

Handbook Of Food Allergen Detection And Control Woodhead Publishing Series In Food Science Technology And Nutrition

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Heat Treatment for Insect Control - Dave Hammond
2014-09-18

Stored product insects and other pests represent a major hygiene and safety issue to many industries, from food production to building infestation, and issues for timber pallets and packaging. Bed bugs are rapidly becoming a public health issue in hotels, hostels and houses in many parts of the world. While fumigation has been one of the prevalent routes for pest control, there remain issues with the toxicity of the chemicals used and potential exposure to humans therefore heat treatment has proven to be a successful alternative when used correctly. It is well known that excessive heat is dangerous to life. There is a difference between the amount of heat required to kill microbes such as bacteria and viruses and that required to kill larger life forms such as insects or mammals. This book focuses on the use of heat to kill insects and mites in food production, storage and other facilities. Heat Treatment for Insect Control examines how controlled heat treatment kills all stages of pest insect life across species and without causing damage to surrounding structures or electronics. The advantages of heat treatment include no health & safety hazards, a completely controllable and environmentally friendly process, reduced treatment time of fumigation (hours verses days), as well as no factory shutdown or exclusion of staff from adjacent areas during treatment. Part I reviews the principles of heat treatment, with chapters covering the fundamentals, planning, best practice and costs of integrated pest management. Part II looks at heat treatment applications in food production, storage, food materials and fresh produce. Part III examines the other applications in clothing, small rooms, buildings, and transportation. Provides a comprehensive and systematic reference on the heat treatment for insect control Reviews the development of heat treatment processes and technology as part of integrated pest management approaches

Global Safety of Fresh Produce - Jeffrey Hoorfar
2014-02-14

Continuing food poisoning outbreaks around the globe have put fresh produce safety at the forefront of food research. Global Safety of Fresh Produce provides a detailed and comprehensive overview of best practice for produce safety throughout the food chain, and unique coverage of commercial technologies for fresh produce safety. Part one covers the production and regulation of fresh produce on the agricultural level, including issues of niche farm fresh products, FDA regulation, and zoonotic transfer of pathogens from animals to farm products. Part two moves on to look at safety and environmental issues surrounding fresh produce processing, such as postharvest washing, alternative sanitizers, and using produce waste as animal feed. Part three focuses on current and emerging commercial solutions for fresh produce safety, like ionizing radiation and edible coatings, and part four covers methods of laboratory testing and related legislation. The final section of the book covers a series of case

studies of fresh produce safety breaches, including European E. coli outbreaks in sprouts and leafy greens, and the illegal use of fluorescent whitening agents (FWAs) in China. This book is an essential text for R&D managers in the fresh produce industry, quality control professionals working with fresh produce throughout the food chain, postgraduate students, and academic researchers with an interest in fresh produce safety. Provides a comprehensive overview of best practice for produce safety Examines the production and regulation of fresh agricultural produce Looks at safety and environmental issues surrounding fresh produce processing

Advances in Microbial Food Safety - J Sofos 2014-11-25
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
Specialty Oils and Fats in Food and Nutrition - Geoff Talbot 2015-06-29

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, extraction, and quality of different fats and oils, 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, as well as academics with a research interest in the area, such as lipid scientists or food scientists. Authored by an industry expert with 35 years of experience working for Unilever and Loders Croklaan Broad coverage encompasses tropical exotic oils, tree

nut oils, algal oils, GM vegetable oils, and more
Addresses growing application areas including
nutraceuticals, infant formula, and ice cream and
confectionery

Modeling Food Processing Operations - Serafim Bakalis
2015-04-28

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

Metabolomics as a Tool in Nutrition Research - J-L Sebedio 2014-11-28

Metabolomics is a multidisciplinary science used to understand the ways in which nutrients from food are used in the body and how this can be optimised and targeted at specific nutritional needs. Metabolomics as a Tool in Nutrition Research provides a review of the uses of metabolomics in nutritional research. Chapters cover the most important aspects of the topic such as analysis techniques, bioinformatics and integration with other 'omic' sciences such as proteomics and genomics. The final chapters look at the impact of exercise on metabolomic profiles and future trends in metabolomics for nutrition research.

