

## Book Review

***New Technologies for Healthy Foods and Nutraceuticals.* Edited by Manssur Yalpani. ATL Press, Inc., Science Publishers, P.O. Box 4563 T Station, Shrewsbury, MA 01545, USA, 1997. ISBN 1-882360-10-9, 334 pp, \$225 cloth-bound and \$150 paperback**

This is a unique volume in that the editor has garnered the resources of 35 international experts in food supplements and nutritional balance to produce an in-depth compendium of information about healthy living. These authors provide an up-to-date statement of both the history and practice of optimizing nutrients from diverse agricultural and natural products sources, with highly accurate literature documentation for each case. The 18 chapters represent the many diverse subjects that must be cogently integrated to give an understanding of how developments in nutritional biochemistry are occurring today. In addition, the necessary inclusion of market extent for all of these products in a rapidly expanding demographic situation and economic prognostication for sustaining viable sales have been well considered by chapter authors and the editor.

The division of the book into four logical subheadings is in itself an emphasis on how complex a process is delivery of health-related information, as well as the manufacturing and provision of the products necessary for a pluralistic society. The divisions are (I) The Markets and the Players; (II) New Product Technologies; (III) Product Safety and Microbiological Characterization Technologies; and (IV) Commercialization Strategies.

For the carbohydrate chemist, each chapter of *New Technologies for Healthy Foods and Nutraceuticals* bears upon carbohydrate-based nutrient sources or their interactions with

other major biochemicals involved in metabolism. This volume touches upon all of the areas of carbohydrate chemistry that should constitute a working knowledge of the common constituents of carbohydrate-related food materials. Thus, there are available with an abundance of appropriate literature the complexities of dietary fiber, polysaccharides as immunopotentiating agents, colloidal benefits of polysaccharides in gastrointestinal processes, modulation of fat, sugar, vitamin, and peptide transport by fruit and vegetable fiber, glycoside antioxidants such as in *Ginkgo biloba* and many other polyphenolic sources, and the psychophysical as well as nutritional significance of new organic structures used in sweeteners.

The subject matter of each chapter stands alone as a definitive statement for a variety of experts in medicine, marketing, pharmaceutical chemistry, etc. On the other hand, for the learner this presents a real problem in attempting to achieve an integrated view of where all of the molecular types come together to aid the subject user. The volume is necessarily a polyglot of information and diversity of subject matter. Although the editor, Manssur Yalpani, has done a commendable job of making sure that each chapter is highly organized and understandable, from chapter to chapter there are often great shifts of emphasis. The effect for me as a reader has been to study each of the chapters over a longer period of time because the attention span required for the whole book is so broad. This is not an adverse commentary on the book, but rather signals its real depth and lasting value.

Each of the nutritionally significant chapters, such as oat polysaccharides as contributors to health in 'Oatmeal and Oat Bran: Heart Health Benefits and More', is a specialist's dedication. Being an organic carbohy-

drate chemist and biochemist, I was intrigued by the developmental history in the many chapters on products and their health effects, such as resistant starch, health benefits of guar galactomannan, production and application of galacto-oligosaccharides, or small non-nutritive carbohydrates as sucrose substitutes in foods. This last-mentioned subject is very interesting because physical properties built into foods by molecules such as sucrose are very difficult to duplicate by substitutes. The chapter (Chapter 4) on 'Nutraceuticals—A Materials-Based Perspective' has a wide range of interesting organic and natural products chemistry that could promote years of research into the effectiveness of this chemistry in maintaining health. Chapter 2 on 'Market Opportunities', in which carbohydrate-based fat mimetics are described at some length, is actually a landmark of description of where this complex subject is heading as new physico-chemical technology is brought to bear on lowering the overall fat content of prepared food while maintaining traditional textural characteristics and understanding physical interactions of carbohydrates and fats in food.

There are minor errors in the text, such as a few misplaced words ('with' instead of 'which'

in the Abstract for Chapter 3, p. 37) and several times the term 'flavonoids' is misspelled. The term 'atherosclerosis' is misspelled several times, e.g., p. 67–68. If a later edition of the book is published, a note should be made on p. 26 that Sucralose was also approved for general use in the United States by the US Food and Drug Administration through the Tate and Lyle licensee, McNeil Specialty Products, in April 1998.

In summary, for carbohydrate researchers in all avenues of health-related endeavors this book is a valuable reference for one's personal ready-perusal shelf. As a sampling of the state of nutritional supplementation and its role in self-maintained health care up to the present, *New Technologies for Healthy Foods and Nutraceuticals* presents thought that professionals and non-specialist scientists or the lay public can appreciate as a benchmark for some time to come.

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