High Pressure Pasteurisation Of Ready To Eat Meals

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In-Pack Processed Foods P Richardson 2008-06-13 Recent developments have enabled the production of in-pack processed foods with improved sensory quality as well as new types of heat-preserved products packaged in innovative containers. This book reviews these advances in packaging formats and processing technologies and their application to produce higher quality, safer foods. Opening chapters cover innovative can designs and non-traditional packaging formats, such as retort pouches. The second part of the book reviews the developments in processing and process control technology required by newer types of packaging. Part three addresses the safety of in-pack processed foods, including concerns over pathogens and hazardous compounds in processed foods. The book concludes with chapters on novel methods to optimise the quality of particular types of in-pack processed foods such as fruit and vegetables, meat, poultry and fish products. In-pack processed foods: improving quality is a valuable reference for professionals involved in the manufacture of this important group of food products and those researching in this area. Reviews advances in packaging formats and processing technologies Covers innovative can designs and non-traditional packaging formats Examines the safety of in-pack processed foods, including concerns over pathogens

Fruit Preservation Amauri Rosenthal 2018-11-05 Fruits and fruit based products are, in most cases, associated with very good sensory characteristics, health, well-being, perishability, relatively easy to mix with food products of diverse origin, amenable to be processed by conventional and novel technologies. Given the multiplicity of aspects whenever fruit preservation is considered, the editors took the challenge of covering in a thorough, comprehensive manner most aspects dealing with this topic. To accomplish these goals, the editors invited well known colleagues with expertise in specific disciplines associated with fruit preservation to contribute chapters to this book. Eighteen chapters were assembled in a sequence that would facilitate, like building blocks, to have at the same time, a birds-eye view and an in-depth coverage of traditional and novel technologies to preserve fruits. Even though processing took center stage in this book, ample space was dedicated to other relevant and timely topics on fruit preservation such as safety, consumer perception, sensory and health aspects. FEATURES: Traditional and Novel Technologies to Process Fruits Microwaves Ohmic Heating UV-C light Irradiation High Pressure Pulsed Electric Fields Ultrasound Vacuum Impregnation Membranes Ozone Hurdle Technology Topics Associated with Fruit Preservation Safety Nutrition and Health Consumer Perception Sensory Minimal Processing Packaging Unit Operations for Fruit Processing Cooling and Freezing Dehydration Frying

A Stakeholder Approach to Managing Food Adam Lindgreen 2016-08-05 This research anthology explores the concept of food production and supply, from farm gate to plate, bringing together contemporary thinking and research on local, national, and global issues from a stakeholder perspective. A Stakeholder Approach to Managing Food includes a number of sections to represent these challenges, opportunities, conflicts, and cohesions affecting relevant stakeholder groups within food production and supply and their reaction to, engagement with, and co-creation of the food environment. For some, local, national, and global interests may seem at odds. We are in an era of growing and pervasive multi-national corporations, and these corporations have significant influence at all levels. Rapidly growing economies such as China are a focus for the global brand, but is this a scenario of adaptation or homogenization of food? Alongside this trend toward national and global development in food, this volume presents the counter-reaction that is taking place (especially in developed countries) toward local speciality and culturally bound foods, with emphasis on the importance of the inter-connection of local communities and agri-food culture and economy. With an in-depth analysis of agricultural businesses, this book shows that the entrepreneurial spirit is alive and well in rural communities with often renewed and engaged connection with consumers and imaginative use of new media. This book will be of interest to students, researchers and policy-makers concerned with agriculture, food production and economics, cultural studies.

Thermal Processing of Ready-to-Eat Meat Products C. Lynn Knipe 2009-08-14 Thermal Processing of Ready-to-Eat Meat Products provides critical technical information on all aspects of thermal processing of RTE meat products. Edited and authored by the most experienced and knowledgeable people in the meat industry on this subject, the book addresses all technical and regulatory aspects of the production of RTE meat products, such as heat and mass transfer, pathogen lethality, post-packaging pasteurization, sanitary design, predictive equations and supportive documentation for HACCP.

Functional Food Ingredients and Nutraceuticals John Shi 2006-08-24 A growing awareness of the contributions that functional foods, bioactive compounds, and nutraceuticals make to health is creating a tremendous market for these products. In order for manufacturers to match this demand with stable, high volume production while maintaining defined and reliable composition, they must have ready access to the very lat

Food Structure and Functionality Charis M. Galanakis 2020-11-17 Food Structure and Functionality helps users further understand the latest research related to food structuring and de-structuring, with an emphasis on structuring to achieve improved texture, taste perception, health and shelf-stability. Topics covered address food structure, nanotechnology and functionality, with an emphasis on the novel experimental and modeling approaches used to link structure and functionality in food. The book also covers food structure design across the lifespan, as well as design for healthcare and medical applications. Dairy matrices for oral and gut functionality is also discussed, as is deconstructing dairy matrices for the release of nutrient and flavor components. This book will benefit food scientists, technologists, engineers and physical chemists working in the whole food science field, new product developers, researchers, academics and professionals working in the food industry, including nutritionists, dieticians, physicians, biochemists and biophysicists. Covers recent trends related to non-thermal processes, nanotechnology and modern food structures in the food industry Begins with an introduction to the structure/function of food products and their characterization methods Addresses biopolymer composites, interfacial layers in food emulsions, amyloid-like fibrillary structures, self-assembly in foods, lipid nano-carriers, microfluidics, rheology and function of hydrocolloids Discusses applications and the effects of emerging technologies on process, structure and function relationships