Foodborne Parasites in the Food Supply Web - Alvin A Gajadhar 2015-05-26

Foodborne Parasites in the Food Supply Web: Occurrence and Control provides an overview of the occurrence, transmission, and control of parasites in the food chain, including an introduction to the topic from the perspectives of various issues surrounding foodborne parasites. The text then explores the different types of foodborne parasites, the dynamics of parasite transmission in different food sources, and the prevention and control of foodborne parasites in the food chain. Provides an overview of the occurrence, transmission, and control of parasites in the food chain Explores the different types of foodborne parasites and the dynamics of parasite transmission in different food sources Highlights prevention and control methods to ensure the safety of the food chain

Food Enrichment with Omega-3 Fatty Acids - Charlotte Jacobsen 2013-07-31

Omega-3 fatty acids provide many health benefits, from reducing cardiovascular disease to improving mental health, and consumer interest in foods enriched with omega-3 fatty acids is increasing. Formulating a product enriched with these fatty acids that is stable and has an acceptable flavour is challenging. Food enrichment with omega-3 fatty acids provides an overview of key topics in this area. Part one, an introductory section,

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

Food Microstructures - Vic Morris 2013-10-15

The development of high-quality foods with desirable properties for both consumers and the food industry requires a comprehensive understanding of food systems and the control and rational design of food microstructures. Food microstructures reviews best practice and new developments in the determination of food microstructure. After a general introduction, chapters in part one review the principles and applications of various spectroscopy, tomography and microscopy techniques for revealing food microstructure, including nuclear magnetic resonance (NMR) methods, environmental scanning electron, probe, photonic force, acoustic, light, confocal and infrared microscopies. Part two explores the measurement, analysis and modelling of food microstructures. Chapters focus on rheology, tribology and methods for modelling and simulating the molecular, cellular and granular microstructure of foods, and for developing relationships between microstructure and mechanical and rheological properties of food structures. The book concludes with a useful case study on electron microscopy. Written by leading professionals and academics in the field, Food microstructures is an essential reference work for researchers and professionals in the processed foods and nutraceutical industries concerned with complex structures, the delivery and controlled release of nutrients, and the generation of improved foods. The book will also be of value to academics working in food science and the emerging field of soft matter. Reviews best practice and essential developments in food microstructure microscopy and modelling Discusses the principles and applications of various microscopy techniques used to discover food microstructure Explores the measurement, analysis and modelling of food microstructures

Advances in Food Traceability Techniques and Technologies - Montserrat Espiñeira 2016-06-18

Advances in Food Traceability Techniques and Technologies: Improving Quality Throughout the Food Chain covers in detail a topic of great importance to both the food industry which is obliged to provide clear and accurate labeling of their products and the government and other organizations which are tasked with verification of claims of food quality and safety. The traceability of food products is becoming ever more important as globalization continues to increase the complexity of food chains. Coverage in the book includes the wide range of technologies and techniques which have been utilized in the tracing of food products. In

addition, the ways in which the misuse of food traceability will affect the quality of food is also covered throughout. The first part of the book introduces the concept of traceability in the food industry, highlighting advantages of a robust traceability and the difficulties involved in implementing them. The second part looks at the technologies used to trace products, and the third section reviews the legal requirements for food traceability in the EU, the US, and the rest of the world. The final section contains a number of case studies which evaluate how food traceability has been successfully implemented in various foods focusing on the quality of the food. Provides a wide ranging overview of all recent advances in food traceability techniques and technologies Presents case studies covering when food traceability techniques have been applied to a range of food stuffs Covers the legal aspects of food traceability in the EU, the USA, and around the world

The Stability and Shelf Life of Food - Persis Subramaniam 2016-05-24

The second edition of *The Stability and Shelf-life of Food* is a fully revised and thoroughly updated edition of this highly-successful book. This new edition covers methods for shelf-life and stability evaluation, reviewing the modelling and testing of the deterioration of products as well as the use of sensory evaluation methods for testing food spoilage. The first part of the book focuses on deteriorative processes and factors influencing shelf-life, covering aspects such as chemical deterioration, physical instability and microbiological spoilage. The effects of process and packaging on the stability and shelf-life of products are also covered in this part. Part Two reviews the methods for shelf life and stability evaluation. These include sensory evaluation methods and instrumental methods to determine food quality deterioration. The final section of the book covers stability of important ingredient categories, from oils and fats, to beverages such as beer, wine, coffee and fruit juices, in addition to bakery products and meats. With updated chapters reflecting advances made in the field and with the addition of new chapters covering the stability and shelf-life a variety of products, this new edition will provide the latest research for both academics working in the field of food quality as well as providing essential information for food scientists working in industry. Thoroughly revised and updated edition of a very popular and well regarded book Includes dedicated chapters covering the shelf-life and stability of specific products making this book ideal for those working in industry Presents a wide coverage of the processes and factors influencing shelf-life, the evaluation of stability and shelf-life and the stability and shelf-life of particular products makes this book valuable for both academics and those working in industry

