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KEY=DAIRY - EDWARDS ZION

ADVANCED DAIRY CHEMISTRY VOLUME 3

VOLUME 3. LACTOSE, WATER, SALTS AND VITAMINS

Springer Science & Business Media This is the third volume in the series on the chemistry and physical properties of milk constituents. Volumes 1 and 2 dealt with the commercially important constituents proteins and lipids, respectively. Although the constituents dealt with in this volume are of less commercial importance, they are, nevertheless, of major significance in the chemical, physical, technological, nutritional and physiological properties of milk and milk products. Advanced Dairy Chemistry Volume 3 is the most comprehensive book available on the subject. The constituents of milk dealt with in this volume are lactose, water, milk salts and vitamins. The chemical and enzymatic modification of lactose and the physico-chemical properties of milk are also discussed. This book is a second edition of the very successful third volume in the series Developments in Dairy Chemistry. Professor Fox, a world authority in this field, has pulled together an impressive international list of contributors, providing a title that will be great use to personnel working within the dairy industry and those in academics and research.

ADVANCED DAIRY CHEMISTRY VOLUME 3

LACTOSE, WATER, SALTS AND VITAMINS

Springer Science & Business Media This book is the third volume of Advanced Dairy Chemistry, which should be regarded as the second edition of Developments in Dairy Chemistry. Volume 1 of the series, Milk Proteins, was published in 1992 and Volume 2, Milk Lipids, in 1994. Volume 3, on lactose, water, salts and vitamins, essentially updates Volume 3 of Developments in Dairy Chemistry but with some important changes. Five of the eleven chapters are devoted to lactose (its physico-chemical properties, chemical modification, enzymatic modification and nutritional aspects), two chapters are devoted to milk salts (physico-chemical and nutritional aspects), one to vitamins and one to overview the flavour of dairy products. Two topics covered in the first editions (enzymes and other biologically active proteins) were transferred to Volume 1 of Advanced Dairy Chemistry and two new topics (water and physico chemical properties of milk) have been introduced. Although the constituents covered in this volume are commercially less important than proteins and lipids covered in Volumes 1 and 2, they are critically important from a nutritional viewpoint, especially vitamins and minerals, and to the quality and stability of milk and dairy products, especially flavour, milk salts and water. Lactose, the principal constituent of the solids of bovine milk, has long been regarded as essentially worthless and in many cases problematic from the nutritional and techno logical viewpoints; however, recent research has created several new possi bilities for the utilization of lactose.

ADVANCED DAIRY CHEMISTRY

VOLUME 3: LACTOSE, WATER, SALTS AND MINOR CONSTITUENTS

Springer Science & Business Media The Advanced Dairy Chemistry series was first published in four volumes in the 1980s (under the title Developments in Dairy Chemistry) and revised in three volumes in the 1990s. The series is the leading reference source on dairy chemistry, providing in-depth coverage of milk proteins, lipids, lactose, water and minor constituents. Advanced Dairy Chemistry Volume 3: Lactose, Water, Salts, and Minor Constituents, Third Edition, reviews the extensive literature on lactose and its significance in milk products. This volume also reviews the literature on milk salts, vitamins, milk flavors and off-flavors and the behaviour of water in dairy products. Most topics covered in the second edition are retained in the current edition, which has been updated and expanded considerably. New chapters cover chemically and enzymatically prepared derivatives of lactose and oligosaccharides indigenous to milk. P.L.H. McSweeney Ph.D. is Associate Professor of Food Chemistry and P.F. Fox Ph.D., D.Sc. is Professor Emeritus of Food Chemistry at University College, Cork, Ireland.

ADVANCED DAIRY CHEMISTRY

ADVANCED DAIRY CHEMISTRY VOLUME 3

LACTOSE, WATER, SALTS AND VITAMINS

This is the third volume in the series on the chemistry and physical properties of milk constituents. Volumes 1 and 2 dealt with the commercially important constituents proteins and lipids, respectively. Although the constituents dealt with in this volume are of less commercial importance, they are, nevertheless, of major significance in the chemical, physical, technological, nutritional and physiological properties of milk and milk products. Advanced Dairy Chemistry Volume 3 is the most comprehensive book available on the subject. The constituents of milk dealt with in this volume are lactose, water, milk salts and vitamins. The chemical and enzymatic modification of lactose and the physico-chemical properties of milk are also discussed. This book is a second edition of the very successful third volume in the series Developments in Dairy Chemistry. Professor Fox, a world authority in this field, has pulled together an impressive international list of contributors, providing a title that will be great use to personnel working within the dairy industry and those in academics and research.

