

Handbook Of Milk Composition Food Science And Technology

Goat Science and Production presents comprehensive, state-of-the-art information on the science of goats and goat production for meat, dairy, and fiber. Chapters provide a fundamental understanding of the goat anatomy and physiology as well as production issues such as welfare, disease management, and feeding. Goat Science and Production is an essential introduction and reference to this increasingly important production animal.

This handbook of nutrition and diet provides information on food nutrients and their functions; food safety and distribution; food composition, consumption and utilization; adequacy of diet; and the nutritional management of diseases and disorders. It also discusses the effects of nutrition and diet on diseases of the bones, teeth, hair, kidneys, liver and nervous system. The first edition of Food processing technology was quickly adopted as the standard text by many food science and technology courses. This completely revised and updated third edition consolidates the position of this textbook as the best single-volume introduction to food manufacturing technologies available. This edition has been updated and extended to include the many developments that have taken place since the second edition was published. In particular, advances in microprocessor control of equipment, 'minimal' processing technologies, functional foods, developments in 'active' or 'intelligent' packaging, and storage and distribution logistics are described. Technologies that relate to cost savings, environmental improvement or enhanced product quality are highlighted. Additionally, sections in each chapter on the impact of processing on food-borne micro-organisms are included for the first time. Introduces a range of processing techniques that are used in food manufacturing Explains the key principles of each process, including the equipment used and the effects of processing on micro-organisms that contaminate foods Describes post-processing operations, including packaging and distribution logistics

Gluten-Free Cereal Products and Beverages is the only book to address gluten-free foods and beverages from a food science perspective. It presents the latest work in the development of gluten-free products, including description of the disease, the detection of gluten, and the labeling of gluten-free products as well as exploring the raw materials and ingredients used to produce gluten-free products. Identifying alternatives to the unique properties of gluten has proven a significant challenge for food scientists and for the 1% of the world's population suffering from the immune-mediated enteropathy reaction to the ingestion of gluten and related proteins, commonly known as Celiac Disease. This book includes information on the advances in working with those alternatives to create gluten free products including gluten-free beer, malt and functional drinks. Food scientists developing gluten-free foods and beverages, cereal scientists researching the area, and nutritionists working with celiac patients will find this book particularly valuable. Written by leading experts, presenting the latest developments in gluten-free products Addresses Coeliac Disease from a food science perspective Presents each topic from both a scientific and industrial point of view

The preservation processes for foods have evolved over several centuries, but recent attention to non-thermal technologies suggests that a new dimension of change has been initiated. The new dimension to be emphasized is the emerging technologies for preservation of foods and the need for sound base of information to be developed as inputs for systematic process design. The focus of the work is on process design, and emphasizes the need for quantitative information as inputs to process design. The concepts presented build on the successful history of thermal processing of foods and use many examples from these types of preservation processes. Preservation of foods by refrigeration, freezing, concentration and dehydration are not addressed directly, but many of the concepts to be presented would apply.

Significant attention is given to the fate of food quality attributes during the preservation process and the concept of optimizing process parameters to maximize the retention of food quality. Focuses on Kinetic Models for Food Components Reviews Transport Models in Food Systems Assesses Process Design Models

"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, chocolates and 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"--

THE ONLY SINGLE-SOURCE GUIDE TO THE LATEST SCIENCE, NUTRITION, AND APPLICATIONS OF ALL THE NON-BOVINE MILKS CONSUMED AROUND THE WORLD