High Throughput Screening for Food Safety Assessment - Arun K. Bhunia 2014-09-06

Recent advances in array-based detectors and imaging technologies have provided high throughput systems that can operate within a substantially reduced timeframe and other techniques that can detect multiple contaminants at one time. These technologies are revolutionary in terms of food safety assessment in manufacturing, and will also have a significant impact on areas such as public health and food defence. This book summarizes the latest research and applications of sensor technologies for online and high throughput screening of food. The book first introduces high throughput screening strategies and technology platforms, and discusses key issues in sample collection and preparation. The subsequent chapters are then grouped into four sections: Part I reviews biorecognition techniques; Part II covers

the use of optical biosensors and hyperspectral imaging in food safety assessment; Part III focuses on electrochemical and mass-based transducers; and finally Part IV deals with the application of these safety assessment technologies in specific food products, including meat and poultry, seafood, fruits and vegetables. Summarises the latest research on sensor technologies for online and high-throughput screening of food Covers high-throughput screening and the current and forecast state of rapid contaminant detection technologies Looks at the use of optical and electrochemical biosensors and hyperspectral imaging in food safety assessment and the application of these technologies in specific food products

Human Milk Biochemistry and Infant Formula Manufacturing Technology - M. Guo 2014-08-12

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

Integrating the Packaging and Product Experience in Food and Beverages - Peter Burgess 2016-03-31

Integrating the Packaging and Product Experience in Food and Beverages: A Road-Map to Consumer Satisfaction focuses on the interrelationship between packaging and the product experience. In both industry and academia there has been a growing interest in investigating approaches that capture consumer responses to products that go beyond traditional sensory and liking measures. These approaches include assessing consumers' emotional responses, obtaining temporal measures of liking, as well as numerous published articles considering the effect of situation and context in the evaluation of food and beverage products. For fast-moving consumer goods (FMCG) products in particular, packaging can be considered as a contributor to consumer satisfaction. Recent cross-modal research illustrated consumers' dissatisfaction or delight with a product can be evoked when there is dissonance between the packaging and the product experience. The book includes an extensive overview of an adapted satisfaction scale that has been tailored for the food and beverage sector and which identifies varying satisfaction response modes such as contentment, pleasure, and delight with a product. This is an important development as it provides insights about products that can be used to market specific categories and brands of foods and beverages. The book demonstrates the value of this approach by bringing together case studies that consider the interrelationships between packaging design, shape, on-pack sensory messages, expectations, and consumer satisfaction with the product. Focuses on the inter-relationship between packaging and the product experience, specifically in the context of the food and beverage sector Presents the expectancy disconfirmation model of satisfaction, which is well developed within the social sciences, to the food and beverage sector Contains case studies demonstrating how these practices can be used in industry to better enhance customer's responses to products Includes an extensive overview of an adapted satisfaction scale that has been tailored for the food and beverage sector and which identifies varying satisfaction response modes such as contentment, pleasure, and delight with a product

Handbook of Food Allergen Detection and Control - Simon Flanagan 2014-09-25

Allergens in food and their detection, management and

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

Food Bioactives - Sankar Chandra Deka 2019-10-28

This valuable volume addresses the growing consumer demand for novel functional food products and for high-value, nutritionally rich products by focusing on the sources and applications of bioactives from food. The chapters in the book describe functional properties and discuss applications of the selected food ingredients obtained from various sources, including culinary banana, phalsa, pseudocereals, roselle calyces, asparagus, and more. Several chapters address the resurgence of interest in pseudocereals due to their excellent nutritional and biological values, gluten-free composition, and the presence of some health-promoting compounds. The book also looks at utilizing industrial byproducts for making functional and nutraceutical ingredients. The chapters on prebiotics and probiotics highlight different functional properties, and a chapter on food allergens discusses advancements in detection and management in the food manufacturing industries.

