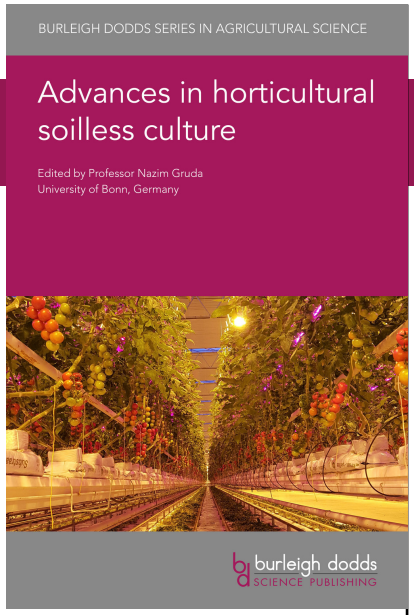

New title information

Advances in horticultural soilless culture

Edited by: Professor Nazim Gruda, University of Bonn, Germany

Endorsement:

"The contents of the book will help extend our knowledge of soilless culture, an advanced method of cultivation that combines precise control of product quality with achieving the more efficient, sustainable production we need."
Prof. Miguel Urrestarazu Gavilán, Univ. of Almería, Spain

Description:

Soilless cultivation techniques (including hydroponic systems) have attracted growing attention as a way of growing horticultural crops more efficiently without taking up more land. These controlled environment systems are also less vulnerable to climate change and are particularly suited to urban farming as part of the shift to more localised, circular food systems. This collection reviews the wealth of recent research on optimising soilless systems so they can make a significant contribution to more sustainable, 'climate-smart' food production.

Part 1 of this collection reviews research on optimising substrates for soilless cultivation. Chapters discuss advances in understanding root nutrient and water uptake and the range of substrates for soilless cultivation, in particular renewable alternatives to common materials such as peat. The book also assesses ways of optimising the physical, chemical and biological properties of substrate materials as well as nutrient formulations to feed crops. Part 2 assesses advances in both solid and liquid-medium container systems as well as technologies such as fertigation systems, modelling and process control. Chapters also cover advances in pest and disease management as well as trends in vertical farming systems. The final part of the books includes case studies on a range of horticultural crops such as tomatoes, strawberries, lettuce and ornamentals.

Key features:

- Detailed review of advances understanding and optimising the physical, chemical and biological properties of substrates to optimise their use
- Strong focus on sustainability issues such as alternative, renewable sources for substrates as well as life cycle assessment (LCA) to optimise soilless systems
- Includes case studies on practical applications of advances in science and technology for key horticultural crops

Audience:

University and other researchers involved in horticultural science, hydroponics and soilless cultivation; government and other agencies supporting vertical and urban farming systems; companies involved in vertical farming and other methods of soilless cultivation

Editor details:

Dr Nazim Gruda is Professor of Horticulture at the University of Bonn, Germany. Professor Gruda is internationally-renowned for his research and over 250 publications in areas such as soilless culture, controlled environment cultivation and product quality of horticultural crops. He is Chair of an International Society for Horticultural Science (ISHS) Working Group and has both organised symposia and edited Acta Horticulturae for the ISHS. In recognition of his research, Professor Gruda has been awarded the 2003 "Dr. Heinrich-Baur-Prize" by the Technical University of Munich, Germany, the 2017 "National Scientific Prize" by the Albanian Academy of Science,and the status of "Distinguished Scientist" by the Chinese Academy of Science in 2020.

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