Omics Technologies and Crop Improvement

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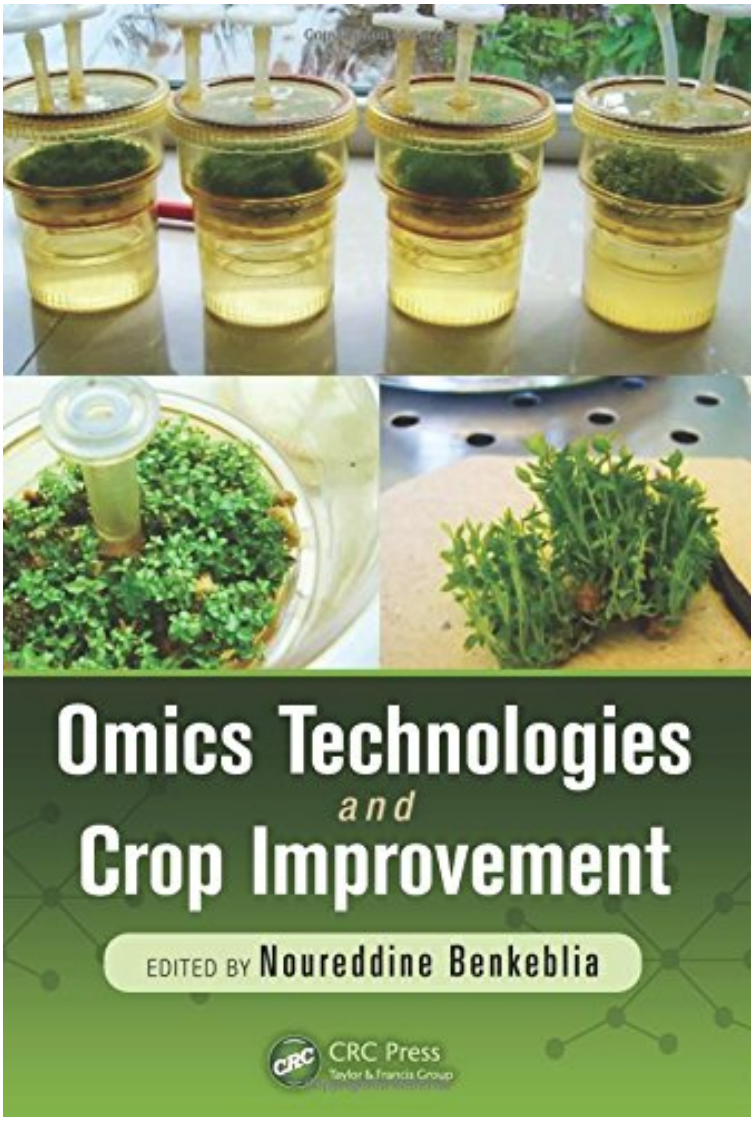

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From CRC Press : Omics Technologies and Crop Improvement before purchasing it in order to gage whether or not it would be worth my time, and all praised Omics Technologies and Crop Improvement:

Increased world population, decreased water supply, and climate change all put stresses on the global food supply. An exploration of the challenges and possible solutions to improve yields of the main crops, such as cereals, roots, tubers, and grasses, Omics Technologies and Crop Improvement reviews data on food sciences and omics. The book covers

modern omic technologies such as nutrigenomics and metagenomics. It provides a detailed examination of how omics can help crop science and horticulture and introduces the benefits of using these technologies to increase crop yields and other features such as resistance and nutritional values. The book highlights crop improvements such as increased yield, drought resistance, disease resistance, and value-added performance through a non-transgenic format. It explores how the different omics technologies, especially the most recent ones (proteomics, metabolomics, nutrigenomics, ionomics, and metagenomics) would be used to improve the quantitative and qualitative features of crop plants. Topics covered include: Advances in omics for improved fresh crops Transcriptome analyses on the drought response using drought tolerant near isogenic lines Metabolite profiling that reveals different effects of nitrogen amendments on vegetables Omics technology application to forage crops improvement Secondary metabolites and plant tissue culture RNAi technology and crop improvement Gene expression analysis methods with NGS data Web database resources and crops improvement Gene Expression Networks (GEN) in crops Specific crop improvement (papaya, wheat, coffee, potato, and more) With contributions from pioneering researchers from twelve countries, the book presents a broad view of how omics would help crop science and horticulture meet the challenges of a shrinking global food supply for a burgeoning global population.

About the Author Noureddine Benkeblia is a professor of crop science involved in food science, focusing on food-plants biochemistry and physiology. His work is mainly devoted to pre- and postharvest metabolism in crops. A few years ago, he introduced a new concept in systems biologymetabolomicsto investigate the mechanisms of biosynthesis and accumulation of fructans in liliaceous plants. Professor Benkeblia received his BSc, MPhil, and Doctor in Food Sciences from the Institut National Agronomique (Algeria) and Doctor in Agriculture (PhD) from Kagoshima University (Japan). After a few years teaching in Algeria, he joined the Institut National de la Recherche Agronomique, Avignon, France, as a postdoctoral scientist from 2000. From 2002 to 2007, he worked as a visiting professor at the University of Rakuno Gakuen, Ebetsu, Japan, and research associate at Hokaido University.Professor Benkeblia joined the Department of Life Sciences, the University of the West Indies, Jamaica, in 2008, continuing his work on the physiology, biochemistry, and metabolomics of fructan-containing plants in Jamaica. He also works on the postharvest physiology and biochemistry of local fruits. Professor Benkeblia has published over 150 papers, and over 37 books and book chapters, and has been the recipient of many awards, including the University of the West Indies Award for the Most Outstanding Researcher in 2011 and 2013.