Food Allergens - Tong-Jen Fu 2017-11-16

This volume identifies gaps in the assessment, management, and communication of food allergen risks. Chapters showcase best practices in managing allergen risks at various stages of the food chain, including during food manufacture/processing; during food preparation in food service, retail food establishments, and in the home; and at the point of consumption. The authors highlight key legislative initiatives that are in various stages of development and implementation at the federal, state and community levels. Finally, the volume includes recommendations for ways to build and strengthen education and outreach efforts at the food industry, government, institutional, and community levels. Chapters come from an array of experts, including researchers and key stakeholders from government, the food industry, retail/food service groups, and consumer groups. The information presented will facilitate the development of educational materials and allergen management training programs for food production and service staff, extension specialists, and government inspectors. Consumers and other food safety professionals will also benefit from information on food allergen control measures that have been put in place across the food chain.

Non-Equilibrium States and Glass Transitions in Foods - Bhesh R. Bhandari 2016-11-10

Non-equilibrium States and Glass Transitions in Foods: Processing Effects and Product Specific Implications presents the tactics needed to understand and control non-equilibrium states and glass transitions in food, an essential element in maintaining the shelf-life and quality of foods. After brief introductory chapters introduce the science behind non-equilibrium states and glass transitions in foods, the book details how glass

transition temperature is affected by composition and the ways it influences processability and physico-chemical changes during the storage of foods, also exploring how these effects can be controlled. The second section looks at individual foods, highlighting the implications of non-equilibrium states and glass transitions within these foods. Maintaining and improving the quality of food is of upmost importance to food companies who have to ensure that the shelf life of their products is as long as possible. A large amount of research has been performed into glass transitions in food over the last few years, however there has not been a comprehensive review. This book fills that gap. Provides the only book on the market that covers non-equilibrium states and glass transitions in food from a practical standpoint Presents food industry professionals in the area of food quality with essential information on the effects of glass transitions and non-equilibrium states on the shelf life of specific products Edited by global leaders in glass transition technology in foods

Improving and Tailoring Enzymes for Food Quality and Functionality - Rickey Y. Yada 2015-07-28

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 sourcing, 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 sourcing, isolation, and production of enzymes for food applications Chapters include detailed discussions of enzyme processing, engineering and analytical and diagnostic applications of enzymes in the food industry, and enzyme applications in specific food commodities

Global Legislation for Food Contact Materials - J S Baughan 2015-04-09

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

Food Analysis - S. Suzanne Nielsen 2017-06-06

This fifth edition provides information on techniques needed to analyze foods for chemical and physical properties. The book is ideal for undergraduate courses in food analysis and is also an invaluable reference to professionals in the food industry. General information chapters on regulations, labeling, sampling, and data handling provide background information for chapters on specific methods to determine chemical composition and characteristics, physical properties, and objectionable matter and constituents. Methods of analysis covered

include information on the basic principles, advantages, limitations, and applications. Sections on spectroscopy and chromatography along with chapters on techniques such as immunoassays, thermal analysis, and microscopy from the perspective of their use in food analysis have been expanded. Instructors who adopt the textbook can contact the editor for access to a website with related teaching materials.

Hygiene in Food Processing - H. L. M. Lelieveld
2014-02-14

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

Metabolomics in Food and Nutrition - Bart C Weimer
2013-10-31

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

resource for industrial researchers in the food and nutrition sectors interested in the potential of metabolomics methods and academics and postgraduate students working in the area. Provides an overview of the current and potential future use of metabolomics in the food industry. Chapters focus on key applications and review the analytical methods used and the bioinformatics techniques involved in processing the results. Discusses metabolomics in nutrition, human samples for health assessments, and current methods for the analysis of human milk oligosaccharides (HMOs) and their novel applications.

