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Book review

Advanced Dietary Fibre Technology
Barry V. McCleary, Leon Prosky (editors), Blackwell Science, Oxford, 2001, ISBN 0000-632-05634-7 pp. 560, £99.00

This book is based on the papers presented at the International Symposium Dietary Fibre—2000 held in Ireland organised by the International Association of Cereal Science and technology and the Association of Official Analytical Chemists International. There are 44 papers in all, grouped into 12 sections dealing with particular topic areas. Nutrition, Diets for health; Chemistry, Structure and Rheology; Measurement; Regulatory Issues, Health Benefits; Technological Aspects; Cereal wall polysaccharides; Legume-seed polysaccharides; Pectins; Resistant Starch; other Polysaccharides and Oligosaccharides.

Although many of the topic areas have been common to virtually all compilations on dietary fibre over the past 30 years, most of the papers in this volume have a fresh feel about them and virtually all present some new information or improve the interpretation of previous findings.

I particularly enjoyed reading the emerging views on the supramolecular structures within the plant cell walls that give a good account of the complexity of the arrangements of the polysaccharides within the wall. It was also interesting to see how modern enzymological studies and technology are beginning to provide powerful and specific approaches to determining polysaccharide structure.

The section on health benefits provides some critical reviews of the current evidence regarding gastrointestinal effects, dietary lipids, glucose, absorption and insulin sensitivity, cholesterol levels, cardiovascular disease and carcinogenesis. The emerging studies of the fennentation of oligosaccharides and the effects on the complex microflora of the large bowel add to our recognition of the importance of the fermentation reactions. It is also interesting to see the emergence of findings concerning cereal fibres on serum cholesterol values.

The section on technological aspects describe the technology involved in preparing fibre-rich foods and deals with the effects on sensory properties that must be addressed, together with a discussion of the effects of processing itself on dietary fibre components.

The sections on specific fibre sources are particularly of interest in relation to the use of these fibres in foods.

The final section on oligosaccharides covers a range of materials which Burkitt and Trowell would have not considered as dietary fibre. But nevertheless, these papers show how these substances, that are not digested in the small intestine to any appreciable extent, exert some of the effects of dietary fibre in the strict sense. This section also considers two semi-synthetic indigestible carbohydrates and their physiological properties. This well-prepared and edited compilation forms a valuable contribution to our understanding of dietary fibre.

The range of chemical structures, physical and physiological properties that this term can now be seen to embrace, indicates to me that the term has outgrown its usefulness. It also emphasises the problems faced by the analytical chemist in producing values that describe, both quantitatively and qualitatively, the dietary fibre in a foodstuff.

The regulatory issues are even more complex when the regulators are limited to the ability to use one or two values, at the most, to describe the dietary fibre content of a food to the consumer in a coherent fashion. The book shows that a great deal of consumer education is essential so that in the consumers may be able to use more specific labelling, possibly polysacchande or specific carbohydrate based, to properly use to their advantage the wealth of information that this excellent book provides.

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