ADVANCED DAIRY CHEMISTRY: VOLUME 1: PROTEINS, PARTS A&B

Springer Advanced Dairy Chemistry-I: Proteins is the first volume of the third edition of the series on advanced topics in Dairy Chemistry, which started in 1982 with the publication of Developments in Dairy Chemistry. This series of volume~ is intended to be a coordinated and authoritative treatise on Dairy Chemistry. In the decade since the second edition of this volume was published (1992), there have been considerable advances in the study of milk proteins, which are reflected in changes to this book. All topics included in the second edition are retained in the current edition, which has been updated and considerably expanded from 18 to 29 chapters. Owing to its size, the book is divided into two parts; Part A (Chapters 1-11) describes the more basic aspects of milk proteins while Part B (Chapters 12-29) reviews the more applied aspects. Chapter 1, a new chapter, presents an overview of the milk protein system, especially from an historical viewpoint. Chapters 2-5, 7-9, 15, and 16 are revisions of chapters in the second edition and cover analytical aspects, chemical and physiochemical properties, biosynthesis and genetic polymorphism of the principal milk proteins. Non-bovine caseins are reviewed in Chapter 6.

MILK PROTEINS

FROM EXPRESSION TO FOOD

Academic Press Understanding of the interactions of milk proteins in complex food systems continues to progress, resulting in specialized milk-protein based applications in functional foods, and in protein ingredients for specific health applications. Milk Proteins is the first and only presentation of the entire dairy food chain – from the source to the nutritional aspects affecting the consumer. With focus on the molecular structures and interactions of milk proteins in various processing methods, Milk Proteins presents a comprehensive overview of the biology and chemistry of milk, as well as featuring the latest science and developments. Significant insight into the use of milk proteins from an industry viewpoint provides valuable application-based information. Those working with food and nutritional research and product development will find this book useful. 20% new chapter content — full revision throughout New chapters address: role of milk proteins in human health; aspects of digestion and absorption of milk proteins in the GIT; consumer demand and future trends in milk proteins; and world supply of proteins with a focus on dairy proteins Internationally recognized authors and editors bring academic and industrial insights to this important topic

DAIRY PROCESSING

IMPROVING QUALITY

Elsevier The dairy sector continues to be at the forefront of innovation in food processing. With its distinguished editor and international team of contributors, Dairy processing: improving quality reviews key developments and their impact on product safety and quality. The first two chapters of part one provide a foundation for the rest of the book, summarising the latest research on the constituents of milk and reviewing how agricultural practice influences the quality of raw milk. This is followed by three chapters on key aspects of safety: good hygienic practice, improvements in pasteurisation and sterilisation, and the use of modelling to assess the effectiveness of pasteurisation. A final sequence of chapters in part one discuss aspects of product quality, from flavour, texture, shelf-life and authenticity to the increasingly important area of functional dairy products. Part two reviews some of the major technological advances in the sector. The first two chapters discuss developments in on-line control of process efficiency and product quality. They are followed by chapters on new technologies to improve qualities such as shelf-life, including high pressure processing, drying and the production of powdered dairy products, and the use of dissolved carbon dioxide to extend the shelf-life of milk. Part three looks in more detail at key advances in cheese manufacture. Dairy processing: improving quality is a standard reference for the

dairy industry in improving process efficiency and product quality. Reviews key developments in dairy food processing and their impact on product safety and quality Summarises the latest research on the constituents of milk and reviews how agricultural practice influences the quality of raw milk Outlines the key aspects of safety: good hygienic practice, improvements in pasteurisation and sterilisation, and the use of modelling to assess the effectiveness of pasteurisation

ADVANCED DAIRY CHEMISTRY VOLUME 2: LIPIDS

Springer Science & Business Media The Advanced Dairy Chemistry series was first published in four volumes in the 1980s (under the title Developments in Dairy Chemistry) and revised in three volumes in the 1990s. The series is the leading reference on dairy chemistry, providing in-depth coverage of milk proteins, lipids, lactose, water and minor constituents. Advanced Dairy Chemistry Volume 2: Lipids, Third Edition, is unique in the literature on milk lipids, a broad field that encompasses a diverse range of topics, including synthesis of fatty acids and acylglycerols, compounds associated with the milk fat fraction, analytical aspects, behavior of lipids during processing and their effect on product characteristics, product defects arising from lipolysis and oxidation of lipids, as well as nutritional significance of milk lipids. Most topics included in the second edition are retained in the current edition, which has been updated and considerably expanded. New chapters cover the following subjects: Biosynthesis and nutritional significance of conjugated linoleic acid, which has assumed major significance during the past decade; Formation and biological significance of oxysterols; The milk fat globule membrane as a source of nutritionally and technologically significant products; Physical, chemical and enzymatic modification of milk fat; Significance of fat in dairy products: creams, cheese, ice cream, milk powders and infant formulae; Analytical methods: chromatographic, spectroscopic, ultrasound and physical methods. This authoritative work summarizes current knowledge on milk lipids and suggests areas for further work. It will be very valuable to dairy scientists, chemists and others working in dairy research or in the dairy industry.