Advances in Food Rheology and Its Applications - Jasim Ahmed
2016-09-13

Advances in Food Rheology and Its Applications presents the latest advances in the measurement and application of food rheology, one of the most important tools for food companies when characterizing ingredients and final products, and a predictor of product performance and consumer acceptance. Split into two main focuses, the book gives in-depth analysis of the general advances in the field, with coverage of the relationship between food microstructure and rheology, the use of tribology in the study of oral processing, the use of large amplitude oscillatory shear (LAOS) measurement and Fourier-transform rheology in food, and the influence of fibers and particle size distribution on food rheology, as well as many other advances. Written by a leading international team of authors, the book provides an in-depth and state-of-the-art coverage of this essential topic on the consumer acceptance of food. Brings together top researchers in the field of rheology, providing in-depth and state-of-the-art coverage on an area of study essential for managing the quality of foods and gaining consumer acceptance. Presents in-depth coverage of advances in rheology, many of which have never been featured before, including tribology, large amplitude oscillatory shear measurement, and the influence of fibers and particle size distribution on food rheology. Contains information that is highly relevant to the industrialist who wants to improve the rheological properties of the foods with which they are working.

Advances in Food and Beverage Labelling - Paul Berryman
2014-12-03

Advances in Food and Beverage Labelling reviews recent advances in labelling research and regulation, covering issues such as nutrition and hazard information, traceability, health claims and standardisation, as well as new labelling technologies and consumer issues. The EU Food Information Regulation will come into force in December 2014 and the book is designed to provide timely and useful information to manufacturers in this area, as well as on a global scale. Part one covers the different types of information that can, or must be present on a food label. Part two looks at recent developments in food labelling technology, regulations and enforcement. Brings together contributions from industry, trade bodies, government and academia. Offers timely advice for those concerned with the legal framework for food labelling, with information about the EU Food Information Regulation, as well as the US market. Reviews issues surrounding nutrition and health claims and GM, ethical and environmental labelling.

Flavour Development, Analysis and Perception in Food and Beverages - J K Parker
2014-11-21

Flavour is a critical aspect of food production and processing, requiring careful design, monitoring and testing in order to create an appealing food product. This book looks at flavour generation, flavour analysis and sensory perception of food flavour and how these techniques can be used in the food industry to create new and improve existing products. Part one covers established and emerging methods of characterising and analysing taste and aroma compounds. Part two looks at

different factors in the generation of aroma. Finally, part three focuses on sensory analysis of food flavour. Covers the analysis and characterisation of aromas and taste compounds Examines how aromas can be created and predicted Reviews how different flavours are perceived
Functional Foods and Beverages - Nicolas Bordenave 2018-06-22

A much-needed guide to in vitro food functionality evaluation principles, processes, and state-of-the-art modeling There are more than a few books devoted to the assessment of food functionality but, until now, there were no comprehensive guides focusing on the increasingly important subject of in vitro food evaluation. With contributions from the world's foremost experts in the field, this book brings readers up to speed on the state-of-the-art in in vitro modeling, from its physiological bases to its conception, current uses, and future developments. Food functionality is a broad concept encompassing nutritional and health functionality, food safety and toxicology, as well as a broad range of visual and organoleptic properties of food. In vitro techniques bridge the gap between standard analytical techniques, including chemical and biochemical approaches and in vivo human testing, which remains the ultimate translational goal for evaluation of the functionality of food. Although it is a well-established field, in vitro food testing continues to evolve toward ever more accurate predictions of in vivo properties and outcomes. Both ethical and highly economical, these approaches allow for detailed mechanistic insights into food functionalities and, therefore, a better understanding of the interactions of food and human physiology. Reviews the core concepts of food functionality and functionality evaluation methodologies Provides an overview of the physiology of the gastrointestinal tract, including host-microbial interactions within it Delves into the physiology of sensory perception of food, taste and texture as they relate to in vitro modeling Explores the challenges of linking in vitro analysis of taste, aroma and flavor to their actual perception Addresses in vitro models of the digestion and absorption of macronutrients, micronutrients, and phytonutrients Describes in vitro evaluations of toxicants, allergens and other specific food hazards Functional Foods and Beverages is an indispensable working resource for food scientists as well as researchers working in government facilities dedicated to tracking food safety.

