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## Preventing food losses and waste to achieve food security and sustainability

Edited by Professor Elhadi M. Yahia Universidad Autónoma de Querétaro, Mexico



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#### About the book

Around one third of all food production is lost or wasted. This book provides a comprehensive review of the causes and prevention of food losses and waste at key steps in the supply chain, for different commodities and across particular regions.

### About the editor

### Professor Elhadi M. Yahia is

Professor and Senior Research Scientist at the Autonomous University of Querétaro, Mexico. Professor Yahia has published 20 books in 3 languages and more than 300 book chapters and articles on post-harvest handling of fresh produce. He has worked at the Food and Agriculture Organization of the United Nations (FAO) where he helped launch the Global Initiative on Food Loss and Waste Reduction.

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# Preventing food losses and waste to achieve food security and sustainability

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#### Part 1 The problem of food losses and waste

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- 3. The role of food losses and waste in food insecurity: Camelia Bucatariu, Independent Researcher, Italy
- The multidimensional socio-economic impacts of food losses and waste: Abdallah Omezzine, University of Nizwa, Oman; Elhadi M. Yahia, Universidad Autónoma de Querétaro, Mexico; and Camelia Bucatariu, Independent Researcher, Italy
- The environmental impact of food loss and waste (FLW): I. Higuera-Ciapara and R. Lugo-Melchor, Food Technology Unit, Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C. (CIATEJ), Mexico; and L. O. Noriega-Orozco, Centro de Investigación en Alimentación y Desarrollo A.C. (CIAD), Mexico
- The impact of food loss and waste on human nutrition and health: Jorge L. Chávez-Servín, Roberto A. Ferriz Martínez and Elhadi M. Yahia, Universidad Autónoma de Querétaro, Mexico
- The role of food safety in food waste and losses: Dima Faour-Klingbeil, Plymouth University, UK and DFK for Safe Food Environment, Germany; and Ewen Todd, Ewen Todd Consulting, USA

#### Part 2 Causes of food losses and waste

- Improving supply chains to prevent food losses and waste:an overview: Hamid El Bilali, University of Natural Resources and Life Sciences (BOKU), Austria
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- 10. Food losses and waste during food processing: Hanne Møller, Aina Elstad Stensgård and Ole Jørgen Hanssen, Ostfold Research, Norway
- Temperature deviations during transport as a cause for food losses: Reiner Jedermann, Institute for Microsensors, Actuators and Systems (IMSAS), Germany; Ulrike Praeger and Martin Geyer, Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Germany; et al.
- Food waste at the consumer level: Elhadi M. Yahia, Universidad Autónoma de Querétaro, Mexico; and Marie Mourad, Center for the Sociology of Organizations (CSO), France
- Food waste in food services: Sampsa Nisonen and Kirsi Silvennoinen, Natural Research Institute Finland (LUKE), Finland

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- 16. Food losses and food waste in roots and tubers: Martini Binti Mohammad Yusoff and Azizah Binti Misran, Universiti Putra Malaysia, Malaysia
- 17. Food losses and waste in meats: Salah El-Safty, Ain Shams University, Egypt; and Carlos F. Sosa-Ferreyra, Universidad Autónoma de Querétaro, Mexico
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- 26. Food losses and waste in the Near East and North Africa region: Elhadi M. Yahia, Universidad Autónoma de Querétaro, Mexico
- Challenges and initiatives in reducing postharvest food losses and food waste: sub-Saharan Africa: Tanya Stathers, Natural Resources Institute (NRI) – University of Greenwich, UK; and Brighton Mvumi, University of Zimbabwe, Zimbabwe
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