FUNDAMENTALS OF CHEESE SCIENCE

Springer This book provides comprehensive coverage of the scientific aspects of cheese, emphasizing fundamental principles. The book's updated 22 chapters cover the chemistry and microbiology of milk for cheesemaking, starter cultures, coagulation of milk by enzymes or by acidification, the microbiology and biochemistry of cheese ripening, the flavor and rheology of cheese, processed cheese, cheese as a food ingredient, public health and nutritional aspects of cheese, and various methods used for the analysis of cheese. The book contains copious references to other texts and review articles.

DAIRY CHEMISTRY AND BIOCHEMISTRY

Springer This book is the most comprehensive introductory text on the chemistry and biochemistry of milk. It provides a comprehensive description of the principal constituents of milk (water, lipids, proteins, lactose, salts, vitamins, indigenous enzymes) and of the chemical aspects of cheese and fermented milks and of various dairy processing operations. It also covers heat-induced changes in milk, the use of exogenous enzymes in dairy processing, principal physical properties of milk, bioactive compounds in milk and comparison of milk of different species. This book is designed to meet the needs of senior students and dairy scientists in general.

MILK PROCESSING AND QUALITY MANAGEMENT

John Wiley & Sons The Society of Dairy Technology (SDT) has joined with Wiley-Blackwell to produce a series of technical dairy-related handbooks providing an invaluable resource for all those involved in the dairy industry; from practitioners to technologists working in both traditional and modern large-scale dairy operations. The fifth volume in the series, Milk Processing and Quality Management, provides timely and comprehensive guidance on the processing of liquid milks by bringing together contributions from leading experts around the globe. This important book covers all major aspects of hygienic milk production, storage and processing and other key topics such as: Microbiology of raw and market milks Quality control International legislation Safety HACCP in milk processing All those involved in the dairy industry including food scientists, food technologists, food microbiologists, food safety enforcement personnel, quality control personnel, dairy industry equipment suppliers and food ingredient companies should find much of interest in this commercially important book which will also provide libraries in dairy and food research establishments with a valuable reference for this important area.

FOOD BIOCHEMISTRY AND FOOD PROCESSING

John Wiley & Sons Simpson (food science and agricultural chemistry, McGill U., Canada) brings together academics and industry professionals working in food biochemistry, processing, and safety around the world for this 45-chapter textbook aimed at food scientists, researchers and technologists in the food industry, and faculty and students in food science, technology, and engineering. It combines the areas of food biochemistry and food processing to help them rationalize and develop more effective strategies to produce and preserve food. It covers the essential principles of food biochemistry, enzymology, and food processing, then the biochemistry of meat, poultry, seafoods, milk, fruits, vegetables, cereals, and fermented foods, and food microbiology and safety. Along with updates to several chapters, this edition has been revised to incorporate safety considerations and the chemical changes induced by processing in the biomolecules of food in each chapter. It includes a new section on health and functional foods and 10

new chapters on topics like thermally and minimally processed foods, separation technology, and allergens.

ULLMANN'S FOOD AND FEED, 3 VOLUME SET

John Wiley & Sons A compilation of 58 carefully selected, topical articles from the Ullmann's Encyclopedia of Industrial Chemistry, this three-volume handbook provides a wealth of information on economically important basic foodstuffs, raw materials, additives, and processed foods, including a section on animal feed. It brings together the chemical and physical characteristics, production processes and production figures, main uses, toxicology and safety information in one single resource. More than 40 % of the content has been added or updated since publication of the 7th edition of the Encyclopedia in 2011 and is available here in print for the first time. The result is a "best of Ullmann's", bringing the vast knowledge to the desks of professionals in the food and feed industries.

CHEESE: CHEMISTRY, PHYSICS AND MICROBIOLOGY, VOLUME 1

GENERAL ASPECTS

Academic Press V. 1. General aspects -- v. 2. Major cheese groups.

PROTEINS IN FOOD PROCESSING

Elsevier Proteins are essential dietary components and have a significant effect on food quality. Edited by a leading expert in the field and with a distinguished international team of contributors Proteins in food processing reviews how proteins may be used to enhance the nutritional, textural and other qualities of food products. After two introductory chapters, the book discusses sources of proteins, examining the caseins, whey, muscle and soy proteins and proteins from oil-producing plants, cereals and seaweed. Part two illustrates the analysis and modification of proteins, with chapters on testing protein functionality, modelling protein behaviour, extracting and purifying proteins and reducing their allergenicity. A final group of chapters are devoted to the functional value of proteins and how they are used as additives in foods. Proteins in food processing is a comprehensive and authoritative reference for the food processing industry. Reviews the wide range of protein sources available Examines ways of modifying protein sources Discusses the use of proteins to enhance the nutritional, textural and other qualities of food products