Satiation, Satiety and the Control of Food Intake - John E Blundell 2013-09-30

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

Modifying Food Texture - Jianshe Chen 2015-05-23
Modifying Food Texture, Volume 1: Novel Ingredients and Processing Techniques discusses texture as an important aspect of consumer food acceptance and preference, and

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

Biosensors for Security and Bioterrorism Applications - Dimitrios P. Nikolelis 2016-03-12

This book offers comprehensive coverage of biomarker/biosensor interactions for the rapid detection of weapons of bioterrorism, as well as current research trends and future developments and applications. It will be useful to researchers in this field who are interested in new developments in the early detection of such. The authors have collected very valuable and, in some aspects indispensable experience in the area i.e. in the development and application of portable biosensors for the detection of potential hazards. Most efforts are centered on the development of immunochemical assays including flow-lateral systems and engineered antibodies and their fragments. In addition, new approaches to the detection of enzyme inhibitors, direct enzymatic and microbial detection of metabolites and nutrients are elaborated. Some realized prototypes and concept devices applicable for the further use as a basis for the cooperation programs are also discussed. There is a particular focus on electrochemical and optical detection systems, including those employing carbon nanotubes, quantum dots and metal nanoparticles. The authors are well-known scientists and most of them are editors of respected international scientific journals. Although recently developed biosensors utilize known principles, the biosensing devices described can significantly shorten the time required for successful detection and enhance efforts in more time-consuming directions, e.g. remote sensing systems and validation in real-sample analysis. The authors describe advances in all stages of biosensor development: the selection of biochemical components, their use in biosensor assembly, detection principles and improvements and applications for real sample assays.

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.

Instrumental Assessment of Food Sensory Quality - David Kilcast 2013-09-30

Instrumental measurements of the sensory quality of food and drink are of growing importance in both complementing data provided by sensory panels and in providing valuable data in situations in which the use of human subjects is not feasible. Instrumental assessment of food sensory quality reviews the range and

use of instrumental methods for measuring sensory quality. After an introductory chapter, part one goes on to explore the principles and practice of the assessment and analysis of food appearance, flavour, texture and viscosity. Part two reviews advances in methods for instrumental assessment of food sensory quality and includes chapters on food colour measurement using computer vision, gas chromatography-olfactometry (GC-O), electronic noses and tongues for in vivo food flavour measurement, and non-destructive methods for food texture assessment. Further chapters highlight in-mouth measurement of food quality and emerging flavour analysis methods for food authentication. Finally, chapters in part three focus on the instrumental assessment of the sensory quality of particular foods and beverages including meat, poultry and fish, baked goods, dry crisp products, dairy products, and fruit and vegetables. The instrumental assessment of the sensory quality of wine, beer, and juices is also discussed. Instrumental assessment of food sensory quality is a comprehensive technical resource for quality managers and research and development personnel in the food industry and researchers in academia interested in instrumental food quality measurement. Reviews the range and use of instrumental methods for measuring sensory quality Explores the principles and practice of the assessment and analysis of food appearance, flavour, texture and viscosity Reviews advances in methods for instrumental assessment of food sensory quality

Handbook of Natural Antimicrobials for Food Safety and Quality - M Taylor 2014-11-04

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

Analysis of Food Toxins and Toxicants - Yiu-Chung Wong 2017-07-03

Analysis of Food Toxins and Toxicants consists of five sections, providing up-to-date descriptions of the analytical approaches used to detect a range of food toxins. Part I reviews the recent developments in analytical technology including sample pre-treatment and food additives. Part II covers the novel analysis of microbial and plant toxins including plant pyrrolizidine alkaloids. Part III focuses on marine toxins in fish and shellfish. Part IV discusses biogenic amines and common food toxicants, such as pesticides and heavy metals. Part V summarizes quality assurance and the recent developments in regulatory limits for toxins, toxicants and allergens, including discussions on laboratory accreditation and reference materials.

Foods, Nutrients and Food Ingredients with Authorised EU Health Claims - Michele Sadler 2015-05-28

The second volume of Foods, nutrients and food ingredients with authorised EU health claims continues from Volume 1, which provided a comprehensive overview of many of the permitted health claims for foods and nutrients approved under European Regulation EC

