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Handbook of Natural Antimicrobials for Food Safety and Quality
Metabolomics in Food and Nutrition
Innovation and Future Trends in Food Manufacturing and Supply Chain Technologies
Foods, Nutrients and Food Ingredients with Authorised EU Health Claims
Postharvest Biology and Technology of Tropical and Subtropical Fruits
Satiety, Satiety and the Control of Food Intake
Manley's Technology of Biscuits, Crackers and Cookies
Handbook of Food Powders
Cereal Grains
Handbook of Antioxidants for Food Preservation
Microbial Production of Food Ingredients, Enzymes and Nutraceuticals
Biscuit, Cookie and Cracker Manufacturing Manuals
A Handbook for Sensory and Consumer-Driven New Product Development
Handbook on Natural Pigments in Food and Beverages
Case Studies in Novel Food Processing Technologies
Human Milk Biochemistry and Infant Formula Manufacturing Technology
Open Innovation in the Food and Beverage Industry
Processed Meats
Functional Ingredients from Algae for Foods and Nutraceuticals
Viruses in Food and Water
Improving the Safety and Quality of Milk
New Analytical Approaches for Verifying the Origin of Food
Breadmaking
Biscuit, Cookie and Cracker Manufacturing Manuals
Handbook of Herbs and Spices
A Complete Course in Canning and Related Processes
Persistent Organic Pollutants and Toxic Metals in Foods
Hygiene in Food Processing
Handbook of Food Proteins
Biscuit, Cookie and Cracker Manufacturing Manuals
Nanotechnology in the Food, Beverage and Nutraceutical Industries
Biscuit, Cookie and Cracker Manufacturing Manuals
Handbook of Food Allergen Detection and Control
Tracing Pathogens in the Food Chain
Modeling Food Processing Operations
Protective Cultures, Antimicrobial Metabolites and Bacteriophages for Food and Beverage Biopreservation
Oxidation in Foods and Beverages and Antioxidant Applications
Reducing Saturated Fats in Foods
Winemaking Problems Solved
Determining Mycotoxins and Mycotoxigenic Fungi in Food and Feed

Since infant formula substitutes for human milk, its composition must match that of human milk as closely as possible. Quality control of infant formula is also essential to ensure product safety, as infants are particularly vulnerable food consumers. This book reviews the latest research into human milk biochemistry and best practice in infant formula processing technology and quality control. The most up to date reference on infant formula processing technology Reviews both human milk biochemistry and infant formula processing technology for broad and applied coverage Focuses exclusively on infant formulae

Many food ingredients are supplied in powdered form, as reducing water content increases shelf life and aids ease of storage, handling and transport. Powder technology is therefore of great importance to the food industry. The Handbook of food powders explores a variety of processes that are involved in the production of food powders, the further processing of these powders and their functional properties. Part one introduces processing and handling technologies for food powders and includes chapters on spray, freeze and drum drying, powder mixing in the production of food powders and safety issues around food powder production processes. Part two focuses on powder properties including surface composition, rehydration and techniques to analyse the particle size of food powders. Finally, part three highlights speciality food powders and includes chapters on dairy powders, fruit and vegetable powders and coating foods with powders. The Handbook of food powders is a standard reference for professionals in the food powder production and handling industries, development and quality control professionals in the food industry using powders in foods, and researchers, scientists and academics interested in the field. Explores the processing and handling technologies in the production of food powders Examines powder properties, including surface composition, shelf life, and techniques used to examine particle size Focuses on speciality powders such as dairy, infant formulas, powdered egg, fruit and vegetable, and culinary and speciality products

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

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

A Complete Course in Canning and Related Processes, Fourteenth Edition: Fundamental Information on Canning provides readers with a complete course on canning. This latest edition continues the tradition for both professionals in the canning industry and students who have benefitted from this collection for over 100 years. It contains extensively revised and expanded coverage, and the three-title set is designed to cover all phases of the canning process, including planning, processing, storage, and quality control. Major changes for the new edition include new chapters on regulation and labeling 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 other topics. Continues the tradition of the series that has educated professionals and students for over 100 years Covers all aspects of the canning process, including planning, processing, storage, and control Analyzes worldwide food regulations, standards, and food labeling Incorporates processing operations, plant location, and sanitation

