

Achieving sustainable cultivation of tomatoes

Edited by Dr Autar Mattoo, ARS-USDA, USA
Professor Avtar Handa, Purdue University, USA



 burleigh dodds
SCIENCE PUBLISHING

Publication date
31 Mar 2017

Price
£180 / \$225 / €215

ISBN
Hardback: 978-1-78676-040-1
PDF: 978-1-78676-043-2
ePub: 978-1-78676-042-5
Mobi: 978-1-78676-041-8

Format
152 x 229 mm / 6 x 9 in, 564 pages

Illustrations
Colour tables, photos and figures

Series
Burleigh Dodds Series in Agricultural
Science: no. 7

BIC/THEMA classification
TVS - Horticulture, PSTD - Plant
physiology, PSTL - Plant reproduction &
propagation, PSTP - Plant pathology &
diseases, PSTS - Plant ecology, TVDR -
Irrigation, TVF - Sustainable agriculture,
TVG - Organic farming, TVKF -
Fertilizers & manures, TVP - Pest
control



Print (exc. US and Canada) and e-books
(worldwide) distributed by NBN
International.

Updated 13/04/17

New book advance information

Achieving sustainable cultivation of tomatoes

Edited by: Autar Mattoo, ARS-USDA, USA and Avtar K. Handa, Purdue University, USA

Endorsement:

"The editors, contents and authors suggest this will be a valuable reference for tomato scientists."

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

Description:

Tomatoes are the second most important vegetable crop in the world after potatoes. Originating in South America, they are now grown widely around the world. As the population continues to grow, there is a need to increase yields in the face of such challenges as climate change, threats from pests and diseases and the need to make cultivation more resource-efficient and sustainable.

Drawing on an international range of expertise, this collection focuses on ways of improving the cultivation of tomatoes at each step in the value chain, from breeding to post-harvest storage. The book begins by looking at improvements in cultivation techniques, before moving on to review advances in ensuring genetic diversity, understanding of tomato physiology and breeding techniques. The collection concludes by discussing developments in understanding and managing pests and diseases.

Achieving sustainable cultivation of tomatoes will be a standard reference for horticultural scientists in universities, government and other research centres and companies involved in tomato cultivation.

Key features:

- Discusses developments in good agricultural practice from crop growth models to improved water and nutrition management;
- Reviews advances in understanding plant physiology and genetic diversity as well as their contribution to improvements in breeding;
- Summarises recent research on diseases and pests as well as their control through developing disease-resistant varieties or integrated weed management

Audience:

Academic researchers in horticultural science; Government agencies supporting horticulture; Fruit and vegetable processors

Editors' details:

Dr Autar Mattoo as Research Leader of the Vegetable Laboratory at the USDA's Henry A. Wallace Research Center, USA is internationally-renowned for his research on tomato physiology.

Dr Handa as Professor of Horticulture at Purdue University, USA is internationally-renowned for his research on tomato physiology.

Table of contents:

Part 1 Cultivation techniques

1. Modelling crop growth and yield in tomato cultivation: *Kenneth J. Boote, University of Florida, USA*
2. Optimizing yields in tomato cultivation: maximizing tomato plant use of resources: *V. S. Almeida, F. T. Delazari, C. Nick, W. L. Ara ú jo and D. J. H. Silva, Universidade Federal de Viçosa, Brazil*
3. Improving water and nutrient management in tomato cultivation: *E. Simonne, M. Ozores-Hampton, A. Simonne and A. Gazula, University of Florida, USA*
4. Organic greenhouse tomato production: *Martine Dorais, Agriculture and Agri-Food Canada and University of Laval, Canada;*

Part 2 Plant physiology and breeding

5. Understanding and improving water-use efficiency and drought resistance in tomato: *A. Zsögön, Universidade Federal de Viçosa, Brazil; and M. H. Vicente, D. S. Reartes and L. E. P. Peres, Universidade de São Paulo, Brazil*
6. Ensuring the genetic diversity of tomatoes: *Andreas W. Ebert and Lawrence Kenyon, AVRDC – The World Vegetable Center, Taiwan*
7. Tomato plant responses to biotic and abiotic stress: *C. A. Avila, S. C. Irigoyen and K. K. Mandadi, Texas A&M AgriLife Research, USA*
8. Developments in tomato breeding: conventional and biotechnology tools: *Y. Bai, Wageningen University and Research, The Netherlands*
9. Advances in marker-assisted breeding of tomatoes: *Junming Li, Institute of Vegetables and Flowers – Chinese Academy of Agricultural Sciences (CAAS), China*
10. Genetic engineering of tomato to improve nutritional quality, resistance to abiotic and biotic stresses, and for non-food applications: *B. Kaur and A. K. Handa, Purdue University, USA; and A. K. Mattoo, USDA-ARS, USA*
11. Developing tomato varieties with improved flavour: *M. Causse, E. Albert and C. Sauvage, INRA, France*
12. Understanding and improving the shelf life of tomatoes: *K. Wang and A. K. Handa, Purdue University, USA; and A. K. Mattoo, USDA-ARS, USA*

Part 3 Diseases, pests and weeds

13. Insect-transmitted viral diseases infecting tomato crops: *H. Czosnek, Hebrew University of Jerusalem, Israel; A. Koren, Hishtil Nursery, Israel; and F. Vidavski, Tomatech R&D, Israel*
14. Genetic resistance to viruses in tomato: *Moshe Lapidot and Ilan Levin, Institute of Plant Sciences – Volcani Center, ARO, Israel*
15. Bio-ecology of major insect and mite pests of tomato crops in the tropics: *R. Srinivasan, AVRDC – The World Vegetable Center, Taiwan*
16. Integrated pest management in tomato cultivation: *Robert L. Gilbertson, Marcela Vasquez-Mayorga and Mônica Macedo, University of California-Davis, USA; and R. Muniappan, Virginia Tech, USA*
17. Developing disease-resistant tomato varieties: *D. R. Panthee, J. P. Kressin and P. Adhikari, North Carolina State University, USA*
18. Integrated weed management in tomato cultivation: *Francesco Tei and Euro Pannacci, University of Perugia, Italy*

Related products:

Achieving sustainable cultivation of apples, 978-1-78676-032-6, 30 Apr 2017, USD 275.00, EUR 265.00, CAD 375.00, and GBP 220.00