

LIMITED ACCESS FOOD CONSTITUENTS AND ORAL HEALTH CURRENT STATUS AND FUTURE PROSPECTS WOODHEAD PUBLISHING SERIES IN FOOD SCIENCE TECHNOLOGY AND NUTRITION

Food Constituents and Oral Health

Oral diseases can have a significant impact on self esteem and quality of life, are widespread and may be expensive to treat. New methods to reduce their incidence are therefore needed and the protective effect of food constituents is an important area of study. This essential collection reviews the latest research into the effects of food constituents on diseases and conditions of the mouth. Part one introduces oral conditions and diseases, with chapters on topics such as diseases caused by oral bacteria, viral and fungal infections of the oral cavity and dental erosion. Part two focuses on the effects of specific foods and food components, including sugar alcohols, casein phosphopeptides and antioxidants. The final part of the book covers the technology and development of foods and supplements for oral health and oral healthcare products containing food-derived bioactives. With its distinguished editor and international team of contributors, Food constituents and oral health is an indispensable reference for dentists, professionals in the oral health product, dietary supplement and functional foods industries and academics with an interest in oral health or functional foods. Essential collection reviews the latest research into the food constituents on diseases and conditions of the mouth Examines oral conditions and diseases with specific chapters assessing bacterial, viral and fungal infections Reviews the effects of specific foods and food components including sugar alcohols and antioxidants

Innovation and Future Trends in Food Manufacturing and Supply Chain Technologies

Innovation and Future Trends in Food Manufacturing and Supply Chain Technologies focuses on emerging and future trends in food manufacturing and supply chain technologies, examining the drivers of change and innovation in the food industry and the current and future ways of addressing issues such as energy reduction and rising costs in food manufacture. Part One looks at innovation in the food supply chain, while Part Two covers emerging technologies in food processing and packaging. Subsequent sections explore innovative food preservation technologies in themed chapters and sustainability and future research needs in food manufacturing. Addresses issues such as energy reduction and rising costs in food manufacture Assesses current supply chain technologies and the emerging advancements in the field, including key chapters on food processing technologies Covers the complete food manufacturing scale, compiling significant research from academics and important industrial figures

Foods, Nutrients and Food Ingredients with Authorised EU Health Claims

The second volume of Foods, nutrients and food ingredients with authorised EU health claims continues from Volume 1, which provided a comprehensive overview of many of the permitted health claims for foods and nutrients approved under European Regulation EC 1924/2006. This new volume discusses more of the health claims authorised to date for use in the EU. The chapters cover details of various permitted claims,

such as the approved wording, conditions of use, the target group for the claims, the evidence for the claimed health benefits, and where appropriate details of other relevant legislation, consumer-related issues and future trends. The book opens with an overview of regulatory developments relating to health claims. Part One reviews authorised disease risk reduction claims and proprietary claims. The second part investigates ingredients with permitted 'general function' claims, with chapters examining ingredients such as red yeast rice, glucomannan and guar gum. The final section of the book explores foods and nutrients with permitted health claims, including chapters on authorised EU health claims for prunes, foods with low or reduced sodium or saturated fatty acids, and claims for essential and long chain polyunsaturated fatty acids. Building on volume 1, this title ensures that the area of EU health claims in food is comprehensively covered. Chapters are devoted to individual food ingredients and substances, covering the range of issues related to health claims. Health-promoting products are an increasing consumer trend in product development and this book provides key information on these advances.

Lifetime Nutritional Influences on Cognition, Behaviour and Psychiatric Illness

The influence of nutrition on cognition and behaviour is a topic of increasing interest. Emerging evidence indicates that nutrition in early life can influence later mental performance and that diet in later life can reduce cognitive decline. Lifetime nutritional influences on cognition, behaviour and psychiatric illness reviews the latest research into the effects of nutrition on cognition and behaviour across the lifespan and on psychiatric illness. Part one investigates nutritional influences on brain development and cognition including the effects of early diet and the impact of key dietary constituents including long-chain polyunsaturated fatty acids and iron. Part two explores the link between diet, mood and cognition discussing carbohydrate consumption, mood and anti-social behaviour, hydration and mental performance and the neurocognitive effects of herbal extracts, among other topics. Part three examines nutritional influences on behavioural problems, psychiatric illness and cognitive decline, including the role of nutrition in attention deficit hyperactivity disorder, vitamin status and psychiatric disorders, antioxidants and dementia, and depression, suicide and fatty acids. With its distinguished editor and international team of expert contributors, Lifetime nutritional influences on cognition, behaviour and psychiatric illness is a valuable reference tool for researchers working on the effects of diet on the brain in both academia and industry and may also appeal to dietitians and nutritionists. Reviews the latest research into the effects of nutrition on cognition and behaviour across the lifespan and on psychiatric illness. Explores the link between diet, mood and cognition discussing carbohydrate consumption, mood and anti-social behaviour. Examines nutritional influences on behavioural problems, psychiatric illness and cognitive decline.

Developing Children's Food Products

The development of food and drink products for children and adolescents represents an expanding market sector, which has received little attention in the existing literature. In recognition of increasing concerns regarding diet and nutrition in children and their potential impact on nutrition-related health issues in later life, this book covers three broad aspects relating to developing children's food products – nutrition and health, children's food choices, and the design and testing of food and drink products for children. Part one covers topical issues in pre-adult nutrition and health, such as nutritional requirements, fluid intake needs, diet and behaviour and growing 20th century health problems such as childhood obesity and food allergies. Part two then focuses on children's food choices, addressing food promotion and food choice in children and strategies that can be used to improve children's food choices both inside and outside of the home. Finally, part three considers the design of food and drink products for children, with an emphasis on working with children and adolescents to design food and drink products, and how best to undertake consumer and sensory testing with children. With its team of expert international contributors, Developing children's food products is an essential resource for both academics and food industry professionals, offering particular assistance to product developers working within the competitive children's market. Covers topical issues in pre-adult nutrition and health, discussing diet and behaviour and growing health problems such as childhood obesity and food allergies. Reviews children's food choices, addressing food promotion and food choice in children.