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,

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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

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

Bacteria, yeast, fungi and microalgae can act as producers (or catalysts for the production) of food ingredients, enzymes and nutraceuticals. With the current trend towards the use of natural ingredients in foods, there is renewed interest in microbial flavours and colours, food bioprocessing using enzymes and food biopreservation using bacteriocins. Microbial production of substances such as organic acids and hydrocolloids also remains an important and fast-changing area of research. Microbial production of food ingredients, enzymes and nutraceuticals provides a comprehensive overview of microbial production of food ingredients, enzymes and nutraceuticals. Part one reviews developments in the metabolic engineering of industrial microorganisms and advances in fermentation technology in the production of fungi, yeasts, enzymes and nutraceuticals. Part two discusses the production and application in food processing of substances such as carotenoids, flavonoids and terpenoids, enzymes, probiotics and prebiotics, bacteriocins, microbial polysaccharides, polyols and polyunsaturated fatty acids. Microbial production of food ingredients, enzymes and nutraceuticals is an invaluable guide for professionals in the fermentation industry as well as researchers and practitioners in the areas of biotechnology, microbiology, chemical engineering and food processing. Provides a comprehensive overview of microbial flavours and colours, food bioprocessing using enzymes and food biopreservation using bacteriocins Begins with a review of key areas of systems biology and metabolic engineering, including methods and developments for filamentous fungi Analyses the use of microorganisms for the production of natural molecules for use in foods, including microbial production of food flavours and carotenoids

This manual explains the principles and machinery involved in baking and post-baking processes, and the key issues in maintaining both quality and throughput.

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

A *Handbook for Sensory and Consumer Driven New Product Development* explores traditional and well established sensory methods (difference, descriptive and affective) as well as taking a novel approach to product development and the use of new methods and recent innovations. This book investigates the use of these established and new sensory methods, particularly hedonic methods coupled with descriptive methods (traditional and rapid), through multivariate data analytical interfaces in the process of optimizing food and beverage products effectively in a strategically defined manner. The first part of the book covers the sensory methods which are used by sensory scientists and product developers, including established and new and innovative methods. The second section investigates the product development process and how the application of sensory analysis, instrumental methods and multivariate data analysis can improve new product development, including packaging optimization and shelf life. The final section defines the important sensory criteria and modalities of different food and beverage products including Dairy, Meat, Confectionary, Bakery, and Beverage (alcoholic and non-alcoholic), and presents case studies indicating how the methods described in the first two sections have been successfully and innovatively applied to these different foods and beverages. The book is written to be of value to new product development researchers working in large corporations, SMEs (micro, small or medium-sized enterprises) as well as being accessible to the novice starting up their own business. The innovative technologies and methods described are less expensive than some more traditional practices and aim to be quick and effective in assisting products to market. Sensory testing is critical for new product development/optimization, ingredient substitution and devising appropriate packaging and shelf life as well as comparing foods or beverages to competitor's products. Presents novel and effective sensory-based methods for new product development-two related fields that are often covered separately Provides accessible, useful guidance to the new product developer working in a large multi-national food company as well as novices starting up a new business Offers case studies that provide examples of how these methods have been applied to real product development by practitioners in a wide range of organizations Investigates how the application of sensory analysis can improve new product development including packaging optimization

This sequence of manuals addresses key issues such as quality, safety and reliability for those working and training in the manufacture of biscuits, cookies and crackers. Each manual provides a self-sufficient guide to a key topic, full of practical advice on problem-solving and troubleshooting drawn from over 30 years in the industry. Chocolate Enrobing o Moulding o Sandwich Creaming o Icing o Application of Jam o Marshmallow o Caramel o Troubleshooting Tips This manual describes what is involved in secondary processes of biscuits-the procedures used to enhance biscuits after they have been baked.

