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## Achieving sustainable cultivation of vegetables

Edited by Professor George Hochmuth  
University of Florida, USA



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### About the book

This volume summarises the wealth of research on improving sustainability in vegetable cultivation. Part 1 reviews advances in physiology and breeding. Parts 2-3 summarise advances in cultivation and pest management. The final part includes case studies on the breeding and cultivation of key vegetables.

### About the editor

**Dr George Hochmuth** is Emeritus Professor of Soil and Water Sciences at the University of Florida, USA. He is co-author of Knott's Handbook for Vegetable Growers. He is former Director of the North Florida Research and Education Center (NFREC) at the University of Florida.

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## Part 1 Physiology and breeding

1. Advances in understanding vegetable physiology: root systems as the next frontier in improving sustainable vegetable production: *Felipe H. Barrios-Masias, University of Nevada, USA; Cristina Lazzcano, University of California–Davis, USA; and Leonardo H. Hernandez-Espinoza, University of Nevada, USA*
2. Advances in understanding and mitigating vegetable responses to abiotic stress: *Frederik Börnke, Leibniz Institute of Vegetable and Ornamental Crops (IGZ) and University of Potsdam, Germany; and Dietmar Schwarz, Leibniz Institute of Vegetable and Ornamental Crops (IGZ), Germany*
3. Developments in breeding vegetables: *Laura A. Chatham and John A. Juvik, University of Illinois at Urbana–Champaign, USA*

## Part 2 Cultivation

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5. Advances in understanding soil health for vegetable cultivation: *Ajay Nair, Iowa State University, USA*
6. Advances in greenhouses and other protected structures used for cultivation of vegetables: *Martine Dorais, Centre de recherche en innovation sur les végétaux, Université Laval, Canada*
7. Developments in soilless/hydroponic cultivation of vegetables: *Dimitrios Savvas, Agricultural University of Athens, Greece; and Damianos Neocleous, Ministry of Agriculture, Natural Resources and Environment, Cyprus*
8. Advances in organic cultivation of vegetables: *Xin Zhao, University of Florida, USA; Francesco Di Gioia, Pennsylvania State University, USA; Kathleen Delate, Iowa State University, USA; Erin Roskopf, USDA-ARS, USA; and Wenjing Guan, Purdue University, USA*

## Part 3 Pests and pathogens

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10. Advances in understanding insect pests of vegetables: a case study of sweetpotato weevil: *Ken Sorensen, North Carolina State University, USA*
11. Integrated pest management (IPM) of vegetables: examples of successful deployment: *Joshua Freeman, University of Florida, USA*
12. Microbiological safety of vegetable produce: the impact of pre- and post-harvest practices: *Max Teplitski, USDA National Institute of Food and Agriculture, USA*

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14. Sustainable carrot product: *Mary Ruth McDonald and Zachariah Telfer, University of Guelph, Canada*
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16. Advances in lettuce cultivation: *Rosemary Collier, University of Warwick, UK*
17. Advances in breeding of cucumbers and watermelon: *Todd Wehner, North Carolina State University, USA; and Rachel Naegele, USDA-ARS, USA*
18. Alternative tillage production systems for cucurbit vegetables: *Alan Walters, Southern Illinois University, USA*
19. Sustainable production of cabbage on plasticulture: *Charles E. Barrett, Lucas G. Paranhos, Kati W. Migliaccio, Gary K. England and Lincoln Zotarelli, University of Florida, USA*
20. Advances in pea breeding: *Diego Rubiales and María J. González-Bernal, Institute for Sustainable Agriculture, Spain; Tom Warkentin and Rosalind Bueckert, University of Saskatchewan, Canada; Maria C. Vaz Patto, ITQB NOVA-Universidade Nova de Lisboa, Portugal; Kevin McPhee, Montana State University, USA; Rebecca McGee, USDA-ARS, USA; and Petr Smýkal, Palacký University, Czech Republic*