and strategies that can be used to improve children's food choices Considers the design of food and drink products for children, with an emphasis on working with children and how best to undertake testing

Separation, Extraction and Concentration Processes in the Food, Beverage and Nutraceutical Industries

Separation, extraction and concentration are essential processes in the preparation of key food ingredients. They play a vital role in the quality optimization of common foods and beverages and there is also increasing interest in their use for the production of high-value compounds, such as bioactive peptides from milk and whey, and the recovery of co-products from food processing wastes. Part one describes the latest advances in separation, extraction and concentration techniques, including supercritical fluid extraction, process chromatography and membrane technologies. It also reviews emerging techniques of particular interest, such as pervaporation and pressurised liquid extraction. Part two then focuses on advances in separation technologies and their applications in various sectors of the food, beverage and nutraceutical industries. Areas covered include dairy and egg processing, oilseed extraction, and brewing. This section discusses the characteristics of different foods and fluids, how food constituents are affected by separation processes and how separation processes can be designed and operated to optimize end product quality. With its team of experienced international contributors, Separation, extraction and concentration processes in the food, beverage and nutraceutical industries is an important reference source for professionals concerned with the development and optimisation of these processes. Describes the latest advances in separation, extraction and concentration techniques and their applications in various sectors of the food, beverage and nutraceutical industries Reviews emerging techniques of particular interest, such as pervaporation and pressurised liquid extraction Explores the characteristics of different foods and fluids and how food constituents are affected by separation processes

Microbial Decontamination in the Food Industry

The problem of creating microbiologically-safe food with an acceptable shelf-life and quality for the consumer is a constant challenge for the food industry. Microbial decontamination in the food industry provides a comprehensive guide to the decontamination problems faced by the industry, and the current and emerging methods being used to solve them. Part one deals with various food commodities such as fresh produce, meats, seafood, nuts, juices and dairy products, and provides background on contamination routes and outbreaks as well as proposed processing methods for each commodity. Part two goes on to review current and emerging non-chemical and non-thermal decontamination methods such as high hydrostatic pressure, pulsed electric fields, irradiation, power ultrasound and non-thermal plasma. Thermal methods such as microwave, radio-frequency and infrared heating and food surface pasteurization are also explored in detail. Chemical decontamination methods with ozone, chlorine dioxide, electrolyzed oxidizing water, organic acids and dense phase CO₂ are discussed in part three. Finally, part four focuses on current and emerging packaging technologies and post-packaging decontamination. With its distinguished editors and international team of expert contributors, Microbial decontamination in the food industry is an indispensable guide for all food industry professionals involved in the design or use of novel food decontamination techniques, as well as any academics researching or teaching this important subject. Provides a comprehensive guide to the decontamination problems faced by the industry and outlines the current and emerging methods being used to solve them Details backgrounds on contamination routes and outbreaks, as well as proposed processing methods for various commodities including fresh produce, meats, seafood, nuts, juices and dairy products Sections focus on emerging non-chemical and non-thermal decontamination methods, current thermal methods, chemical decontamination methods and current and emerging packaging technologies and post-packaging decontamination

Trends in Packaging of Food, Beverages and Other Fast-Moving Consumer Goods (FMCG)

Packaging plays an essential role in protecting and extending the shelf life of a wide range of foods, beverages and other fast-moving consumer goods. There have been many key developments in packaging materials and technologies in recent years, and Trends in packaging of food, beverages and other fast-moving consumer goods (FMCG) provides a concise review of these developments and international market trends. Beginning with a concise introduction to the present status and trends in innovations in packaging for food, beverages and other fast-moving consumer goods, the book goes on to consider modified atmosphere packaging and other active packaging systems, including smart and intelligent packaging, and the role these play in augmenting and securing the consumer brand experience. Developments in plastic and bioplastic materials and recycling systems are then discussed, followed by innovations and trends in metal, paper and paperboard packaging. Further chapters review international environmental and sustainability regulatory and legislative frameworks, before the use of nanotechnology, smart and interactive packaging developments for enhanced communication at the packaging/user interface are explored. Finally, the book concludes by considering potential future trends in materials and technologies across the international packaging market. With its distinguished editor and international team of expert contributors, Trends in packaging of food, beverages and other fast-moving consumer goods (FMCG) is an important reference tool, providing a practical overview of emerging packaging technologies and market trends for research and design professionals in the food and packaging industry, and academics working in this area. Introduces the present status, current trends and new innovations in the field whilst considering future trends in materials and technologies Considers modified atmosphere packaging and other active packaging systems including smart and intelligent packaging Discusses developments in plastic and bioplastic materials and recycling systems

Handbook of Herbs and Spices

Herbs and spices are among the most versatile ingredients in food processing, and alongside their sustained popularity as flavourants and colourants they are increasingly being used for their natural preservative and potential health-promoting properties. An authoritative new edition in two volumes, Handbook of herbs and spices provides a comprehensive guide to the properties, production and application of a wide variety of commercially-significant herbs and spices. Volume 2 begins with a discussion of such issues as the medicinal uses of herbs and spices and their sustainable production. Herbs and spices as natural antimicrobials in foods and the effect of their natural antioxidants on the shelf life of food are explored, before the book goes on to look in depth at individual herbs and spices, ranging from ajowan to tamarind. Each chapter provides detailed coverage of a single herb or spice, and begins by considering origins, chemical composition and classification. The cultivation, production and processing of the specific herb or spice is then discussed in detail, followed by analysis of the main uses, functional properties and toxicity. With its distinguished editor and international team of expert contributors, the two volumes of the new edition of Handbook of herbs and spices are an essential reference for manufacturers using herbs and spices in their products. They also provide valuable information for nutritionists and academic researchers. Provides a comprehensive guide to the properties, production and application of a wide variety of commercially-significant herbs and spices Begins with a discussion of such issues as the medicinal uses of herbs and spices and their sustainable production Explores herbs and spices as natural antimicrobials in foods and the effect of their natural antioxidants on the shelf life of food

