Processed Meats Improving Safety Nutrition And Quality Woodhead Publishing Series In Food Science Technology And Nutrition - 47e2f4a1ff7b2fcb021c09499d499b9

Innovative Food Processing Technologies Case Studies in Food Safety and Authenticity Hygiene in Food Processing Nutritional and Health Aspects of Food in Western Europe Metabolomics in Food and Nutrition Designing Foods Improving Safety Nutrition and Quality Woodhead Publishing Series in Food Science Technology and Nutrition


Case Studies in Food Safety and Authenticity As tree nuts and peanuts become increasingly recognised for their health-promoting properties, the provision of safe, high-quality nuts is a growing concern. Improving the safety and quality of nuts reviews key aspects of nut safety and quality management. Part one explores production and processing practices and their influence on nut contaminants. Chapters discuss agricultural practices to reduce microbial contamination of nuts, pest control in postharvest nuts, and the impact of nut postharvest handling, de-shelling, drying and storage on quality. Further chapters review the validation of processes for reducing the microbial load on nuts and integrating Hazard Analysis Critical Control Point (HACCP) and Statistical Process Control (SPC) for safer nut processing. Chapters in part two focus on improving nut quality and safety and highlight oxidative rancidity in nuts, the impact of roasting on nut quality, and advances in automated nut sorting. Finally chapters explore the safety and quality of a variety of nuts including almonds, macadamia nuts, pecans, peanuts, pistachios and walnuts. Improving the safety and quality of nuts is a comprehensive resource for food safety, product development and QA professionals using nuts in foods, those involved in nut growing, nut handling and nut processing, and researchers in food science and horticulture departments interested in the area. Reviews key aspects of nut safety and quality management and addresses the influences of production and processing practices on nut safety Analyses particular nut contaminants, safety management in nut processing and significant nut quality issues, such as oxidative rancidity Places focus on quality and safety in the production and processing of selected types of nuts

Hygiene in Food Processing This book is a printed edition of the Special Issue “Reducing Dietary Sodium and Improving Human Health” that was published in Nutrients

Nutritional and Health Aspects of Food in Western Europe This edited volume provides up-to-date information on recent advancements in efforts to enhance microbiological safety and quality in the field of food preservation. Chapters from experts in the field cover new and emerging alternative food preservation techniques and highlight their potential applications in food processing. A variety of different natural antimicrobials are discussed, including their source, isolation, industrial applications, and the dosage needed for use as food preservatives. In addition, the efficacy of each type of antimicrobial, used alone or in combination with other food preservation methods, is considered. Factors that limit the use of antimicrobials as food preservatives, such as moisture, temperature, and the ingredients comprising foods, are also discussed. Finally, consumer perspectives related to the acceptance of various preservation approaches for processed foods are described.

Metabolomics in Food and Nutrition Sustainable Meat Production and Processing presents current solutions to promote industrial sustainability and best practices in meat production, from postharvest to consumption. The book acts as a guide for meat and animal scientists, technologists, engineers, professionals and producers. The 12 most trending topics of sustainable meat processing and meat by-products management are included, as are advances in ingredient and processing systems for meat products, techno-functional ingredients for meat products, protein recovery from meat processing by-products, applications of blood proteins, artificial meat production, possible uses of processed slaughter co-products, and environmental considerations. Finally, the book covers the role of novel technologies in meat production, natural antioxidants as additives in meat products, and facilitators and barriers for foods containing meat co-products. Analyzes the role of novel technologies for sustainable meat processing Covers how to maintain sustainability and achieve high levels of meat quality and safety Presents solutions to improve productivity and environmental sustainability Takes a proteomic approach to characterize the biochemistry of meat quality defects

Designing Foods The identification and control of food contaminants rely on careful investigation and implementation of appropriate management strategies. Using a wide range of...
Advances in Meat, Poultry and Seafood Packaging Advances in Food and Nutrition Research, Volume 84, provides updated knowledge on nutrients in foods and how to avoid their deficiency, especially the essential nutrients that should be present in the diet to reduce disease risk and optimize health. The book provides the latest advances on the identification and characterization of emerging bioactive compounds with putative health benefits. Readers will find up-to-date information on food science, including raw materials, processing, distribution and retailing, and variability in microbiota and other parameters that affect food quality and safety. The book also covers topics such as the effects of food processing on nutritional value, storage stability, and safety, as well as the impact of packaging materials on food quality and safety.