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

Novel food processing technologies have significant potential to improve product quality and process efficiency. Commercialisation of new products and processes brings exciting opportunities and interesting challenges. Case studies in novel food processing technologies provides insightful, first-hand experiences of many pioneering experts involved in the development and commercialisation of foods produced by novel processing technologies. Part one presents case studies of commercial products preserved with the leading nonthermal technologies of high pressure processing and pulsed electric field processing. Part two broadens the case histories to include alternative novel techniques, such as dense phase carbon dioxide, ozone, ultrasonics, cool plasma, and infrared technologies, which are applied in food preservation sectors ranging from fresh produce, to juices, to disinfestation. Part three covers novel food preservation techniques using natural antimicrobials, novel food packaging technologies, and oxygen depleted storage techniques. Part four contains case studies of innovations in retort technology, microwave heating, and predictive modelling that compare thermal versus non-thermal processes, and evaluate an accelerated 3-year challenge test. With its team of distinguished editors and international contributors, Case studies in novel food processing technologies is an essential reference for professionals in industry, academia, and government involved in all aspects of research, development and commercialisation of novel food processing technologies. Provides insightful, first-hand experiences of many pioneering experts involved in the development and commercialisation of foods produced by novel processing technologies Presents case studies of commercial products preserved with the leading nonthermal technologies of high pressure processing and pulsed electric field processing Features alternative novel techniques, such as dense phase carbon dioxide, ozone, ultrasonics, cool plasma, and infrared technologies utilised in food preservation sectors

Successful methods for the detection and investigation of outbreaks of foodborne disease are essential for ensuring consumer safety. Increased understanding of the transmission of pathogens in food chains will also assist efforts to safeguard public health. Tracing pathogens in the food chain reviews key aspects of the surveillance, analysis and spread of foodborne pathogens at different stages of industrial food production and processing. Part one provides an introduction to foodborne pathogen surveillance, outbreak investigation and control. Part two concentrates on subtyping of foodborne pathogens, with chapters on phenotypic subtyping and pulsed-field gel electrophoresis, as well as emerging methods. The vital topics of method validation and quality assurance are also covered. The focus in Part three is on particular techniques for the surveillance and study of pathogens, such as protein-based analysis, ribotyping and comparative genomics. Finally, Part four focuses on tracing pathogens in specific food chains, such as red meat and game, dairy, fish and shellfish. With its distinguished editors and international team of contributors, Tracing pathogens in the food chain is a standard reference for researchers, public health experts and food industry professionals concerned with the study and control of foodborne disease. Reviews key aspects of the surveillance, analysis and spread of foodborne pathogens Provides an overview of method validation and quality assurance Examines the tracing of pathogens in specific food chains, such as red meat, game and dairy

Consumers demand quality milk with a reasonable shelf-life, a requirement that can be met more successfully by the milk industry through use of improved processes and technologies. Guaranteeing the production of safe milk also remains of paramount importance. Improving the safety and quality of milk provides a comprehensive and timely reference to best practice and research advances in these areas. Volume 1 focuses on milk production and processing. Volume 2 covers the sensory and nutritional quality of cow's milk and addresses quality improvement of a range of other milk-based products. The opening section of Volume 1: Milk production and processing introduces milk biochemistry and raw milk microbiology. Part two then reviews major milk contaminants, such as bacterial pathogens, pesticides and veterinary residues. The significance of milk production on the farm for product quality and safety is the focus of Part three. Chapters cover the effects of cows' diet and mastitis, among other topics. Part four then reviews the state-of-the-art in milk processing. Improving the quality of pasteurised milk and UHT milk and novel non-thermal processing methods are among the subjects treated. With its distinguished editor and international team of contributors, volume 1 of Improving the safety and quality of milk is an essential reference for researchers and those in industry responsible for milk safety and quality. Addresses consumer demand for improved processes and technologies in the production, safety and quality of milk and milk products Reviews the major milk contaminants including bacterial pathogens, pesticides and veterinary residues as well as the routes of contamination, analytical techniques and methods of control Examines the latest advances in milk processing methods to improve the quality and safety of milk such as modelling heat processing, removal of bacteria and microfiltration techniques

