less effort devoted to hormones and the more physiological aspects. This edited volume aims to provide an up-to-date account of the roles played by phytohormones in the coordination of plant growth and development in response to stress, and to provide an insight into the complexity of the mechanisms involved in signal perception and transduction in response to abiotic stresses. The format includes a mix of chapters ranging from those outlining general aspects of phytohormone involvement in stress responses to individual chapters on some of the traditionally recognised major hormone classes (auxins, cytokinins, gibberellins and ethylene) and on less well-known compounds (nitric oxide, brassinosteroids, salicylic acid and jasmonic acid). Disappointingly, there is no chapter specifically focussing on what is probably the central hormone involved in plant stress responses (abscisic acid), though it is discussed in the text.

Overall, the articles bring together much useful information on phytohormone involvement in the signalling pathways in response to abiotic stresses, with a particularly useful chapter by Harrison on the cross talk between them, and some useful up-to-date information and references. There is little attempt to synthesise available information on overall stress responses that could make this an essential read for researchers or students. Therefore, I cannot see any individuals and few libraries wanting to purchase a copy at this price. For most topics covered, more useful reviews can be found in recent issues of *Annual Reviews* or relevant plant journals.

Hamlyn Jones

Expl Agric. (2012), volume 48 (4), © *Cambridge University Press 2012*
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Bioenergy for Sustainable Development in Africa. Edited by R. Janssen and D. Rutz. Heidelberg, Germany: Springer Science (2012), pp. 413, £117.00. ISBN: 978-94-007-2180-7.

This book addresses bioenergy opportunities and related risks for Africa in five parts: Biomass Production and Use; Biomass Technologies and Markets; Biomass Policies; Sustainability of Biomass Production and Use; Financing and Socio-Economic Issues. The interest in bioenergy has been driven primarily by initiatives on climate change to reduce Greenhouse Gas (GHG), to reduce dependency on fossil fuels and by potential for socio-economic development. At the same time, there is increasing concern with the wider implications of bioenergy production, particularly if grown at large scale, including pro-poor development, environmental sustainability, GHG emissions, land use changes and impact on food prices.

African countries have launched initiatives to establish regulatory policy frameworks for bioenergy to ensure environmentally, economically and socially sustainable production and use of traditional and modern bioenergy. There are regional and African Union level initiatives too. Specific activities in bioenergy sustainability certification as an essential component of the regulation of the bioenergy sector are also being performed in three countries and one region but these do not address the perceptions of communities and the risks of negative environmental and socio-economic effects.

The book highlights the crucial importance of carefully integrating polices for land use, agriculture and energy, and aligning them with policies for rural development, transport and finance; and that bioenergy development in African countries will only find its proper environmental context and agricultural scale if convergence with biodiversity, GHG emissions and water use policies is achieved. Two important aspects are not addressed: the important role of Conservation Agriculture in reducing energy requirement for bioenergy crop production and in lowering GHG emissions, and the need to use crop residues in sustainable soil health and production management.

Amir Kassam

Expl Agric. (2012), volume 48 (4), © *Cambridge University Press 2012*
doi:10.1017/S0014479712000579

Crop Post-Harvest: Science and Technology – Perishables. Edited by D. Rees, G. Farrell and J. Orchard. Chichester, UK: Wiley-Blackwell (2012), pp. 451, £160.00. ISBN 978-0-632-05725-2.

This multi-authored book provides a comprehensive overview of many of the factors affecting the post-harvest quality of perishable fruits, vegetables and ornamentals. The book is the third volume in a series dedicated

to the post-harvest science and technology of commonly traded horticultural commodities. This book is well written and draws upon the expertise of an international team of 34 authors. It is organized into 19 chapters that cover the following commodities: tomatoes, bananas, citrus, apples, mango, pineapple, avocado, grapes, stone fruit, soft fruit, kiwifruit, guava, passion fruit, lychee, prickly pear fruit and cladodes, cucurbits, herbs, spices and flavorings, potatoes, onions, shallots and garlic, tropical root crops, and cut flowers. Each chapter typically provides a detailed review of the history and importance of each commodity, the key factors affecting product quality, current handling practices and recent advances in technology and procedures for improving the maintenance of post-harvest quality. While the book covers a broad range of perishable crops, some commodities, such as European and Asian pears and several tropical fruits (e.g. papaya) of economic importance, were sadly overlooked. In addition, the most currently available data and references were not always presented. Nonetheless and taken overall, this book will be a useful resource for professionals and students with a fundamental and practical interest in the challenge to maintain the post-harvest quality of perishable horticultural products.

Andrew J. Macnish

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Vegetable Production and Marketing in Africa: Socio-Economic Research. Edited by D Mithofer and H. Waibel. Wallingford, UK and Cambridge, MA: CABI (2011), pp. 288, £85.00/US$160.00. ISBN 978-1-84593-649-5.

With the growth of vegetable exports from Africa, vegetables are increasingly recognised as providing an important contribution to rural incomes. Yet the characteristics of this contribution and the socio-economic challenges inherent in vegetable value chains have been comparatively little researched. This book addresses this gap by bringing together a collection of papers presenting the results of detailed socio-economic research on vegetable production and marketing in Africa.

The 16 chapters span theoretical discussion of concepts and methodologies, and analysis of the economic impact of interventions in vegetable value chains, such as the Global Good Agricultural Practice (GAP) standards, together with studies of domestic and regional vegetable markets and price behaviour. Factors promoting effective knowledge acquisition and sharing are also examined. The chapter on theoretical concepts argues for a more theory-driven approach to socio-economic research and the need for methods to capture the complex nature of the horticulture sector.

Several studies examine the impacts of private standards on smallholder vegetable producers and household welfare, noting tendencies towards concentration of production in fewer larger farms. However, the potential for mutual benefit from exporter investment in smallholder vegetable production is also elaborated. Income and poverty reduction benefits may be realised through labour markets as illustrated by a case study from Senegal. However, an analysis of supply chains for indigenous vegetables in Kenya and Uganda found that women earned the lowest incomes in the supply chain.

The selection of studies in this book successfully combines theoretical rigour and empirical interest. The book will be of great interest to researchers and students and also to those with a more general interest in horticultural value chains.

Adrienne Martin

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Improving Soil Fertility Recommendations in Africa Using the Decision Support System for Agrotechnology Transfer (DSSAT). Edited by J. Kihara, D. Fatonji, J. W. Jones, G Hoogenboom, R. Tabo and A. Bationo. New York: Springer (2012), pp. 195, US$165.87. ISBN 978-94-007-2959-9.

Simulation modeling is a robust technique that speeds up our understanding of the interaction of crop, soil, environment and management (CSEM) to attain food security by increasing agricultural productivity.