APPLIED FOOD PROTEIN CHEMISTRY

John Wiley & Sons Food proteins are of great interest, not only because of their nutritional importance and their functionality in foods,

but also for their detrimental effects. Although proteins from milk, meats (including fish and poultry), eggs, cereals, legumes, and oilseeds have been the traditional sources of protein in the human diet, potentially any proteins from a biological source could serve as a food protein. The primary role of protein in the diet is to provide the building materials for the synthesis of muscle and other tissues, and they play a critical role in many biological processes. They are also responsible for food texture, color, and flavor. Today, food proteins are extracted, modified, and incorporated into processed foods to impart specific functional properties. They can also have adverse effects in the diet: proteins, such as walnuts, pecans, almonds, and cashews, soybean, wheat, milk, egg, crustacean, and fish proteins can be powerful allergens for some people. Applied Food Protein Chemistry is an applied reference which reviews the properties of food proteins and provides in-depth information on important plant and animal proteins consumed around the world. The book is grouped into three sections: (1) overview of food proteins, (2) plant proteins, and (3) animal proteins. Each chapter discusses world production, distribution, utilization, physicochemical properties, and the functional properties of each protein, as well as its food applications. The authors for each of the chapters are carefully selected experts in the field. This book will be a valuable reference tool for those who work on food proteins. It will also be an important text on applied food protein chemistry for upper-level students and graduate students of food science programs.

HANDBOOK OF DAIRY FOODS AND NUTRITION

CRC Press Once again the National Dairy Council has produced the industry reference on the important role of dairy foods in health. Packed with the latest information from the Council's notable scientists, the Handbook of Dairy Foods and Nutrition, Third Edition makes the case for the beneficial role of dairy foods in a variety of conditions and disea

FUNCTIONAL AND SPECIALITY BEVERAGE TECHNOLOGY

Elsevier As consumer demand for traditional carbonated drinks falls, the market for beverages with perceived health-promoting properties is growing rapidly. Formulating a nutritional, nutraceutical or functional beverage with satisfactory sensory quality and shelf-life can be challenging. This important collection reviews the key ingredients, formulation technology and health effects of the major types of functional and speciality beverage. Chapters in part one consider essential ingredients such as stabilizers and sweeteners, and significant aspects of formulation such as fortification technology and methods to extend shelf-life. Dairy-based beverages are the focus of Part two, with chapters covering methods to improve the nutritional and sensory quality and technological functionality of milk, a crucial ingredient in many healthful beverages. Chapters on newer dairy ingredients, such as whey and milk-fat globule membrane complete the section. Part three then reviews advances in the significant plant-based beverage sector, with

chapters on popular products such as fruit juices, sports drinks, tea and coffee. Soy proteins are also covered. Chapters on product development and the role of beverages in the diet complete the volume. With its distinguished editor and contributors, Functional and speciality beverage technology is an essential collection for professionals and academics interested in this product sector. Reviews the key ingredients, formulation technology and health effects of the major types of functional and speciality beverages Essential ingredients such as stabilizers and sweeteners, and significant aspects of formulation such as fortification technology and methods to extend shelf-life are considered Focuses on methods to improve the nutritional and sensory quality and technological functionality of milk

EFFECT OF MILK FAT GLOBULE SIZE ON THE PHYSICAL FUNCTIONALITY OF DAIRY PRODUCTS

Springer Effect of Milk Fat Globule Size on the Physical Functionality of Dairy Products provides a comprehensive overview of techniques utilized to vary milk fat globule size in fat-structured dairy products. The text aims to highlight the importance of both native and emulsified milk fat globule size in the processing and functionality of these products. Both herd managements strategies and fractionation techniques utilized to vary milk fat globule size are covered thoroughly, as are the effects of mechanical sheer processing. The influence of different size fat globules on aspects such as TAG composition, physical stability, viscosity, crystallization properties and electric conductivity are studied, as are the influences on processability and function. This Brief aims to highlight the importance of milk fat as a determinant of the microstructural, rheological and sensorial properties of fat-containing dairy products such as milk, cream, yogurt, ice cream, cheese, butter and milk chocolate. Since milk fat globules have a widely varied size distribution, controlling their size is of major importance in processing. In comprehensively covering the various methods used to vary milk fat globule size, this text serves as an important resource for those involved in dairy product processing.

HANDBOOK OF FOOD SCIENCE, TECHNOLOGY, AND ENGINEERING - 4 VOLUME SET

CRC Press Advances in food science, technology, and engineering are occurring at such a rapid rate that obtaining current, detailed information is challenging at best. While almost everyone engaged in these disciplines has accumulated a vast variety of data over time, an organized, comprehensive resource containing this data would be invaluable to have. The

BYPRODUCTS FROM AGRICULTURE AND FISHERIES

ADDING VALUE FOR FOOD, FEED, PHARMA AND FUELS

John Wiley & Sons Ranging from biofuels to building materials, and from cosmetics to pharmaceuticals, the list of products that may be manufactured using discards from farming and fishery operations is extensive. Byproducts from Agriculture and Fisheries examines the procedures and technologies involved in this process of reconstitution, taking an environmentally aware approach as it explores the developing role of value-added byproducts in the spheres of food security, waste management, and climate control. An international group of authors contributes engaging and insightful chapters on a wide selection of animal and plant byproducts, discussing the practical business of byproduct recovery within the vital contexts of shifting socio-economic concerns and the emergence of green chemistry. This important text: Covers recent developments, current research, and emerging technologies in the fields of byproduct recovery and utilization Explores potential opportunities for future research and the prospective socioeconomic benefits of green waste management Includes detailed descriptions of procedures for the transformation of the wastes into of value-added food and non-food products With its combination of practical instruction and broader commentary, Byproducts from Agriculture and Fisheries offers essential insight and expertise to all students and professionals working in agriculture, environmental science, food science, and any other field concerned with sustainable resources.

