

## BOOK REVIEWS

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*Genetic Engineering, Biofertilisation, Soil Quality and Organic Farming.* Edited by E. Lichtfouse. Heidelberg, Germany: Springer (2010), pp. 396, US\$209.00. ISBN-10 9048187400, ISBN-3 978-9048187409.

Genetic engineering, biofertilisation and organic agriculture offer innovative friendly methods for sustainable food production. In the present era of globalization, these approaches have attracted the farming community to address the challenges of food quality, greenhouse gas emissions, soil degradation and climate change, which ultimately leads to a healthier/safer ecosystem. The authors of this book emphasise the importance of plant biotechnology and cover crops to improve the overall performance of agricultural systems and to cut down expensive costs of chemical fertilisers. The role of phosphate rock (PR) and mixed cropping systems for organic agriculture are discussed in detail, and nitrate leaching and its management with reference to vegetable crops are highlighted. The authors provide causes, impact and remediation methods to address the issue of manure spills. The effects of cropping practices (tillage, crop rotation, inputs) on relative efficiency and population dynamics of soil microbes in relation to soil fertility have also been described. Soil structure and fertility of salt-affected soils can be efficiently improved by cyanobacteria because of their ability to tolerate various stresses and to produce extracellular polysaccharides. The authors measure the impact of intensive poultry rearing on environmental sustainability using various approaches, each of which has been elaborated with its application to agriculture and especially to the poultry industry. The book also provides lucid information on the use of compost in the organic production system. The implicit message to use simultaneously genetic engineering, biofertilisation and organic farming for a better ecosystem is commended, and this book is highly recommended to researchers, policy makers, farmers and students engaged in the field of agriculture and related disciplines.

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*Organic Crop Breeding.* Edited by E. T. Lammerts van Bueren and J. R. Myers. Chichester, UK: Wiley-Blackwell (2012), pp. 282, £95.00. ISBN 978-0-470-95858-2.

*Organic Crop Breeding* is divided into two sections: the first section comprises eight chapters on general topics, while the second one is devoted to specific crops: wheat, maize, rice, soybean, faba bean, potato, tomato, brassicas and onions. The editors have done an excellent job in putting together a well-organized and informative book, which covers theory, practice, issues and the latest research. The individual chapters by leading experts are all well written with extensive references to the scientific literature. The book should be of value to anyone interested in plant breeding and crop production systems. The main themes to emerge from the book are as follows: traits of importance for organic crops are ones that contribute to weed suppression; efficient nutrient uptake through root structure, function and beneficial interactions with soil microbes; and resistance to and tolerance of pests and diseases, particularly seed-borne diseases in organic seed production. Selection for higher and stable yields needs to take place on organic farms. Farmer participation produces many locally adapted cultivars and hence maintains cultivar diversity. Genetically heterogeneous cultivars help organic farmers cope with variable abiotic and biotic stresses on their farms. European regulations for cultivar registration and seed certification are not designed to cope with organic cultivars. Organic breeders reject plant-breeding techniques and their products such as genetic transformation, protoplast fusion, microspore culture and embryo rescue,