Improving the Safety and Quality of Eggs and Egg Products

Eggs are economical and of high nutritional value, yet can also be a source of foodborne disease. Understanding of the factors influencing egg quality has increased in recent years and new technologies to assure egg safety have been developed. Improving the safety and quality of eggs and egg products reviews recent research in these areas Volume 2 focuses on egg safety and nutritional quality. Part one provides an overview of egg contaminants, covering both microbial pathogens and chemical residues. Salmonella control

in laying hens is the focus of part two. Chapters cover essential topics such as monitoring and control procedures in laying flocks and egg decontamination methods. Finally, part three looks at the role of eggs in nutrition and other health applications. Chapters cover dietary cholesterol, egg allergy, egg enrichment and bioactive fractions of eggs, among other topics. With its distinguished editors and international team of contributors, Volume 2 of Improving the safety and quality of eggs and egg products is an essential reference for managers in the egg industry, professionals in the food industry using eggs as ingredients and all those with a research interest in the subject. Focuses on egg safety and nutritional quality with reference to egg contaminants such as Salmonella Enteritidis Chapters discuss essential topics such as monitoring and control procedures in laying flocks and egg decontamination methods Presents a comprehensive overview of the role of eggs in nutrition and other health applications including dietary cholesterol, egg allergy, egg enrichment and bioactive fractions of eggs

Rice Quality

Rice is a unique and highly significant crop, thought to help feed nearly half the planet on a daily basis. An understanding of its properties and their significance is essential for the provision of high quality products. This is all the more true today as international trade in rice trade has been increasing rapidly in recent years. This important book reviews variability in rice characteristics and their effects on rice quality. After an introduction on rice quality that also explores paradoxes associated with the crop, the book goes on to examine rice physical properties and milling quality. This leads to a discussion of the effects that the degree of milling has on rice quality. The ageing of rice and its cooking and eating quality are investigated in the following chapters before an analysis of the effect of parboiling on rice quality. Later chapters consider the product-making and nutritional quality of rice and investigate speciality rices and rice breeding for desirable quality. The book concludes with an extensive chapter on rice quality analysis and an appendix containing selected rice quality test procedures. With its distinguished author Rice quality: a guide to rice properties and analysis proves an invaluable resource for professionals in the rice industry and researchers and post-graduate students interested in rice. Examines the physical properties of rice, such as grain appearance and density and friction Investigates the ageing of rice and its cooking and eating quality The product making and nutritional aspects of rice are also considered

Diet, Immunity and Inflammation

Although inflammation is one of the body's first responses to infection, overactive immune responses can cause chronic inflammatory diseases. Long-term low-grade inflammation has also been identified as a risk factor for other diseases. Diet, immunity and inflammation provides a comprehensive introduction to immunity and inflammation and the role that diet and nutrition play with regard to this key bodily response. Part one, an introductory section, discusses innate and adaptive immunity, mucosal immunity in a healthy gut and chronic inflammatory diseases and low grade inflammation. Chapters in part two highlight the role of micronutrients, including zinc, selenium, iron, vitamin A and vitamin D, in inflammation and immunity. Part three explores other dietary constituents and includes chapters on intestinal bacteria and probiotics, the impacts of prebiotics on the immune system and inflammation, and antimicrobial, immunomodulatory and anti-inflammatory effects of food bioactive proteins and peptides. Further chapters explore the role of olive oil, short and long chain fatty acids and arginine and glutamine in immune functions. Nutrition, immunity and inflammation are discussed from an integrative and life course perspective in part four. Chapters focus on adverse immune reactions to foods, early nutritional programming, the impact of nutrition on the immune system during ageing, the impact of exercise on immunity and the interaction with nutrition, and the effect that malnutrition has on immunity and susceptibility to infection. With its distinguished editors and international team of expert contributors, Diet, immunity and inflammation is a comprehensive resource for those researching immunology or inflammation, nutrition scientists, and professionals in the food and nutrition industries who require an understanding of the effect that diet can have on the immune system and inflammation. Provides an overview of key research in the important and connected areas of inflammation, infection, overactive immune responses, diseases and diet Outlines the fundamentals of immunity and

inflammation and reviews the effects of different food constituents Discusses important related issues, such as ageing and exercise

Improving the Safety and Quality of Eggs and Egg Products

Eggs are economical and of high nutritional value, yet can also be a source of foodborne disease. Understanding of the factors influencing egg quality has increased in recent years and new technologies to assure egg safety have been developed. Improving the safety and quality of eggs and egg products reviews recent research in these areas. Volume 1 focuses on egg chemistry, production and consumption. Part one sets the scene with information on egg production and consumption in certain countries. Part two then provides essential information on egg formation and chemistry. Factors that impact egg quality are the focus of part three. Chapters cover the role of poultry breeding, hen nutrition and laying environment, among other significant topics. Part four addresses organic and free range egg production, the impact of egg production on the environment and non-poultry eggs. A chapter on processed egg products completes the volume. With its distinguished editors and international team of contributors, Volume 1 of Improving the safety and quality of eggs and egg products is an essential reference for managers in the egg industry, professionals in the food industry using eggs as ingredients and all those with a research interest in the subject. Focuses on egg chemistry, production and consumption with reference to the factors that can impact egg quality Reviews recent research in the areas of disease, egg quality and the development of new technologies to assure egg safety Comprehensively covers organic, free-range and processed egg production

