



Book reviews

Biotechnological Innovations in Food Processing. The BIOTOL Team, Butterworth-Heinemann Ltd, Oxford, 1991. x + 294pp. Price £19.95. ISBN 0-7506-1513-3.

Biotechnology is not only a major growth industry in its own right, but is also having major effects on many other existing industries. One such example is the food processing industry. Food processing has been, and continues to be, affected to a great extent by genetic engineering, fermentation technology and enzyme technology.

The aim of 'Biotechnical Innovations in Food processing' is to provide an overview of all aspects (technological, functional and nutritional) of biotechnology within the food processing industry. Particular attention is paid to the many recent developments which have led to modification and improvement in the processing of consumables. The use of genetic and protein engineering in biotechnological food conversions is investigated. The use of similar modifications to produce food additives and processing aids (improving the quality of processed foods) is explained. Methods for sweetening, preserving, flavour enhancing, etc. are also examined within the text.

This volume is written in the form of an open-learning text. This means that the book actually reads like a lecture course, complete with self-testing questions (thankfully complete with answers at the end of the book!). As such, the volume will provide an excellent learning tool for anyone with a good basic scientific knowledge who wishes to learn a great deal more about the subject.

One word of warning is that the text assumes a degree of knowledge in the reader in basic microbiology, genetic engineering and biochemistry.

The BIOTOL set of books is constructed as a teaching package (including videos and computer programs) which will eventually provide a set of flexible teaching courses. If the quality of these further works is comparable with this volume, then the whole package could be an excellent teaching or self-help aid. As one book alone, this text will be a very good introduction, and a quick reference to the whole field of biotechnology in food processing.

**David W. Taylor
John F. Kennedy**

Frontiers in Carbohydrate Research — 2. Edited by Rengaswami Chandrasekaran, Elsevier Science Publishers Ltd, Barking, 1992. ix + 269pp. Price £65.00. ISBN 1-85166-756-3.

Carbohydrates play important roles in many industries, the two main ones being sucrose and paper manufacture. Their potential, however, is enormous. The majority of present carbohydrate utilisation occurs in the food industry, where starch is used in vast quantities for the production of baked goods; mono- and oligosaccharides are used as sweeteners and in beer and wine production, and gums are utilised in food processing. The textile industry still uses large amounts of cellulose despite the availability of man-made alternatives, and cellulose provides the backbone to the pulp and paper industry.

More and more industries are gradually using carbohydrates, fulfilling previously entitled 'potential applications'. For example, the pharmaceutical industry now uses carbohydrates for antibiotics, intravenous solutions, and vitamin C production, etc. Carbohydrates will undoubtedly play a major role in the science of the next century.

This book is based on the proceedings of the second 'Whistler Centre for Carbohydrate Research' conference held at Purdue University, West Lafayette, Indiana, USA. The conference covered a broad range of topics including biochemistry, molecular biology and physiology, chemistry and chemical structure. Topics covered included molecular biology and biochemistry of starch biosynthesis, industrial starch hydrolysing enzymes, and the characterisation of complex carbohydrates by the reductive cleavage method.

A major part of the conference dealt with structure-functional property relations of polysaccharides, with much attention given to bacterial polysaccharides, kinetic analysis for the study of polysaccharide conformations, and conformational-dependent solution properties of microbial polysaccharides.

This is a well presented and informative book encompassing a very wide range of topics. The only criticism is that it does not have an index, making specific information difficult to locate.

**John F. Kennedy
Charles J. Knill**