Sustainable Food Systems from Agriculture to Industry Charis Michel Galanakis 2018-01-02 Sustainable Food Systems from Agriculture to Industry: Improving Production and Processing addresses the principle that food supply needs of the present must be met without compromising the ability of future generations to meet their needs. Responding to sustainability goals requires maximum utilization of all raw materials produced and integration of activities throughout all production-to-consumption stages. This book covers production stage activities to reduce postharvest losses and increase use of by-products streams (waste), food manufacturing and beyond, presenting insights to ensure energy, water and other resources are used efficiently and environmental impacts are minimized. The book presents the latest research and advancements in efficient, cost-effective, and environmentally friendly food production and ways they can be implemented within the food industry. Filling the knowledge gap between understanding and applying these advancements, this team of expert authors from around the globe offer both academic and industry perspectives and a real-world view of the challenges and potential solutions that exist for feeding the world in the future. The book will guide industry professionals and researchers in ways to improve the efficiency and sustainability of food systems. Addresses why food waste recovery improves sustainability of food systems, how these issues can be adapted by the food industry, and the role of policy making in ensuring sustainable food production Describes in detail the latest understanding of food processing, food production and waste reduction issues Includes emerging topics, such as sustainable organic food production and computer aided process engineering Analyzes the potential and sustainability of already commercialized processes and products

Animal Sourced Foods for Developing Economies Muhammad Issa Khan 2018-12-21 Animal products are good source of disposable income for many small farmers in developing countries. In fact, livestock are often the most important cash crop in many small holder mixed farming systems. Livestock ownership currently supports and sustains the livelihoods of rural poor, who depend partially or fully on livestock for their income and/or subsistence. Human population growth, increasing urbanization and rising incomes are predicted to double the demand for, and production of, livestock products in the developing countries over the next twenty years. The future holds great opportunities for animal production in developing countries. Animal Sourced Foods for Developing Economies addresses five major issues: 1) Food safety and nutritional status in developing world; 2) the contribution of animal origin foods in human health; 3) Production processes of animal foods along with their preservation strategies; 4) functional outcomes of animal derived foods; and finally, 5) strategies, issues and polices to promote animal origin food consumption. Animal sourced food contain high biological value protein and important micronutrients required for optimal body functioning but are regarded as sources of fat that contribute to the intake of total and saturated fatty acids in diet. The quality of protein source has a direct influence on protein digestibility, as a greater proportion of higher quality proteins is absorbed and becomes available for bodily functions. Animal foods has high quantity and quality of protein that includes a full complement of the essential amino acids in the right proportion. Land availability limits the expansion of livestock numbers in extensive production systems in most regions, and the bulk of the increase in livestock production will come from increased productivity through intensification and a wider adoption of existing and new production and marketing technologies. The significant changes in the global consumption and demand for animal source foods, along with increasing pressures on resources, are having some important implications for the principal production systems. In this book, contributors critically analyze and describe different aspects of animal's origin foods. Each chapter is dedicated to a specific type of food from animal source, its nutritional significance, preservation techniques, processed products, safety and quality aspects on conceptual framework. Special attention is given to explain current food safety scenario in developing countries and contribution of animal derived food in their dietary intake. Existing challenges regarding production, processing and promotion of animal's origin foods are also addressed with possible solutions and strengthening approaches.

Innovation Strategies in the Food Industry Charis M. Galanakis 2021-10-21 Innovation Strategies for the Food Industry: Tools for Implementation, Second Edition explores how process technologies and innovations are implemented in the food industry, by i.e., detecting problems and providing answers to questions of modern applications. As in all science sectors, Internet and big data have brought a renaissance of changes in the way academics and researchers communicate and collaborate, and in the way that the food industry develops. The new edition covers emerging skills of food technologists and the integration of food science and technology knowledge into the food chain. This handbook is ideal for all relevant actors in the food sector (professors, researchers, students and professionals) as well as for anyone dealing with food science and technology, new products development and food industry. Includes the latest trend on training requirements for the agro-food industry Highlights new technical skills and profiles of modern food scientists and technologists for professional development Presents new case studies to support research activities in the food sector, including product and process innovation Covers topics on collaboration, entrepreneurship, Big Data and the Internet of Things

High Pressure Processing of Food V.M. Balasubramaniam 2016-01-28 High pressure processing technology has been adopted worldwide at the industrial level to preserve a wide variety of food products without using heat or chemical preservatives. High Pressure Processing: Technology Principles and Applications will review the basic technology principles and process parameters that govern microbial safety and product quality, an essential requirement for industrial application. This book will be of interest to scientists in the food industry, in particular to those involved in the processing of products such as meat, fish, fruits, and vegetables. The book will be equally important to food microbiologists and processing specialists in both the government and food industry. Moreover, it will be a valuable reference for authorities involved in the import and export of high pressure treated food products. Finally, this update on the science and technology of high pressure processing will be helpful to all academic, industrial, local, and state educators in their educational efforts, as well as a great resource for graduate students interested in learning about state-of-the-art technology in food engineering.