Winemaking Problems Solved

What is the best way to cold settle my white juices? How do I sample for Brettanomyces? What's the best procedure to clean or store a used barrel? How do I care for the winery pump? My wine is too astringent - what do I do? When can I skip filtering my wine? When will it re-ferment and push the corks? How do I best store and ship my bottled wine? Expert answers to these and further questions that arise during winemaking can be found in this convenient reference book. Arranged in practical question and answer format, Winemaking problems solved provides brief, quickly accessible solutions to more than one hundred issues of frequent concern to winemaking professionals. Chapters review issues associated with grape analysis, juice and must preparation, yeast and malolactic fermentation, wine clarification and stabilisation, filtration, packaging and storage. Sections on winery equipment maintenance and troubleshooting, wine microbiology and sanitation are also included. The final part of the book focuses on particular wine quality issues, such as hazes and off-odours. With expert contributions from a diverse team of international enologists, Winemaking problems solved is an essential, hands-on reference for professionals in the winemaking industry and students of enology. Provides solutions to a variety of issues of frequent concern to wine making professionals Reviews issues related to grape analysis, filtration, packaging and microbiology A hands-on reference book written by a diverse team of international enologists

Metabolomics in Food and Nutrition

Metabolomics enables valuable information about the biochemical composition of foods to be rapidly obtained. Since the biochemical profile of food largely determines key food properties such as flavour and shelf life, the information gained using metabolomics-based methods will enable greater control of food quality and also help to determine the relationship between diet and health. Metabolomics in food and nutrition provides an overview of their current and potential use in the food industry. Part one reviews equipment, methods and data interpretation in metabolomics including the use of nuclear magnetic resonance (NMR), statistical methods in metabolomics, and metabolic reconstruction databases and their application to metabolomics research. Part two explores applications of metabolomics in humans, plants and food. Chapters discuss metabolomics in nutrition, human samples for health assessments, and current methods for the analysis of human milk oligosaccharides (HMOs) and their novel applications. Further chapters highlight metabolomic analysis of plants and crops, metabolomics for the safety assessment of genetically modified

(GM) crops, and applications of metabolomics in food science including food composition and quality, sensory and nutritional attributes. With its distinguished editors and team of expert contributors, *Metabolomics in food and nutrition* is a technical resource for industrial researchers in the food and nutrition sectors interested in the potential of metabolomics methods and academics and postgraduate students working in the area. Provides an overview of the current and potential future use of metabolomics in the food industry. Chapters focus on key applications and review the analytical methods used and the bioinformatics techniques involved in processing the results. Discusses metabolomics in nutrition, human samples for health assessments, and current methods for the analysis of human milk oligosaccharides (HMOs) and their novel applications.

High Throughput Screening for Food Safety Assessment

Recent advances in array-based detectors and imaging technologies have provided high throughput systems that can operate within a substantially reduced timeframe and other techniques that can detect multiple contaminants at one time. These technologies are revolutionary in terms of food safety assessment in manufacturing, and will also have a significant impact on areas such as public health and food defence. This book summarizes the latest research and applications of sensor technologies for online and high throughput screening of food. The book first introduces high throughput screening strategies and technology platforms, and discusses key issues in sample collection and preparation. The subsequent chapters are then grouped into four sections: Part I reviews biorecognition techniques; Part II covers the use of optical biosensors and hyperspectral imaging in food safety assessment; Part III focuses on electrochemical and mass-based transducers; and finally Part IV deals with the application of these safety assessment technologies in specific food products, including meat and poultry, seafood, fruits and vegetables. Summarises the latest research on sensor technologies for online and high-throughput screening of food. Covers high-throughput screening and the current and forecast state of rapid contaminant detection technologies. Looks at the use of optical and electrochemical biosensors and hyperspectral imaging in food safety assessment and the application of these technologies in specific food products.

Modifying Food Texture

Modifying Food Texture, Volume 1: Novel Ingredients and Processing Techniques discusses texture as an important aspect of consumer food acceptance and preference, and the fact that specific consumer groups, including infants, the elderly, and dysphagia patients require texture-modified foods. Topics covered include ingredients and processing techniques used in texture modification of foods, an overview of food texture issues, the novel use of processing techniques for texture modification, and the uses of food ingredients in texture-modified foods. Discusses texture as an important aspect of consumer food acceptance and preference. Presents findings and tactics that address the special needs of infants, the elderly, and dysphagia patients. Topics covered include ingredients and processing techniques used in texture modification of foods, along with an overview of food texture issues, amongst others.

Foods, Nutrients and Food Ingredients with Authorised EU Health Claims

Foods, Nutrients and Food Ingredients with Authorised EU Health Claims provides an overview of how health claims are regulated in the European Union, as well as detailed scientific and regulatory information about permitted health claims for particular types of foods and ingredients. Part one provides a background to the regulation of health claims in Europe. Part two focuses on authorised disease risk reduction claims, claims relating to children's development, and health and proprietary claims. Part three sets out ingredients with permitted "general function claims, including choline, creatine, sweeteners, dietary lactase supplements, and polyphenols in olive oil. Part four outlines foods and nutrients with permitted health claims, with chapters on vitamins and minerals, proteins, meat, fish, water, and the replacement of saturated fats. *Foods, Nutrients and Food Ingredients with Authorised EU Health Claims* is the go-to resource for R&D managers and technical managers in the food, and beverage and dietary supplements industry, product development

managers, health professionals and academic researchers in the field. Provides a comprehensive overview of foods and food substances that have achieved approved health claims in Europe under Regulation EC 1924/2006 Covers properties and applications of each ingredient, as well as evidence for the health claim and how it benefits consumers Outlines the importance of each claim in product development and marketing and regulatory issues such as conditions of use

Global Legislation for Food Contact Materials

Food contact materials such as packaging, storage containers and processing surfaces can pose a substantial hazard to both food manufacturer and consumer due to the migration of chemicals or other substances from the material to the food, which can cause tainting of flavours and other sensory characteristics, or even illness. This book reviews the main materials used for food contact in terms of the global legislation in place to ensure their safe and effective use. Part One provides an overview of food contact legislation issues such as chemical migration and compliance testing. Part Two looks in detail at the legislation for specific food contact materials and their advantages, hazards and use in industry. Includes global coverage of food contact legislation Features expert analysis of future trends in global food packaging regulation Focus on specific materials such as plastic, paper and rubber materials in contact with food

