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Book Reviews

Developments in Food Flavours. Edited by G. G. Birch and M. G. Lindley. Elsevier Applied Science Publishers, London. 1987. ix + 287 pp. Price: £42.00. ISBN 1-85166-037-2.

This book represents the proceedings of an industry–university co-operation symposium which was organized under the auspices of the National College of Food Technology, University of Reading (Great Britain) in March of 1986. As the title suggests, the subject matter is not focused on any individual area of flavor research but rather is intended to be an update in several areas.

The initial four chapters deal with developments in the sensory area. Thompson (Chapter 1) defines flavor, goes into the physiology of perception and then finishes with some discussion as to 'why' we perceive flavor. Boelens and Van Gemert (Chapter 2) review what is known about the relationship between the physico-chemical properties of flavor compounds and their organoleptic properties. Williams (Chapter 3) discusses developments in conventional and free choice profiling and similarity scaling, and shows how these techniques, coupled with multivariate statistics, can be used in flavor development. Sugita (Chapter 4) provides a review on the developments in Umami research. His review includes a discussion of Umami in terms of: (1) occurrence in nature; (2) psychometric study; (3) neurophysiology: receptor and (4) nutrition/behaviour. The remaining chapters of this book have no central focus (such as sensory).

Taylor (Chapter 5) provides a brief discussion of how computers can be used in flavor studies. This includes using computers in analytical data handling, molecular modelling, and flavor selection.

Schreier (Chapter 6) presents an update on the biogeneration of aroma in plants. While he reviews several pathways for flavor formation, emphasis is placed on biogenetic routes for the formation of monoterpenes.

Rhodes (Chapter 7) discusses some of the more recent work in the area of plant cell cultures.

Moyler (Chapter 8) provides an overview of flavor extraction using liquid carbon dioxide. Comparisons of several steam distilled essential oils to carbon dioxide extracted essential oils are made based on gas chromatographic profiles.

Pagington (Chapter 9) presents some background information on β-cyclodextrins (e.g. history, manufacture, chemistry, and complex stability) as well as current or projected applications.

Adda (Chapter 10) reviews the flavor compounds and mechanisms of their formation in dairy products. He places an emphasis on what we still need to know in this area.

The following two chapters (11 and 12) are related to flavor formation via thermal processing. Nursten discusses the production of volatile compounds by the Maillard reaction. Emphasis is placed on several amino acids (proline, hydroxyproline, serine, threonine, cystine, cysteine, phenylalanine, leucine, and glycine). MacLeod summarizes the recent literature related to the flavor of red meats.

Knights (Chapter 13) discusses the role of legislation on flavor development. Gangolli (Chapter 14) provides a brief update on the dilemma of determining toxicological status of flavor compounds.

The final chapter (by Whitfield) relates case studies of off-flavors encountered in the Australian food industry from 1980–85.

Overall, this book is quite well done and of substantial value to individuals in the food/flavor industry. The value is not due to new information in the text (for there is little) but to the excellent reviews provided by experts in each area of flavor research.

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Starch: Properties and Potential. Vol. 13 in the Critical Reports on Applied Chemistry Series. Edited by T. Galliard. Published for the Society of Chemical Industry by John Wiley and Sons, Chichester. 1987. 151 pp. Price: £32.00. ISBN 0-471-91326-X.

The authors have set out, at the suggestion of the Food Group of the Society of Chemical Industry, to produce an up-to-date review of the active areas in starch research.