British Social Attitudes Alison Park 2010-01-30 The acclaimed British Social Attitudes survey is the essential guide to the topical issues and debates facing British society today, and this is the 26th report

Progress in Food Preservation Rajeev Bhat 2012-03-05 This volume presents a wide range of new approaches aimed at improving the safety and quality of food products and agricultural commodities. Each chapter provides in-depth information on new and emerging food preservation techniques including those relating to decontamination, drying and dehydration, packaging innovations and the use of botanicals as natural preservatives for fresh animal and plant products. The 28 chapters, contributed by an international team of experienced researchers, are presented in five sections, covering: Novel decontamination techniques Novel preservation techniques Active and atmospheric packaging Food packaging Mathematical modelling of food preservation processes Natural preservatives This title will be of great interest to food scientists and engineers based in food manufacturing and in research establishments. It will also be useful to advanced students of food science and technology.

Emerging Technologies for Food Processing Da-Wen Sun 2014-08-14 The second edition of Emerging Technologies in Food Processing presents essential, authoritative, and complete literature and research data from the past ten years. It is a complete resource offering the latest technological innovations in food processing today, and includes vital information in research and development for the food processing industry. It covers the latest advances in non-thermal processing including high pressure, pulsed electric fields, radiofrequency, high intensity pulsed light, ultrasound, irradiation, and addresses the newest hurdles in technology where extensive research has been carried out. Provides an extensive list of research sources to further research development Presents current and thorough research results and critical reviews Includes the most recent technologies used for shelf life extension, bioprocessing simulation and optimization

Non-thermal Processing of Foods O. P. Chauhan 2019-01-10 This book presents the latest developments in the area of non-thermal preservation of foods and covers various topics such as high-pressure processing, pulsed electric field processing, pulsed light processing, ozone processing, electron beam processing, pulsed magnetic field, ultrasonics, and plasma processing. Non-thermal Processing of Foods discusses the use of non-thermal processing on commodities such as fruits and vegetables, cereal products, meat, fish and poultry, and milk and milk products. Features: Provides latest information regarding the use of non-thermal processing of food products Provides information about most of the non-thermal technologies available for food processing Covers food products such as fruits and vegetables, cereal products, meat, fish and poultry, and milk and milk products Discusses the packaging requirements for foods processed with non-thermal techniques The effects of non-thermal processing on vital food components, enzymes and microorganisms is also discussed. Safety aspects and packaging requirements for non-thermal processed foods are also presented. Rounding out coverage of this technology are chapters that cover commercialization, regulatory issues and consumer acceptance of foods processed with non-thermal techniques. The future trends of non-thermal processing are also investigated. Food scientists and food engineers, food regulatory agencies, food industry personnel and academia (including graduate students) will find valuable information in this book. Food product developers and food processors will also benefit from this book.

Sustainable Food Processing and Engineering Challenges Charis Michel Galanakis 2021-03-16 Sustainability is becoming a major item for the food industry around the world, as resources become more restricted and demand grows. Food processing ensures that the resources required producing raw food materials and ingredients for food manufacturing are used most efficiently. Responding to the goals of sustainability requires the maximum utilization of all raw materials produced and integration of activities throughout all the production-to-consumption stages. To maximize the conversion of raw materials into consumer products, food engineering and food processing challenges should be met. Sustainable Food Processing and Engineering Challenges covers the most trend topics and challenges of sustainable food processing and food engineering, giving emphasis in engineering packaging for a sustainable food chain, food processing technologies, Industry 4.0 applied to food, food digestion engineering, sustainable alternative food processing technologies, physico-chemical aspects of food, cold plasma technology, refrigeration climate control, non-thermal pasteurisation and sterilization, nanotechnology and alternative processes requiring less resources, sustainable innovation in food product design etc. Edited by a multiple team of experts, the book is aimed at food engineers who are seeking to improve efficiency of production systems and also researchers, specialists, chemical engineers and professionals working in food processing. Covers the most trend topics and challenges of sustainable food processing and food engineering Brings developments in methods to reduce the carbon footprint of the food system Explores emerging topics such as Industry 4.0 applied to food and Food digestion engineering

Foodborne Pathogens Clive de W Blackburn 2009-06-30 Effective control of pathogens continues to be of great importance to the food industry. The first edition of Foodborne pathogens quickly established itself as an essential guide for all those involved in the management of microbiological hazards at any stage in the food production chain. This major edition strengthens that reputation, with extensively revised and expanded coverage, including more than ten new chapters. Part one focuses on risk assessment and management in the food chain. Opening chapters review the important topics of pathogen detection, microbial modelling and the risk assessment procedure. Four new chapters on pathogen control in primary production follow, reflecting the increased interest in safety management early in the food chain. The fundamental issues of hygienic design and sanitation are also covered in more depth in two extra chapters. Contributions on safe process design and operation, HACCP and good food handling practice complete the section. Parts two and three then review the management of key bacterial and non-bacterial foodborne pathogens. A new article on preservation principles and technologies provides the context for following chapters, which discuss pathogen characteristics, detection methods and control procedures, maintaining a practical focus. There is expanded coverage of non-bacterial agents, with dedicated chapters on gastroenteritis viruses, hepatitis viruses and emerging viruses and foodborne helminth infections among others. The second edition of Foodborne pathogens: hazards, risk analysis and control is an essential and authoritative guide to successful pathogen control in the food industry. Strengthens the highly successful first edition of Foodborne pathogens with extensively revised and expanded coverage Discusses risk assessment and management in the food chain. New chapters address pathogen control, hygiene design and HACCP Addresses preservation principles and technologies focussing on pathogen characteristics, detection methods and control procedures

