Bücher = Livres

Bücher – Livres

Food Colour and Appearance

John B. Hutchings (ed.)

Blackie Academic & Professional, an imprint of Chapman & Hall, London – Glasgow – New York – Tokyo – Melbourne – Madras 1994. XII, 513 p. £ 95.00 (ISBN 0-7514-0176-5)

This book considers the science and methodology of food appearance, which is of paramount importance to human health and well-being. Its great merit is to describe the philosophy of the *total* appearance of foods; not only their colour, but the different factors involved, as well as applications across all fields of the the food industry. Included are: considerations of the evolutionary, historical, and cultural aspects of food appearance, the physics and food chemistry of colour and appearance, the principles of sensory appearance assessment, appearance profile analysis, and instrumental measurements, the interaction of product appearance and control, with their acceptance in the varied environments of the laboratory, production line, supermarket, and even the customer at home and in the restaurant.

The book is divided in eleven chapters dealing with: food colour and appearance in perspective, the philosophy of total appearance, light and interaction with materials, vision, sensory evaluation of appearance (methodology), appearance profile analysis and sensory scales, instrumental specification, colour specification of food, specification of appearance properties other than colour, the chemistry of food colour, and the environment and food display. Every chapter lists its own references (including many recent publications), as well as numerous tables and figures whose numeration refers to that of the corresponding chapter. Finally, a detailed index helps the reader looking for specific information. This is a study, and has been made in an attempt to underline the importance of appearance to all sectors of the industry. By including all the principles of food appearance under one cover, it also aims to encourage interdisciplinary cross-fertilization of approach and method among different parts of R & D.

This excellent volume provides a base in the science and methodology of food colour and appearance. It is a basic reference text, suitable for food scientists, technologists, designers, manufacturers, and product specialists in industry and university, as well as those involved in laboratory research and development such as sensory scientists and colour and flavour chemists. It will also serve as a text for students of food science, technology, marketing, and those concerned in any way with food presentation and food appearance specification. The message to take away is that the total appearance in foods, in all areas of life, can be understood, described, quantified, and optimized.

J.O. Bosset

Food Biotechnology: Microorganisms

Y.H. Hui and *George G. Khachatourians* (eds)

VCH Verlagsgesellschaft, Weinheim – New York – Basel – Cambridge – Tokyo 1995. XVI, 937 pages, 131 figures and 91 tables. DM 295.–/£ 118.– (ISBN 1-56081-565-5)

As a professional reference book, *Food Biotechnology: Microorganisms* is targeted towards the following groups: i) Food manufacturing companies, ii) food ingredient and additive suppliers, iii) government and academic units and iv) teachers and students in departments of food science; food technology; food engineering; microbiology; applied molecular genetics and biotechnology. As a book with over 4100 citations, it will serve as a useful reference book for beginners as well as for knowledgeable veterans.

Principles and General Applications (Part I) covers concisely the basic theories, principles, and major methods of approach to the topics: microbial genetics; microbial growth and physiology; cloning, RFLP and karyotyping; eukaryotic cells and expression vectors; protein engineering (Chapters 1–5); organic acid production, production of volatile flavours, and industrial application of *Candida* spp. (Chapters 6–8).

Production of Enzymes and Food Ingredients (Part II, Chapters 9–16) covers the contribution of bacteria and fungi to the production of food-related enzymes and other ingredients with the help of biotechnology (*Bacillus* spp.; amino-acid-, cellulose-, xanthan- and pullulan-producing microorganisms; *Rhizopus, Rhizomucor* and *Penicillium* spp.).

Manufacture of Fermented Foods (Part III, Chapters 17–26) includes reviews of biotechnical manipulation and the potential for enhancing the production of fermented foods by bacteria (lactobacilli, lactococci, pediococci, propionobacteria and leuconostoc) an yeasts (brewer's, distilled beverages and wine). Also very helpful for referencing may be the appendices with the following topics: i) Genetics and Probes, ii) Microorganisms, iii) Compounds and iv) Enzymes.

