

## Book reviews

**B. Mattsson, U. Sonesson, (Eds.), *Environmentally-Friendly Food Processing*, Woodhead Publishing Ltd, Cambridge, UK, 2003 (xiv + 337 pp., £115.00, ISBN 1-85573-677-2).**

The environmental impacts of food production processes can occur in different places and at different times. For example, large losses of raw material in a variety of food production processes leads to large amounts of emissions (both agricultural and industrial). In recent years, the food industry has had to respond to the increasing environmental awareness of both consumers and regulators (the latter often responding to pressure from the former). This volume provides food manufacturers with a better understanding of how to achieve environmentally friendly food production. This is achieved through discussion and assessment of different food products and the practices that can help the food industry to be more environmentally responsible.

A structured and systematic, up-to-date account of the assessment of various food production processes and practical measurements to assist with improving environmental performance is provided in *Environmentally-Friendly Food Processing*, which is divided into two main parts. There are five chapters in the first part, which discusses the life cycle assessment (LCA) of food processing operations in the fruit, vegetable, animal and seafood production industries. LCA is an assessment of the environmental impact of a product from the raw materials to the point of consumption. The eleven chapters that make up the second part of the volume concentrate on good practice in food processing. Energy and waste management are extremely important issues relating to food production and processing. Specific chapters in the second part focus on packaging, recycling and waste treatment, providing training and ways of improving energy efficiency in the food industry.

*Environmentally-friendly food processing* is a useful reference volume for all food industry professionals, since it provides the reader with a solid grounding in environmental awareness in relation to the food industry, which itself is a major user of carbohydrate polymers.

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**M. Lees (Ed.), *Food Authenticity and Traceability*, Woodhead Publishing Ltd, Cambridge, UK, 2003 (xvii + 612 pp., £150.50, ISBN 1-85573-526-1).**

Food as a collection of items invariably involves carbohydrate polymers—giving energy, structure, flow, gelation, viscosity, and bulk. Food traceability has recently become a major concern for the food industry and consumers, particularly since the emergence of food-related diseases such as BSE and avian fever. Another new consumer concern is the traceability of genetically modified (GM) food or food components, which have yet to be proved to be harmless or harmful. Yet another area of concern with the influx of a range of useful carbohydrate polymers is the adulteration of such by other carbohydrate polymers which have not been approved or are impure and therefore represent a contamination. Such increasing concerns have led to significant improvements in food traceability technologies during the last decade, which now involve the use of very specific techniques, such as spectrophotometry, chromatography and PCR.

*Food Authenticity and Traceability* is a collection of detailed reviews covering the application of current and new technologies with respect to food traceability and authentication. The volume is divided into three sections; the first 13 chapters focusing on current technologies, e.g. PCR, enzyme immunoassays, NMR spectroscopy, GC and HPLC. PCR is now applied to food traceability by identifying specific DNA fragments in food products or materials. This has a range of applications, such as fraud detection or certification of products. For example, the

'fingerprinting' of Barley used for malting is now used to detect 'offtype' cultivars. The second section of the book provides specific application examples, e.g. species identification in processed seafood and meat, identification of milk and fat in dairy products, identification of GMO's and Wine authentication. Transgenic crops can now be detected by ELISA or PCR by targeting specific recombinant proteins. The final part of the book presents existing traceability systems of food products such as the EAN.UCC coding system, the FOODTRACE project and the study of examples for traceability of fish processed food, animal feed, cheeses and GMO's.

This book is composed of an informative collection of reviews that will be appreciated by industrialists and researchers involved in all areas of food processing, authentication and traceability. It is also highly recommended to food science students and academics that utilise any of the analytical techniques discussed.

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**I. E. Tothill (Ed.), Rapid and On-line Instrumentation for Food Quality Assurance, Woodhead Publishing Ltd, Cambridge, UK, 2003 (xiv + 406 pp., £125.00, ISBN 1-85573-674-8).**

Continuing developments in many areas of food production has resulted in an increasing need for faster, automated methods of detecting contaminants, in order to provide food quality assurance. This includes carbohydrate polymers-only some of which have been approved for food use yet there is always the temptation to develop them with similar but non-accepted natural polymers. However, many measurements of product and process characteristics are performed off-line, i.e. samples are removed from the production process and taken to a quality control laboratory for analysis over a period of several hours or days. There is therefore a need for more rapid on-line methods, which provide continuous, real-time measurement of products and processes.

*Rapid and on-line instrumentation for food quality assurance* provides a structured and systematic, up-to-date

account of existing and new methods available for food safety analysis, and is divided into two main parts. The first part is composed of nine chapters, which focus upon the area of product safety. Topics discussed in the part of the volume include the on-line detection of contaminants, such as pesticides and various types of drug residues and toxins, and rapid detection methods for microbial contamination. The ten chapters that make up the second part of the volume concentrate upon developments in the analysis of product quality. The first four chapters in this part cover the analysis of ingredients such as additives, micronutrients, genetically modified organisms and added water. Spectroscopic techniques, laser microscopy, and electronic noses used to analyse food composition and assess food quality are described in the following five chapters in this part of the volume. The final chapter provides a selection of case studies about on-line analysis and control of product quality.

In conclusion, this volume is an up-to-date, clearly written and well-presented compendium of useful information on a wide variety of instrumental techniques for food analysis. It is therefore highly recommended as an important reference tool for all individuals working in the food industry, particularly in areas of quality assurance/quality control.

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**R. Y. Yada, (Ed.), Proteins in Food Processing, Woodhead Publishing Ltd, Cambridge, UK, 2004 (xviii + 686 pp. £135.00, ISBN 1-85573-723-X).**

Proteins are biomacromolecules that are essentially composed of multiple combinations of approximately 20 different amino acids, connected together by peptide linkages. They play an essential role in sustaining all forms of life, and provide a source of plant and animal derived food, making them important for human growth and maintenance. Food protein contents vary according to their origin and use, and therefore their physicochemical (structural and functional) properties in foods also vary and have a profound