Food Safety Engineering Ali Demirci 2020-05-28 Food Safety Engineering is the first reference work to provide up-to-date coverage of the advanced technologies and strategies for the engineering of safe foods. Researchers, laboratory staff and food industry professionals with an interest in food engineering safety will find a singular source containing all of the needed information required to understand this rapidly advancing topic. The text lays a solid foundation for solving microbial food safety problems, developing advanced thermal and non-thermal technologies, designing food safety preventive control processes and sustainable operation of the food safety preventive control processes. The first section of chapters presents a comprehensive overview of food microbiology from foodborne pathogens to detection methods. The next section focuses on preventative practices, detailing all of the major manufacturing processes assuring the safety of foods including Good Manufacturing Practices (GMP), Hazard Analysis and Critical Control Points (HACCP), Hazard Analysis and Risk-Based Preventive Controls (HARPC), food traceability, and recalls. Further sections provide insights into plant layout and equipment design, and maintenance. Modeling and process design are covered in depth. Conventional and novel preventive controls for food safety include the current and emerging food processing technologies. Further sections focus on such important aspects as aseptic packaging and post-packaging technologies. With its comprehensive scope of up-to-date technologies and manufacturing processes, this is a useful and first-of-its kind text for the next generation food safety engineering professionals.

Advances in Thermal and Non-Thermal Food Preservation Gaurav Tewari 2008-02-28 Advances in Thermal and Non-Thermal Food Preservation provides current, definitive and factual material written by experts on different thermal and non-thermal food preservation technologies. Emphasizing inactivation of microorganisms through the application of traditional as well as newer and novel techniques and their combinations, the book's chapters cover: thermal food preservation techniques (e.g., retorting, UHT and aseptic processing), minimal thermal processing (e.g., sous-vide processing), and non-thermal food preservation techniques (e.g., high pressure processing and pulsed technologies). Editors Tewari and Juneja give special emphasis to the commercial aspects of non-conventional food preservation techniques. As the most comprehensive and contemporary resource of its kind, Advances in Thermal and Non-Thermal Food Preservation is the definitive standard in describing the inactivation of microorganisms through conventional and newer, more novel techniques.

Listeria, Listeriosis, and Food Safety, Third Edition Elliot T. Ryser 2007-03-27 Since the second edition of Listeria, Listeriosis, and Food Safetywas published in 1999, the United States has seen a 40 percent decline in the incidence of listeriosis, with the current annual rate of illness rapidly approaching the 2010 target of 2.5 cases per million. Research on this food-borne pathogen, however, has continued unabated, concentrating in the last five years on establishing risk assessments to focus limited financial resources on certain high-risk foods. Listeria, Listeriosis, and Food Safety, Third Edition summarizes much of the newly published literature and integrates this information with earlier knowledge to present readers with a complete and current overview of foodborne listeriosis. Two completely new chapters have been added to this third edition. The first deals with risk assessment, cost of foodborne listeriosis outbreaks, and regulatory control of the Listeria problem in various countries. The second identifies specific data gaps and directions for future research efforts. All of the chapters from the second edition have been revised, many by new authors, to include updated information on listeriosis in animals and humans, pathogenesis and characteristics of Listeria monocytogenes, methods of detection, and subtyping. The text covers the incidence and behavior of Listeria monocytogenes in many high-risk foods including, fermented and unfermented dairy products, meat, poultry, and egg products, fish and seafood products, and products of plant origin. Upholding the standard of the first two editions, Listeria, Listeriosis, and Food Safety, Third Edition provides the most current information to food scientists, microbiologists, researchers, and public health practitioners.

