

Book reviews

Biochemistry of Milk Products. Edited by A.T. Andrews and J. Varley. The Royal Society of Chemistry, Cambridge, UK, 1994. viii + 181 pp. Price £39.50. ISBN 0-85186-702-2.

The milk and dairy products sector forms a very major part of the food and agriculture industries. Most milk is still consumed as such, rather than being processed into other products. Nevertheless, processing even only a part of the total milk production still represents an extremely important activity. Bovine milk contains only ~3.5% protein, however, the heterogeneity of the protein and the range of processes used for its recovery makes milk protein products perhaps the most versatile functional food protein products available.

This volume documents the latest advances in the field of milk products and focuses on the two most active research areas, which are starter cultures and enzymes for use in cheese and other foods, and factors influencing the functional properties of proteins. Many of the findings described, and certainly the techniques used, in this volume are undoubtedly applicable not only elsewhere in the milk and dairy chemistry area, but also widely outside it, especially in the microbiological and protein chemistry/engineering fields. It provides a general platform for the study of protein properties and enzyme behaviour and their applied objectives. Topics discussed include cheese ripening, debittering, thermal aggregation, proteolysis, UHT processing and ultrafiltration.

There are many advantages associated with the enzymic hydrolysis of food proteins such as casein, ranging from improvements in solubility and viscosity to digestibility. However, a major disadvantage encountered with casein hydrolysates is bitterness. This defect in taste renders the hydrolysate unfit for addition to foods, thus curbing its usefulness and wasting protein.

The book is based on the proceedings of a symposium organised by the Food Chemistry Group of the Royal Society of Chemistry Industrial Division at Reading University, and will prove important reading for researchers, graduates and undergraduates with interests in the practical applications of molecular biology and protein chemistry.

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Food Macromolecules and Colloids. Edited by E. Dirkson and D. Lorient. Royal Society of Chemistry,

Cambridge, UK, 1995. xvi + 586 pp. Price £92.50. ISBN 0-85-404-700-X.

Food macromolecules play a key role in the food formulation of products such as bread, cheese, desserts, dressings, ice-cream, etcetera. The inherent quality of these products is dependent on interactions between macromolecules and other food composites such as sugars, fats, surfactants, salts, flavours and aroma compounds. All of these interactions are sensitive to processing conditions, for example, during mixing, freezing, drying and baking. The macromolecular interactions balance to produce the final food structure and texture.

This book records the proceedings of the international symposium on 'Food Macromolecules and Colloids' held at Dijon, where the main theme was the role of macromolecular interactions in determining the physical and biochemical properties of well-defined multi-phase, multi-component systems. The contents of this book deal with major topics such as adsorbed layers, protein interactions and functionality, emulsions, foams, mixed biopolymer systems, gels and networks, rheological and mechanical properties and glasses.

Each topic includes an informative introduction to the topic and describes recent progress in food colloid research, based on the increased availability of advanced instrumentation and new experimental techniques. Details are also provided on the emergence of new concepts and theoretical principles. These include the increased use of physico-chemical techniques based on principles of spectroscopy, microscopy, calorimetry, scattering, ultrasonics, rheology, and so on. Enhancements in instrument sensitivity and capacity for data handling have been led by the increased power of small computers.

The objectives of this book are to present the very latest research in the food macromolecular field. It achieves this by covering both proteins and polysaccharides in the same volume. Details of recent experimental and theoretical analysis of macromolecules in solutions, suspensions, gels, glasses, emulsions and foams are presented in a concise and comprehensible style and format.

This book provides an invaluable reference to any laboratory library, whose individuals are associated with the physico-chemical role of macromolecular interactions in food colloids.

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