BURLEIGH DODDS SERIES IN AGRICULTURAL SCIENCE

BURLEIGH DODDS SERIES IN AGRICULTURAL SCIENCE

Advances in understanding insect pests affecting wheat and other cereals

Edited by Professor Sanford D. Eigenbrode, University of Idaha USA and Dr Arash Rashed, Virginia Tech, USA



burleigh dodds SCIENCE PUBLISHING

AVAILABLE NOW!

About the book

With growing concerns surrounding the impact of climate change on both native and invasive pest invasions, coupled with the rising threat of global food insecurity, more research is required to understand the major insect pests of cereals.

This book discusses the most recent developments in fundamental and applied research on major pests and shows how better understanding of these pests can be used to improve integrated pest management strategies.

About the editors

Dr Sanford D. Eigenbrode is

University Distinguished Professor in the College of Agricultural and Life Sciences at the University of Idaho, USA.

Dr Arash Rashed is Associate Professor and Director of the Southern Piedmont Agricultural Research and Extension Center, Virginia Tech, USA.

Advances in understanding insect pests affecting wheat and other cereals

Available in print and digital formats: ISBN - print 978-1-80146-113-9

Pages 478

Pub. Date May 2023

Price £150/\$195/€180/C\$255

Series No AS129

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

T: +44 (0) 1223 839365

E: info@bdspublishing.com

www.bdspublishing.com

🍠 @bdspublishing

in Burleigh Dodds Science Publishing



Empowering knowledge - delivering sustainable agriculture

Advances in understanding insect pests affecting wheat and other cereals

Edited by: Professor Sanford D. Eigenbrode, University of Idaho, USA and Dr Arash Rashed, Virginia Tech, USA

Part 1 Foliar feeding pests

- Cereal leaf beetle (Oulema melanopus): Edward W. Evans, Utah State University, USA
- Grasshoppers and other orthopteran pests: Robert B. Srygley, Pest Management Research Unit, Northern Plains Agricultural Research Laboratory, USDA-ARS, USA

Part 2 Gall midges and stem feeding pests

- The Hessian fly: a destructive pest of wheat and barley: Ming-Shun Chen, Hard Winter Wheat Genetics Research Unit, Center for Grain and Animal Health Research – USDA-ARS, USA; Nida Ghori, Kansas State University, USA; and Guihua Bai and Xuming Liu, Hard Winter Wheat Genetics Research Unit, Center for Grain and Animal Health Research – USDA-ARS, USA
- Wheat midge (Sitodiplosis mosellana): management in the Northern Great Plains of the United States and Canada: Govinda Shrestha, Oregon State University, USA; and Gadi V. P. Reddy, Southern Insect Management Research Unit, USA
- Wheat stem sawfly (Cephus cinctus Norton): David Weaver, Montana State University, USA

Part 3 Phloem feeding pests, mites and root feeding pests

- Russian wheat aphid (Diuraphis noxia): an overview: Vicki L. Tolmay, Agricultural Research Council – Small Grain Institute, South Africa
- Greenbug (Schizaphis graminum): an overview: Tom A. Royer, Oklahoma State University, USA
- Greenbug-wheat interactions, pest management and host resistance: L.
 A. Crespo-Herrera, International Maize and Wheat Improvement Center (CIMMYT), Mexico; J. Huerta-Espino, Instituto Nacional de Investigaciones Forestales Agrícolas y Pecuarias, Mexico; and R. P. Singh, International Maize and Wheat Improvement Center (CIMMYT), Mexico

- Fescue aphid (Metopolophium festucae): Sanford D. Eigenbrode and Subodh Adhikari, University of Idaho, USA; and Arash Rashed, Virginia Tech, USA
- 10. The English grain aphid Sitobion avenae: Deguang Liu, College of Plant Protection, Northwest A&F University, China
- Wheat curl mite ecology and epidemiology of its associated wheat viruses: Gary L. Hein, Anthony J. McMechan and Lindsay Overmyer, University of Nebraska-Lincoln, USA
- Advances in managing wireworms in cereal crops: challenges and future directions: Arash Rashed, Virginia Tech, USA; and Erik J. Wenninger, University of Idaho, USA

Part 4 Emerging issues

- Recent invasions of insect pests of wheat and sorghum: Michael J. Brewer and Blake H. Elkins, Texas A&M AgriLife Research, Texas A&M University, USA
- 14. Biotechnology for wheat crop protection: potential and challenges: Anna-Maria Botha, Stellenbosch University, South Africa
- 15. Online decision support systems, remote sensing and artificial intelligence applications for wheat pest management: Daniel J. Leybourne, Leibniz University Hannover, Germany and RSK ADAS Ltd, UK; Mark Ramsden and Sacha White, RSK ADAS Ltd, UK; Rujing Wang, He Huang and Chengjun Xe, Institute of Intelligent Machines, Chinese Academy of Sciences, China; and Po Yang, University of Sheffield, UK