

The book contains 11 chapters by authors based in national research institutes and universities. Two introductory chapters give standard reviews of crop brassicas (and radish) and their breeding, with anecdotal accounts of the breeding of *B. rapa* vegetables in Korea.

Many genetic studies of *Brassica* have been prompted by the wide array of morphological and physiological types, by species with known evolutionary relationships, including hybrid polyploids, and by close relatedness to the extensively studied *Arabidopsis thaliana*. The next six chapters review these studies, covering the cytogenetics of the genus *Brassica*, its molecular taxonomy, genome mapping and architecture and genetic transformation. The last three chapters describe transcriptomics, proteomics, metabolomics and bioinformatics. There are limited references to vegetable forms of brassicas beyond short accounts of the genetics of disease resistance, self-incompatibility and glucosinolates. Other important objectives of brassica vegetable breeding such as cosmetic/culinary properties and predictable maturity are scarcely discussed.

The book adds little to a contemporary review covering the same topic (Schmidt and Bancroft, 2011), but complements a recent review of more traditional methodologies and achievements in brassica breeding (Gupta, 2009).

Gupta, S. K. (Ed). (2009). *Biology and Breeding of Crucifers*. Boca Raton, FL: CRC Press, 405 pp. ISBN 978-1-4200-8608-9.
Schmidt, R. and Bancroft, I. (Eds). (2011). *Genetics and Genomics of the Brassicaceae*. Heidelberg, Germany: Springer, 677 pp. ISBN 978-90-481-8686-0.

Peter Crisp

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Elevated Carbon Dioxide. Impacts on Soil and Plant Water Relations. By M. B. Kirkham. Boca Raton, FL, USA: CRC Press (2011), pp. 415, US\$129.95. ISBN 978-143-9855-041.

This useful summary of plant and crop responses and impacts on soil and plant water relations to elevated carbon dioxide levels is a timely and valuable contribution to the debate on atmospheric and climate change. It presents research on field-grown wheat, sorghum and rangeland plants performed over a seven-year period at Kansas State University. The opening chapters cover a useful reminder of different types of photosynthesis and water relations in the soil and the soil–plant–atmosphere continuum.

The main body of the book is soil-focused, which look at soil–atmosphere relations and then moves onto plant responses in terms of stomatal density, resistance and evapotranspiration. The area of carbon isotope research in root studies is well covered. The potted biographies of key researchers in each chapter provide an intriguing human insight. The effect of elevated CO₂ in narrowing the gap between C3 and C4 crops is an important area covered and has global implications for both food and biofuel crop production. The careful targeted use of figures is a feature of the work and will be most useful to all readers.

The book clearly demonstrates the positive effects on crop and rangeland plants of elevated carbon dioxide, producing not just increased yields but improved efficiency of water use with increase in carbon dioxide. This will be an important positive effect in a world short of both food and water resources. This book is a timely, balanced and authoritative contribution to the field of crop science.

Keith Dawson

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Agrobiodiversity Management for Food Security. A Critical Review. By J. M. Lenné and D. Wood. Wallingford, UK: CABI (2011), pp. 248, £75.00. ISBN 978-1-84593-761-4.

The main aim of this book is to show how agrobiodiversity can be effectively and efficiently managed for food security. There are 13 chapters. The first two are concerned with definitions of agrobiodiversity and