Handbook on Natural Pigments in Food and Beverages

Handbook on Natural Pigments: Industrial Applications for Improving Food Colour is unique in its approach to the improvement of food colors. The book is written with industrial applications in mind, with each chapter focusing on a color solution for a specific commodity that will provide food scientists with a one-stop, comprehensive reference on how to improve the color of a particular food product. The first section of the book looks at the legal frameworks which underpin natural food colorings, also investigating the consumer expectations of food color. The second section of the book focuses on specific industrial applications of natural colorants with chapters covering the use of natural colorants in aqueous food products, cereal-based foods, and meat products, amongst many other topics. The various pigments which can be used to effectively color these commodities are presented with information on safety and testing included throughout. The final section in the book looks at recent developments and future perspectives in natural food colorings. There are chapters which cover the health benefits of natural pigments, the use of novel fruits and vegetables in pigments, and stable natural solutions for blue colorings. Presents recent advances in consumer demand and worldwide legislation regarding natural food colorants Discusses the use of natural food colorants for one specific product category per chapter rather than one pigment class per chapter – this makes the book extremely useable for industrialists working in a specific sector Contains a comprehensive array of product-specific coloration approaches, from using pigment-enriched feed additives to the direct addition of color formulations

Handbook of Antioxidants for Food Preservation

Lipid oxidation in food leads to rancidity, which compromises the sensory properties of food and makes it unappealing to consumers. The growing trend towards natural additives and preservatives means that new antioxidants are emerging for use in foods. This book provides an overview of the food antioxidants currently available and their applications in different food products. Part one provides background information on a comprehensive list of the main natural and synthetic antioxidants used in food. Part two looks at methodologies for using antioxidants in food, focusing on the efficacy of antioxidants. Part three covers the main food commodities in which antioxidants are used. Reviews the various types of antioxidants used in food preservation, including chapters on tea extracts, natural plant extracts and synthetic phenolics Analyses the performance of antioxidants in different food systems Compiles significant international research and advancements

Early Nutrition and Long-Term Health

The nutrition of an individual during gestation and the first two years of life—the first 1,000 days—sets the stage for lifelong health. Nutrition quality and quantity in this period can influence the risk of developing diseases that constitute today's epidemics. Early-life nutrition can program the body's tissues, organ structure and function, and metabolic and immunologic responses. These factors impact growth, development and cognition, and the risk of cardiovascular diseases, allergies and obesity. The first part of Early Nutrition and Long-Term Health examines the mechanisms by which early nutrition affects the risk of developing these conditions. The second part of this book reviews specific non-communicable diseases (NCDs) associated with early nutrition. The third part discusses the effects of nutritional programming from fetal life to toddlerhood. Prevention of over- or undernutrition in early life, rather than dietary, behavioral or therapeutic interventions in later life, is likely to have a greater return on society's investment in coping with the modern epidemic of NCDs. Examines the relation between early life nutrition and long-term health Covers the mechanistic aspects of nutritional programming and its impact on risk of chronic non-communicable diseases Reviews associations between infant and child diet and its effect on growth, development, cognition and later occurrence of cardiovascular diseases, allergies, metabolic conditions and obesity

Modeling Food Processing Operations

Computational modeling is an important tool for understanding and improving food processing and manufacturing. It is used for many different purposes, including process design and process optimization. However, modeling goes beyond the process and can include applications to understand and optimize food storage and the food supply chain, and to perform a life cycle analysis. Modeling Food Processing Operations provides a comprehensive overview of the various applications of modeling in conventional food processing. The needs of industry, current practices, and state-of-the-art technologies are examined, and case studies are provided. Part One provides an introduction to the topic, with a particular focus on modeling and simulation strategies in food processing operations. Part Two reviews the modeling of various food processes involving heating and cooling. These processes include: thermal inactivation; sterilization and pasteurization; drying; baking; frying; and chilled and frozen food processing, storage and display. Part Three examines the modeling of multiphase unit operations such as membrane separation, extrusion processes and food digestion, and reviews models used to optimize food distribution. Comprehensively reviews the various applications of modeling in conventional food processing Examines the modeling of multiphase unit operations and various food processes involving heating and cooling Analyzes the models used to optimize food distribution

Colour Additives for Foods and Beverages

Food colour additives have been the focus of much research in the last few years, and there is increasing consumer demand for natural and safer synthetic colours. This book reviews the natural and synthetic colours available, their properties and applications, as well as regulatory, sensory and analytical issues. Part one covers the development and safety of food colour additives. Part two covers properties and methods of analysis, and part three focuses on specific food product applications and future trends. Reviews the natural and synthetic colour additives available for foods and beverages, looking at their properties and applications as well as regulatory, sensory and analytical issues Expert analysis of natural origin colours, synthetic origin colours, overview of regulations, safety analysis and consumer health Comprehensive coverage of properties and development in food colours: chemical purity, colour stability, and consumer sensory perception

Hygiene in Food Processing

The hygienic processing of food concerns both potential hazards in food products and the regulation, design, and management of food processing facilities. This second edition of Hygiene in Food Processing gives a revised overview of the practices for safe processing and incorporates additional chapters concerning pest

control, microbiological environmental sampling, and the economics of food plants. Part one addresses microbial risks in foods and the corresponding regulation in the European Union. Part two discusses the hygienic design of food factory infrastructure, encompassing the design and materials for the factory itself, as well as food processing equipment. This edition includes a new chapter on the control of compressed gases used to pneumatically operate equipment. Part three focuses on cleaning and disinfection practices in food processing. The chapter on cleaning in place also considers more cost-effective systems, and complements the additional chapter on maintenance of equipment. These chapters also explore issues such as the hygiene of workers, potential infection by foreign bodies, and pest control. Further, the chapter on microbiological sampling explains how to calculate the risk of contamination depending on the product's environment. This essential second edition is useful to professionals responsible for hygiene in the food industry. It provides a comprehensive, yet concise and practical reference source for food plant managers, suppliers of food processing equipment, building contractors, and food inspectors looking for an authoritative introduction to hygiene regulation, hygienic design, and sanitation. Provides a revised overview of the practices for safe processing Incorporates additional chapters concerning pest control, microbiological environmental sampling, and the economics of food plants This essential second edition is useful for professionals responsible for hygiene in the food industry

