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Book Review: *Breeding Major Food Staples* Edited by Manjit S. Kang and P.M. Priyadarshan

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Ilyas-Ahmed point out in their chapter on rice breeding, in order to meet the global demand, we will need to produce as much food in the next 50 years as we have produced in the 10,000 years since agriculture began. Plant breeding is clearly part of the solution to this problem. *Breeding Major Food Staples* is a guide to the improvement of the crops humanity depends on most to meet its nutritional needs. Its strength is its global perspective, which clearly originates from the affiliations of the contributors, many of whom are associated with international plant-breeding centers.

The volume begins with an overview of essential concepts in crop improvement, including breeding methods and theory, polyploidy, breeding for improved nutrition, genomics, and bioinformatics. These chapters are followed by species-specific ones on rice, wheat, barley, maize, soybeans, potato, cassava, sweet potato, and banana. Each contains background information about the species and material essential for its genetic improvement, including origin, global production data, what genetic resources are available, breeding objectives, breeding strategies, and how biotechnology can be implemented. The main biotic and abiotic stresses are frequently tabulated, as are genes for overcoming these stresses. Taken together, it is particularly interesting to see how breeders have designed efficient breeding programs to meet specific breeding objectives given the unique reproductive mechanisms and the genetic and physical resources available. Clear contrasts are found, for example, between the participatory breeding strategy described for barley improvement, the industrialized breeding system used for development of maize hybrids in the U.S. Corn Belt, and the complex ploidy manipulations used in potato breeding. While tremendous resources have gone into the development of hybrid rice, relatively few resources have been devoted to the improvement of cassava.

Several crops produced in the Great Plains are covered; however the chapters on corn and soybeans depart from the global theme somewhat by taking the perspective of breeding programs in the U.S. Midwest, making these chapters particularly relevant to Great Plains researchers. Those working with alternative crops in the Great Plains will be able to find lessons about developing efficient crop improvement systems that take advantage of the unique features of their crops. The book's global view provides a beneficial context and perspective for those of us working in the Great Plains. **Paul Scott**, *Corn Insects and Crop Genetics Research Unit, USDA-Agricultural Research Service, Ames, Iowa*.

Breeding Major Food Staples. Edited by Manjit S. Kang and P.M. Priyadarshan. Ames, IA: Blackwell Publishing, 2007. xv + 437 pp. Maps, figures, tables, references, index. $169.99 cloth.

This book will be primarily of interest to plant breeders and people interested in global food security. As Virmani and

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