Improving the Safety and Quality of Eggs and Egg Products Metabolomics is a multidisciplinary science used to understand the ways in which nutrients from food influence the health status of people. Consumers are increasingly aware of the importance of dietary factors in the development of certain diseases, and food products are therefore being developed that take into account aspects such as trans fats, lower caloric intake, less salt, etc. However, there are bioactive compounds that can improve the beneficial effect of these foods and go beyond the nutritional value. This book provides information on metabolic pathways in food processing, modern genetics, and molecular biology. It is part of the IFST Advances in Food Science book series.

Improving the Safety and Authenticity of Fresh Produce. Providing the latest advances on the practical application of strategies for control and prevention of food contaminants. Provides detailed examples of recent outbreak investigations from a wide range of experts around the world, including lessons learnt, before part two goes on to explore examples of how the science was traced and the implications for the food chain. Methods of crisis management are the focus of part three, whilst part four provides studies of farm-level interventions and the tracking of contaminants before they enter the food chain. Part five is focussed on safe food production, and considers the challenges of regulatory testing and certification, hygiene control and predictive microbiology. The book concludes in part six with an examination of issues related to food adulteration and authenticity. With its distinguished editor and international team of expert contributors, Case studies in food safety and authenticity is a key reference work for those involved in food production, quality control, laboratory and teaching food safety. Delivers a vital insight into the practical application of strategies for control and prevention of food contaminants. Provides detailed examples of recent outbreak investigations from a wide range of international experts, discussing how the source was traced and the implications for the food chain. Chapters discuss methods of crisis management, farm-level interventions, safe food production and the challenges of regulatory testing and certification.

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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.

Advances in Food and Nutrition Research The market in which consumers demand nutritionally-balanced meat products, producing processed meats that fulfill 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 methods. 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 reliable reference tool for professionals working in the processed meat industry and academia.

Processed meats: Improving safety, nutrition and quality. Woodhead Publishing Series in Food Technologies aims to inform students, researchers, lecturers and others who are interested in the subject, about new meat and meat-based product processing technologies. The book explores new techniques in the production, engineering, and application of enzymes, covering souring, isolation, and production of enzymes for food applications. In addition, chapters include detailed discussions of enzyme processing, analytical and diagnostic applications of enzymes in the food industry, and enzyme applications in specific food commodities. Provides readers with the latest information on enzymes and their unique applications in the food industry. Explores new techniques in the production, engineering, and application of enzymes, covering souring, isolation, and production of enzymes for food applications. The book also includes detailed discussions of enzyme processing, engineering and analytical and diagnostic applications of enzymes in the food industry, and enzyme applications in specific food commodities.

Advances in Meat Processing Technologies: Modern Approaches to Meet Consumer Demand This book has been updated and expanded to give more complete coverage than the earlier edition. Like the earlier edition, it emphasizes basic scientific principles in which volume in production of processed meat and poultry products. In addition, many product formulations and processing procedures that have been tested under commercial conditions are included. Intended as a university text for advanced undergraduate and graduate students enrolled in the meat processing course, it is hoped that this book will also prove useful as a reference book to industry and government scientists and researchers engaged in meat processing as well as students interested in meat science.