Mycotoxins - toxic secondary metabolites produced by mycotoxigenic fungi - pose a significant risk to the food chain. Indeed, they may be the most hazardous of all food contaminants in terms of chronic toxicity and legislative limits on their levels in food and feed continue to be developed worldwide. Rapid and reliable methods for the determination of both mycotoxigenic fungi and mycotoxins in food and feed are therefore essential. This book reviews current and emerging methods in this area. Part one focuses on the essentials of mycotoxin determination, covering sampling, sample preparation and clean-up and key determination techniques, such as chromatographic separation, liquid chromatography-mass spectrometry and immunochemical methods. Part two then goes on to describe quality assurance, official methods and performance criteria for determining mycotoxins in food and feed. Topics covered include laboratory accreditation, method validation and measurement uncertainty. The development and analysis of biomarkers for mycotoxins are discussed in part three. Individual chapters focus on detecting exposure in humans and animals. Part four is concerned with the processes involved in determining mycotoxigenic fungi in food and feed. It also describes the identification of genes and gene clusters involved in mycotoxin synthesis, as well as DNA barcoding of toxigenic fungi. Finally, part five explores some of the emerging methods for mycotoxin analysis, ranging from bio-sensing to spectroscopic techniques. With its distinguished editor and international team of contributors, Determining mycotoxins and mycotoxigenic fungi in food and feed is a standard reference for all those concerned with reducing mycotoxin contamination in the food chain. Focuses on the essentials of mycotoxin determination, covering sampling, sample preparation, clean-up and key determination techniques Documents quality assurance and official methods and performance criteria for determining mycotoxins in food and feed Explores the processes of determining mycotoxigenic fungi in food and feed including the identification of genes and gene clusters

With growing concerns about the rising incidence of obesity, there is interest in understanding how the human appetite contributes to energy balance and how it might be affected by the foods we consume, as well as other cultural and environmental factors. Satiation, satiety and the control of food intake provides a concise and authoritative overview of these areas. Part one introduces the concepts of satiation and satiety and discusses how these concepts can be quantified. Chapters in part two focus on biological factors of satiation and satiety before part three moves on to explore food composition factors. Chapters in part four discuss hedonic, cultural and environmental factors of satiation and satiety. Finally, part five explores public health implications and evaluates consumer understanding of satiation and satiety and related health claims. Provides a concise and authoritative overview of appetite regulation Focuses on the effects of biological factors, food composition and hedonic, cultural and environmental factors affecting appetite control Discusses implications for public health

The need to reduce saturated fat levels in food and the different ways of doing this are among the most important issues facing the food industry. Reducing saturated fats in foods reviews the sources and effects of saturated fats in food and the ways in which the food industry can effectively reduce saturates. Part one covers the functional and nutritional aspects of saturated fats in foods, with chapters covering sources of dietary saturated fats, their functional attributes and the health issues associated with saturated fatty acids. Part two focuses on reducing saturated fats through food reformulation, concentrating on both the technologies used and the food categories affected. Chapters cover topics such as emulsion technology for reduction of saturated fats and the application of diacylglycerol oils, as well as different food categories including milk and dairy products, processed meats, fried foods and pastry products. With its distinguished editor and international team of contributors, Reducing saturated fats in foods is an essential reference for oils and fats processors and food manufacturers, as well as those researching saturated fats in the academic sector. Reviews the sources and effects of saturated fats in food and the ways in which the food

industry can effectively reduce saturates Explores the functional and nutritional aspects of saturated fats in foods, covering sources of dietary saturated fats and their functional attributes Focuses on reducing saturated fats through food reformulation, concentrating on both the technologies used and the food categories affected

The first edition of *Breadmaking: Improving quality* quickly established itself as an essential purchase for baking professionals and researchers in this area. With comprehensively updated and revised coverage, including six new chapters, the second edition helps readers to understand the latest developments in bread making science and practice. The book opens with two introductory chapters providing an overview of the breadmaking process. Part one focuses on the impacts of wheat and flour quality on bread, covering topics such as wheat chemistry, wheat starch structure, grain quality assessment, milling and wheat breeding. Part two covers dough development and bread ingredients, with chapters on dough aeration and rheology, the use of redox agents and enzymes in breadmaking and water control, among other topics. In part three, the focus shifts to bread sensory quality, shelf life and safety. Topics covered include bread aroma, staling and contamination. Finally, part four looks at particular bread products such as high fibre breads, those made from partially baked and frozen dough and those made from non-wheat flours. With its distinguished editor and international team of contributors, the second edition of *Breadmaking: Improving quality* is a standard reference for researchers and professionals in the bread industry and all those involved in academic research on breadmaking science and practice. With comprehensively updated and revised coverage, this second edition outlines the latest developments in breadmaking science and practice Covers topics such as wheat chemistry, wheat starch structure, grain quality assessment, milling and wheat breeding Discusses dough development and bread ingredients, with chapters on dough aeration and rheology

