

Achieving sustainable cultivation of potatoes

VOLUMES 1 & 2

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Achieving sustainable cultivation of potatoes - Vol.1

Breeding, nutritional and sensory quality

Edited by: Professor Gefu Wang-Pruski, Dalhousie University, Canada

KEY FEATURES

- Reviews latest research on understanding potato plant physiology and genetic variety
- Discusses major advances in conventional, hybrid and marker-assisted breeding as well as their application in improved varieties
- Focuses on ways of supporting smallholders in developing countries

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Part 1 Plant physiology and breeding

1. Advances in understanding of potato plant physiology and growth: Curtis M. Frederick, University of Wisconsin, USA; Masahiko Mori, Obihiro University of Agriculture and Veterinary Medicine, Japan; and Paul C. Bethke, USDA-ARS, USA and University of Wisconsin, USA
2. Understanding ageing processes in seed potatoes: Paul C. Struik, Wageningen University & Research, The Netherlands
3. Ensuring the genetic diversity of potatoes: John Bamberg and Shelley Jansky, USDA-ARS, USA; Alfonso del Rio, University of Wisconsin- Madison, USA; and Dave Ellis, International Potato Center (CIP), Peru
4. Advances in conventional potato-breeding techniques: Jai Gopal, Central Potato Research Institute, India
5. Hybrid potato breeding for improved varieties: Pim Lindhout, Michiel de Vries, Menno ter Maat, Su Ying, Marcela Viquez-Zamora and Sjaak van Heusden, Solynta, The Netherlands
6. Advances in development of potato varieties resistant to abiotic stress: Ankush Prashar and Filipe de Jesus Colwell, Newcastle University, UK; and Csaba Hornyik and Glenn J. Bryan, The James Hutton Institute, UK
7. Developing early-maturing, stress-resistant potato varieties: Prashant G. Kwar, ICAR - Directorate of Floricultural Research, India; Hemant B. Kardile, Raja S., Som Dutt, Raj Kumar Goyal, Vinay Bhardwaj, B. P. Singh, P. M. Govindkrishnan

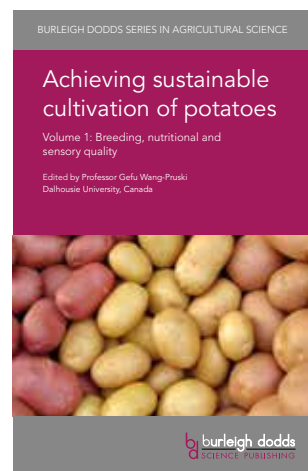
- and S. K. Chakrabarti, ICAR - Central Potato Research Institute, India; and P. Manivel, ICAR - Directorate of Medicinal & Aromatic Plants Research, India
8. Developing new sweet potato varieties with improved performance: Peng Zhang, Weijuan Fan, Hongxia Wang, Yinliang Wu and Wenzhi Zhou, Chinese Academy of Sciences, China and Jun Yang, Shanghai Chenshan Botanical Garden, China

Part 2 Nutritional and sensory quality

9. Nutritional properties and enhancement/bio-fortification of potatoes: Roy Navarre, USDA-ARS and Washington State University, USA
10. Improving the breeding, cultivation and use of sweetpotato in Africa: Putri Ernawati Abidin and Edward Ewing Carey, International Potato Center (CIP), Ghana

Part 3 Translating research into practice: improving cultivation in the developing world

11. Potato production and breeding in China: Liping Jin, Chinese Academy of Agricultural Sciences, China
12. Improving potato cultivation to promote food self-sufficiency in Africa: Moses Nyongesa and Nancy Ng'ang'a, Kenya Agricultural and Livestock Research Organization, Kenya
13. Supporting small holders in potato cultivation: Linley Chiwona-Karlton, Swedish University of Agricultural Sciences, Sweden



Editor biography

Dr Wang-Pruski is Professor of Molecular Biology in the Department of Plant and Animal Sciences at Dalhousie University, Canada. Her research focuses on potato genetics and its implications for quality and stress resistance, an area in which she has published widely. She is on the Editorial Board of Potato Research.