Flavor

Flavor: From Food to Behaviors, Wellbeing and Health is the first single-volume resource focused on the different mechanisms of flavor perception from food ingestion, to sensory image integration and the physiological effects that may explain food behaviors. The information contained is highly multidisciplinary, starting with chemistry and biochemistry, and then continuing with psychology, neurobiology, and sociology. The book gives coherence between results obtained in these fields to better explain how flavor compounds may modulate food intake and behavior. When available, physiological mechanisms and mathematical models are explained. Since almost half a billion people suffer from obesity and food related chronic diseases in the world, and since recent research has investigated the possible roles of pleasure linked to the palatability of food and eating pleasure on food intake, food habits, and energy regulation, this book is a timely resource on the topic. This book links these results in a logical story, starting in the food and the food bolus, and explaining how flavor compounds can reach different receptors, contribute to the emergence of a sensory image, and modulate other systems recognized as controlling food intake and food behavior. The influence of age, physiological disorders, or social environments are included in this approach since these parameters are known to influence the impact of food flavor on human behavior. Uniquely brings together multidisciplinary fields to explain, in a narrative structure, how flavor compounds may modulate food intake and behavior Includes discussions of chemistry and biochemistry, psychology, neurobiology, and sociology Presents an extremely current view that offers a wide perspective on flavor, an area of rapidly expanding knowledge Edited by renowned experts in the field of flavor perception

Functional Dietary Lipids

Functional Dietary Lipids: Food Formulation, Consumer Issues and Innovation for Health discusses this important component of the human diet and the ways it plays an essential functional role in many foods. The book covers the functionality and nutritional benefits of dietary fat in food in terms of formulation, manufacturing, and innovation for health. After an introduction by the editor reviewing the role of fats in the human diet, the book discusses the chemistry of edible fats, manufacturing issues, including the replacement of trans-fatty acids in food, fat reformulation for calorie reduction, thermal stability of fats, and the flavor and functional texture and melting characteristics of fats in food. Subsequent chapters address the effect of dietary lipid intake on various health issues and the potential health benefits of bioactive compounds in dietary lipids, with final sections discussing issues that affect the consumer relationship with fat, such as regulation, marketing, and health claims. Comprehensively examines the functionality and nutritional benefits of dietary fat in food Discusses the chemistry of edible fats, manufacturing issues, including the replacement of trans fatty acids in food, fat reformulation for calorie reduction, thermal stability of fats, and

more Considers manufacturing issues of dietary fat in foods Addresses issues affecting the consumer relationship with fat, such as regulation, marketing, and health claims

Consumer-Driven Innovation in Food and Personal Care Products

Experts from around the world present changes in the global marketplace and developments in research methodologies underpinning new product development (NPD) in this essential collection. The business and marketing aspects of NPD, sometimes neglected in books of this type, are addressed alongside methods for product testing. Trends, processes and perspectives in consumer-driven NPD in the food and personal care product industries are addressed in the opening chapters of the book. Specific topics include evolution in food retailing and advances in concept research. Hedonic testing is the focus of the next section. Different viewpoints on consumer research methods and statistics for NPD are reviewed in later chapters. The final part of the book looks towards the future of innovation, covering the implications for NPD of topics such as human genetic variation in taste perception and neuroimaging. Several chapters are not standard scientific articles. Rather they are written records of conversations between two people on a particular topic related to consumer-driven innovation in foods and personal care products. In them the interviewees speak freely about their views and experiences in NPD, providing unique insights. Consumer-driven innovation in food and personal care products will broaden readers' understanding of the many approaches available to NPD personnel and ways in which they can be used to support innovation activities. Provides expert insight into the changes in the global market place and developments in research methodologies underpinning NPD Examines the business and marketing aspects of NPD, sometimes neglected in books of this type, are addressed alongside methods for product testing Chapters review the different viewpoints on consumer research methods and statistics for NPD

Open Innovation in the Food and Beverage Industry

Food and beverage companies are increasingly choosing to enhance internal idea development by pursuing an 'open innovation' approach, allowing the additional exploitation of external ideas and paths to market. Drawing on a range of important case studies, Open innovation in the food and beverage industry investigates the challenges and opportunities afforded by the incorporation of open innovation into the food industry. Part one provides a comprehensive overview of the changing nature of innovation in the food and drink industry, acknowledging trends and considering the implications and impact of open innovation. Part two then reviews the role of partners and networks in open innovation, with collaboration, co-creation of value with consumers, the effectiveness of cluster organizations and the importance of network knowledge all discussed, before part three goes on to explore the establishment and varied management aspects of open innovation partnerships and networks. Finally, open-innovation tools, processes and managerial frameworks are the focus of part four, with discussion of the development, application and psychology of a range of initiatives. With its distinguished editor and international team of expert contributors, Open innovation in the food and beverage industry is a unique guide to the implementation and management of open innovation for all food industry professionals involved in management, research and product development, as well as academics with an interest in open innovation across all industries. Investigates the challenges and opportunities afforded by the incorporation of open innovation into the food industry Provides a comprehensive overview of the changing nature of innovation in the food and drink industry and reviews the role of partners and networks in open innovation Explores the establishment and varied management aspects of open innovation partnerships and networks and discusses the development, application and psychology of a range of initiatives

A Complete Course in Canning and Related Processes

A Complete Course in Canning is firmly established as a unique and essential guide to canning and related processes. Professionals in the canning industry and students have benefited from successive editions of the book for over 100 years. This major new edition continues that reputation, with extensively revised and

expanded coverage. The three-title set is designed to cover all planning, processing, storage and quality control phases undertaken by the canning industry in a detailed, yet accessible fashion. Major changes for the new edition include new chapters on regulation and labelling that contrast the situation in different regions worldwide, updated information on containers for canned foods and new information on validation and optimization of canning processes, among many others.