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

Algae have a long history of use as foods and for the production of food ingredients. There is also increasing interest in their exploitation as sources of bioactive compounds for use in functional foods and nutraceuticals. Functional ingredients from algae for foods and nutraceuticals reviews key topics in these areas, encompassing both macroalgae (seaweeds) and microalgae. After a chapter introducing the concept of algae as a source of biologically active ingredients for the formulation of functional foods and nutraceuticals, part one explores the structure and occurrence of the major algal components. Chapters discuss the chemical structures of algal polysaccharides, algal lipids, fatty acids and sterols, algal proteins, phlorotannins, and pigments and minor compounds. Part two highlights biological properties of algae and algal components and includes chapters on the antioxidant properties of algal components, anticancer agents derived from marine algae, anti-obesity and anti-diabetic activities of algae, and algae and cardiovascular health. Chapters in part three focus on the extraction of compounds and fractions from algae and cover conventional and alternative technologies for the production of algal polysaccharides. Further chapters discuss enzymatic extraction, subcritical water extraction and supercritical CO₂ extraction of bioactives from algae, and ultrasonic- and microwave-assisted extraction and modification of algal components. Finally, chapters in part four explore applications of algae and algal components in foods, functional foods and nutraceuticals including the design of healthier foods and beverages containing whole algae, prebiotic properties of algae and algae-supplemented products, algal hydrocolloids for the production and delivery of probiotic bacteria, and cosmeceuticals from algae. Functional ingredients from algae for foods and nutraceuticals is a comprehensive resource for chemists, chemical engineers and medical researchers with an interest in algae and those in the algaculture, food and nutraceutical industries interested in the commercialisation of products made from algae. Provides an overview of the major compounds in algae, considering both macroalgae (seaweeds) and microalgae Discusses methods for the extraction of bioactives from algae Describes the use of algae and products derived from them in the food and nutraceutical industries

Cereal Grains: Assessing and Managing Quality, Second Edition, provides a timely update to this key reference work. Thoroughly revised from the first edition, this volume examines the latest research and advances in the field. New chapters have been added on alternative grains, including ancient grains and pseudocereals, biosecurity, and industrial processing of grains, amongst others. Quality and food safety are important throughout the value-addition chain, from breeding, production, harvest, storage, transport, processing, and marketing. At all stages, analysis is needed so that quality management can proceed intelligently. These considerations are examined for each of the major cereal species, including wheat (common and durum), rye and triticale, barley and oats, rice, maize (corn), pseudocereal species, sorghum, and the millets. Divided into five sections, the book analyses these for the range of cereal species before a final section summarizes key findings. Documents the latest research in cereal grains, from their nutraceutical and antioxidant traits, to novel detection methods Provides a complete and thorough update to the first edition, analyzing the range of major cereal species Presents detailed advice on the management of cereal quality at each stage of production and processing

Nanotechnology has the potential to impact on food processing significantly. This important book summarises current research in this area and provides an overview of both current and possible future applications of nanotechnologies in the food industry. Issues such as safety and regulation are also addressed. After an introductory overview, the first part discusses general issues such as risk assessment, the regulatory framework, detection and characterisation of nanoparticles in food. Part two summarises the wide range of applications of nanotechnology in food processing, including nanoscale nutraceutical delivery systems, nanoemulsions and colloids, nanoscale rapid detection devices for contaminants, nanofiltration and nanocomposite packaging materials. With its distinguished editor and international team of contributors, *Nanotechnology in the food, beverage and nutraceutical industries* is a valuable reference work for both food processors and those researching this expanding field. Discusses issues such as risk assessment, regulatory framework, detection and characterisation of nanoparticles in food Summarises the wide range of applications of nanotechnology in food processing, including nutraceutical delivery and packaging materials Written by a distinguished team of international contributors, this book is an invaluable reference for industry professionals and academics alike