"Sustainable potato cultivation means simultaneously addressing and resolving a complex set of varied and interlinked context-specific constraints. These books promise to rise to the occasion with a talented cast of authors who span the disciplinary spectrum from genetics, pests and diseases, cropping systems all the way through to nutrition and consumer perspectives." Graham Thiele, Director - CGIAR Research Program on Roots Tubers and Bananas, led by the International Potato Center (CIP), Lima, Peru

Achieving sustainable cultivation of potatoes - Vol.2

Production and storage, crop protection and sustainability

Edited by: Dr Stuart Wale, Potato Dynamics Ltd., UK

KEY FEATURES

- **Comprehensive coverage of improvements in cultivation techniques across the potato value chain, from yield modelling to post-harvest storage**
- **Detailed review of the main fungal, bacterial and viral diseases affecting potatoes**
- **Assesses the environmental impact of potato cultivation**

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Part 1 Potato production and storage

1. Modelling potato growth: *Ilkka Leinonen, Scotland's Rural College (SRUC), UK; and Hongyan Chen and James A. Taylor, Newcastle University, UK*
2. Good planting, cultivation and harvesting practices for potatoes: *VK Dua, Central Potato Research Institute (CPRI), India*
3. Improving nutrient management in potato cultivation: *Philip J. White, The James Hutton Institute, UK*
4. Advances in irrigation management and technology in potato cultivation: experiences from a humid climate: *Jerry Knox and Tim Hess, Cranfield University, UK*
5. Advances in post-harvest storage of potatoes: *Glyn Harper, Sutton Bridge Crop Storage Research, UK*
6. Acrylamide formation in fried potato products and its mitigation: *Bruno De Meulenaer, Raquel Medeiros Vinci and Frédéric Mestdagh, Ghent University, Belgium*

Part 2 Diseases, pests and weeds

7. Fungal diseases affecting potato storage: *Alison Lees, The James Hutton Institute, UK*
8. Bacterial diseases affecting potatoes: *M. Jennifer Sjölund, Rachel Kelly, Gerry S. Saddler and David M. Kenyon, Science and Advice for Scottish Agriculture (SASA), UK*
9. Viruses affecting potatoes: *Colin Jeffries and Christophe Lacomme, Science and Advice for Scottish Agriculture (SASA), UK*
10. Non-infectious disorders affecting potatoes: *Andrew Robinson, North Dakota State University, USA*
11. Nematode pests of potatoes: *Jon Pickup, Science and Advice for Scottish Agriculture (SASA), UK*
12. Insect pests affecting potatoes: *Jurgen Kroschel, International Potato Center (CIP), Peru*
13. Advances in pest and disease-resistant potato varieties: *Benoit Bizimungu, Potato Research Centre – Agriculture and Agri-Food Canada, Canada*
14. Potato pest management with specific reference to the Pacific Northwest (USA):

Stuart Reitz, Oregon State University, USA

Part 3 Sustainability

15. Assessing the impact of climate change on potato cultivation: *Roberto Quiroz, International Potato Center (CIP), Peru*
16. Good agricultural practice and integrated crop management (ICM) in sustainable potato cultivation: *Samuel Essah, Colorado State University, USA*
17. Organic potato cultivation: *Thomas F. Döring, Humboldt-Universität zu Berlin and University of Bonn, Germany; and Derek H. Lynch, Dalhousie University, Canada*

Editor biography

Dr Wale is a potato agronomist and researcher for SAC Consulting within SRUC (Scotland's Rural College). He was formerly Head of Crop Services at the Scottish Agricultural College (SAC – the forerunner of SRUC). He has published widely on potato diseases in particular, coediting *Diseases, pests and disorders of potatoes: a colour handbook*, and is a former President of the British Society of Plant Pathology.

Biblio information

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