The information coverage in each chapter is self-contained and it was left to each of the 47 well-regarded authors (from 9 countries) to give a balanced view of the current state of knowledge within their field of interest. This publication is similar to other books in approaching its fundamental offerings; first, the most rapidly growing research interests and publications, and second the information of commercial interest in food biotechnology. However, it differs from other competing books in its concentrationon on the balance between fundamental biology, molecular genetics and biotechnical manipulations. A wide context that relates directly or indirectly to food, wether ingredients, raw material, production and processing, or modification is adopted to meet the twenty-first century's first prerequisite of human well-being, that is, our food.

U. Pauli

La levure dans les industries alimentaires

H. Heslot et *B. Vladescu*

TEC & DOC – Lavoisier, éditeur, Paris 1994. VI, 57 p., 15,5 x 22 cm, broché. FF. 180.–
(ISBN 2-85206-986-5)

Ce petit fascicule se compose de cinq grandes parties non numérotées: une introduction générale suivie des trois principaux chapitres consacrés chacun à une application industrielle importante des levures: en boulangerie, dans les industries brassicoles et en oenologie. En raison de leur capacité à provoquer la fermentation alcoolique et à générer des arômes, les levures sont en effet à l'origine d'importantes applications dans le domaine alimentaire. Les techniques de génie génétique ont également permis de leur faire produire des médicaments, tels un vaccin contre l'hépatite B ou de l'insuline humaine. Très hétérogène, la dernière partie de ce fascicule comprend une conclusion et une esquisse de quelques utilisations potentielles des levures, une liste de références bibliographiques ainsi qu'une liste non exhaustive de brevets.

Pour en illustrer et en expliquer les principales applications industrielles, les auteurs commencent par brosser le portrait et évoquer les caractéristiques des levures: fusion des protoplastes, techniques de génie génétique, méthodes d'identification, physiologie, production industrielle et formulations commerciales. Dans le cas des levures destinées à la boulangerie, ils rappellent le rôle de la levure, la fermentation rapide, l'utilisation accélérée du maltose, l'importance des levures destinées aux pâtes congelées et de celles utilisant le raffinose. Pour les applications brassicoles, les thèmes traités sont: le rappel à nouveau du rôle clé des levures, les bières basses calories, le contrôle du diacétyle et de la 2,3-pentanedione (sensoriellement indésirables), les levures glucanolytiques et la valorisation potentielle des surplus de levures. Quant aux applications oenologiques, les auteurs traitent, outre le rôle même des levures, la fermentation malolactique, les fermentations alcoolique et lactique simultanées, la sécrétion d'enzymes, les levures «tueuses», celles ne produisant pas d'urée, celles produisant des terpènes ainsi que celles utilisées pour l'obtention des vins de Champagne.

Le principal intérêt de cet ouvrage réside dans ses indéniables qualités didactiques d'une part et dans son orientation prospective d'autre part. Les divers aspects des levures sont traités non seulement dans une optique d'information et d'enseignement au profit du néophyte et de l'étudiant, mais aussi dans celle de nouvelles applications en cours d'introduction ou futures au profit du spécialiste. A ce titre, ce fascicule intéressera généticiens et industriels, puisqu'il cite maints brevets récents d'ingénierie génétique ayant permis de conférer de nouvelles propriétés à des levures.

Au nombre des regrets, on peut mentionner parfois le manque d'indications précises quant à certaines références bibliographiques ainsi qu'un ordre aléatoire (ni alphabétique, ni chronologique) de la liste des ouvrages de référence cités en fin de fascicule.

J.O. Bosset

Ei und Eiprodukte

Waldemar Ternes, Ludwig Acker, Siegfried Scholtyssek (Hrsg.)

