Valuable in Food Products and Processing using Enzyme Technology offers an updated review regarding the potential impact of new enzymes and enzyme technology on the food sector. The book brings together novel sources and technologies regarding enzymes in value-added food development, food production, food processing, food preservation, food engineering and food biotechnology. It will be extremely useful for different types of readers, including food scientists, academic and food biotechnologists, but will also be ideal for students studying food-related courses. This book includes concisely and up-to-date research information from multiple international contributors and is a valuable resource for research and development professionals, researchers, and scientists in food, biotechnology, and agriculture industries. It addresses safety issues and includes the sources, screening, immobilization and application of food-grade enzymes from experts and representatives of emerging industry topics such as baby food and food safety. Offers methodologies of enzymes in diagnostics for food testing and analysis. Emphasizes enzyme technology through a microbial biotechnological lens. Includes bakery and confectionery products, meat and poultry products, vegetables, food ingredients, functional foods, flavors and food additives and sealants.

**Specialty Oils and Fats in Food and Nutrition**

Modifying Food Texture

A Handbook for Sensory and Consumer Driven New Product Development explores traditional and well-established sensory methods (difference and affective) as well as taking a developmental and the use of new methods and recent innovations. This book investigates the use of these established and novel sensory methods, particularly historic methods coupled with descriptive methods (traditional and rapid), through multivariate data-analytical interfaces in the processes of developing food products in a practically defined manner. The first part of the book covers the sensory methods which are used by sensory scientists and product developers, including established and new and innovative methods. The second section investigates the product development process and how the application of sensory analysis, instrumental methods and multivariate data analysis can improve new product development, including packaging optimization and shelf life. The final section defines the important sensory criteria and modalities of instant and beverage products including dairy, Meat, Confectionary, Bakery, and Beverage (alcoholic and non-alcoholic), and presents case studies indicating how the methods described in the first two sections have been successfully and innovatively applied to these different foods and beverages. The book is written to be of use to all new product development researchers working in large corporations, SME’s (micro, small or medium-sized enterprises) as well as being accessible to the new businesses starting up. The innovative technologies and methods described are less expensive than some more traditional practices and aim to be quick and effective in assisting products to market. Sensory testing is critical for new product development, optimization and ingredient substitution and developing appropriate packaging and shelf life as well as comparing foods or beverages to competitor’s products.

Processors face increasing pressure to develop new product developments—two related fields that are often covered separately. Provides accessible, useful guidance to the new product developer working in a large multi-national food company as well as newbies or a start-up. Offers case studies that provide examples of how these methods have been applied to real product development by practitioners in a wide range of organizations. Investigates how sensory analysis can improve new product development including packaging optimization.

Improving and Tailoring Enzymes for Food Quality and Functionality

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 oils and fats, 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 ingredient markets, such as confectionery, ice cream, and margarines, and provides a key text for R&D managers and product development personnel in the dairy, baking and dairy analogue sectors, or any sector using fats and oils. It is a particularly useful package for companies reformulating their products incorporating more healthy fats or fats with other functional benefits, as well as with a research interest in the area, such as lipid scientists or food scientists. Authored by an industry expert with 25 years of experience working for Unilever and Codexis Croklaan, this book encompasses tropical exotic oils, tree nuts oils, algae, olive oils and more. A addresses growing application areas including nutraceuticals, infant formula, and ice cream and confectionery.

Evaluation Technologies for Food Quality

Computational modeling is an important tool for understanding and improving food processing and manufacturing. It is used for many different purposes, including process design, analysis, optimization and modeling across the process and can include applications in understanding and optimizing food storage and the food supply chain, and to perform a cycle analysis. Modelling Food Processing Operations provides a comprehensive overview of the various applications of modeling in conventional food processing operations, and data of the technologies 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; freezing; and chilled and frozen food freezing. Part Three explores the modeling of mixing, storage and drying; as well as membrane-renewal, extraction 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. Analysis and case studies are used to optimize food distribution.

Global Legislation for Food Contact Materials

The nutrition of an individual during gestation and the first two years of life—the first 1,000 days—sets the stage for lifelong health. Nutrition quality and quantity influences the consequences that constitute today’s epidemics. Early life nutrition can program the body’s tissues, organ structure and function, and metabolic and immunologic responses. These factors impact aging, development and cognition, and the risk of cardiovascular diseases, allergies and obesity. The first two years of life is a time when health is examined by which early nutrition affects the risk of developing these conditions. This second part of this book reviews specific non-communicable diseases (NCDs) associated with early nutrition. The third part discusses the effects of nutritional programming by food intake in early life, rather than behavior interventions in adulthood. The risk of a higher rate of society’s investment on health care in the modern epidemic of NCD’s. It examines the relation between early life nutrition and long-term health. Covers the mechanistic aspects of nutritional programming and its impact on risk of chronic non-communicable diseases. Reviews associations between infant and child diet and its effects on growth, development, cognition and later occurrence of cardiovascular diseases, allergies, metabolic conditions and obesity.

