-Ruiz, Curtin University, Australia

Endorsement:
“This new book provides a comprehensive coverage of the issue of fungicide resistance in agriculture. The content of the chapters in Part one is well supported by the inclusion of several case studies – written by representatives from the scientific community and the chemical industry – in Part two which detail recent advances in understanding resistance to key groups of fungicides. Edited by a leading name in the field and featuring contributions from a very impressive list of international experts, the volume promises to be an excellent reference for the future management of fungicide resistance.” (Lise Nistrup Jørgensen, Senior Scientist, Aarhus University, Denmark)

Description:
The emergence of fungicide resistance is a major challenge facing agriculture. With increasing regulation and costs limiting the development of new fungicides, farmers remain reliant on a relatively small group of working fungicides, many of which are decreasingly effective as major crop disease pathogens develop resistance to them.

Understanding and minimising fungicide resistance provides an authoritative review on the wealth of research on understanding the development of fungicide resistance in agricultural crops and the establishment of preventative measures which can be implemented to limit its spread and the consequent impact of disease on yields. This collection includes ways of understanding and preventing resistance to key groups of fungicides, such as SBI, Qol, SDHI and OSPBI.

Key features:
- Reviews good practices for minimising the development of fungicide resistance in crop cultivation
- Provides a comprehensive overview of our current understanding of resistance to the key groups of fungicides used across agriculture
- Considers trends in the development of resistance in key staple crops and advances in techniques to predict future patterns in resistance development

Audience:
University and other researchers in crop protection and agronomy; plant pathologists; farmers; as well as government and private sector agencies supporting sustainable crop production and regulating the development and use of fungicides throughout agriculture

Editor details:
Dr Francisco J. Lopez-Ruiz leads the Fungicide Resistance Group at the Centre for Crop and Disease Management (CCDM). Based in the School of Molecular and Life Sciences at Curtin University, Australia, the Fungicide Resistance Group has made major contributions towards the management of fungicide resistance in several key plant pathogens. Dr Lopez-Ruiz has published widely on the molecular mechanisms of fungicide resistance and its detection.
Table of contents:

- **Part 1 Understanding and managing resistance**
  1. How pathogens develop resistance to fungicides: an overview: Richard Oliver, University of Nottingham, UK;
  2. Molecular evolution and mechanisms of fungicide resistance in plant pathogenic fungi: Laetitia Chartrain and James K. M. Brown, John Innes Centre, UK;
  3. Tracking the development of fungicide resistance: Francisco J. Lopez-Ruiz, Curtin University, Australia;
  4. Crop disease control efficacy and selection for resistance: two sides of the same coin?: Frank van den Bosch, ADAS High Mowthorpe, UK; Stephen Parnell, The University of Warwick Wellesbourne, UK; and Neil Paveley, ADAS High Mowthorpe, UK, UK;
  5. Fungicide resistance risk assessment: Mike Grimmer, ADAS Boxworth, UK;
  6. Good practice in minimising the development of fungicide resistance in crop pathogens: Neil Paveley, and Frank van den Bosch, ADAS High Mowthorpe, UK;
  7. Fungicide resistance: Evolutionary questions and practical implications Nichola Hawkins, NIAB, UK;
  8. The role of Extension in fungicide resistance management: Guido Schnabel, Clemson University, USA; and Phillip M. Brannen, University of Georgia, USA;
  9. Key challenges in developing new fungicides: Gregory M. Kemmitt, Corteva Agriscience™, UK;
- **Part 2 Case studies: resistance in key groups of fungicides**
  10. Understanding resistance to sterol biosynthesis inhibitor fungicides: Andreas Mehl, Bayer AG, Crop Science Division, Germany;
  11. Quinone outside inhibitor fungicide resistance: selection patterns and the current situation: Stefano F. F. Torriani and Helge Sierotzki, Syngenta Crop Protection AG, Switzerland;
  12. Understanding resistance to succinate dehydrogenase inhibitor fungicides: Wesley Mair, Centre for Crop and Disease Management, Curtin University, Australia;
  13. Understanding resistance to Anilinopyrimidine fungicides: Seiya Saito and Chang-Lin Xiao, USDA-Agricultural Research Service, San Joaquin Valley Agricultural Sciences Center, USA;
  14. Understanding resistance to oxysterol binding protein inhibitor fungicides: Jean-Luc Genet, Corteva Agriscience, France;

Related products:
Achieving durable disease resistance in cereals, 978-1-78676-601-4, 19 Oct 2021, GBP 180.00, EUR 215.00, USD 235.00, CAD 305.00, and AUD 325.00
Achieving sustainable cultivation of maize Volume 2, 978-1-78676-012-8, 31 Jul 2017, USD 220.00, EUR 205.00, CAD 290.00, GBP 170.00, and AUD 305.00
Achieving sustainable cultivation of wheat Volume 1, 978-1-78676-016-6, 30 Jun 2017, USD 245.00, EUR 230.00, CAD 325.00, GBP 190.00, and AUD 340.00
Integrated disease management of wheat and barley, 978-1-78676-216-0, 23 Oct 2018, CAD 290.00, USD 220.00, EUR 205.00, GBP 170.00, and AUD 305.00
Integrated management of diseases and insect pests of tree fruit, 978-1-78676-256-6, 10 Sep 2019, GBP 190.00, EUR 230.00, USD 245.00, CAD 325.00, and AUD 340.00