Advances in Microbial Food Safety Improving and Tailoring Enzymes for Food Quality and Functionality provides readers with the latest information on enzymes, a biological processing tool that offers the food industry a unique means to control and tailor specific food properties. The book explores new techniques in the production, engineering, and application of enzymes, covering souring, isolation, and production of enzymes for food applications. In addition, chapters include detailed discussions of enzyme processing, analytical and diagnostic applications of enzymes in the food industry, and enzyme applications in specific food commodities. Provides readers with the latest information on enzymes and their unique applications in the food industry. Explores new techniques in the production, engineering, and application of enzymes, covering souring, isolation, and production of enzymes for food applications. The book also includes detailed discussions of enzyme processing, engineering and analytical and diagnostic applications of enzymes in the food industry, and enzyme applications in specific food commodities.

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Reduction of Salt in Foods 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 optimising product formulations and processing procedures sensitively in an effective 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 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 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. The authors compare sensory methods to derivations 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.
and meat analogues. Additional chapters cover the use of additives and ultrasound technology in meat processing as well as different strategies suitable for meat processing operations. The simple, topical presentation of the book, which covers a wide variety of products makes the book a key reference for informing students, researchers, lecturers, professionals and general readers who are interested in the subject of meat processing technology.

Case Studies in Novel Food Processing Technologies 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, supply chain, 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. Part Three examines the modeling of multiphase unit operations, extrusion processes and food digestion, and reviews models used to optimize food distribution. Comprehensive 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.

Microbial Control and Food Preservation: 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 childhood. 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: Specialty Oils and Fats in Food and Nutrition: Properties, Processing and Applications examines the main specialty oils and fats currently in use in food processing, as well as those with significant potential. Specialty oils and fats have an increasing number of applications in the food industry, due to growing consumer interest in "clean label" functional foods and the emerging markets in "free-from" and specialist foods. Part One of this book covers the properties and processing of specialty oils and fats, with a focus on the chemistry, production methods, and uses of shelf-stable oils and, including chapters on shea butter, tropical exotic oils, and structured triglycerides. Part Two looks at the applications of specialty oils and fats in different food and nutraceutical products, such as confectionary, ice cream, and margarine. Specialty Oils and Fats in Food and Nutrition is a key text for R&D managers and product development personnel working in the dairy, baking, and dairy analogue sectors, or any sector using fats and oils. It is a particularly useful reference point for companies reformulating their products or developing new products to alter fat content. Authored by an industry expert with 35 years of experience working for Unilever and a PhD from the University of Leiden. This book is a comprehensive review of both current and emerging technologies for the effective and safe packaging of muscle foods. Examines the use of membrane separation in vacuum and modified atmosphere packaging for fresh and processed muscle foods, including advances in bulk packaging and soluble carbon dioxide use. Explores environmentally-compatible, antimicrobial and antioxidant active packaging for meat and poultry, along with edible films, smart packaging systems, and issues regarding traceability and regulation. 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Part Two goes on to investigate developments in vacuum and modified atmosphere packaging for both fresh and processed muscle foods, including advances in bulk packaging and soluble carbon dioxide use. Other packaging methods are the focus of part three, with the packaging of processed, frozen, ready-to-serve and retail-ready meat, seafood and poultry products all reviewed, alongside advances in sausage casings and in-package pasteurization. Finally, part four explores emerging labelling and packaging techniques. Environmentally-compatible, antimicrobial and antioxidant active packaging for meat and poultry are investigated, along with edible films, smart packaging systems, and issues regarding traceability and regulation. With its distinguished editor and international team of expert contributors, Advances in meat, poultry and seafood packaging is a key text for R&D managers and product development personnel working in the dairy, baking, and dairy analogue sectors, or any sector using fats and oils. It is a particularly useful reference point for companies reformulating their products or developing new products to alter fat content. The book is a comprehensive review of current and emerging technologies for the effective and safe packaging of muscle foods. Examines the use of membrane separation in vacuum and modified atmosphere packaging for fresh and processed muscle foods, including advances in bulk packaging and soluble carbon dioxide use. Explores environmentally-compatible, antimicrobial and antioxidant active packaging for meat and poultry, along with edible films, smart packaging systems, and issues regarding traceability and regulation. 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meat products, typically produced in different areas, with the description of their main characteristics.