Non-Equilibrium States and Glass Transitions in Foods

Foodborne Pathogens 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 situations 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 including an introduction to the topic from the perspectives of various situations surrounding foodborne parasites. The text then explores the different types of foodborne parasites, the dynamics of parasite transmission in different food sources, highlights prevention and control methods to ensure the safety of the food chain.

Modifying Food Texture

A Complete Course in Canning and Related Processes: Volume 3, Processing Procedures for Canned Food Products, Fourteenth Edition provides a complete course in canning and is an essential guide to canning and related processes. Professionals and students in the canning industry have benefited from successive editions of the book for over 50 years. This major new edition represents an extensive revision and update of the book’s third title, is designed to cover all canning, processing, processing, and quality control phases undertaken by the canning industry in a detailed, yet accessible fashion. Major changes for the new edition include: the first two parts of the book reflect the situation in different regions worldwide, updated information on canning for canned foods, and new information on validation and optimization of canning processes, among many other topics. Extensively revised and expanded coverage in the field of food caging. Designed to cover all canning, processing, storage, and quality control phases undertaken by the canning industry in a detailed, yet accessible fashion. Examines the canning of various fruits and vegetables, in addition to meat, milk, and composite products. Updated to cover the canning of ready meals, pet food, and UHT milk.

Handbook of Food Nanotechnology

Feed and fertilizer are significant costs in aquaculture operations and play an important role in the successful production of fish and other seaweed for human consumption. This book reviews the key properties of feeds, advances in feed formulation and ingredient choices and the practicalities of feeding systems and strategies. Provides an overview of feed and fertilizer in aquaculture. Covers feeding strategies related to different areas of aquaculture.

Foods, Nutrients and Food Ingredients with Authorised EU Health Claims

Developing Food Products for Customers with Specific Dietary Needs explains the process for developing foods for customers who have specific dietary needs, further defining a higher number of medical conditions related to food intake that have emerged in the past few decades. From increased fat and sugar intake leading to higher levels of obesity, to greater levels of cardiac disease, the ingredients and nutritional content of food is becoming more and more important. A significant change in the health landscape in recent years is the increased realization of the role of diet in different health aspects, both in health-related or for nutritional or moral reasons. The first part of the book looks in detail, all the organizational structure required within a company to allow for the development of food products which meet the needs of these customers, while the second part of the book highlights the development of food products for various dietary requirements. Precise coverage includes sections on the development of low-sodium, low-sugar, low-fat, and low-carbohydrate products with the aim of producing healthier foods. Provides an overview of the organizational structure required within a company to develop foods for specific consumer needs (includes sections on the development of low-sodium, low-sugar, low-fat, and low-carbohydrate products with the aim of producing healthier foods).

Modifying Food Texture Novel Ingredients And Processing Techniques Woodhead Publishing Series In Food Science Technology And Nutrition

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Advances in Food Traceability Techniques and Technologies

Baking Problems Solved, Second Edition, provides a fully revised follow-up to the innovative question and answer format of its predecessor. Presenting a quick bakery problem-solving reference, Elaine Cauvain and David Williams, known experts in the field, guide bakers through various issues which arise throughout the baking process. The book begins with issues found in the use of raw materials, including chapters on wheat, eggs, and sugar. Following in the step-by-step order of baking, the authors progress to the problems that occur in the intermediate stages of baking, such as the creation of dough and the crumb, and the final product. It’s a detailed and clear question and answer format that is ideal for quick reference. It contains new, up-to-date problems and solutions with the benefit of the previous volume Presents a wide range of ingredient and process solutions from a world-leading expert in the baking industry.

The Stability and Shelf Life of Food

Multisensory Flavor Perception: From Fundamental Neuroscience Through to the Marketplace provides state-of-the-art coverage of the latest insights from the rapidly-expanding world of multisensory flavor research. The book highlights the various types of crossmodal interactions, such as as acid and tars, and vision and taste, showing how these may be altered with their consumption in the context of foods and drinks. The chapters in this edited volume review the existing literature, also explaining the underlying neural and psychological mechanisms which led to crossmodal perception of flavor. The book brings together research from all over the world to present the latest findings in the field to cover the literature of multisensory flavor perception by incorporating the latest findings in neurobiology and psychophysics. Authored by top academics and world leaders in the field, this book takes readers on a journey from the neurobiological underpinnings of multisensory flavor perception, then presenting insights that can be used by food companies to create better flavor sensations for consumers. Offers a wide perspective on multisensory Flavor perception, an area of rapidly expanding knowledge.