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

Persistent organic pollutants (POPs) and toxic elements, such as dioxins, flame retardants, lead and mercury, are substances of major concern for the food industry, the regulator and the public. They persist in the environment, accumulate in food chains and may adversely affect human

health if ingested over certain levels or with prolonged exposure. Persistent organic pollutants and toxic metals in foods explores the scientific and regulatory challenges of ensuring that our food is safe to eat. Part one provides an overview of regulatory efforts to screen, monitor and control persistent organic pollutants and heavy metals in foods and includes case studies detailing regulatory responses to food contamination incidents. Part two moves on to highlight particular POPs, toxic metals and metalloids in foods, including dioxins and polychlorinated biphenyls (PCBs), mercury, polycyclic aromatic hydrocarbons (PAHs) and phthalates. Persistent organic pollutants and toxic metals in foods is a standard reference for those in the food industry responsible for food safety, laboratories testing for food chemical safety, regulatory authorities responsible for ensuring the safety of food, and researchers in industry and academia interested in the science supporting food chemical safety. Includes case studies which detail regulatory responses to food contamination incidents Considers the uptake and transfer of persistent organic pollutants in the food chain and the risk assessment of contaminants in food Details particular persistent organic pollutants, toxic metals and metalloids in foods including polychlorinated biphenyls (PCBs), per- and polyfluoroalkyl substances (PFASs), mercury and arsenic among others

Food and beverage labels often specify a product's geographical origin, species, variety and method of production. These claims can significantly influence an item's economic value, but their verification is not always straightforward. New analytical approaches for verifying the origin of food reviews new analytical methods in this area together with applications to key commodities. Part one introduces the concept of food origin and provides supporting information on labelling legislation and standards. Part two moves on to explore new approaches for verifying the geographical origin of food using geospatial models and verifying species and varietal components of the food we eat. Holistic methods of verification methods using vibrational spectroscopy and associated chemometrics are also discussed. Finally, part three highlights the applications of new analytical methods to verify the origin of particular food commodities: fish, honey and wine. New analytical approaches for verifying the origin of food is a standard reference for professionals working in analytical laboratories testing food authenticity and for researchers, in the food industry, analytical laboratories and academia, working on the development of analytical methods for food authenticity. Includes a chapter on origin labelling legislation and standards Chapters address the applications of both established and novel methods in key product sectors Reviews new analytical methods and their applications in the food industry

This manual identifies the quality parameters and describes each ingredient by type, function, handling and storage.

In a market in which consumers demand nutritionally-balanced meat products, producing processed meats that fulfil their requirements and are safe to eat is not a simple task. Processed meats: Improving safety, nutrition and quality provides professionals with a wide-ranging guide to the market for processed meats, product development, ingredient options and processing technologies. Part one explores consumer demands and trends, legislative issues, key aspects of food safety and the use of sensory science in product development, among other issues. Part two examines the role of ingredients, including blood by-products, hydrocolloids, and natural antimicrobials, as well as the formulation of products with reduced levels of salt and fat. Nutraceutical ingredients are also covered. Part three discusses meat products' processing, taking in the role of packaging and refrigeration alongside emerging areas such as high pressure processing and novel thermal technologies. Chapters on quality assessment and the quality of particular types of products are also included. With its distinguished editors and team of expert contributors, Processed meats: Improving safety, nutrition and quality is a valuable reference tool for professionals working in the processed meat industry and academics studying processed meats. Provides professionals with a wide-ranging guide to the market for processed meats, product development, ingredient options, processing technologies and quality assessment Outlines the key issues in producing processed meat products that are nutritionally balanced, contain fewer ingredients, have excellent sensory characteristics and are safe to eat Discusses the use of nutraceutical ingredients in processed meat products and their effects on product quality, safety and acceptability

