

Book Reviews

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Lipid Technologies and Applications. Edited by Frank D. Gunstone & Fred B. Padley. Marcel Dekker, New York, 1997. ISBN 0-8247-9838-4. xi + 834 pp. US\$195.00.

There have been many developments in science and technology relating to lipids in recent years. These have often been driven by improved understanding of lipid nutrition, new processes to modify fats or lipids, new sources of lipids made available by biotechnology, or environmental concerns. This book is a wide-ranging account of the structures and properties of lipids, the processing of oils and fats and the applications of lipids in food and non-food products. Part I is an introduction covering lipid structure and sources, phospholipids, and lipids in nutrition. Part II describes extraction, refining, handling, fractionation, interesterification and hydrogenation of edible oils. Part III covers food emulsions including butter, margarine and spreads, ice cream and cream alternatives. Part IV covers nonaqueous foods including ghee, vanaspati, chocolate, frying and salad oils. Part V covers special food applications including edible coatings, spray processing, low-calorie fats, food emulsifiers, lipid emulsions for intravenous nutrition and drug delivery, and lipids in animal feeds. Part VI is concerned with non-food uses of oils and lipids including surfactants, lubricants and biofuels. The book is completed by a comprehensive index. The 31 chapters include contributions from many leading lipid scientists and technologists involved in the lipids or oils and fats business in Europe, North America or Asia. Despite many chapters discussing strongly applied topics, the level of scientific coverage is good. There is much valuable information collected in this text and it is a useful reference text on an impressive range of subjects relevant to lipid technology. The cost is not excessive for a book of this length, and the text is recommended for purchase by libraries and companies involved in lipid science and technology.

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Chemical and Functional Properties of Food Components. Edited by Z. E. Sikorski. Technomic Publishing Co., Inc., Lancaster, 1997. ISBN 1-56676-464-5. xii + 293 pp. US\$169.95.

There are several excellent texts available on the subject of food chemistry. This book, however, differs from most texts dealing with this subject by including discussion of rheology and functional properties of food components. The book comprises 12 chapters which cover food components and their role in food quality; water and food quality; mineral components; saccharides; lipids; proteins; rheological properties of food systems; food colorants; flavour compounds; main functional food additives; food safety; and mutagenic and carcinogenic components in foods. The book includes an index, which is generally quite detailed, although there is no reference to denaturation.

The book is useful as a basic text for those new to the subject, introducing much useful information about the chemical and functional properties of food components. However, the coverage is somewhat uneven with some important topics being omitted or covered superficially. This often happens with edited books unless the Editor ensures that the contributors adhere to strict guidelines. Although flavour deterioration by lipid oxidation is discussed in the chapter on flavour compounds, antioxidant structures, discussion of mechanisms of lipid oxidation and antioxidant action are omitted, and flavour generation by lipid hydrolysis is not discussed. This contrasts with the chapter on saccharides, where chemical reactions are discussed with the use of chemical formulae. Among the best chapters are those discussing mineral components, and water and food quality. This text is less satisfactory as a food chemistry book than alternatives including those by Coultate, Belitz and Grosch, and Fennema. However, the additional coverage of functional aspects does provide some justification for purchase. The high price will deter university students from purchasing individual copies, but it is a useful book for libraries to include in their collections.

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