Modifying Food Textures

Modifying Food Texture, Volume 2: 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 use of processing techniques for texturereduction, and the uses of ingredients in texture-modified foods. Discusses texture as an important aspect of consumer food acceptance and preference and 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.

Feed and Feeding Practices in Aquaculture

Functional Dietary Lipids: Food Formulation, Consumer Issues and Innovations for Health discusses an important component of the human diet and the way it plays an essential role in maintaining the functional and nutritional roles in many foods. The book covers the functionality and nutritional roles in many fats, the functionality and nutritional roles in oil-based products. The book details how oil-based products can be used to improve the shelf-life and quality of foods. It also covers the functionality and nutritional roles in many fats, the functionality and nutritional roles in oil-based products, and the functionality and nutritional roles in oil-based products.

Biotransformed Metal Nanoparticle Chemistry for Sustainable Applications

Modifying Food Texture, Volume 2: Sensory Analysis, Consumer Requirements and Preferences explores texture as an important aspect of consumer food acceptance and preference, specifically addressing the special needs of infants, the elderly, and dysphagia patients. This volume covers the sensory analysis of texture-modified foods, taking an in-depth look at the product development needs of consumers and exploring the sensory analysis of food texture and the development of texture-modified foods. Discusses texture as an important aspect of consumer food acceptance and preference and presents findings and tactics that address the special needs of infants, the elderly, and dysphagia patients. This volume covers the sensory analysis of texture-modified foods, taking an in-depth look at the product development needs of consumers and exploring the sensory analysis of food texture and the development of texture-modified foods.

Developing Food Products for Consumers with Specific Dietary Needs

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 foods. The book details how glass transition temperature is affected by composition and the ways it influences physicochemical and physico-chemical changes during the storage of foods, and why 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. In addition, the book provides an overview of the significance of non-equilibrium states and glass transitions in foods, as well as a description of how to improve the quality of foods. It also identifies the factors that contribute to the improvement of food quality, and the factors that can be controlled to improve the quality of foods.

Steam Breads

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 academia and industry there has been a growing interest in investigating approaches that can encourage consumers to respond to products that go beyond traditional sensory and cognitive modalities. These approaches include avoiding consumers’ emotional responses, thinking temporal measures of lard, and numerous published articles considering the effect of situation and context in the evaluation of food and beverage products. For fast-moving consumer goods (FMCG) producers, new marketing channels are being developed as a contributor to consumer satisfaction. Recent cross-modal research illustrated consumer dissatisfaction with a product can be evoked when there is a 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 comfort, pleasure, and delight with a product. This is an important development in that 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 for bringing together case studies that consider the interrelationships between packaging design, shape, on-pack sensory messages, expertise, and consumer satisfaction with the product experience. The book brings together research 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. It offers a unique contribution to the field as case studies demonstrating the link between food and beverage sector and the consumer satisfaction response modes such as comfort, pleasure, and delight with a product.

Handbook of Hygiene Control in the Food Industry

The Handbook of Hygiene Control in the Food Industry provides an up-to-date, comprehensive guide to the risk analysis and assessment of food hygiene. The book begins with an overview of the hygiene requirements for food and beverage production, including an introduction to the hygiene of food and beverage production. It then goes on to discuss the role of hygiene in the production of food and beverage products, including the importance of hygiene in the production of food and beverage products, and the role of hygiene in the production of food and beverage products. The book concludes with an overview of the hygiene requirements for food and beverage production, including an introduction to the hygiene of food and beverage production. It then goes on to discuss the role of hygiene in the production of food and beverage products, including the importance of hygiene in the production of food and beverage products, and the role of hygiene in the production of food and beverage products.

Handbook on Natural Pigments in Food and Beverages

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 foodstuffs approved under European Regulation EC 1924/2006. This new volume discusses some of the health claims that are currently permitted, and for which there is evidence of the claimed health benefit, and where appropriate details of other relevant legislation, consumer-related issues and future trends. The book opens with an overview of the regulatory developments relating to health claims, before moving on to discuss the role of hygiene in the production of food and beverage products, including the importance of hygiene in the production of food and beverage products, and the role of hygiene in the production of food and beverage products. Written by an international team of leading authors, this book provides state-of-the-art coverage of this topic, which is essential to the shelf-life and quality of food. Provides an in-depth coverage of the different spoilage groups that cause the deterioration of food products, including the spoilage groups that cause the deterioration of food products. The book concludes with a detailed examination of the spoilage of specific products, making this book an invaluable resource for those working in the food industry. Presents a framework for future research in the area of food spoilage.