Featuring contributions by an international team of dairy and nutrition experts, this second edition of the popular Handbook of Milk of Non-Bovine Mammals provides comprehensive coverage of milk and dairy products derived from all non-bovine dairy species. Milks derived from domesticated dairy species other than the cow are an essential dietary component for many countries around the world. Especially in developing and under-developed countries, milks from secondary dairy species are essential sources of nutrition for humanity. Due to the unavailability of cow milk and the low consumption of meat, the milks of non-bovine species such as goat, buffalo, sheep, horse, camel, Zebu, Yak, mare and reindeer are critical daily food sources of protein, phosphate and calcium. Furthermore, because of hypoallergenic properties of certain species milk including goats, mare and camel are increasingly recommended as substitutes in diets for those who suffer from cow milk allergies. This book: Discusses key aspects of non-bovine milk production, including raw milk production in various regions worldwide Describes the compositional, nutritional, therapeutic, physio-chemical, and microbiological characteristics of all non-bovine milks Addresses processing technologies as well as various approaches to the distribution and consumption of manufactured milk products Expounds characteristics of non-bovine species milks relative to those of human milk, including nutritional, allergenic, immunological, health and cultural factors Features six new chapters, including one focusing on the use of non-bovine species milk components in the manufacture of infant formula products. Thoroughly updated and revised to reflect the many advances that have occurred in the dairy industry since the publication of the acclaimed first edition, Handbook of Milk of Non-Bovine Mammals, 2nd Edition is an essential reference for dairy

scientists, nutritionists, food chemists, animal scientists, allergy specialists, health professionals, and allied professionals.

The Book Covers Technological Innovations In Indian Dairy Products, Milk And Milk Products, Techniques Of Products And Process, Global Export Potentia L, Milk, Its Composition And Processing Characteristics, Dairy Products Ingredients, Milk Based Products (Desiccated), Heat-Acid Coagulated Products, Fat-Rich Products, Cultured/Fermented Products, Milk-Based Puddings/Desserts, Plan For Product Manufacturing, Details Of Plant And Equipments, Packaging, Processing Of Milk And Milk Products Etc.

Proteins play an important role in nutrition, taste, allergies, texture, structure, processing and yield performance. In the food industry, proteins are a key element of our diet and an important ingredient for food technologists. The total protein component of milk is composed of numerous specific proteins. Isolated milk protein products represent an important and valuable source of protein ingredients due to their recognized superior nutritional, organoleptic and functional properties. Milk protein is a rich source of essential amino acids and they have been the subject of intensive research for an effort to unravel their molecular structure and interactions, relationship between structure and functional attributes, interactions of proteins during processing and, more recently, their physiological functions. Free fatty acids (FFA) in fresh milk normally amount to less than 1% of the total milk fat, yet they are important because of their effect on milk flavour. Now a day, the processing of milk is part of a highly organized and controlled dairy industry, which produces and markets a multitude of dairy products. Functional milk proteins are perfectly suited for use in the dairy sector of food production and the modern food processing industry is placing more and more emphasis upon the utilization of protein ingredients to provide specific functional properties to a wide range of formulated foods. In recent years, there has been a great deal of progress in the understanding and management of milk proteins across the production chain. Some of the fundamentals of the book are surface tension of milk, lactose chemistry, milk proteins, phosphorylation of milk proteins, comparative aspects of milk proteins, utilization of milk proteins, heat stability of milks, heat stability of homogenized concentrated milk, lysinoalanine in milk and milk products, heat coagulation of type a milk, syneresis of heated milk, fatty acids in milk, milk gel assembly, mechanical agitation of milk, natural, leucocyte and bacterial milk, grass and legume diets and milk production. This book provides a complete overview and offers insights into topics for more in-depth reading on milk and milk proteins. The book covers chapters on milk proteins, biosynthesis & secretion of milk proteins, utilization, types of milk proteins, phosphorylation, milk glycoproteins and many more. It is hoped that this book will be very helpful to all its readers, students, new entrepreneurs, food technologist, technical institution and scientists.