Electron Beam Pasteurization and Complementary Food Processing Technologies As with the first edition, the main goal of Advanced Technologies for Meat Processing is to provide the reader with recent developments in advanced technologies for the full meat-processing chain. This book is written by distinguished international contributors with recognized expertise and excellent reputations, and brings together all the advances in a wide and varied number of technologies that are applied in different stages of meat processing. This second edition contains 21 chapters, combining updated and revised versions of several chapters with entirely new chapters that deal with new online monitoring techniques such as Raman spectroscopy, the use of nanotechnology for sensor devices or new packaging materials and the application of omics technologies like nutrigenomics and proteomics for meat quality and nutrition. The book starts with the control and traceability of genetically modified farm animals, followed by four chapters reporting the use of online non-destructive monitoring techniques like hyperspectral imaging and Raman spectroscopy, real-time PCR for pathogens detection, and nanotechnology-based sensors. Then, five chapters describe different advanced technologies for meat decontamination, such as irradiation, hydrostatic and hydrodynamic pressure processing, other non-thermal technologies, and the reduction in contaminants generation. Nutrigenomics in animal nutrition and production is the object of a chapter that is followed by five chapters dealing with nutritional-related issues like bioactive peptides, functional meats, fat and salt reduction, processing of nitrite-free products, and the use of proteomics for the improved processing of dry-cured meats. The last four chapters are reporting the latest developments in bacteriocins against meat-borne pathogens, the functionality of bacterial starters, modified atmosphere packaging and the use of new nanotechnology-based materials for intelligent and edible packaging.

Salt, Fat and Sugar Reduction Nanotechnology for Food Packaging: Materials, Processing Technologies, and Safety Issues showcases the latest research in the use of nanotechnology in food packaging, providing an in-depth and interdisciplinary overview of the field. Nanoscale advances in materials science, processing technology and analytical techniques have led to the introduction of new, cheaper and safer packaging techniques. Simultaneously, the increasing use of renewable nanomaterials has made food packaging more sustainable. Chapters provide a comprehensive review on materials used, their structure-function relationship, and new processing technologies for the application and production of nanotechnology-based packaging materials. In addition, the book discusses the use of functional materials for the development of active, smart and intelligent packaging, possible migration and toxicity of nanomaterials for foods and regulatory aspects, and commercial applications. Provides detailed information on the use of nanomaterials and methodologies in food packaging, possible applications and regulatory barriers to commercialization. Presents an interdisciplinary approach that brings together materials science, bioscience, and the industrial and regulatory aspects of the creation and uses of food packaging. Helps those undertaking research and development in food packaging gain a cogent understanding on how nanotechnology is leading to the emergence of new packaging technologies.

Advances in Meat Processing Technology 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 the 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. Chapter topics explore the role of olive oil, probiotics and the role of immune function and nutrition 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 researchers investigating inflammation or immunology, nutrition scientists, and professionals in the food and nutrition industries who require an understanding of the effects that diet can have on immune and inflammation. Provides an overview of key research in the important and connected areas of inflammation, infection, overactive immune responses, diet and disease. Outlines the fundamentals of immunity and inflammation and reviews the effects of different food constituents. Discusses important related issues, such as ageing and exercise.

Global Safety of Fresh Produce This lively book examines recent trends in animal product consumption and diet; reviews industry efforts, policies, and programs aimed at improving the nutritional attributes of animal products; and offers suggestions for further research. In addition, the volume reviews dietary and health recommendations from major health organizations and notes specific target levels for nutrients.

