

from the study of grains at all stages of their production and utilization.

The editors bring together information about all areas of grain science, offering extensive articles that include bibliographies and lists of useful Web sites. One of the strengths of this book is the amount of effort put into its cross-referencing. This information is well organized making this set very easy to locate information as needed. The valuable information, authoritative answers to perplexing questions, and numerous black and white photos, illustrations, and charts are supplied for complementing a useful and clear introduction of grain science. This book is highly recommended for academic collections with agriculture, food science, and/or nutrition departments.

John F. Kennedy*

Miao Jin

Chembiotech Laboratories,

Institute of Research & Development,

University of Birmingham Research Park,

Birmingham B15 2Q2, UK

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* Corresponding author

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S.W. Cui, editor. Food Carbohydrates: Chemistry, physical properties, and applications, CRC Press/Taylor and Francis Group, Boca Raton, FL, USA, 2005 (x + 418 pp., £92.00, ISBN 0-8493-1574-3)

Carbohydrates are one of the most important ingredients in foods and are essential for the maintenance of life and good health. These may occur naturally or added to food products to provide nutrients and to improve the overall quality of a food product. Food carbohydrates can be classified according to their chemical structure into three main groups, low molecular weight mono- and disaccharides, intermediate molecular weight oligosaccharides and high molecular weight polysaccharides. However, nutritionists divide food carbohydrates into two classes on the basis of their metabolism.

Food Carbohydrates: Chemistry, Physical Properties, and Applications opens with an introductory chapter on chemistry of food polysaccharides. The current methods used for the analysis of total carbohydrates, monosaccharides, oligosaccharides and dietary fibers in food products are described in the second chapter and structural analysis of polysaccharides is discussed in the subsequent chapter.

The functional properties of food polysaccharides are dependent on the structure, molecular weight and concentration of the polysaccharides present. The fourth chapter deals with the functional properties of food polysaccharides and associated characterisation methods. The basic concepts,

terminologies and characterisation methodologies used in studying the conformation of polysaccharides are covered in the fifth chapter.

Polysaccharide gums occur in nature as storage materials, cell wall components, exudates and extracellular substances from plants or microorganisms. The structure, functional properties and application of different polymer gums are covered in the sixth chapter. The seventh chapter is focussed on starch chemistry, granular and molecular structure, functionality and the role of starch in food. Starch modifications using various techniques, the functional properties of starches and their application in foods are discussed in the final chapter of the book.

The only criticisms of the book are that some of the polysaccharide structures are poorly presented, i.e. not drawn very well, and some could be described as inaccurate or even incorrect. Likewise, the use of Haworth structures and chair structures is not consistent throughout. Also some of the written descriptions of the linkage configurations between monosaccharide units are not correct, e.g. one should not write β -(1 \rightarrow 4) linkages, but e.g. (1 \rightarrow 4-linked β -D-glucopyranose units since the β refers to the configuration of the monosaccharide unit present, not the linkage. Similarly the description of an α - or β -anomeric form is only specific if the absolute configuration is co-named e.g. ' α -D-glucopyranose.' The naming of monosaccharide units is not consistent, since the absolute configuration is used sporadically. Sadly even the structure on the front cover has some poorly produced H's for hydrogen atoms.

In conclusion, this book is a useful reference book for all the persons working in the area of food carbohydrates.

John F. Kennedy*

Parmjit S. Panesar

Chembiotech Laboratories, Institute of Research & Development, University of Birmingham Research Park, Birmingham B15 2Q3, UK

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* Corresponding author

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Robert Thomas, Practical guide to ICP-MS (2004, Marcel Dekker, INC, New York, USA) (xii + 324pp., £55.00, ISBN 0-8247-5319-4)

Inductively coupled plasma mass spectrometry has grown for over 20 years. Recently, even though numerous publications were available, no textbooks were being written specifically for beginners with a very limited knowledge of the technique. This book includes detailed knowledge of this technique, so it can be used as a reference book by both