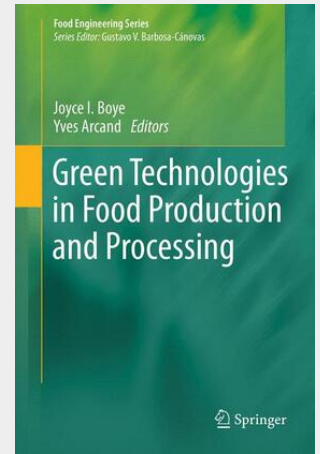


## Green Technologies in Food Production and Processing

This book will review the current status of the agriculture and agri-food sector in regard to green processing and provide strategies that can be used by the sector to enhance the use of environmentally-friendly technologies for production, processing. The book will look at the full spectrum from farm to fork beginning with chapters on life cycle analysis and environmental impact assessment of different agri-food sectors. This will be followed by reviews of current and novel on-farm practices that are more environmentally-friendly, technologies for food processing that reduce chemical and energy use and emissions as well as novel analytical techniques for R&D and QA which reduce solvent, chemical and energy consumption. Technologies for waste treatment, "reducing, reusing, recycling", and better water and energy stewardship will be reviewed. In addition, the last section of the book will attempt to look at technologies and processes that reduce the generation of process-induced toxins (e.g., trans fats, acrylamide, D-amino acids) and will address consumer perceptions about current and emerging technologies available to tackle these processing and environmental issues.

As we move into the future, decisions on food purchases will increasingly be influenced not only by price and quality but by social and environmental factors, such as the sustainability of technologies used for food production and processing and their environmental and health impacts. Growing consumer awareness about the impact of processing and production practices on the environment, the high energy consumption of certain processes, health impacts of some of the technologies used in processing, and a heightened social and industrial consciousness to reduce the carbon-footprint are examples of factors influencing food choice. These factors have been made quite evident in the recent "buy-local", "fair-trade", and "certified organic" trends. As a result, farmers and food manufacturers will increasingly be interested in identifying and using greener economically viable technologies for food production and processing. Some producers are already responding with the use of organic inputs in processing, use of recyclable and good-for-the-environment packaging, establishing just employer-employee relationships, and reducing animal testing in product development. Green Technologies in Food Production and Processing provides a comprehensive review of the current status of the agriculture and agri-food sectors in regards to environmental sustainability and material and energy stewardship, and provides strategies that can be used by industries to enhance the use of environmentally-friendly technologies for food production and processing. The book further provides an in-depth look at some emerging analytical techniques for research and development which reduce solvent, chemical, and energy use. In addition, technologies to reduce the generation of process-induced toxins are also reviewed. In the last section of the book, a critical analysis of some of the challenges associated with the use of agricultural resources to grow biofuels and bio-based products are addressed. Furthermore, social factors that influence consumer perceptions about some of the current and emerging agri-food technologies, and the need and importance of biodiversity in maintaining sustainable diets of human populations are also discussed in detail.



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