LACTOSE AND LACTOSE DERIVATIVES

BoD – Books on Demand Lactose is a unique disaccharide found exclusively in the milk of mammals. This sugar has a crucial role in nourishing newborn and young mammals; however, some adults have difficulties in fully metabolizing lactose. Despite lactose intolerance in the population, the dairy industry produces 400,000 tons of crystalline lactose worldwide. The food and pharmaceutical industries use lactose as well as lactose derivatives in a wide variety of products. This book reviews some aspects of lactose properties and synthesis as well as recent advances in the recovery of lactose and lactose derivatives from cheese whey.

SWEETENERS

NUTRITIONAL ASPECTS, APPLICATIONS, AND PRODUCTION TECHNOLOGY

CRC Press Sweeteners: Nutritional Aspects, Applications, and Production Technology explores all essential aspects of sugar-based, natural non-sugar-based, and artificial sweeteners. The book begins with an overview presenting general effects, safety, and nutrition. Next, the contributors discuss sweeteners from a wide range of scientific and lifestyle perspectives. Topics include: The chemistry and functional properties of monosaccharides, oligosaccharides, polysaccharides, and sugar polyols Analytical methodologies for

determining low-calorie nonnutritive sweeteners Honey, syrups, and their physicochemical aspects and applications Sweeteners such as "sykin" and raisin, prune, apple, and grape juice concentrate Quality control, production, handling, storage, safety, legislation, and risk assessment of sweeteners The impact of sweeteners and sugar alternatives on nutrition and health Environmental and health concerns from the use of genetically modified (GM) herbicide-tolerant sugar beets and GM high fructose corn syrup Inulin and oligofructose as soluble dietary fibers derived from chicory root As manufacturers strive to produce healthier and safer products with better taste, new avenues of inquiry are opening up with respect to both the sources and the processing of sweeteners. This volume provides a solid starting point for researchers and product developers in the food and beverage industry.

UNDERSTANDING AND CONTROLLING THE MICROSTRUCTURE OF COMPLEX FOODS

Elsevier It is widely accepted that the creation of novel foods or improvement of existing foods largely depends on a strong understanding and awareness of the intricate interrelationship between the nanoscopic, microscopic and macroscopic features of foods and their bulk physiochemical properties, sensory attributes and healthfulness. With its distinguished editor and array of international contributors, Understanding and controlling the microstructure of complex foods provides a review of current understanding of significant aspects of food structure and methods for its control. Part one focuses on the fundamental structural elements present in foods such as polysaccharides, proteins and fats and the forces which hold them together. Part two discusses novel analytical techniques which can provide information on the morphology and behaviour of food materials. Chapters cover atomic force microscopy, image analysis, scattering techniques and computer analysis. Chapters in part three examine how the principles of structural design can be employed to improve performance and functionality of foods. The final part of the book discusses how knowledge of structural and physicochemical properties can be implemented to improve properties of specific foods such as ice-cream, spreads, protein-based drinks, chocolate and bread dough. Understanding and controlling the microstructure of complex foods is an essential reference for industry professionals and scientists concerned with improving the performance of existing food products and inventing novel food products. Reviews the current understanding of significant aspects of food structure and methods for its control Focuses on the fundamental structural elements present in foods such as proteins and fats and the forces that hold them together Discusses novel analytical techniques that provide information on the morphology and behaviour of food materials

GLOBAL CHEESEMAKING TECHNOLOGY

CHEESE QUALITY AND CHARACTERISTICS

John Wiley & Sons Global Cheesemaking Technology: Cheese Quality and Characteristics reviews cheesemaking practices, and

describes cheeses and the processes from which they are manufactured. In addition, the book examines new areas to stimulate further research in addition to the already established knowledge on the scientific principles on cheesemaking. Part I provides an account on the history of cheese, factors influencing the physicochemical properties, flavour development and sensory characteristics, microbial ecology and cheese safety, traceability and authentication of cheeses with protected labels, and traditional wooden equipment used for cheesemaking, while an overview of the cheesemaking process is also presented. Part II describes 100 global cheeses from 17 countries, divided into 13 categories. The cheeses described are well-known types produced in large quantities worldwide, together with some important locally produced, in order to stimulate scientific interest in these cheese varieties. Each category is presented in a separate chapter with relevant research on each cheese and extensive referencing to facilitate further reading.

