

BURLEIGH DODDS SERIES IN AGRICULTURAL SCIENCE

Chemical contaminants in foods

Understanding and managing risks

Edited by Dr Rob Theelen



 burleigh dodds
SCIENCE PUBLISHING

NOW AVAILABLE!

About the book

The book provides a comprehensive overview of new approach methodologies with the potential to identify and assess health risks from chemicals in food or feed more accurately and rapidly, including human biomonitoring, advances in-vitro cell culture and in-silico methods and physiologically-based pharmacokinetic models. The book also considers how techniques such as adverse outcome pathways can inform more sophisticated, next-generation risk assessments.

About the editor

Dr Rob Theelen has worked for the Dutch Ministry of Agriculture, Nature and Food Quality, the Netherlands Food and Consumer Product Safety Authority (NVWA) and the National Institute for Public Health and the Environment (RIVM). Dr Theelen was formerly Technical Assistant to the Chair of the Codex Committee on Contaminants in Food and currently manages the Food Safety Portal supporting chemical risk management and assessment.

Chemical contaminants in foods: Understanding and managing risks

Available in print and digital formats:

ISBN - print 978-1-83545-050-5

Pages 644

Pub. Date December 2025

Price £175/\$230/€210/C\$300

Series No AS172

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

Chemical contaminants in foods: Understanding and managing risks

Edited by: Dr Rob Theelen

Part 1 Current principles and systems

1. The global framework for food chemical risk assessment: *Gracia Brisco and Verna Carolissen-Mackay, Joint FAO/WHO Food Standards Programme Secretariat - Codex Alimentarius Commission, Italy; and Annamaria Bruno, formerly Joint FAO/WHO Food Standards Programme Secretariat - Codex Alimentarius Commission, Italy*
2. The role of the Joint Food and Agriculture Organization/World Health Organization Expert Committee on Food Additives (JECFA) in food chemical risk assessment: *Angeliki Vlachou, Vittorio Fattori and Markus Lipp, Food and Agriculture Organisation (FAO), Italy*
3. Chemical contaminants in food: key issues in exposure assessment: *Rob Theelen, Food Safety Portal, The Netherlands*

Part 2 Developments in risk assessment: Hazard identification/characterisation and exposure assessment

4. Advances in techniques for monitoring/detecting chemical contaminants in food: chromatography: *Merrick Kobarfard, Alexander Sweett and Tadeusz Górecki, University of Waterloo, Canada*
5. Advances in techniques for detecting chemical contaminants in food: electrochemical biosensors: *Daniel Cozzolino, Central Queensland University, Australia*
6. The use of effect biomarkers to assess potential effects of exposure to chemical residues from food and other sources: *G. Dervilly, M. Hernández-Mesa and B. Le Bizec, ONIRIS - INRAE - LABERCA, France*
7. Understanding the role of diet/food as a source of potentially harmful chemicals within the exposome: *Bozidar Udovicki and Ilija Djekic, University of Belgrade, Serbia*
8. Advances in human biomonitoring to assess levels of dietary exposure to potentially harmful chemicals from food or other sources: *Pascal Sanders and Christophe Rousselle, Agency for Food, Environmental and Occupational Health and Safety (ANSES), France*

Part 3 Developments in risk assessments: Risk characterisation

9. Developments in toxicokinetic modeling of chemical residues in food: *Dimosthenis Sarigiannis, National Hellenic Research Foundation/Aristotle University of Thessaloniki, Greece and University School for Advanced Study (IUSS), Italy; and Spyros Karakitsios, National Hellenic Research Foundation/Aristotle University of Thessaloniki, Greece*
10. The integration of adverse outcome pathways and aggregate exposure pathways for food safety testing: pesticides as a case study: *Alexandra-Costina Avîrvarei, Ellen Callewaert, Kyriaki Xiftou, Mathieu Vinken and Julien Sanz-Serrano, Vrije Universiteit Brussel, Belgium*
11. Developments in in silico tools for safety and hazard assessment of chemicals in food: *Szabina Stice, U.S. Food and Drug Administration, USA*

Part 4 Environmental and processing contaminants and natural toxins

12. Advances in assessing heavy metals in food: *Paul Williams, Simon Haughey and Yicong Li, The Queen's University of Belfast, UK; Ramón Fernández-Ruiz, Universidad Autónoma de Madrid, Spain; Alfredo de la Escosura-Muñiz, University of Oviedo, Spain; Alessandro Migliori, Nuclear Science and Instrumentation Laboratory, Division of Physical and Chemical Sciences, Department of Nuclear Sciences and Applications, International Atomic Energy Agency (IAEA), Vienna, Austria; Christina Vlachou and Britt Maestroni, Food Safety and Control Laboratory, Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture, Department of Nuclear Sciences and Applications, International Atomic Energy Agency (IAEA), Vienna, Austria*
13. Advances in chemical analysis of flame-retardant residues in food: *Gary Codling, University of Exeter, UK*
14. Advances in assessing residues of perfluoroalkyl substances in foods: *Thimo Groffen, University of Antwerp, Belgium; Chayma El Amraoui Aarab, Mélanie Di Mario, Els Van Hoeck and Laure Joly, Sciensano, Belgium; Marc Hanikenne, University of Liège, Belgium; and Els Van Pamel, Flanders Research Institute for Agriculture, Fisheries and Food (ILVO), Belgium*
15. Assessing microplastics and nanoplastics in food: *Alfonso Lampen, Federal Institute for Risk Assessment (BfR), Germany*
16. Contaminants related to high-temperature processing of food: *YOUNGSONG LEE, University of Helsinki, Finland; and HOONJEONG KWON, Seoul National University, Republic of Korea*
17. Assessing pyrolyzidine alkaloids in food: *Natalia Casado, Universidad Rey Juan Carlos, Spain; Florian Kaltner, Ludwig Maximilian University of Munich, Germany; Begoña Fernández-Pintor and Sonia Morante-Zarero, Universidad Rey Juan Carlos, Spain; and Isabel Sierra, Universidad Rey Juan Carlos and Instituto de Investigación de Tecnologías para la Sostenibilidad, Spain*
18. TROPANE ALKALOIDS IN FOOD: *Inês Parente, University of Coimbra, Portugal; Ana Rita Soares Mateus, University of Coimbra, Portugal/National Institute for Agricultural and Veterinary Research (INIAV), Portugal/Centre for Animal Science Studies (CECA), ICETA, Portugal; Sílvia Cruz Barros, National Institute for Agricultural and Veterinary Research (INIAV), Portugal; Angelina Pena, University of Coimbra, Portugal; and Ana Sanches Silva, University of Coimbra, Portugal/Centre for Animal Science Studies (CECA), ICETA, Portugal/Associate Laboratory for Animal and Veterinary Sciences (AL4AnimalS), Portugal*