1924/2006. This new volume discusses more of the health claims authorised to date for use in the EU. The chapters cover details of various permitted claims, such as the approved wording, conditions of use, the target group for the claims, the evidence for the claimed health benefits, and where appropriate details of other relevant legislation, consumer-related issues and future trends. The book opens with an overview of regulatory developments relating to health claims. Part One reviews authorised disease risk reduction claims and proprietary claims. The second part investigates ingredients with permitted 'general function' claims, with chapters examining ingredients such as red yeast rice, glucomannan and guar gum. The final section of the book explores foods and nutrients with permitted health claims, including chapters on authorised EU health claims for prunes, foods with low or reduced sodium or saturated fatty acids, and claims for essential and long chain polyunsaturated fatty acids. Building on volume 1, this title ensures that the area of EU health claims in food is comprehensively covered Chapters are devoted to individual food ingredients and substances, covering the range of issues related to health claims Health-promoting products are an increasing consumer trend in product development and this book provides key information on these advances

Quality Systems in the Food Industry - Marco Fiorino 2019-06-05

This book explains the role of food-oriented (or 'food-centric') quality system standards in the modern food and beverage industry. It discusses food safety schemes based on the international norm ISO 9001 and the "Hazard Analysis and Critical Control Points" approach, and also introduces the new Global Standard for Food Safety (GSFS) and the International Featured Standard (IFS, 7th ed.), outlining standardization for international equivalence (while maintaining the necessary flexibility and independence – which is not always an easy task). Providing selected specific examples, it examines the problems of chemical additives and possible cross-contaminations between different production lines, as well as adequate reactions to and handling of intentional adulterations. In addition, it includes a chapter focusing on quality audits and technical data sheets in the food industry, and a final chapter describing the certification of food-grade lubricants in the food industry, especially with regard to allergenic substances.

Foods, Nutrients and Food Ingredients with Authorised EU Health Claims - Michele Jeanne Sadler 2014-04-21

Foods, Nutrients and Food Ingredients with Authorised EU Health Claims provides an overview of how health claims are regulated in the European Union, as well as detailed scientific and regulatory information about permitted health claims for particular types of foods and ingredients. Part one provides a background to the regulation of health claims in Europe. Part two focuses on authorised disease risk reduction claims, claims relating to children's development, and health and proprietary claims. Part three sets out ingredients with permitted "general function claims, including choline, creatine, sweeteners, dietary lactase supplements, and polyphenols in olive oil. Part four outlines foods and nutrients with permitted health claims, with chapters on vitamins and minerals, proteins, meat, fish, water, and the replacement of saturated fats. Foods, Nutrients and Food Ingredients with Authorised EU Health Claims is the go-to resource for R&D managers and technical managers in the food, and beverage and dietary supplements industry, product development managers, health professionals and academic researchers in the field. Provides a comprehensive overview of foods and food substances that have achieved approved health claims in Europe under Regulation EC 1924/2006 Covers properties and applications of each ingredient, as well as evidence

for the health claim and how it benefits consumers
Outlines the importance of each claim in product development and marketing and regulatory issues such as conditions of use

Food Safety - Umile Gianfranco Spizzirri 2016-11-29

Food safety and quality are key objectives for food scientists and industries all over the world. To achieve this goal, several analytical techniques (based on both destructive detection and nondestructive detection) have been proposed to fit the government regulations. The book aims to cover all the analytical aspects of the food quality and safety assessment. For this purpose, the volume describes the most relevant techniques employed for the determination of the major food components (e.g. protein, polysaccharides, lipids, vitamins, etc.), with peculiar attention to the recent development in the field. Furthermore, the evaluation of the risk associated with food consumption is performed by exploring the recent advances in the detection of the key food contaminants (e.g. biogenic amines, pesticides, toxins, etc.). Chapters tackle such subject as: GMO Analysis Methods in Food Current Analytical Techniques for the Analysis of Food Lipids Analytical Methods for the Analysis of Sweeteners in Food Analytical Methods for Pesticides Detection in Foodstuffs Food and Viral Contamination Application of Biosensors to Food Analysis

Food Allergy - Andreas L. Lopata 2017-09-07

Food allergy is an adverse immunological reaction to allergens present in food. Up to 4% adults and 8% children are affected by food allergy. The increase in allergic diseases to food has led to the need for better diagnostics and more effective therapeutic approaches.

This book describes the molecular biology and immunology of major food allergens, from laboratory based science to clinical immunology, encompassing novel characterisation and quantification methods, the application of recombinant food allergens in molecular diagnosis and the development of novel therapeutics. This book is the ideal reference tool for researchers, students and allergy clinicians to accurately diagnose and manage food allergies.

Innovative Food Processing Technologies - Kai Knoerzer 2016-06-29

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