

Book review

Flavour release

D.D. Roberts, A.J. Taylor (Eds.) ACS Symp. Series 763. ISBN 0842-3692-5 XII+ 484 pp.

Apart from the occasional hard sell by electronic nose manufacturers, flavour science rarely makes the news. The enjoyment of food, however, is a fundamental pleasure, to which the flavour scientist is an important contributor. By identifying the important flavour compounds in foods and discovering how they are formed, the flavour of what we eat can be enhanced, through improved processing techniques and production of more appetising raw materials.

Immense advances have been made in our knowledge of the flavour compounds present in all foods, during the past 40 years. Bench-top gas chromatography-mass spectrometry systems, with sophisticated data analysis software, have permitted the identification of many thousands of compounds. Those compounds that make key contributions to the typical aroma of a food have been identified and model systems containing flavour precursors, such as sugars and amino acids, have been used to show how flavour forms, for example, during cooking.

Much work is still necessary, however, in order to explain how flavour compounds function within the food matrix. Can we explain why low fat foods taste different from their full fat equivalents? Why can some people smell and taste flavours that others cannot? Is the flavouring used for a regular chewing gum suitable for a sugar-free gum? In attempting to answer these questions, the measurement of flavour release is necessary.

Flavour Release is the book of the proceedings of an American Chemical Society symposium held in New Orleans in August, 1999. It provides a timely collection of papers on a subject which has been studied since the late 1960s, but has only come to the forefront of flavour science in the last 10 years. The editors, Andy Taylor and Debbie Roberts, both possess international reputations. Andy Taylor has pioneered the use of atmospheric pressure chemical ionisation mass spectrometry for the measurement of flavour compounds released from food in vivo. Debbie Roberts has published papers on the analysis of flavour release, using various devices,

at Cornell University, the Institute of Food Research, Reading and Nestlé, Lausanne. They should both be congratulated for compiling this book within 12 months of the conference.

The continuity of the book is excellent, considering it is a conference proceedings. The first chapter introduces the topic of flavour release and tells a brief history of its measurement, from early work on the calculation of partition coefficients for various compounds at equilibrium, through to current studies on the dynamic measurement of flavour release. Current key areas of study are highlighted and ideas for future areas for research are suggested.

The book is then divided into four sections: (1) in vivo and dynamic flavour release methodology (2) modelling of flavour release (3) interactions of flavour compounds with food components and (4) relating analytical results to human perception. As well as original research papers there are also three up-to-date review articles, which allow newcomers to this field to acquaint themselves with (1) the techniques used for measuring flavour release, (2) the mathematical modelling of flavour release and (3) the interactions of flavour compounds with starch.

Because the book is a collection of papers from different authors working in the same area, a sense of déjà vu may understandably prevail when reading the introductions of some of the papers, but this is a minor criticism. The papers are well written and represent most, if not all, of the current published work on all aspects of flavour release.

This first book devoted to the study of flavour release would make an excellent addition to any flavour scientist's library and must be an essential purchase for anybody measuring or modelling what happens to the flavour of a food during the eating process.

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