22. Band aus der Schriftenreihe «Grundlagen und Fortschritte der Lebensmitteluntersuchung und Lebensmitteltechnologie», Verlag Paul Parey, Berlin und Hamburg 1994. 512 Seiten mit 76 Abbildungen, davon 3 farbig und 114 Tabellen. Broschiert SFr./DM 88.– (ISBN 3-8263-2503-3)

Wer sich in den letzten Dezennien als Produzent, Abpacker oder sonstwie fachlich mit Fragen rund um das Hühnerei beschäftigte, musste, wenn er die Antwort in deutscher Sprache suchte, im «Eierbuch» von Prof. B. Grzimek nachschlagen. 1994 erschien nun mit Beiträgen von 15 renommierten Autoren aus Deutschland, Grossbritannien, den Niederlanden und Polen ein neues umfassendes wissenschaftliches Werk, worin das aktualisierte und wesentliche Wissen über das Lebensmittel «Ei» zusammenfassend dargestellt wird. In 17 Kapiteln werden ausführlich die Physiologie der Eibildung, chemische, chemisch-physikalische, ernährungsphysiologische und funktionelle Eigenschaften, die Mikrobiologie von Eiern und die gesamte Technologie der Eiverarbeitung, angefangen bei der Eisammlung bis zur Vorstellung aller gängigen Eiprodukte sowie die chemische und mikrobiologische Analytik dargestellt. Dabei nimmt die Beschreibung des Eiaufbaues und der chemischen Eizusammensetzung einen ziemlich grossen Raum ein. Ein umfangreiches Literaturverzeichnis ist am Schluss des Werkes beigefügt.

Das Buch wendet sich vorab an die in lebensmittelchemischen und ernährungswissenschaftlichen Hochschulinstituten Tätigen, aber auch an die in der eiverarbeitenden Industrie verantwortlichen Personen sowie an Studierende dieser Fachrichtungen. Dem Werk sei der Wunsch mitgegeben, dass es seinen Weg machen werde, da es den vorgestellten Stoff gleichermassen von der praktischen wie auch von der wissenschaftlichen Seite ausführlich behandelt.

K.-W. Lüthi

Water-soluble Vitamin Assays in Human Nutrition

G.F.M. Ball (ed.)

Chapman & Hall, London – Glasgow – Weinheim – New York – Tokyo – Melbourne – Madras 1994. X, 416 p. £ 95.00 (ISBN 0-412-58370-4)

The demand for vitamin analysis and determination of bioavailability is growing, particularly due to the increased consumption of processed and convenience foods for which nutritional data are lacking. In order to assess the nutritional value of a food commodity or diet it is necessary to estimate the fraction of the total vitamin content that is biologically available. This book is an up-to-date, single source reference that deals with the nature and determination of the water-soluble

vitamins in food. The concept of vitamin bioavailability is discussed as a means of assessing the nutritional value of a diet, together with methods of determining the naturally occurring vitamin content of foods and the amount of vitamin added to fortified foods. Analytical methods include physicochemical, microbiological and biospecific techniques with emphasis on the extraction of the vitamins from the food matrix.

As to the scope of this book, the introductory chapter establishes the nutritional theme and introduces the concepts of biological activity and bioavailability. A detailed discussion of animal bioassays is beyond the scope of this book, since such assays are the province of specialised laboratories equipped with the personnel and facilities for their evaluation. Chapter 2 sets out to acquaint the reader with a brief account of the chemical and biological properties of thiamin, riboflavin, niacin, vitamin B-6, pantothenic acid, biotin, folate, vitamin B-12 and vitamin C. Emphasis is placed upon the vitamins' chemical structures, including the various bound forms, their stabilities and their occurrence in natural materials. Chapter 3 sets the stage for the subsequent analytical chapters by defining the analytical objectives and summarising the scope of current analytical techniques in determining the vitamins and related vitamins. Chapter 4 is entirely devoted to the extraction of the vitamins from the food matrix. The chemistry of the extraction process and the quantitative efficiency have a great influence upon the accuracy of an assay method, yet extraction methods are the least studied and least characterised component of vitamin assays. Chapters 5–8 present the basic principles of the various physicochemical, microbiological and biospecific techniques encountered in vitamin analysis and discuss the applications of these techniques by reference to representative published methods. In the concluding chapter the various techniques are appraised by reference to comparative studies. All chapters include many recent references. The index of the subjects treated is a welcome complement to the table of contents.

This excellent book will be of great practical use as a tool and reference work for laboratory managers, senior analysts and laboratory technicians in food and vitamin manufacturing companies, for those in government and research institutes and for medical researchers, public analysts and nutritionists. It can also be recommended for a broad audience including lecturers, students of natural sciences and food technologists.

J.O. Bosset