Oxidative rancidity is a major cause of food quality deterioration, leading to the formation of undesirable off-flavours as well as unhealthful compounds. Antioxidants are widely employed to inhibit oxidation, and with current consumer concerns about synthetic additives and natural antioxidants are of much interest. The two volumes of Oxidation in foods and beverages and antioxidant applications review food quality deterioration due to oxidation and methods for its control. The first volume focuses on oxidation mechanisms and antioxidant activity. Initial chapters in part one describe oxidation processes in foods, including the role of metals, heme proteins and lipoxygenase. The impact of oxidation on food flavour and the health aspects of oxidized fats are also covered. Final chapters in part one review the measurement of the extent of lipid oxidation and methods for food shelf-life determination. Part two discusses the ways in which antioxidants inhibit food oxidation, factors affecting antioxidant efficacy, methods to measure antioxidant activity and novel antioxidants. With its distinguished international team of editors and contributors, the two volumes of Oxidation in foods and beverages and antioxidant applications is standard references for R&D and QA professionals in the food industry, as well as academic researchers interested in food quality. Describes oxidation processes in foods, including the role of metals, heme proteins and lipoxygenase Reviews the impact of oxidation on food flavour and the health aspects of oxidized fats Discusses the ways in which antioxidants inhibit food oxidation, factors affecting antioxidant efficacy and methods to measure antioxidant activity

Consumers favour foods with fewer synthetic additives, but products must also be safe to eat and have a sufficiently long shelf-life. Biopreservation, the use of a product's natural microflora and its antibacterial products for protection against pathogens and spoilage, is a method of growing interest for the safe production of high quality minimally-processed foods. This book provides an essential overview of key topics in this area. Initial chapters review central aspects in food biopreservation, including the identification of new protective cultures and antimicrobial culture components, existing commercial fermentates including nisin and natamycin and the potential of novel fermentates and bacteriophages to improve food safety. Part II concentrates on the use of protective cultures, bacteriocins and bacteriophages to control the carriage of pathogenic microorganisms in food animals and to modulate human gut microflora. Chapters in the final section of the book review biopreservation of different types of foods, including milk and dairy products, fermented meats, fresh seafood and fruit. A review of active packaging for food biopreservation completes the volume. Edited by a leading expert, Protective cultures, antimicrobial metabolites and bacteriophages for food and beverage biopreservation is a fundamental reference for researchers and food industry professionals working to ensure the safety of the food supply. Reviews the central aspects in food biopreservation, including the identification of new protective cultures and antimicrobial culture components Examines the use of protective cultures, bacteriocins and bacteriophages to control the carriage of pathogenic microorganisms Provides an overview of the biopreservation of different types of foods, including milk and dairy products, fermented meats, fresh seafood and fruit

Natural additives are increasingly favoured over synthetic ones as methods of ensuring food safety and long shelf-life. The antimicrobial properties of both plant-based antimicrobials such as essential oils and proteins such as bacteriocins are used in, for example, edible preservative films, in food packaging and in combination with synthetic preservatives for maximum efficacy. New developments in delivery technology such as nanoencapsulation also increase the potential of natural antimicrobials for widespread use in industry. Part one introduces the different types of natural antimicrobials for food applications. Part two covers methods of application, and part three looks at determining the effectiveness of natural antimicrobials in food. Part four focuses on enhancing quality and safety, and includes chapters on specific food products. Reviews different types of antimicrobials used in food safety and quality Covers how antimicrobials are created to be used in different foods Examines how the antimicrobials are used in foods to enhance the safety and quality

Allergens in food and their detection, management and elimination constitute a key issue for food manufacturers, especially in terms of safety. This book reviews current and emerging technologies for detecting and reducing allergens, as well as issues such as traceability, regulation and consumer attitudes. Following an introductory chapter by a distinguished expert, part one covers allergen management throughout the food chain. Part two details current and emerging methods of allergen detection in food, and part three covers methods for reducing and eliminating allergens in food. Finally, part four focuses on the control and detection of individual food allergens and the risks each one presents in food manufacture. Reviews current and emerging technologies for detecting and reducing allergens, as well as issues such as traceability, regulation and consumer attitudes Covers allergen management throughout the food chain and reviews current and emerging methods of allergen detection

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Examines methods for reducing and eliminating allergens in food and provides a detailed overview of the control and detection of individual food allergens

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

This manual identifies the quality parameters and describes each ingredient by type, function, handling and storage.