DAIRY INGREDIENTS FOR FOOD PROCESSING

John Wiley & Sons "Unique in its perspective and scope, Dairy Ingredients for Food Processing gives a complete description of various dairy ingredients commonly used in food processing operations. Information is conveniently grouped under two sections. Section 1. Dairy Ingredients: Basic Technology includes chapters covering an overview of the milk composition, physical, chemical and functional properties, and basic dairy processing principles to describe how various ingredients are engineered for functional quality related to food processing. Additional chapters highlight production and specifications of various condensed milk products, dry milk products, and whey products. Other chapters address milk fat concentrates (cream, butter, and anhydrous butterfat), processing and specifications of cheese and cheese products, enzyme modified cheese, cheese sauce and dry cheese products, and fermented dairy ingredients. Information is provided on microbiological considerations relative to dairy processing, nutrition and health, frozen dairy ingredients, and dairy desserts as well as labeling and regulatory compliance.Coverage in Section 2. Dairy Ingredients: Applications describes the applied aspects of using dairy ingredients in food products such as bakery products, chocolatesand confectionery, snack foods, meats, sauces, dressings, desserts, infant formulas, puddings, and functional foods. Shelf life and safety issues are also addressed. All technology and applications chapters are supported by sound scientific and engineering principles. The book presents a contemporary update and a unique approach to the topics, and is designed to augment related books in the existing market. The editorial team is comprised of individuals with significant experience in the science and applications of dairy products manufacture as well their industrial use in various food products. Intended for professionals in the dairy and food industry, Dairy Ingredients for Food Processing also appeals to professors and students in food science for its contemporary information and experience-based applications"--

DAIRY FAT PRODUCTS AND FUNCTIONALITY

FUNDAMENTAL SCIENCE AND TECHNOLOGY

Springer Nature This work highlights a new research area driven by a material science approach to dairy fats and dairy fat-rich products where innovative dairy products and ingredients can be tailor-made. Cutting edge topics such as tribology of dairy fats and dairy products, manipulation of differentiated-sized milk fat globules, milk fat interesterification for infant formula, structuring of lipids in dairy products and production of human milk fat substitutes by including dairy fats are featured in dedicated chapters authored by international scientific experts from across the globe. The text also presents in-depth research on proteomic characterization, digestion and the nutritional functionality of milk fat globule membrane. The biosynthesis, chemistry, digestion and nutritional roles of milk lipids, physics of dairy fats, structure and functionality of the milk fat globule membrane, analytical methods, materials science, technology and manufacturing of dairy fat-rich products such as butter, dairy fat spreads, dairy creams, cream powders and ghee are also covered in-depth. Dairy Fat Products and Functionality: Fundamental Science and Technology is a useful reference text for technologists and scientists interested in advancing their fundamental knowledge of dairy fat and dairy products as well as using a materials science and technology approach to guide efforts or widen research opportunities in optimizing the functionality of these products. From their physics and chemistry to their nutritional values and methodologies, this comprehensive and innovative text covers all the necessary information needed to understand the new methods and technologies driving the modern production of milk fat products.

TECHNIQUES TO MEASURE FOOD SAFETY AND QUALITY

MICROBIAL, CHEMICAL, AND SENSORY

Springer Nature This book addresses the basic understanding of food contaminants and their sources, followed by the techniques to measure food safety and quality. It is divided into four parts: Part A - sources of contaminants in foods, their associated health risks, and integrated management and alternative options to minimize contaminants; Part B - Technological assessment of conventional methods and selected advanced methods for the detection, identification and enumeration of microbial contaminates; Part C - Technological assessment of different chemical measurements techniques; and Part D – Technological assessment of different instrumental techniques to assess sensory properties of foods. Food safety is a growing concern due to the increase in food-borne illnesses caused by food adulteration, excessive use of pesticides, use of chemical preservatives and artificial fruit ripening agents,

microbial contaminations, and improper food handling. Chemical contaminants in food could be transferred from environmental or agrochemical sources, personal care products, and other by-products of water disinfects. In addition, microbial food safety can be threatened due to the presence of many pathogens, such as Salmonella, Escherichia coli, Clostridium botulinum, Staphylococcus aureus, and Listeria monocytogenes in foods. Globally, strict regulations are imposed to limit the potential contaminants in foods. Development of accurate, rapid, and inexpensive approaches to test food contamination and adulteration would be highly valued to ensure global food safety. There are existing processes to ensure safety of food products from chemical and microbial contaminants. Apart from the existing measurement technologies, varieties of new techniques are also being emerged and these could be potential to ensure food safety and quality. In addition to chemical and microbial properties, sensory properties such as texture, mouth feel, flavor, and taste, are among the most important attributes of food products to ensure their acceptability by consumers. Two approaches are available to evaluate sensory properties of food products, namely subjective and objective analyses. The responses are perceived by all five senses: smell, taste, sight, touch, and hearing. The approach used in sensory evaluation varies depending on the types of foods and the ultimate goal of the testing. Sensory attributes are the most important quality parameters after ensuring the safety of foods.

