

book should also have a place in a large, general science library, for which there is enough scientific information to warrant a purchase.

David W. Taylor
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Flavours and Off-Flavours '89. Edited by G. Charalambous, Elsevier Science Publishers, Amsterdam, 1990. xxiv + 1042 pp. ISBN 0 444 88246 4. Price: US\$282.00/Dfl 550.00.

The field of flavours and off-flavours is, not surprisingly, of chief interest to those people working in food science.

Within the realms of the food industry, flavours and off-flavours are of the utmost importance in marketing. It is for this reason that the International Flavour Conferences organised by Dr Charalambous (the editor of this volume) have been such a success. This book details the proceedings of the sixth of these meetings and, whilst being concerned with flavours in general, the volume concerns itself mostly with off-flavours which arise in various foodstuffs.

An off-flavour can range from making the food mildly unpalatable to making the foodstuff virtually inedible. It can be caused by the way the food is processed, packaged, transported, stored, or it may occur naturally. Because so much food is lost in this way it is the focus of much scientific research, examples of which are found in this volume.

The food is explored in several of the papers in a hard scientific way, e.g. 'flavour analysis by gas chromatography' or 'preparation and chemical composition of commercial oak wood extracts'. There are also papers in the volume which describe the state of current knowledge in a more theoretical way, e.g. 'foreign and undesirable flavours in wine' or 'flavour characteristics of a variety of spices'.

This mix of the hard science, which describes techniques and research, along with 'softer' science, attempting to describe a flavour, makes for a good balance for a person wanting to have an overall view of the subject. However, a non-scientist would find the first set of papers too complex, and a scientist may find the second set of papers less than useful.

The book belongs in any science library which covers flavours, food chemistry, analytical chemistry or foods science, but for reasons of cost

and subject area, it should be excluded from all but the most dedicated food scientist's personal library.

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Biotechnology of Microbial Exopolysaccharides. By I. Sutherland, Cambridge University Press, Cambridge, 1990. viii + 363 pp. ISBN 0 521 36350 0. Price £30.00.

Carbohydrate polymers of microbial origin are currently the topic of several areas of research and industrial interest. The application of such macromolecules have shown an increase due to successful efforts to find out about the relationship between their unique physical properties and chemical structures. *Biotechnology of Microbial Exopolysaccharides* provides a broad approach to the area, focusing mainly on scientific and industrial aspects of usage of bioactive carbohydrates.

Initial chapters deal with basic definitions and classifications of the most-used microbial macromolecules, e.g. cellulose, xanthan, dextran; their structures and analytical methods, i.e. HPLC, NMR, GLC, GPC, etc., thus enabling easy comprehension of further chapters.

Basic information on biosynthesis of polysaccharides is also included, as for example, mechanism of synthesis of xanthan and alginate. Other chapters of the book are related to the production and industrial use of carbohydrate polymers with commercial importance, e.g. alginates, curdlan, xanthan, dextran, hyaluronic acid, pullulan, arabic and guar gums, and so on.

Also relevant are the examples of food usage (dairy products, fabricated foods, icings), industrial applications (oil recovery, enzymes and cell recovery, paints, printing, textiles) and medical applications (vaccines, wound healing, antitumor and antiviral activity, drug delivery).

This book is therefore recommended to those working with carbohydrate molecules, e.g. biotechnology scientists, teachers, industry related managers, and students of biology and engineering courses.

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