Brewing Microbiology

Brewing Microbiology discusses the microbes that are essential to successful beer production and processing, and the ways they can pose hazards in terms of spoilage and sensory quality. The text examines the properties and management of these microorganisms in brewing, along with tactics for reducing spoilage and optimizing beer quality. It opens with an introduction to beer microbiology, covering yeast properties and management, and then delves into a review of spoilage bacteria and other contaminants and tactics to reduce microbial spoilage. Final sections explore the impact of microbiology on the sensory quality of beer and the safe management and valorisation of brewing waste. Examines key developments in brewing microbiology, discussing the microbes that are essential for successful beer production and processing Covers spoilage bacteria, yeasts, sensory quality, and microbiological waste management Focuses on developments in industry and academia, bringing together leading experts in the field

Encapsulation Technologies and Delivery Systems for Food Ingredients and Nutraceuticals

Improved technologies for the encapsulation, protection, release and enhanced bioavailability of food ingredients and nutraceutical components are vital to the development of future foods. Encapsulation technologies and delivery systems for food ingredients and nutraceuticals provides a comprehensive guide to current and emerging techniques. Part one provides an overview of key requirements for food ingredient and nutraceutical delivery systems, discussing challenges in system development and analysis of interaction with the human gastrointestinal tract. Processing technologies for encapsulation and delivery systems are the focus of part two. Spray drying, cooling and chilling are reviewed alongside coextrusion, fluid bed microencapsulation, microencapsulation methods based on biopolymer phase separation, and gelation phenomena in aqueous media. Part three goes on to investigate physicochemical approaches to the production of encapsulation and delivery systems, including the use of micelles and microemulsions, polymeric amphiphiles, liposomes, colloidal emulsions, organogels and hydrogels. Finally, part four reviews characterization and applications of delivery systems, providing industry perspectives on flavour, fish oil, iron micronutrient and probiotic delivery systems. With its distinguished editors and international team of expert contributors, Encapsulation technologies and delivery systems for food ingredients and nutraceuticals is an authoritative guide for both industry and academic researchers interested in encapsulation and controlled release systems. Provides a comprehensive guide to current and emerging techniques in encapsulation technologies and delivery systems Chapters in part one provide an overview of key requirements for food ingredient and nutraceutical delivery systems, while part two discusses processing technologies for encapsulation and delivery systems Later sections investigate physicochemical approaches to the production of encapsulation and delivery systems and review characterization and applications of delivery systems

Grapevine Breeding Programs for the Wine Industry

Grapevine Breeding Programs for the Wine Industry: Traditional and Molecular Techniques summarizes recent trends in grapevine breeding, both in terms of research and practical programs. The first group of chapters covers the challenges faced by breeders and existing and emerging techniques used to combat them. Two further groups of chapters focus on grapevine breeding programs in different wine-producing countries around the world. With authoritative contributions from experts across the world's winemaking regions, this book will be an essential reference for all those involved in viticulture and oenology wanting to explore new

methods, understand different approaches and refine existing practices. Covers challenges faced by breeders Highlights grapevine breeding programs in different wine-producing countries Contributions from experts across the world's winemaking regions

Food and Beverage Stability and Shelf Life

Ensuring that foods and beverages remain stable during the required shelf life is critical to their success in the market place, yet companies experience difficulties in this area. Food and beverage stability and shelf life provides a comprehensive guide to factors influencing stability, methods of stability and shelf life assessment and the stability and shelf life of major products. Part one describes important food and beverage quality deterioration processes, including microbiological spoilage and physical instability. Chapters in this section also investigate the effects of ingredients, processing and packaging on stability, among other factors. Part two describes methods for stability and shelf life assessment including food storage trials, accelerated testing and shelf life modelling. Part three reviews the stability and shelf life of a wide range of products, including beer, soft drinks, fruit, bread, oils, confectionery products, milk and seafood. With its distinguished editors and international team of expert contributors, Food and beverage stability and shelf life is a valuable reference for professionals involved in quality assurance and product development and researchers focussing on food and beverage stability. A comprehensive guide to factors influencing stability, methods of stability and shelf life assessment and the stability and shelf life of major products Describes important food and beverage quality deterioration processes exploring microbiological spoilage and physical instability Investigate the effects of ingredients, processing and packaging on stability and documents methods for stability and shelf life assessment

Emerging Food Packaging Technologies

The successful employment of food packaging can greatly improve product safety and quality, making the area a key concern to the food processing industry. Emerging food packaging technologies reviews advances in packaging materials, the design and implementation of smart packaging techniques, and developments in response to growing concerns about packaging sustainability. Part one of Emerging food packaging technologies focuses on developments in active packaging, reviewing controlled release packaging, active antimicrobials and nanocomposites in packaging, and edible chitosan coatings. Part two goes on to consider intelligent packaging and how advances in the consumer/packaging interface can improve food safety and quality. Developments in packaging material are analysed in part three, with nanocomposites, emerging coating technologies, light-protective and non-thermal process packaging discussed, alongside a consideration of the safety of plastics as food packaging materials. Finally, part four explores the use of eco-design, life cycle assessment, and the utilisation of bio-based polymers in the production of smarter, environmentally-compatible packaging. With its distinguished editors and international team of expert contributors, Emerging food packaging technologies is an indispensable reference work for all those responsible for the design, production and use of food and beverage packaging, as well as a key source for researchers in this area. Reviews advances in packaging materials, the design and implementation of smart packaging techniques, and developments in response to growing concerns about packaging sustainability Considers intelligent packaging and how advances in the consumer/packaging interface can improve food safety and quality Examines developments in packaging materials, nanocomposites, emerging coating technologies, light-protective and non-thermal process packaging and the safety of plastics as food packaging materials