STRUCTURE OF DAIRY PRODUCTS

John Wiley & Sons Structure of Dairy Products SOCIETY OF DAIRY TECHNOLOGY SERIES Edited by A. Y. Tamime The Society of Dairy Technology (SDT) has joined with Blackwell Publishing to produce a series of technical dairy-related handbooks providing an invaluable resource for all those involved in the dairy industry; from practitioners to technologists working in both traditional and modern large-scale dairy operations. The previous 30 years have witnessed great interest in the microstructure of dairy products, which has a vital bearing on, e.g. texture, sensory qualities, shelf life and packaging requirements of dairy foods. During the same period, new techniques have been developed to visualise clearly the properties of these products. Hence, scanning electron microscopy (SEM) and transmission electron microscopy (TEM) have been used as complimentary methods in quality appraisal of dairy products, and are used for product development and in trouble shooting wherever faults arise during manufacturing. Structure of Dairy Products, an excellent new addition to the increasingly well-known and respected SDT series, offers the reader: • information of importance in product development and quality control • internationally known contributing authors and book editor • thorough coverage of all major aspects of the subject • core, commercially useful knowledge for the dairy industry Edited by Adnan Tamime, with contributions from international authors, this book is an essential purchase for dairy scientists and technologists, food scientists and technologists, food chemists, physicists, rheologists and microscopists. Libraries in all universities and research establishments teaching and researching in these areas should have copies of this important work on their shelves.

FOOD PROCESSING: STRATEGIES FOR QUALITY ASSESSMENT

Springer The aim of the food processing is to ensure microbiological and chemical safety of foods, adequate nutrient content and bioavailability and acceptability to the consumer with regard to sensory properties and ease of preparation. Processing may have either beneficial or harmful effects on these properties, so each of these factors must be taken into account in the design and preparation of foods. This book offers a unique dealing with the subject and provides not only an update of state-of-the art techniques in many critical areas of food processing and quality assessment, but also the development of value added products from food waste, safety and nanotechnology in the food and agriculture industry and looks into the future by defining current obstacles and future research goals. This book is not intended to serve as an encyclopedic review of the subject. However, the various chapters incorporate both theoretical and practical aspects and may serve as baseline information for future research through which significant development is possible.

ENCYCLOPEDIA OF DAIRY SCIENCES

Academic Press Dairy Science includes the study of milk and milk-derived food products, examining the biological, chemical, physical, and microbiological aspects of milk itself as well as the technological (processing) aspects of the transformation of milk into its various consumer products, including beverages, fermented products, concentrated and dried products, butter and ice cream. This new edition includes information on the possible impact of genetic modification of dairy animals, safety concerns of raw milk and raw milk products, peptides in milk, dairy-based allergies, packaging and shelf-life and other topics of importance and interest to those in dairy research and industry. Fully reviewed, revised and updated with the latest developments in Dairy Science Full color inserts in each volume illustrate key concepts Extended index for easily locating information

CHEESEMAKING PRACTICE

Springer Science & Business Media When the late Reg Scott wrote the first edition of this book in 1981, his intention was 'to produce a script generally interesting to those readers requiring more information on cheese'. It was not conceived as a book that covered the most recent developments with respect to lipid or protein chemistry, for example, but rather it was hoped that the text would reveal cheesemaking as a fascinating, and yet technically demanding, branch of dairy science. The fact that the author had some 50 years' experience of cheesemaking gave the book a very special character, in that the 'art' of the traditional cheesemaker emerged as a system that, in reality, had a strong scientific basis. Today, cheesemaking remains a blend of'art and science' for, while much cheese is made in computer-controlled factories relying on strict standard ization to handle the large volumes of milk involved, the production

oftop quality cheese still relies on the innate skill of the cheesemaker. It was considered appropriate, therefore, that this revised edition ofCheesemaking Practice should include, at one end of the spectrum, details of the latest technology for curd handling and, at the other, simple recipes for the production of farmhouse cheeses. Obviously a student of dairy science will need to consult other texts in order to complete his/her knowledge of the cheesemaking process, but if this revised edition stimulates its readers to delve more deeply, then the task of updating the original manuscript will have been worthwhile.

HANDBOOK OF CHEESE IN HEALTH: PRODUCTION, NUTRITION AND MEDICAL SCIENCES

PRODUCTION, NUTRITION AND MEDICAL SCIENCES

Wageningen Academic Publishers Cheeses are one of the most diverse food commodities known. They have a wide range of regional and geographical differences in manufacture, taste, texture, colour and contribution to the diet. Because cheese is an important source of macro- and micro-nutrients it can be seen as a valuable product in human nutrition. However, some consider that traditionally manufactured cheeses may not contribute to optimal health. For this reason, there is a drive to produce types with reduced or modified fat or salt contents. Another aspect that affects human health is that cheese may also harbour harmful pathogens in some circumstances. To gain a holistic understanding of cheese in health, nutritionists and dieticians have a fundamental need to grasp the process of cheese manufacture, while cheese manufacturers benefit by understanding the health related aspects of cheese. This handbook bridges the intellectual and trans-disciplinary divide and provides a balanced overview of cheese in relation to health. Experts provide a comprehensive coverage of subjects in relation to cheese production, nutrition and medical sciences, such as composition and health benefits, toxicology, metabolic and nutritional effects and microbiology.

