

Book Reviews

Water and Food Quality. Edited by Thelma M. Hardman. Elsevier Applied Science Publishers, London, 1989. xii + 370 pp. ISBN 1-85166-306-1. Price: £53.00.

Water and Food Quality is a comprehensive account, including contributions from researchers in university departments, government institutes and industrial research. The articles complement each other well and there is little overlap; the emphasis is on molecular behaviour; processing and nutritional aspects are also considered. Topics include:

- (1) Water activity, its definition, methodology for its control and measurement and its effect on quality factors.
- (2) Protein–water interactions, the effect of water on protein conformation, the effect of protein structure and interactions on interfacial behaviour and emulsion stability, enzyme behaviour in systems of low water content and the effect of water content and temperature on activity and stability.
- (3) The physical chemistry of water/solute interactions in low moisture foods, including confectionery products, particularly crystallization and vitrification in these systems, the aqueous solution behaviour of biopolymers and the mechanical characteristics of biopolymer gels.
- (4) Dehydration of foodstuffs, particularly the principles and practice of alternative processing operations.
- (5) The effect of processing on water holding capacity of meat products.
- (6) The effect of water content and temperature on vitamin stability.

The coverage is very good and it is an interesting and informative book to read. The references at the end of each chapter are generally extensive and up to date and provide a good route into the food science literature. While most books and articles on water will provoke discussion and debate, I found it surprising that there was no common view on topics such as bound and unfreezable water—are they worthwhile concepts, do they exist and if so, over what timescale? A more general chapter on current research on water itself and the aqueous solution behaviour of biomolecules may have helped; it would have been helpful to see how food research on water related to other research in this area.

Apart from this minor criticism—it is, after all, not possible to cover all aspects in a book of this length—it is a book to be recommended to food scientists and technologists and will stimulate further research.

Steven Ring

Rancidity in Foods. 2nd Edn. Edited by J. C. Allen & R. J. Hamilton. Elsevier Applied Science Publishers, London, 1989. xii + 244 pp. ISBN 1-85166-327-4. Price: £37.00.

The development of rancidity represents a continuous threat to the shelf life and acceptability of fatty foods, and manufacturers must be continuously on their guard against this potential threat. The first edition of this book filled an important gap in the literature by concentrating on the practical aspects of rancidity development and measurement and steps that should be taken to avoid this problem. The editors have now extended the previous edition by including chapters covering practical measures to minimise rancidity in processing and storage by K. G. Berger and rancidity in meats by M. D. Ranken. The other chapters, included from the first edition, describe the principles of rancidity development and measurement, antioxidants, nutritional aspects and practical considerations about rancidity in a variety of food products, snack foods, creams and desserts, biscuits, dairy and confectionery products. Several of these chapters have been extended to provide more detail and cover some of the more recent literature. In particular, the chapters on measurement of rancidity and nutritional aspects have been extended and provide very useful reviews of these areas. Some of the references are rather out of date, such as the book on food microbiology from 1944 in Chapter 10. In addition, Section 11.6, covering the storage of oils and fats, repeats several of the points made in Chapter 4 and could have been omitted. However, in general, the book has been well edited and there