

BURLEIGH DODDS SERIES IN AGRICULTURAL SCIENCE

Advances in monitoring of native and invasive insect pests of crops

Edited by Dr Michelle Fountain, NIAB-EMR, UK

Dr Tom Pope, Harper Adams University, UK



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About the book

This book reviews the wealth of research on techniques to monitor and thus prevent threats from both native and invasive insect pests. The book considers recent advances in areas such as sampling, identifying and modelling pest populations.

The book explores current best practices for the detection, identification and modelling of native and invasive insect pests of crops. The contributors offer farmers informed advice on how to mitigate a growing problem which has been exacerbated as a result of climate change.

About the editors

Dr Michelle Fountain is Head of Pest and Pathogen Ecology at the world-famous NIAB East Malling, UK.

Dr Tom Pope is Reader in Entomology and Integrated Pest Management at Harper Adams University, a leading agricultural university in the UK.

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Advances in monitoring of native and invasive insect pests of crops

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Part 1 Detection

1. Advances in techniques for trapping crop insect pests: *Archie K. Murchie, Agri-Food & Biosciences Institute, UK*
2. Advances and challenges in monitoring insect pests of major field crops in the United States: *Erin W. Hodgson and Ashley N. Dean, Iowa State University, USA; Anders Huseth, North Carolina State University, USA; and William D. Hutchison, University of Minnesota, USA*
3. Quantifying captures from insect pest trap networks: *Nicholas C. Manoukis, USDA-ARS, USA*
4. Developments in crop insect pest detection techniques: *Richard W. Mankin, USDA-ARS, USA*
5. Monitoring airborne movement of crop insect pests and beneficials: *V. Alistair Drake, University of Canberra and University of New South Wales, Australia*

Part 2 Identification, modelling and risk assessment

6. Advances in image-based identification and analysis of crop insect pests: *Daniel Guyer, Michigan State University, USA; and Charles Whitfield, NIAB, UK*
7. Advances in insect pest monitoring using pest population growth and geospatial data for pest risk assessment: *Michael J. Brewer, Texas A&M AgriLife Research, USA; Isaac L. Esquivel, North Florida Research and Education Center, University of Florida, USA; and John W. Gordy, Syngenta Crop Protection, USA*

8. Advances in pest risk assessment techniques focusing on invertebrate pests of European outdoor crops: *Mark W. Ramsden, Samuel Telling, Daniel J. Leybourne, Natasha Alonso and Sacha White, RSK ADAS Ltd, UK; and Nikos Georgantzis, Burgundy School of Business, France*

Part 3 Invasive species

9. Assessing the potential economic impact of invasive plant pests: *Monique Mourits and Alfons Oude Lansink, Wageningen University, The Netherlands*
10. Developing effective phytosanitary measures to prevent the introduction of invasive insect pests: *Alan MacLeod and Dominic Eyre, DEFRA, UK*
11. Mitigating invasive insect species: eradication, long-term management, and the importance of sampling and monitoring: *Amy Morey, University of Minnesota, USA; and Robert Venette, USDA Forest Service, USA*