Viruses can be highly infectious and are capable of causing widespread disease outbreaks. The significance of viral pathogens in food and waterborne illness is increasingly being recognised and viruses transferred by these routes are important areas of research. Viruses in food and water reviews the risks, surveillance and control of food and waterborne viral disease. Part one provides an introduction to food and environmental virology. Part two goes on to explore methods of detection, surveillance and risk assessment of viruses in food and water; it includes chapters on molecular detection of viruses in foods and food processing environments, quality control in the analytical laboratory, and quantitative risk assessment for food and waterborne viruses. Part three focuses on virus transmission routes and control of food and water contamination. It contains chapters on fresh produce, shellfish and viral presence, and control methods in waste water and sewage. Finally, part four highlights particular pathogens including norovirus, hepatitis A and emerging zoonotic viruses. Viruses in food and water is a standard reference book for microbiologists in academia, analytical labs and the food and water treatment industries, as well as environmental health professionals and researchers working on foodborne viruses. Explores methods of detection, surveillance and risk assessment of viruses in food and water Considers virus transmission routes and control of food and water contamination Highlights advances in the understanding of specific pathogens, including norovirus, hepatitis A and rotaviruses and the advances in vaccine development

While products such as bananas, pineapples, kiwifruit and citrus have long been available to consumers in temperate zones, new fruits such as lychee, longan, carambola, and mangosteen are now also entering the market. Confirmation of the health benefits of tropical and subtropical fruit may also promote consumption further. Tropical and subtropical fruits are particularly vulnerable to postharvest losses, and are also transported long distances for sale. Therefore maximising their quality postharvest is essential and there have been many recent advances in this area. Many tropical fruits are processed further into purees, juices and other value-added products, so quality optimisation of processed products is also important. The books cover current state-of-the-art and emerging post-harvest and processing technologies. Volume 1 contains chapters on particular production stages and issues, whereas Volumes 2, 3 and 4 contain chapters focused on particular fruit. Chapters in Volume 4 review the factors affecting the quality of different tropical and subtropical fruits from mangosteen to white sapote. Important issues relevant to each product are discussed, including means of maintaining quality and minimising losses postharvest, recommended storage and transport conditions and processing methods, among other topics. With its distinguished editor and international team of contributors, Volume 4 of Postharvest biology and technology of tropical and subtropical fruits, along with the other volumes in the collection, are essential references both for professionals involved in the postharvest handling and processing of tropical and subtropical fruits and for academics and researchers working in the area. Along with the other volumes in the collection, Volume 4 is an essential reference for professionals involved in the postharvest handling and processing of tropical and subtropical fruits and for academics and researchers working in the area Reviews factors affecting the quality of different tropical and subtropical fruits, concentrating on postharvest biology and technology Important issues relevant to each particular fruit are discussed, such as postharvest physiology, preharvest factors affecting postharvest quality and pests and diseases

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

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

Manley's Technology of Biscuits, Crackers and Cookies is widely regarded as the standard work in its field. Part one covers management issues such as HACCP, quality control, process control and product development. Part two deals with the selection of raw materials and ingredients. The range and types of biscuits is covered in part three, while part four covers the main production processes and equipment, from bulk handling and metering of ingredients to packaging, storage and waste management. Eight expert authors have joined Duncan Manley in extensively updating and expanding the book, which is now some 25% longer than the previous edition. Part one now includes a new chapter on sustainability in the biscuit industry and the discussion of process and efficiency control is more detailed. In part two the information on wheat flour has been extensively revised to reflect recent developments and there are entirely new chapters on fats and oils and packaging materials. Photographs of the major types of biscuits now illustrate chapters in part three, which also includes a newly-composed chapter on the position of biscuits in nutrition. Finally, part four has been comprehensively reviewed and revised with the assistance of an author from a major machinery manufacturer. With its distinguished editor and team of expert contributors this new edition consolidates the position of Manley's Technology of Biscuits, Crackers and Cookies as the standard reference work in the industry. Widely regarded as the standard work in its field Covers management issues such as HACCP, quality control, process control and product development Deals with the selection of raw materials and ingredients

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