Innovative Food Processing Technologies 2020-08-18 Food process engineering, a branch of both food science and chemical engineering, has evolved over the years since its inception and still is a rapidly changing discipline. While traditionally the main objective of food process engineering was preservation and stabilization, the focus today has shifted to enhance health aspects, flavour and taste, nutrition, sustainable production, food security and also to ensure more diversity for the increasing demand of consumers. The food industry is becoming increasingly competitive and dynamic, and strives to develop high quality, freshly prepared food products. To achieve this objective, food manufacturers are today presented with a growing array of new technologies that have the potential to improve, or replace, conventional processing technologies, to deliver higher quality and better consumer targeted food products, which meet many, if not all, of the demands of the modern consumer. These new, or innovative, technologies are in various stages of development, including some still at the R&D stage, and others that have been commercialised as alternatives to conventional processing technologies. Food process engineering comprises a series of unit operations traditionally applied in the food industry. One major component of these operations relates to the application of heat, directly or indirectly, to provide foods free from pathogenic microorganisms, but also to enhance or intensify other processes, such as extraction, separation or modification of components. The last three decades have also witnessed the advent and adaptation of several operations, processes, and techniques aimed at producing high quality foods, with minimum alteration of sensory and nutritive properties. Some of these innovative technologies have significantly reduced the thermal component in food processing, offering alternative nonthermal methods. Food Processing Technologies: A Comprehensive Review covers the latest advances in innovative and nonthermal processing, such as high pressure, pulsed electric fields, radiofrequency, high intensity pulsed light, ultrasound, irradiation and new hurdle technology. Each section will have an introductory article covering the basic principles and applications of each technology, and in-depth articles covering the currently available equipment (and/or the current state of development), food quality and safety, application to various sectors, food laws and regulations, consumer acceptance, advancements and future scope. It will also contain case studies and examples to illustrate state-of-the-art applications. Each section will serve as an excellent reference to food industry professionals involved in the processing of a wide range of food categories, e.g., meat, seafood, beverage, dairy, eggs, fruits and vegetable products, spices, herbs among others.

Nonthermal Processing Technologies for Food Howard Q. Zhang 2011-02-04 Nonthermal Processing Technologies for Food offers a comprehensive review of nonthermal processing technologies that are commercial, emerging or over the horizon. In addition to the broad coverage, leading experts in each technology serve as chapter authors to provide depth of coverage. Technologies covered include: physical processes, such as high pressure processing (HPP); electromagnetic processes, such as pulsed electric field (PEF), irradiation, and UV treatment; other nonthermal processes, such as ozone and chlorine dioxide gas phase treatment; and combination processes. Of special interest are chapters that focus on the "pathway to commercialization" for selected emerging technologies where a pathway exists or is clearly identified. These chapters provide examples and case studies of how new and nonthermal processing technologies may be commercialized. Overall, the book provides systematic knowledge to industrial readers, with numerous examples of process design to serve as a reference book. Researchers, professors and upper level students will also find the book a valuable text on the subject.

Fruit Juices Gaurav Rajauria 2017-11-24 Fruits Juices is the first and only comprehensive resource to look at the full scope of fruit juices from a scientific perspective. The book focuses not only on the traditional ways to extract and preserve juices, but also the latest novel processes that can be exploited industrially, how concentrations of key components alter the product, and methods for analysis for both safety and consumer acceptability. Written by a team of global experts, this book provides important insights for professionals in industrial and academic research as well as in production facilities. Presents fruit juice from extraction to shelf-life in a single resource volume Includes quantitative as well as qualitative insights Provides translatable information from one fruit to another

Validation of Food Preservation Processes based on Novel Technologies Tatiana Koutchma 2021-11-26 Validation of Food Preservation Processes based on Novel Technologies discusses and recommends activities for bench top, pilot, prototype and commercial high hydrostatic pressure (HPP) and ultraviolet (UV) systems validation. The book explores issues of equipment scalability, selection of microorganisms of concern and their surrogates, validation and verification of critical processing conditions, treatment uniformity, process control and instrumentation. Topics are discussed in order to facilitate HPP and UV technologies implementation, thus mitigating risks during production and processing. Other sections deal with the selection of suitable surrogates that can be used in validation studies and procedures for their selection. The book also encloses case studies of validation of UV and HPP systems for pathogen reduction in juice. Edited by the main experts in the field of non-thermal food processing, this title is a guide for food process developers from starting to final point of the development and validation. Brings science-based validation practices for food processes using novel preservation technologies Guides food process developers from starting point to final point of development and validation Explains objectives of the process development on each stage, including in-lab, pilot scale and commercialization

Heat Transfer in Food Processing S. Yanniotis 2007 Heat Transfer is important in food processing. This edited book presents a review of ongoing activities in a broad perspective.

Food Preservation and Safety of Natural Products Helen N. Onyeaka 2022-06-24 Food Preservation and Safety of Natural Products addresses the most common causes of food spoilage that create significant loss to global food production while also discussing how food serves as a vehicle for the transmission of pathogenic microorganisms responsible for mild to debilitating health conditions in humans. The book provides essential information for food safety professionals on issues relating to foodborne diseases and offers potential solutions by presenting various methods of incorporating natural products in food production to prevent the spread of foodborne pathogenic organisms. The demand for green consumerism and consumers general distaste for synthetic food additives poses a serious challenge to food safety and preservation. Natural products are used as green and sustainable source of bioactive compounds that can be applied in various fields including food. The use of plant and other natural products in food preservation is on the rise, hence this book reviews microbial mediated food spoilage, foodborne pathogens and food contamination and offers applications of natural products in food preservation. Provides important information on microbial metabolic by-products (natural enzymatic processes) to prevent food spoilage or deterioration Includes molecular techniques for antimicrobial and antioxidant applications in food, food packaging and edible films Presents the latest evidence-based science on the natural products used as additives in food