Steamed Breads

Steamed Breads: Ingredients, Processing, and Quality provides an overview of all aspects of steamed bread and steamed bun technology. A valuable resource for those interested in the practical, technical, scientific, and historical aspects of the subject. Topics that are covered include classification of the different types of steamed bread, flour quality requirements, ingredients, traditional and modern production methods, bread

faults and solutions, storage, food safety, nutrition, and future trends. Steamed bread and filled steamed buns or mantou are the staple food in the wheat growing areas of China. Around 50% of all flour consumed in China is used to produce steamed breads. They have recently spread to other Asian countries and are now eaten around the world. The current state of relevant research knowledge about steamed bread in Asia and throughout the world is described. The first comprehensive reference on the topic, Steamed Breads provides a complete overview of this important wheat-based Asian food of value to cereal scientists and researchers, wheat marketers and breeders, and Asian food and steamed bread manufacturers. Provides the first comprehensive reference on steamed breads and steamed buns Features input from authors who are leading experts in steamed bread technology and pioneers in steamed bread research Contains important information on the ingredients, processing, and quality of this staple food of China, which is gaining popularity around the world Includes classification of the different types of steamed bread, flour quality requirements, ingredients, traditional and modern production methods, bread faults and solutions, storage, food safety, nutrition, and future trends

Rapid Sensory Profiling Techniques

Sensory analysis is an important tool in new product development. There has recently been significant development in the methods used to capture sensory perception of a product. Rapid Sensory Profiling Techniques provides a comprehensive review of rapid methods for sensory analysis that can be used as alternatives or complementary to conventional descriptive methods. Part one looks at the evolution of sensory perception capture methods. Part two focuses on rapid methods used to capture sensory perception, and part three covers their applications in new product development and consumer research. Finally, part four explores the applications of rapid methods in testing specific populations.

Handbook of Food Proteins

Traditionally a source of nutrition, proteins are also added to foods for their ability to form gels and stabilise emulsions, among other properties. The range of specialised protein ingredients used in foods is increasing. Handbook of food proteins provides an authoritative overview of the characteristics, functionalities and applications of different proteins of importance to the food industry in one convenient volume. The introductory chapter provides an overview of proteins and their uses in foods. The following chapters each focus on a particular protein ingredient or group of ingredients covering their origins, production, properties and applications. The proteins discussed are caseins, whey proteins, gelatin and other meat-derived protein ingredients, seafood proteins, egg proteins, soy proteins, pea and other legume proteins, mycoprotein, wheat gluten, canola and other oilseed proteins, algal proteins and potato protein. A chapter on texturised vegetable proteins completes the volume. Innovative products and potential methods for improving nutrition and diet using these proteins are described. With its distinguished editors and international team of expert contributors Handbook of food proteins is an invaluable reference tool for professionals using food protein ingredients for both food and other applications. An authoritative overview of the characteristics, functionalities and applications of different proteins of importance to the food industry Chapters each focus on a particular protein ingredient or group of ingredients Innovative products and potential methods for improving nutrition and diet using proteins is also described

Food Enrichment with Omega-3 Fatty Acids

Omega-3 fatty acids provide many health benefits, from reducing cardiovascular disease to improving mental health, and consumer interest in foods enriched with omega-3 fatty acids is increasing. Formulating a product enriched with these fatty acids that is stable and has an acceptable flavour is challenging. Food enrichment with omega-3 fatty acids provides an overview of key topics in this area. Part one, an introductory section, reviews sources of omega-3 fatty acids and their health benefits. Chapters in part two explore the stabilisation of both fish oil itself and foods enriched with omega-3 fatty acids. Part three focuses on the fortification of different types of foods and beverages with omega-3 fatty acids, including meat products, by the

modification of animal diets and other methods, infant formula and baked goods. Finally, part four highlights new directions in the field and discusses algal oil as a source of omega-3 fatty acids and labelling and claims in foods containing omega-3 fatty acids. Food enrichment with omega-3 fatty acids is a standard reference for professionals in the functional foods industry involved with research, development and quality assessment and for researchers in academia interested in food lipids, oxidation and functional foods. Provides a comprehensive overview of formulating a product enriched with omega-3 fatty acids that is stable, provides many health benefits and has an acceptable flavour Reviews sources of omega-3 fatty acids and their health benefits and explores the stabilisation of fish oil and foods enriched with omega-3 fatty acids Focuses on the fortification of different types of foods and beverages with omega-3 fatty acids and highlights new directions in the field

Instrumental Assessment of Food Sensory Quality

Instrumental measurements of the sensory quality of food and drink are of growing importance in both complementing data provided by sensory panels and in providing valuable data in situations in which the use of human subjects is not feasible. Instrumental assessment of food sensory quality reviews the range and use of instrumental methods for measuring sensory quality. After an introductory chapter, part one goes on to explore the principles and practice of the assessment and analysis of food appearance, flavour, texture and viscosity. Part two reviews advances in methods for instrumental assessment of food sensory quality and includes chapters on food colour measurement using computer vision, gas chromatography-olfactometry (GC-O), electronic noses and tongues for in vivo food flavour measurement, and non-destructive methods for food texture assessment. Further chapters highlight in-mouth measurement of food quality and emerging flavour analysis methods for food authentication. Finally, chapters in part three focus on the instrumental assessment of the sensory quality of particular foods and beverages including meat, poultry and fish, baked goods, dry crisp products, dairy products, and fruit and vegetables. The instrumental assessment of the sensory quality of wine, beer, and juices is also discussed. Instrumental assessment of food sensory quality is a comprehensive technical resource for quality managers and research and development personnel in the food industry and researchers in academia interested in instrumental food quality measurement. Reviews the range and use of instrumental methods for measuring sensory quality Explores the principles and practice of the assessment and analysis of food appearance, flavour, texture and viscosity Reviews advances in methods for instrumental assessment of food sensory quality

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