Achieving sustainable cultivation of cocoa

Edited by Professor Pathmanathan Umaharan Cocoa Research Centre - The University of the West Indies, Trinidad and Tobago



burleigh dodds

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Tables, photos and figures

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BIC/THEMA classification

TDCT - Food & beverage technology, RBGB - Soil science, sedimentology, TVF - Sustainable agriculture, TVK -Agronomy & crop production, TVM -Smallholdings, TVP - Pest control



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New title information

Achieving sustainable cultivation of cocoa

Edited by: Pathmanathan Umaharan, The University of the West Indies, Trinidad and Tobago

Endorsement:

"This collection is a welcome addition to the rather scarce number of textbooks dealing with sustainable cultivation of cacao. Dealing with the basics of cacao physiology and genetic resources through to cacao breeding, cultivation and sustainability issues, the collection has many highly relevant chapters authored by experts in their field. This should be of great interest to researchers, development agencies, governments, industry specialists, and NGOs, in short anyone who is trying to improve the sustainability of this important crop".

Martin Gilmour, CocoaSustainability R&D Director, Mars Global Chocolate

Description:

There is a growing demand for cocoa. However, cultivation is dependent on ageing trees with low yields and increasing vulnerability to disease. There is growing concern about the environmental impact of cultivation in areas soil health and biodiversity. There is therefore an urgent need to make cocoa cultivation more efficient and sustainable to ensure a successful future. These challenges are addressed in Achieving sustainable cultivation of cocoa.

Part 1 reviews genetic resources and developments in breeding. Part 2 discusses optimising cultivation techniques to make the most of new varieties. Part 3 summaries the latest research on understanding and combatting the major fungal and viral diseases affecting cocoa. Part 3 covers safety and quality issues whilst the final part of the book looks at ways of improving sustainability, including the role of agro-forestry, organic cultivation and ways of supporting smallholders.

With its distinguished editor and international range of expert authors, this collection will be a standard reference for cocoa scientists, growers and processors.

Key features:

- Strong focus on conserving and exploiting genetic resources for breeding improved varieties
- Detailed review of specific diseases such as witches broom as well as insect pests and nematodes
- Covers key aspects of sustainability such as agro-forestry, organic cultivation and measures to support smallholders

Audience:

Academic researchers of cocoa; cocoa growers and processors; government and non-governmental agencies supporting or monitoring the sustainability of cocoa cultivation

Editor details:

Professor Umaharan is Director of the Cocoa Research Centre and Professor of Genetics at the University of the West Indies, Trinidad and Tobago. Professor Umaharan has published extensively in the areas of plant genetic resources, genetic analysis and cocoa crop improvement.



New title information

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Part 1 Genetic resources and breeding

1.Taxonomy and classification of cacao: Ranjana Bhattacharjee, International Institute of Tropical Agriculture (IITA), Nigeria; and Malachy Akoroda, Cocoa Research Institute of Nigeria, Nigeria

2. Conserving and exploiting cocoa genetic resources: the key challenges: Brigitte Laliberté, Bioversity International, France

3.The role of gene banks in preserving the genetic diversity of cacao: Lambert A. Motilal, The University of the West Indies, Trinidad and Tobago

4.Safe handling and movement of cocoa germplasm for breeding: Dário Ahnert, Universidade Estadual de Santa Cruz, Brazil; and Albertus Bernardus, Eskes CIRAD, France (retired)

5. Developments in cacao breeding programmes in Africa and the Americas: Dario Ahnert, State University of Santa Cruz (UESC), Brazil

Part 2 Cultivation techniques

6.Cocoa plant propagation techniques: Michelle End, Cocoa Research Association Ltd, UK

7.The potential of somatic embryogenesis for commercial-scale propagation of elite cacao varieties: Siela N. Maximova and Mark J. Guiltinan, The Pennsylvania State University, USA

8.Good agronomic practices in cocoa cultivation: rehabilitating cocoa farms: Richard Asare, International Institute of Tropical Agriculture, Ghana; Victor Afari-Sefa, World Vegetable Center, Mali; Sander Muilerman, Wageningen University, The Netherlands; and Gilbert J. Anim-Kwapong, Cocoa Research Institute of Ghana, Ghana

9.Improving soil and nutrient management for cacao cultivation: Didier Snoeck and Bernard Dubos, CIRAD, France

Part 3 Diseases, pests and weeds

10.Cocoa diseases: witches broom: Jorge Teodoro De Souza, Federal University of Lavras, Brazil; Fernando Pereira Monteiro, Federal University of Lavras and UNIVAG Centro Universitário, Brazil; Maria Alves Ferreira, Federal University of Lavras, Brazil; and Karina Peres Gramacho and Edna Dora Martins Newman Luz, CEPLAC, Cacao Research Centre, Brazil

11. Frosty pod rot, caused by Moniliophthora roreri: Ulrike Krauss, Palm Integrated Services and Solutions (PISS) Ltd, Saint Lucia

12.Cocoa diseases: vascular-streak dieback: David I. Guest, University of Sydney, Australia; Philip J. Keane, LaTrobe University, Australia

13.Insect pests affecting cacao: Leïla Bagny Beilhe, Régis Babin and Martijn ten Hoopen, CIRAD, France

14. Nematode pests of cocoa: Samuel Orisajo, Cocoa Research Institute of Nigeria, Nigeria

15.Advances in pest and disease-resistant cocoa varieties: Christian Cilas and Olivier Sounigo, CIRAD, France; Bruno Efombagn and Salomon Nyassé, Institute of Agricultural Research for Development (IRAD), Cameroon; Mathias Tahi, CNRA, Côte d'Ivoire; Sarah M. Bharath, Meridian Cacao, USA

Part 4 Safety and sensory quality

16.Improving best practice with regard to pesticide use in cocoa: M. A. Rutherford, J. Crozier and J. Flood, CABI, UK; S. Sastroutomo, UPM Serdang, Malaysia

17. Mycotoxins in cocoa: causes, detection and control: Mary Egbuta, Southern Cross University, Australia

18. Analysing sensory and processing quality of cocoa: Darin A. Sukha and Naailah A. Ali, University of the West Indies, Trinidad and

Part 5 Sustainability

19.Climate change and cocoa cultivation: Christian Bunn, Fabio Castro and Mark Lundy, International Center for Tropical Agriculture (CIAT), Colombia; and Peter Läderach, International Center for Tropical Agriculture (CIAT), Vietnam

20. Analysis and design of the shade canopy of cocoa-based agroforestry systems: Eduardo Somarriba, CATIE, Costa Rica; Luis Orozco-Aguilar, University of Melbourne, Australia; Rolando Cerda, CATIE, Costa Rica; and Arlene López-Sampson, James Cook University, Australia 21.Organic cocoa cultivation: Amanda Berlan, Coventry University, UK

22. Cocoa sustainability initiatives: The impacts of cocoa sustainability initiatives in West Africa: Verina Ingram, Yuca Waarts and Fedes van Rijn, Wageningen University, The Netherlands

23. Supporting smallholders in achieving more sustainable cocoa cultivation: Paul Macek, World Cocoa Foundation, USA; Upoma Husain and Krystal Werner, Georgetown University, USA

Related products:

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