Ensuring Global Food Safety Christine Boisrobert 2009-11-11 Taking into account toxicity levels at normal consumption levels, intake per kg bodyweight and other acknowledged considerations, each chapter in this book will be based on one or more proven examples. It is intended to provide specific examples and potential improvements to the safety of the world's food supply, while also increasing the amount of food available to those in undernourished countries. This book is designed to to provide science-based tools for improving legislation and regulation. Benefits: Reduce amount of food destroyed due to difference in regulations between nations Positively impact the time-to-market of new food products by recognizing benefit of "one rule that applies to all" Use the comparison of regulations and resulting consequences to make appropriate, fully-informed decisions Employ proven science to obtain global consensus for regulations Understand how to harmonize test protocols and analytical methods for accurate measurement and evaluation Take advantage of using a risk/benefit based approach rather than risk/avoidance to maximize regulatory decisions

High Pressure Processing of Fruit and Vegetable Products Milan Houška 2017-10-24 High pressure processing is a fast-growing food processing technology and opens the door to nearly-fresh products that retain their sensorial and nutritional qualities. High Pressure Processing of Fruit and Vegetable Products reviews and summarizes the latest advances in novel high-pressure processing techniques for preserving fruits, fruit juices, and their mixtures. It contains basic information on the relation of high-process treatment parameters with the safety and quality of fruit and vegetable juices/products. The book focuses on product quality parameters, nutritional value, bio-active health components, and microbial safety and stability. The main aim of this book is to summarize the advances in the utilization of modern high pressure pasteurization (HPP) treatment to preserve and stabilize fruit and vegetable products. HPP technology is related to the product quality parameters, the content of nutritional and health active components, and the microbial safety and subsequent shelf life. One chapter of this book is devoted to industrial equipment available; other chapters deal with examples of commercial fruit and vegetable products. Another chapter of this book is dedicated to packaging, as packaging of food before HPP is mandatory in this technology. The regulatory aspects for high-pressure treated fruit and vegetable products in different regions of the world (Europe, the United States, Asia, and Australia) are also an important topic dealt within one chapter of the book. The effects of HPP technology on the quality of fruit and vegetable products, namely nutrients and stability, health active components, and sensory aspects, are reviewed in a trio of chapters.

Advances in Prevention of Foodborne Pathogens of Public Health Concern during Manufacturing Aliyar Cyrus Fouladkhah 2019-11-27 According to a report from the U.S. Centers for Disease Control and Prevention (CDC), achieving safe and healthier foods was one of the top ten achievements of public health in the 20th century. However, considerable persisting challenges currently exist in developed nations and developing economies for further assuring the safety and security of the food supplies. According to CDC estimates, as many as 3000 American adults, as an example, and based on a recent epidemiological estimate of the World Health Organization, around 420,000 individuals around the globe, lose their lives annually due to foodborne diseases. This emphasizes the need for innovative and emerging interventions, for further prevention or mitigation of the risk of foodborne microbial pathogens during food processing and manufacturing. The current publication discusses recent advancements and progress in the elimination and decontamination of microbial pathogens during various stages of manufacturing and production. Special emphasis is placed on hurdle validation studies, investigating decontamination of non-typhoidal Salmonella enterica serovars, various serogroups of Shiga toxin-producing Escherichia coli, public health-significant serotypes of Listeria monocytogenes, and pathogenic species of Cronobacter.

Food Engineering Handbook Theodoros Varzakas 2014-11-24 Food Engineering Handbook: Food Process Engineering addresses the basic and applied principles of food engineering methods used in food processing operations around the world. Combining theory with a practical, hands-on approach, this book examines the thermophysical properties and modeling of selected processes such as chilling, freezing, and dehydration. A complement to Food Engineering Handbook: Food Engineering Fundamentals, this text: Discusses size reduction, mixing, emulsion, and encapsulation Provides case studies of solid–liquid and supercritical fluid extraction Explores fermentation, enzymes, fluidized-bed drying, and more Presenting cutting-edge information on new and emerging food engineering processes, Food Engineering Handbook: Food Process Engineering is an essential reference on the modeling, quality, safety, and technologies associated with food processing operations today.

Recent Developments in High Pressure Processing of Foods Navin K Rastogi 2013-07-16 Features a Foreword by Dr. Dietrich Knorr. Fruit processing and preservation technologies must ensure fresh-like characteristics in foods while providing an acceptable and convenient shelf life, as well as assuring safety and nutritional value. Processing technologies include a wide range of methodologies to inactivate microorganisms, improve quality and stability, and preserve and minimize changes of fresh-like characteristics in fruit. High pressure as a food preservation technique inactivates microorganisms at room temperature or lower; thus, sensory and nutritional characteristics can be maintained. In recent years, a significant increase in the number of scientific papers in literature demonstrating novel and diversified uses of high pressure processing indicates it to be highly emerging technology. The effect of high pressure technology on the quality and safety of foods will be discussed. Selected practical examples in fruits and vegetables, dairy and meat industries using high pressure will be presented and discussed. A brief account of the challenges in adopting this technology for industrial development will also be included.

