

## Book reviews

*Alternative Sweeteners*, 3rd ed, revised and expanded, 2001. Lyn O'Brien Nabors (editor). Pp. 572, Marcel Dekker, \$175.00. ISBN 0-8247-0437-1

Since the 1800s, a very large number of naturally occurring and industrially synthesized alternatives to sucrose have been discovered or developed, though many of these only began to appear more widely in foods within the past 20 years. These 'alternative' sweeteners include high-potency sweeteners (which in practice are essentially non-energetic), reduced-energy sweeteners having an intermediate energetic value, and bulk sweeteners which are isoenergetic with sucrose. These latter two categories typically claim additional health or technical (cost, flavour profile, etc.) benefits relative to sucrose.

In twenty-seven well-organized chapters, largely arranged by specific sweetener, this book comprehensively addresses the discovery, chemistry, sensory characteristics, food technology, metabolism, toxicology, and current and potential applications of virtually all of the established and many of the recently discovered alternative sweeteners, as well as their use in combinations. The chapters are generally consistent in style and layout, covering each of these major points in reasonable depth, aided by numerous tables and figures. This is therefore a very well-edited, authoritative, and comprehensive reference resource for the technological and regulatory aspects of alternative sweeteners.

Having said that, certain biases and omissions are also apparent. The book appears to be a production of (and is edited via) the Calorie Control Council, a trade organization which directly supports the marketing and use of reduced-energy products. This book is therefore not intended to showcase controversial views on the value of alternative sweeteners, and the chapters are mostly authored by individuals with a direct commercial interest in their subject. Their working familiarity with the ingredients can be seen in the timely and authoritative nature of the information on technological and regulatory issues. However, a certain positive 'spin' is sometimes apparent in the interpretation or presentation of information relating to the putative benefits or potential negatives of specific sweeteners. Those more familiar with some of the sweeteners will see these biases, but other readers must simply bear this *caveat* in mind.

The book is clearly oriented towards technologists, not nutritionists. Some of the chapters go into reasonable depth on nutritional issues (e.g. metabolic fate, side effects and derivation of the energy values of polyols). However, for those seeking a more general overview of the nutritional or health aspects of alternative sweeteners, there may be some disappointments.

No chapter actually focuses on sucrose itself, nor on the questions of when and where and why its replacement by

alternatives is appropriate. This might have made an interesting starting point. There is, for example, no serious attempt to address the issue of whether use of intense or reduced-energy sweeteners actually offers a benefit to consumers, particularly with regard to weight control. This has undoubtedly been a major stimulus for consumer interest in reduced-sugar foods, and hence a key driver of the development and marketing efforts of sucrose alternatives. Furthermore, those familiar with this area will know that this topic provoked a vigorous scientific debate and a large number of research trials through the 1980s and 1990s, which continue today. The value of sucrose alternatives in weight control remains open to differential interpretations.

The book's index is unfortunately centred on specific sweeteners as main headings. This is somewhat redundant, since it is also how the chapters themselves are arranged. Thus, no independent entries can be found for nutritional interests such as 'diabetes', 'appetite', 'malabsorption', or 'energy (intake or value)', even though many of these issues are listed and addressed under multiple chapters.

Marketing and consumer issues are further areas which are not addressed, i.e. who uses alternatively sweetened products, why, and what are the trends? What benefits do consumers expect or want from these products? What are some of the marketing successes and failures? Once again, those familiar with the industry will recognize that there are some interesting and valuable stories to be told here, but perhaps this will have to wait for a later edition.

These latter comments are not intended to convey dissatisfaction with the overall value of the book, but merely to point out some shortcomings which may be particularly relevant to readers of the *British Journal of Nutrition*. Although somewhat costly, I believe this volume would be a highly recommended addition to the shelves of any group working in food product research and development, and an excellent background technical reference for nutritionists and dietitians.

D. J. Mela

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*Social Behaviour in Farm Animals*. Edited by L. J. Keeling and H. W. Conyous. Wallingford, Oxon: CABI Publishing. 2001. £60.00 ISBN 0 85199 397 4

This is probably the first volume on the social behaviour in farm animals for 25 years. It is predominately designed for undergraduate students studying animal behaviour, but it will also act as a good introduction to researchers in related areas, including the nutrition of farm animals. There is,

however, little direct reference to nutrition and feeding in the volume.

The volume is divided into three parts. The first part has three chapters which describe the essentials of animal behaviour, and a fourth chapter which deals with domestication. These chapters, written in a clear and concise manner, consider living in groups from an evolutionary perspective, group life, parental behaviour and the evolution and domestication of social behaviour.

The second part of the volume describes the social behaviour of domestic species, i.e. cattle, sheep, pigs, domestic birds, horses and fish. These are written by experts of each species. My expertise is in the study of sheep and cattle, and I found the chapters on these species comprehensive in their coverage of our understanding and with all the key references to work in the area included. These chapters will be useful, and indeed should be compulsory reading for researchers starting to work on any of the species described.

The third part of the volume considers contemporary topics in social behaviour with particular reference to farm animals. The contemporary topics chosen are entitled 'Breaking social bonds', 'Individual differences and personality', 'People as social actors in the world of farm animals' and 'Social cognition of farm animals'. These chapters, written by scientists working at the cutting edge of social behaviour research in farm animals, are stimulating, posing a number of unanswered questions which also have relevance to feeding behaviour.

As each of the chapters has been written by different sets

of authors, there is some unevenness of style and quality. There is also some overlap of subject matter between the chapters, but this does not detract from the volume, as readers are unlikely to want to read the volume from end to end, but wish to read selectively areas of interest. The editors are to be commended on the firm brief that the authors must have been given, and also for their commentary at the start of each part of the volume and at the start of each chapter which provides for a consistency of approach and coherence to the volume.

Considerable advances have been made in our understanding of feeding behaviour, particularly of farm animals, in the past two decades. The relationship between feeding behaviour and voluntary intake, the factors influencing diet choice and foraging behaviour are all areas where elegant theoretical and experimental work has been undertaken. I am of the view that for the study of feeding behaviour to advance, new perspectives need to be brought to bear. The development of research thinking which brings the studying of social behaviour and feeding behaviour together is one area where new perspectives can be fruitfully explored.

This volume will provide those interested in the feeding behaviour of farm animals with an excellent introduction to their social behaviour and, I hope, will act as stimulus for research in this area.

Professor John A. Milne

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