Processed Meats Reducing Salt in Foods, Second Edition, presents updated strategies for reducing salt intake. The book contains comprehensive information on a wide range of topics, including the key health issues driving efforts to reduce salt, government action regarding salt reduction and the implications of salt labeling. Consumer perceptions of salt and views on salt reduction in different countries are also discussed, as are taste, processing and preservation functions of salt and salt reduction strategies. Final sections discuss salt reduction in particular food groups, including meat and poultry, seafood, bread, snack foods, dairy products and canned foods, each one including a case study. This updated edition also includes a new section on the future of salt reduction, the development of new ingredients to replace salt, salt reduction in catering, and how to teach new generations to adjust salt levels from an early age. Completely revised and updated with an overview of the latest developments in salt reduction. Presents guidelines to help with reducing salt in specific product groups. Presents a new section on the future of salt reduction, development of new ingredients to replace salt, salt reduction in catering and how to teach new generations to adjust salt levels from an early age. Contains new chapters on preservation issues, taste issues and processing issues when reducing salt in food, along with case studies that illustrate salt reduction.

Lifetime Nutritional Influences on Cognition, Behaviour and Psychiatric Illness 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
Advanced Technologies for Meat Processing The Microwave Processing of Foods, Second Edition, has been updated and extended to include the many developments that have taken place over the past 10 years. Including new chapters on microwave assisted frying, microwave assisted microbial inactivation, microwave assisted disinfection, this book continues to provide the basic principles for microwave technology, while also presenting current and emerging research trends for future use development. Led by an international team of experts, this book will serve as a practical guide for those interested in applying microwave technology. Provides thoroughly up-to-date information on the basics of microwaves and microwave heating Discusses the main factors for the successful application of microwaves and the main problems that may arise Includes current and potential future applications for real-world application as well as new research and advances Includes new chapters on microwave-assisted frying, microbial inactivation, and disinfection.

Reducing Dietary Sodium and Improving Human Health Salt, Fat and Sugar Reduction: Sensory Approaches for Nutritional Reformulation of Foods and Beverages explores salt, sugar, fat, and multi-variant functional foods that link them to consumer appeal, developing consumer appealing nutritional optimized products are also discussed, as are other aspects of shelf life and physicochemical analysis, consumer awareness of the negative nutritional impact of these ingredients, and taxes and other factors that are drivers for nutritional optimization. This book is ideal for undergraduate and postgraduate students and academics, food scientists, food and nutrition researchers, and those in the food and beverage industries. Provides a clear outline of current legislation on global ingredient taxes Demonstrates effective protocols, sensory, multivariate and physico-chemical for salt, fat and sugar reduction Outlines reduction protocols, with and without the use of replacer ingredients for salt, fat and sugar reduction Illustrates the full process chain, consumer to packaging, and the effects of reformulation by reduction of ingredients.

A Handbook for Sensory and Consumer-Driven New Product Development 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 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 consistuents 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 developing the role of nutritional intervention in defining 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

Biologically Active Peptides 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 disinfection. 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 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 used in food preservation sectors.

Early Nutrition and Long-Term Health People were once restricted to food native to their region and produced locally. Today, however, food from any place in the world is available, or can be made available, anywhere else. Often there is no or very little information about the nutritional and health aspects of these foods. Nutrition and Health of Western European Foods: Traditional and Ethnic Diets is part of a series that will cover the entire globe and is aimed at filling the knowledge gap from traditional and scientific points of view. This volume provides an analysis of points of view from the United Kingdom, Netherlands, Belgium, Luxembourg, France, and Germany. It also addresses the history of use, composition, preparation, ingredient origin, nutritional aspects, and health effects of various foods and food products in each of these countries. Nutrition and Health of Western European Foods: Traditional and Ethnic Diets ultimately presents both local and international regulations, providing suggestions to harmonize these regulations and promote global availability of these foods. Analyzes nutritional and health claims related to western European foods Includes traditional and ethnic foods from Ireland, the UK, Netherlands, Belgium, Luxembourg, France, and Germany Explores both scientific and anecdotal diet-based health claims Examines if foods meet regulatory requirements, and how to remedy noncompliance Reviews the influence of historical eating habits on today’s diets

Nanomaterials for Food Packaging 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 applications of metabolomics technology in nutrition, human samples for health assessments, and current methods for the analysis of human milk oligosaccharides (HMOs) and their novel applications.