Essentials and Applications of Food Engineering C. Anandharamakrishnan 2019-03-15 Essentials & Applications of Food Engineering provides a comprehensive understanding of food engineering operations and their

practical and industrial utility. It presents pertinent case studies, solved numerical problems, and multiple choice questions in each chapter and serves as a ready reference for classroom teaching and exam preparations. The first part of this textbook contains the introductory topics on units and dimensions, material balance, energy balance, and fluid flow. The second part deals with the theory and applications of heat and mass transfer, psychrometry, and reaction kinetics. The subsequent chapters of the book present the heat and mass transfer operations such as evaporation, drying, refrigeration, freezing, mixing, and separation. The final section focuses on the thermal, non-thermal, and nanotechnology-based novel food processing techniques, 3D food printing, active and intelligent food packaging, and fundamentals of CFD modeling. Features Features 28 case studies to provide a substantial understanding of the practical and industrial applications of various food engineering operations Includes 178 solved numerical problems and 285 multiple choice questions Highlights the application of mass balance in food product traceability and the importance of viscosity measurement in a variety of food products Provides updated information on novel food processing techniques such as cold plasma, 3D food printing, nanospray drying, electrospraying, and electrospinning The textbook is designed for undergraduate and graduate students pursuing Food Technology and Food Process Engineering courses. This book would also be of interest to course instructors and food industry professionals.

Emerging Food Packaging Technologies Kit L Yam 2012-03-15 The successful employment of food packaging can greatly improve product safety and quality, making the area a key concern to the food processing industry. Emerging food packaging technologies reviews advances in packaging materials, the design and implementation of smart packaging techniques, and developments in response to growing concerns about packaging sustainability. Part one of Emerging food packaging technologies focuses on developments in active packaging, reviewing controlled release packaging, active antimicrobials and nanocomposites in packaging, and edible chitosan coatings. Part two goes on to consider intelligent packaging and how advances in the consumer/packaging interface can improve food safety and quality. Developments in packaging material are analysed in part three, with nanocomposites, emerging coating technologies, light-protective and non-thermal process packaging discussed, alongside a consideration of the safety of plastics as food packaging materials. Finally, part four explores the use of eco-design, life cycle assessment, and the utilisation of bio-based polymers in the production of smarter, environmentally-compatible packaging. With its distinguished editors and international team of expert contributors, Emerging food packaging technologies is an indispensable reference work for all those responsible for the design, production and use of food and beverage packaging, as well as a key source for researchers in this area. Reviews advances in packaging materials, the design and implementation of smart packaging techniques, and developments in response to growing concerns about packaging sustainability Considers intelligent packaging and how advances in the consumer/packaging interface can improve food safety and quality Examines developments in packaging materials, nanocomposites, emerging coating technologies, light-protective and non-thermal process packaging and the safety of plastics as food packaging materials

Diet Diversification and Health Promotion I. Elmadfa 2005-01-01 About half of the global burden of disease is due to chronic noncommunicable diseases such as obesity, metabolic disorders, cardiovascular diseases and cancer, which are all related to modifiable risk factors such as unbalanced diet and malnutrition as well as determinants such as behavior and lifestyle. Dietary patterns during the last few decades have undergone a general shift towards high energy density and fatty foods combined with a low proportion of plant components. The resulting diet profile has proven inadequate to meet the physiological needs of a healthy human life. A comprehensive and highly valuable source of knowledge for all professionals interested in the underlying causes of today's major health challenges, this publication gives an in-depth view of the various methods of monitoring and addressing this precarious situation: impact of gender and age on eating behavior, role of a vegetarian lifestyle, processed and fortified foods, organic foods, ethnic food culture, and consumer choice.

High Pressure Processing of Foods Christopher J. Doona 2008-02-04 In High Pressure Processing of Foods, an array of international experts interrelate leading scientific advancements that use molecular biology techniques to explore the biochemical mechanisms of spore germination and inactivation by high pressure; investigate the inactivation of different spore species as functions of processing parameters such as pressure, temperature, time, food matrix, and the presence of anti-microbials; propose predictive mathematical models for predicting spore inactivation in foods treated with HPP; address commercial aspects of high pressure processing that include the high pressure equipment and packaging used to achieve the sterilization of bacterial spores in foods; and provide an assessment of the quality of food products preserved by HPP. High Pressure Processing of Foods is the landmark resource on the mechanisms and predictive modeling of bacterial spore inactivation by HPP.

Encyclopedia of Meat Sciences 2014-07-22 The Encyclopedia of Meat Sciences, Second Edition, prepared by an international team of experts, is a reference work that covers all important aspects of meat science from stable to table. Its topics range from muscle physiology, biochemistry (including post mortem biochemistry), and processing procedures to the processes of tenderization and flavor development, various processed meat products, animal production, microbiology and food safety, and carcass composition. It also considers animal welfare, animal genetics, genomics, consumer issues, ethnic meat products, nutrition, the history of each species, cooking procedures, human health and nutrition, and waste management. Fully up-to-date, this important reference work provides an invaluable source of information for both researchers and professional food scientists. It appeals to all those wanting a one-stop guide to the meat sciences. More than 200 articles covering all areas of meat sciences Substantially revised and updated since the previous edition was published in 2004 Full color throughout

Electron Beam Pasteurization and Complementary Food Processing Technologies Suresh Pillai 2014-11-28 Food safety is a constant challenge for the food industry, and food irradiation technology has developed significantly since its introduction, moving from isotope irradiation to the use of electron beam technology. Electron Beam Pasteurization and Complementary Food Processing Technologies explores the application of electron beam pasteurization in conjunction with other food processing technologies to improve the safety and quality of food. Part one provides an overview of the issues surrounding electron beam pasteurization in food processing. Part two looks at different thermal and non-thermal food processing technologies that complement irradiation. Finally, a case study section on the commercial applications of e-beam processing provides examples from industry.