Dairy foods account for a large portion of the Western diet, but due to the potential diversity of their sources, this food group often poses a challenge for food scientists and their research efforts. Bringing together the foremost minds in dairy research, Handbook of Dairy Foods Analysis compiles the top dairy analysis techniques and methodologies from around the world into one, well-organized volume. Co-Edited by Fidel Toldra - Recipient of the 2010 Distinguished Research Award from the American Meat Science Association Exceptionally comprehensive both in its detailing of methods and the range of products covered, this handbook includes tools for analyzing chemical and biochemical compounds and also bioactive peptides, prebiotics, and probiotics. It

describes noninvasive chemical and physical sensors and starter cultures used in quality control. Covers the Gamut of Dairy Analysis Techniques The book discusses current methods for the detection of microorganisms, allergens, and other adulterations, including those of environmental origin or introduced during processing. Other methodologies used to evaluate color, texture, and flavor are also discussed. Written by an International Panel of Distinguished Contributors Under the editorial guidance of renowned authorities, Leo M.L. Nollet and Fidel Toldrá, this handbook is one of the few references that is completely devoted to dairy food analysis – a extremely valuable reference for those in the dairy research, processing, and manufacturing industries. The accelerated globalization of the food supply, coupled with toughening government standards, is putting global food production, distribution, and retail industries under a high-intensity spotlight. High publicity cases about foodborne illnesses over recent years have heightened public awareness of food safety issues, and momentum has been building to find new ways to detect and identify foodborne pathogens and eliminate food-related infections and intoxications. This extensively revised Third Edition covers how the incidence and impact of foodborne diseases is determined, foodborne intoxications with an introduction that notes common features among these diseases and control measures that are applicable before and after the basic foodstuff is harvested. * A summary of the foods most association with human infections * A discussion of the principles of laboratory detection of the agent considering the advantages and disadvantages of various procedure * A 'historical to present-day' section * A description of the infection in humans and animals, including reservoirs and the mode of transmission

This is the second edition of a successful title first published in 1983 and now therefore a decade out of date. The authors consider the development of the right package for a particular food in a particular market, from the point of view of the food technologist, the packaging engineer and those concerned with marketing. While the original format has been retained, the contents have been thoroughly revised to take account of the considerable advances made in recent years in the techniques of food processing, packaging and distribution. While efficient packaging is even more a necessity for every kind of food, whether fresh or processed, and is an essential link between the food producer and the consumer, the emphasis on its several functions has changed. Its basic function is to identify the product and ensure that it travels safely through the distribution system to the consumer. Packaging designed and constructed solely for this purpose adds little or nothing to the value of the product, merely preserving farm or processor freshness or preventing physical damage, and cost effectiveness is the sole criterion for success. If, however, the packaging facilitates the use of the product, is reusable or has an after-use, some extra value can be added to justify the extra cost and promote sales. Many examples of packaging providing such extra value can be cited over the last decade.

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

In recent years, the formation and impacts of biofilms on dairy manufacturing have been studied extensively, from the effects of microbial enzymes produced during transportation of raw milk to the mechanisms of biofilm formation by thermophilic spore-forming bacteria. The dairy industry now has a better understanding of biofilms and of approaches that may be adopted to reduce the impacts that biofilms have on manufacturing efficiencies and the quality of dairy products. *Biofilms in the Dairy Industry* provides a comprehensive overview of biofilm-related issues facing the dairy sector. The book is a cornerstone for a better understanding of the current science and of ways to reduce the occurrence of biofilms associated with dairy manufacturing. The introductory section covers the definition and basic concepts of biofilm formation and development, and provides an overview of problems caused by the occurrence of biofilms along the dairy manufacturing chain. The second section of the book focuses on specific biofilm-related issues, including the quality of raw milk influenced by biofilms, biofilm formation by thermophilic streptococci and thermophilic spore-forming bacteria in dairy manufacturing plants, the presence of pathogens in biofilms, and biofilms associated with dairy waste effluent. The final section of the book looks at the application of modelling approaches to control biofilms. Potential solutions for reducing contamination throughout the dairy manufacturing chain are also presented. Essential to professionals in the global dairy sector, *Biofilms in the Dairy Industry* will be of great interest to anyone in the food and beverage, academic and government sectors. This text is specifically targeted at dairy professionals who aim to improve the quality and consistency of dairy products and improve the efficiency of dairy product manufacture through optimizing the use of dairy manufacturing plant and reducing operating costs. This informative treatise offers a concise collection of existing, expert data summarizing the composition of milk. The *Handbook of Milk Composition* summarizes current information on all aspects of human and bovine milk, including: sampling, storage, composition, as well as specific chapters on major and minor components such as protein, carbohydrates, lipids, electrolytes, minerals, vitamins and hormones. The book also features comprehensive coverage of compartmentation, host-defense components, factors affecting composition, composition of commercial formulas, and contaminants. * Reliable data on the composition of human and bovine milks. * Discusses the many factors affecting composition. * Composition tables make up 25-30% of the total book. * Problems concerning sampling and analysis are described. * Should appeal equally to industry and academia. * Also of interest to developing countries in need of information on infant nutrition and agricultural development 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 disease. This text discusses a wide range of print and electronic media to locate hard-to-find documents, navigate poorly indexed subjects and investigate specific research topics and subcategories. It includes a chapter on grey and extension literature covering technical reports and international issues.