Handbook of Fermented Meat and Poultry Meat is a unique biological material with a central importance in nutrition and health. Advances in Meat Processing Technology merges the expertise of meat scientists and food engineers in a holistic approach toward the processing of meat. The meat industry strives to deliver consistent high quality and safe meat products. Readers can benefit from knowledge generated by meat science researchers by achieving a greater understanding of the nature of meat, and the engineering technology required for meat processing. This book comprises 17 full chapters that provide up-to-date and fundamental information on current topics in meat processing. This includes novel technologies, such as the application of pulsed electric field, meat stretching and shaping, ultrasound and high pressure. In addition, analytical techniques such as Raman spectroscopy and NMR are enabling considerable advancement of knowledge in meat science and in meat processing. Written by world renowned experts in their fields, this contemporary collective work assembles the state of current knowledge that is of importance to both industry and academia.

Metabolomics as a Tool in Nutrition Research Biologically Active Peptides: From Basic Science to Applications for Human Health stands as a comprehensive resource on bioactive peptide science and applications. With contributions from more than thirty global experts, topics discussed include bioactive peptide science, structure–activity relationships, basic principles for their study and application, and the value of metabolomics to assess peptide status in biological systems. The book highlights the gap between basic peptide chemistry and human physiology, while reviewing recent advances in peptide analysis and characterization. Methods and technology–driven chapters offer step-by-step guidance in peptide preparation from different source materials, bioactivity assays, analysis and identification of bioactive peptides, encoding bioactive peptides. Later, applications across disease areas and medical specialities are examined in–depth, including the use of bioactive peptides in treating obesity, diabetes, osteoporosis, mental health disorders, food allergies, and joint health. The book also highlights the use of bioactive peptides in providing cardiovascular health, and driving advances in biotechnology. Discusses the latest advances in bioactive peptide chemistry, functionality and analysis Offers step-by-step instruction in applying new technologies for peptide extraction, protection, production and encoding, as well as employing bioactive peptide sequencing and bioactivity assays in new research Effectively links basic peptide chemistry, human biology and disease Features chapter contributions from international experts across disciplines and applications

Fermented Meat Products Innovative Food Processing Technologies: Extraction, Separation, Component Modification and Process Intensification focuses on advances in new and novel non-thermal processing technologies which allow food producers to modify and process food with minimal damage to the foodstuffs. The book is highly focused on the application of new and novel technologies, beginning with an introductory chapter, and then detailing technologies which can be used to extract food components. Further sections on the use of technologies to modify the structure of food and the separation of food components are also included, with a final section focusing on process intensification and enhancement. Provides information on a variety of food processing technologies focuses on advances in new and novel non-thermal processing technologies which allow food producers to modify and process food with minimal damage to the foodstuffs. Presents a strong focus on the application of technologies in a variety of situations Created by editors who have a background in both the industry and academia.

High Throughput Screening for Food Safety Assessment Research and legislation in food microbiology continue to evolve, and outbreaks of foodborne disease place further pressure...
on the industry to provide microbiologically safe products. This second volume in the series Advances in Microbial Food Safety summarises major recent advances in this field, and complements volume 1 to provide an essential overview of developments in food microbiology. Part one opens the book with an interview with a food safety expert. Part two provides updates on single pathogens, and part three looks at pathogen detection, identification and surveillance. Part four covers pathogen control and food preservation. Finally, part five focuses on pathogen control management. Extends the breadth and coverage of the first volume in the series Includes updates on specific pathogens and safety for specific foods. Reviews both detection and management of foodborne pathogens.

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