Innovative and Emerging Technologies in the Bio-marine Food Sector Marco Garcia-Vaquero 2021-12-06 Innovative and Emerging Technologies in the Bio-marine Food Sector: Applications, Regulations, and Prospects presents the use of technologies and recent advances in the emerging marine food industry. Written by renowned scientists in the field, the book focuses primarily on the principles of application and the main technological developments achieved in recent years. It includes technological design, equipment and applications of these technologies in multiple processes. Extraction, preservation, microbiology and processing of food are extensively covered in the wide context of marine food products, including fish, crustaceans, seafood processing waste, seaweed, microalgae and other derived by-products. This is an interdisciplinary resource that highlights the potential of technology for multiple purposes in the marine food industry as these technological approaches represent a future alternative to develop more efficient industrial processes. Researchers and scientists in the areas of food microbiology, food chemistry, new product development, food processing, food technology, bio-process engineers in marine based industries and scientists in marine related areas will all find this a novel resource. Presents novel innovative technologies in the Bio-marine food sector, including principles, equipment, advantages, disadvantages, and future technological prospects Explores multi-purpose uses of technologies for extraction, functional food generation, food preservation, food microbiology and food processing Provides industrial applications tailored for the marine biological market to foster new innovative applications and regulatory requirements

Handbook of Food Safety Engineering Da-Wen Sun 2011-11-03 This book presents a comprehensive and substantial overview of the emerging field of food safety engineering, bringing together in one volume the four essential components of food safety: the fundamentals of microbial growth food safety detection techniques microbial inactivation techniques food safety management systems Written by a team of highly active international experts with both academic and professional credentials, the book is divided into five parts. Part I details the principles of food safety including microbial growth and modelling. Part II addresses novel and rapid food safety detection methods. Parts III and IV look at various traditional and novel thermal and non-thermal processing techniques for microbial inactivation. Part V concludes the book with an overview of the major international food safety management systems such as GMP, SSOP, HACCP and ISO22000.

Food Processing Kshirod Kumar Dash 2021-06-28 Non-thermal operations in food processing are an alternative to thermal operations and similarly aimed at retaining the quality and organoleptic properties of food products. This volume covers different non-thermal processing technologies such as high-pressure processing, ultrasound, ohmic heating, pulse electric field, pulse light, membrane processing, cryogenic freezing, nanofiltration, and cold plasma processing technologies. The book focuses both on fundamentals and on recent advances in non-thermal food processing technologies. It also provides information with the description and results of research into new emerging technologies for both the academy and industry. Key features: Presents engineering focus on non-thermal food processing technologies. Discusses sub-classification for recent trends and relevant industry information/examples. Different current research-oriented results are included as a key parameter. Covers high-pressure processing, pulse electric field, pulse light technology, irradiation, and ultrasonic techniques. Includes mathematical modeling and numerical simulations. Food Processing: Advances in Non-Thermal Technologies is aimed at graduate students, professionals in food engineering, food technology, and biological systems engineering.

Innovative Technologies in Beverage Processing Ingrid Aguilo-Aguayo 2017-05-18 An in-depth look at new and emerging technologies for non-alcoholic beverage manufacturing The non-alcoholic beverage market is the fastest growing segment of the functional food industry worldwide. Consistent with beverage consumption trends generally, the demand among consumers of these products is for high-nutrient drinks made from natural, healthy ingredients, free of synthetic preservatives and artificial flavor and color enhancers. Such drinks require specialized knowledge of exotic ingredients, novel processing techniques, and various functional ingredients. The latest addition to the critically acclaimed IFST Advances in Food Science series this book brings together edited contributions from internationally recognized experts in their fields who offer insights and analysis of the latest developments in non-alcoholic beverage manufacture. Topics covered include juices made from pome fruits, citrus fruits, prunus fruits, vegetables, exotic fruits, berries, juice blends and non-alcoholic beverages, including grain-based beverages, soups and functional beverages. Waste and by-products generated in juice and non-alcoholic beverage sector are also addressed. Offers fresh insight and analysis of the latest developments in non-alcoholic beverage manufacture from leading international experts Covers all product segments of the non-alcoholic beverage market, including juices, vegetable blends, grain-based drinks, and alternative beverages Details novel thermal and non-thermal technologies that ensure high-quality nutrient retention while extending product shelf life Written with the full support of The Institute of Food Science and Technology (IFST), the leading qualifying body for food professionals in Europe Innovative Technologies in Beverage Processing is a valuable reference/working resource for food scientists and engineers working in the non-alcoholic beverage industry, as well as academic researchers in industrial food processing and nutrition.