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Book Reviews

Encyclopedia of Food Science and Technology. Edited by Y. H. Hui. John Wiley and Sons Inc., USA, 1992. Four volumes. ISBN 0-471-550541-2. Price £385.00.

This four volume work fills a definite gap in the Food Science and Technology literature. Contributions to this most comprehensive work have come from nearly 400 eminent food science and technology experts around the world and the editorial team, led by Dr Hui, have done an excellent job in bringing the contributions together in a clear, concise and highly readable manner.

The coverage of the four volumes is most impressive and not only are the topics one might expect in such a work referred to, but many associated topics are well covered also, e.g. bee keeping, artificial intelligence and patents. The more traditional topics are comprehensively covered and each entry has a useful list of up to date references for further reading. Indeed, for some subjects the list of references is almost as long as the encyclopedia entry on the subject; e.g. for immunological methodology there are 441 cited references!

The encyclopedia is useful for both undergraduate and postgraduate level students who are studying food science and technology and in view of its highly readable style, it provides an ideal 'browsing book' for those generally interested in the subject. It would be most surprising if even the most knowledgeable on a subject did not pick up some extra snippet of information; e.g. milk from lactating rabbits contains only 2·1% of lactose, the lowest level among common mammals!

The index is well presented and easy to follow but only appears in the fourth volume which makes it necessary to keep referring back for on-going searching. The inclusion of the index in each volume would have been useful. Also some terms are not listed in the index and need to be searched out in a different manner; e.g. pyridoxine appears only as vitamin B_6 and non-enzymatic browning is cited only as Maillard reaction.

The work would seem to be written primarily for the American market so that there are the usual annoying spelling differences for many common words (color for colour, etc.) and prices and costs are given in dollars. The section on Food Laws and Regulations also relates to the United States legislation rather than attempting to cover international standards such as Codex recommendations. This focus on the American legislation would, on balance, seem to be a sensible approach rather than becoming bogged down in minor differences in national legislation.

As stated earlier, the type style is very easy to read and the majority of the diagrams and tables are very clear and present no difficulty in understanding. In those areas where the reader is unfamiliar, the diagrams and figures are most helpful in making complex ideas more easily understood. Many of the diagrams are especially useful in reducing the amount of text required to describe a process, e.g. the production of Surimi and the brewing of sake.

Generally the style and words used suggest that the text is aimed at the scientist, as anyone with little scientific knowledge would perhaps find the language and concepts rather difficult to follow.

It is encouraging to see that some of the modern approaches to food safety and quality are discussed in detail in this work. The HACCP concept is carefully explained and the procedure for implementing it clearly set out. Also the subject of quality is discussed not only in the light of the difficulty of clearly defining what is meant by the term but how it has become of such importance to the food industry.

Whilst it is not possible to comment on all entries a few are of special interest and serve to illustrate the overall high standard of presented data. The section 'Mycotoxins' by H. B. Schiefer gives an excellent summary of current knowledge on the subject without repeating the so often regurgitated material. The tables are most useful and concise and the entry is supported by seventeen references, most of which are dated after the late 1980s. The section on 'Filth and Extraneous Matter in Food' by J. R. Gorham provides some fascinating information about food contamination and acceptability. This entry is supported by 225 references and a list of general reading. The concept of 'de minimus filth' (i.e. too small to matter) is explored and makes especially interesting reading as regards the 'due diligence' defence under the UK Food Safety Act of 1990.

Perhaps one criticism of the work as a whole is a degree of repetition in different sections. This is always a problem in a multi-authored work but could perhaps have been reduced by a more careful editing and possibly more cross reference within the text between entries which would have highlighted those areas where repetition had occurred.

The use of chemical formulae is restricted in the text but when used they are clearly shown and certainly the more important chemical reactions that occur in food are given, e.g. non-enzymatic browning reactions.

Despite the minor criticisms, this *Encyclopedia of Food Science and Technology* is an excellent piece of work and should find a place on the library shelf of all universities, polytechnics and colleges that teach food science, food technology or nutrition. It will prove of invaluable assistance at undergraduate and postgraduate level as a reference book giving a comprehensive review of a tremendous range of topics as well as providing a useful number of references for the interested person to follow up. The price of £385 is rather prohibitive for the individual buyer but I have little doubt that this encyclopedia will become one of the classic reference books in the ever-growing subject of Food Science and Technology. The team of authors are to be congratulated on a significant piece of work.

P. J. Barlow

Food Analysis by HPLC. Edited by M. L. Nollet. Marcel Dekker Inc., New York, 1992. ix + 776 pp. ISBN 0-8247-8623-8. Price: US$199.00.

This large reference book (730 pages plus an index running to 29 pages) is divided into 20 chapters, each written by experts in the field. The first chapter is devoted to a careful explanation of HPLC, ranging from the various parts of the instrumentation to the different types of stationary phase available. The main definitions relating to column performance are very well explained, and the chapter is illustrated with clear diagrams. This chapter is to be recommended to first-time users of the technique as well as to more experienced analysts.

Subsequent chapters deal with the analysis of specific classes of food components. Amino acids (with and without derivatisation), peptides, proteins, lipids, phospholipids, carbohydrates, fat-soluble vitamins, water-soluble vitamins, organic acids, mycotoxins, additives and preservatives, antimicrobial residues, pesticide residues, bittering substances, phenolic compounds and various compounds, organic bases, N-nitroso compounds, polycyclic aromatic hydrocarbons, and anions and cations are all accorded separate chapters. Most deal with the analysis of these components in foods in general, although a few focus on specific foods, e.g. the chapter on bittering substances and phenolic compounds is limited to alcoholic beverages.

In each chapter, a short introduction to the components in question is given, together with a brief comparison of HPLC with other techniques available for their analysis. Emphasis is put on sample preparation, which is crucial for the successful determination of all components, and the various separation mechanisms and detection systems which have been used are reviewed. Several chapters incorporate tables summarising the experimental details used by researchers, and this facilitates a comparison of methods. The reference section at the end of each chapter lists plenty of sources of further up-to-date information. This general approach makes it easy to find information when moving between chapters. The book adopts a practical approach which will make it a useful text for practising chromatographers.

The book is extremely well written and has been carefully edited. Clear explanations of procedures are accompanied by over 200 diagrams. It is highly recommended to all food analysts, whether they are involved in quality control and assurance, or in research and development. In addition, this text will be invaluable to research students who need to perform HPLC analyses of food components. At $199·00 the book is not inexpensive, but is fair value for money.

J. M. Ames