

divided into three major parts and one part titled 'conclusion', which discusses regulatory issues and implications and the future of synthetic sweeteners. The major sections deal respectively with sweeteners, discovery and structure-taste studies (100+ pp), sweetener and sweet taste receptor modelling (100 pp) and mechanisms of sweet taste perception (75 pp).

In the sweetener discovery and structure-taste section the eight chapters are presented in the same typeface and generally the formulae and diagrams are well drawn. The contributions here include chapters on the shortly to be released new sweeteners sucralose and alitame. In the second major section the emphasis is on the various approaches to sweet receptor modelling. Three different types of characters are used here in the seven chapters but the presentation is clear. The six chapters in the last section cover such topics as sweet taste transduction, inhibition of sweetness, electrophysiological studies of sweeteners and time-intensity and concentration-response studies of sweeteners.

Author and affiliation indexes are followed by a good subject index. This is essential reading for those interested in the sweetener and general tastant fields. A few errors in the chemical formulae were noted here and there but these are easily detected and do not detract seriously from this useful volume.

W. J. Spillane

Breakfast Cereals and How They are Made. Edited by Robert B. Fast and Elwood F. Caldwell. American Association of Cereal Chemists, 1990. 372 pp. ISBN 0-913250-70-8. Price US\$ 79.00.

A very large number of non-technical people use the term 'cereals' to describe *the food they choose to eat at breakfast*. The book 'Breakfast Cereals and How They are Made' is therefore an obvious title for the American Association of Cereal Chemists to publish. The editors have gathered together 21 American experts whose contributions fill 372 pages (using 110 illustrations) to cover such topics as: Raw materials used in the manufacture of breakfast cereals, including flavourings and sweeteners; the manufacturing technology of both ready-to-eat cereals and hot cereals with an emphasis on the equipment used and packaging; the fortification and nutritional aspects of breakfast cereals; and quality assurance.

The volume is well indexed and contains a handy list of equipment manufacturers (handy if you are American that is!). The descriptions of cereal grains are kept to a minimum so that the characteristics necessary for quality breakfast cereals can be discussed. The AACC publish excellent books detailing our in-depth understanding of each cereal and these are included in the authors' list of references. (The reviewer strongly recommends these books to the serious student.)

The illustrations of equipment, contained in this volume, are really excellent. The mysteries surrounding puffing guns, batch and continuous cookers, driers, etc., are soon dispelled. Heat transfer in cereal processing is tackled using simple mathematical formulae and clear diagrams, which are easily understood. I would recommend this book for the splendid explanations of extrusion cooking alone.

This is a book which will be of interest, not just to the curious, but also to those who are newly involved in breakfast cereal manufacture or who supply the raw materials. It is affordable at its price and suitable for technical libraries. It is a shame that the contributors centred their attention on the American industry at the expense of the rest of the world.

Barbara Brockway

Spices, Condiments and Seasonings. 2nd edition. By K. T. Farrell. Van Nostrand Reinhold, New York, 1990. xiv + 414 pp. ISBN 0-442-00464-8. Price: £47.50.

The new edition to this book is timely in view of the renewed interest in the food industry in spices and seasonings with increased consumer demand for 'ethnic' foods and interest developing in the so-called 'functional' foods.

The aim in producing the book was to prepare a general reference text for those in the food industry requiring information on condiments and seasonings. Spice and extract manufacturers will find the book invaluable as will those in the processed meat industry. However, as well as being of value to food technologists, there is also a spice-substitute section with suggestions to replace sodium in low sodium diets, which should be of value to dietitians. Those involved in research and teaching of food technology will also find it useful.

There are five sections of unequal length in the book. The first section is a major one, in which 58 spices are described in detail, including historical and legendary background, sources of supply and composition and nutritional value. Photographs or drawings of the spice plant and photographs of a commercial sample of the spice or condiment are included in each case. Other useful information includes the antioxidant capacity and microbiological aspects of the spices with means for sterilizing them and specification of spice blends for specific purposes such as curry or chili powder. Soluble spices are also covered, including essential oil.

The book includes a discussion of up-to-date analytical methods, world trade figures and purchasing specifications. Simple and compound condiments are described, from garlic salt to Worcestershire sauce, soy sauce to mango chutney. Indeed, there are data for

more than one hundred condiments and sauces. Finally, seasonings and seasonings technology are covered for specific uses, e.g. meat seasoning for frankfurters and instant gravy mixes.

An Appendix is presented on a case study of Malaysian pepper, including production and cultivation, but with a major accent on marketing. The index is very comprehensive, dealing particularly well with herbs, spices, countries of origin, spice mixtures and spice active constituents.

It is excellent to find all this information in a single source. Although at times it may appear US-orientated (e.g. spice mixtures for pumpkin pie) it is important to recognise the influence of American taste worldwide

and also that most of the information has universal appeal.

The style is easy to read, perhaps because the text is not heavily referenced. However, each section has a very useful list of suggested reading with references to books and journals, including journal article titles. The main criticism is that in some instances the photographs are a little unclear, although most are of a good standard.

The book gives the overall impression of being an absolute mine of information—a must for all food processing companies and libraries in universities where food subjects are studied.

Ann Walker