DICTIONARY OF FOOD INGREDIENTS

Springer Science & Business Media The Dictionary of Food Ingredients is a unique, easy-to-use source of infor mation on over 1,000 food ingredients. Like the previous editions, the new and updated Third Edition provides clear and concise information on currently used additives, including natural ingredients, FDA-approved artificial ingredients, and compounds used in food processing. The dictionary entries, organized in alphabetical order, include information on ingredient functions, chemical properties, and uses in food products. The updated and revised Third Edition contains approximately 1 SO new entries, and includes an updated and expanded bibliography. It also lists food ingredients ac cording to U. S. federal regulatory status. Users of the two previous editions have commented favorably on the dictionary's straightforward and clearly-written definitions, and we have endeavored to maintain that standard in this new edition. We trust it will continue to be a valuable reference for the food scientist, food processor, food product

developer, nutritionist, extension specialist, and student. R S. Igoe Y. H. Hui vii Ingredients A Acacia See Arabic. Acesulfame-K A non-nutritive sweetener, also termed acesulfame potas sium. It is a white, crystalline product that is 200 times sweeter than sucrose. It is not metabolized in the body. It is relatively stable as a powder and in liquids and solids which may be heated. Acesulfame-K is approved for use in dry food products. Acesulfame Potassium See Acesulfame-K.

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CHEESE PROBLEMS SOLVED

Elsevier Cheese is a unique food product which requires a significant amount of scientific knowledge to be produced successfully. However, due to the many, complex and interrelated changes which occur during cheese manufacture and ripening, it is still not possible to guarantee the production of premium quality cheese. Written by an international team of renowned contributors, Cheese problems solved provides responses to over 200 of the most frequently asked questions about cheese and the cheese-making process, in a unique and practical question-and-answer format. Opening chapters concentrate on queries regarding the preparation of cheese milk, the conversion of milk to curd, the ripening process, pathogens, cheese analysis and nutritional aspects of cheese amongst other issues. The latter half of the book discusses particular types of cheeses such as Cheddar, Grana-type cheeses, Mozzarella, Dutch-type, Swiss and Blue cheeses, to name but a few. Edited by a leading expert and with contributions from specialists

within the field, Cheese problems solved is an essential reference and problem solving manual for professionals and trainees in the cheese industry. Provides responses to over 200 of the most frequently asked questions about cheese and the cheese-making process An essential reference and problem solving manual for professionals and trainees in the cheese industry Benefit from the knowledge of leading specialists in the field

HANDBOOK OF FOOD PROCESSING, TWO VOLUME SET

CRC Press Authored by world experts, the Handbook of Food Processing, Two-Volume Set discusses the basic principles and applications of major commercial food processing technologies. The handbook discusses food preservation processes, including blanching, pasteurization, chilling, freezing, aseptic packaging, and non-thermal food processing. It describes com

HIGH TEMPERATURE PROCESSING OF MILK AND MILK PRODUCTS

John Wiley & Sons High Temperature Processing of Milk and Milk Products covers many aspects of thermal processing of milk and milk products with particular focus on UHT processing. The book begins with an overview of the major thermal processing technologies: thermisation, pasteurisation, extended-shelf-life (ESL), UHT and in-container sterilisation. It discusses the principles of the technologies, the processing and packaging equipment used, processing issues such as temperature-time profiles, heat stability, fouling and cleaning, and the quality and safety aspects of the products produced. It provides a balance of the engineering aspects of the processes and the chemical, microbiological and sensory aspects of the products. The changes that occur in products during processing and storage, and the related defects which can arise, are central to the book. The discussions of these changes will be an aid to industry personnel in identifying the causes of quality defects in these products and devising measures which can be taken to eliminate or minimise the defects. A unique feature is a chapter on analytical methodologies applicable to thermally processed dairy products. There are also chapters on high-temperature processed products other than white cows' milk, including products based on plant materials, and on non-thermal technologies which may be used in place of or as adjuncts to thermal processing. The book concludes with a chapter outlining some of the challenges with the technologies and treated products, and a compendium of relevant reviews, chapters and books.

ADVANCES IN CONJUGATED LINOLEIC ACID RESEARCH

The American Oil Chemists Society Advances in Conjugated Linoleic Acid Research, Volume 2 is the second book in a series devoted entirely to conjugated linoleic acid. This book has updated information on the analysis, biochemistry and applications of conjugated

fatty acids in an attempt to make Volume 2, in conjunction with Volume 1 (published in 1999), the most comprehensive, up-to-date sources of CLA-related information available today. Both scientific and commercial views are presented, with the same data sometimes interpreted differently.