Statistical Methods in Food and Consumer Research, Second Edition, continues to be the only book to focus solely on the statistical techniques used in sensory testing of foods, pharmaceuticals, cosmetics, and other consumer products. This new edition includes the most recent applications of statistical methods, and features significant updates as well as two new chapters. Covering the application of techniques including R-index, the Bayesian approach for sensory differences tests, and preference mapping in addition to several other methodologies, this is the comprehensive reference needed by those studying sensory evaluation and applied statistics in agriculture and biological sciences. Research professionals working with food, beverages, healthcare, cosmetics, and other related areas will find the book a valuable guide to the variety of statistical methods available. Provides comprehensive coverage of statistical techniques in sensory testing Includes data compiled from real-world experiments Covers the latest in data interpretation and analysis Addresses key methods such as R-index, Thursonian Discriminal Distances, group sequential tests, beta-binomial tests, sensory difference and similarity tests, just-about-right data, signal-to-noise ratio, analysis of cosmetic data, Descriptive Analysis, claims substantiation and preference mapping

Food processing is the step of the food chain that principally affects a food's physical or biochemical properties, along with determining the safety and shelf life of the product. This book provides a comprehensive overview of innovations in non-thermal technologies specifically for fluid foods, recognized for their high bioavailability of macronutrients and micronutrients. Considerable resources and expertise has been devoted to the processing of safe and wholesome foods. Non-thermal technologies have been developed as an alternative to thermal processing, while still meeting required safety or shelf-life demands and minimising the effects on its nutritional and quality attributes. Examines non-thermal processing techniques specifically applied to fluid foods Includes methods for mathematically evaluating each technique Addresses global regulatory requirements for fluid foods Provides recommendations and opportunities for various safety-related issues

The continuously increasing human population, has resulted in a huge demand for processed and packaged foods. As a result of this demand, large amounts of water, air, electricity and fuel are consumed on a daily basis for food processing, transportation and preservation purposes. Although not one of the most heavily polluting, the food industry does contribute to the increase in volume of waste produced as well as to the energy expended to do so. For the first time, nine separate food industry categories are thoroughly investigated in Waste Management for the Food Industries in an effort to help combat this already acute problem. The current state of environmental management systems is described, offering comparisons of global legislation rarely found in other resources. An extensive review of commercial equipment, including advantages and disadvantages per employed waste management technique, offers a unique perspective for any academic, student, professional, and/or consultant in the food, agriculture and environmental industries. Thoroughly examines the most prevalent and most polluting industries such as Meat, Fish, Dairy, Olive Oil, Juice and Wine industries Includes synoptical tables [methods employed, physicochemical or microbiological parameters altered after treatment etc] and comparative figures of the effectiveness of various waste management methods Contains nearly 2500 of the most up-to-date references available Globalization of the nutraceutical and functional food industries presents significant challenges, not the least of which is the regulatory variance between countries active in the marketplace.

Nutraceutical and Functional Food Regulations in the United States and Around the World has been written by eminent experts in the field with the specific intention of addressing these important considerations. Beginning with insights into the scope, importance and growing opportunities in these industries, the book demonstrates the global scenario on the acceptance and demand for nutraceuticals and functional foods. It explores the regulatory hurdles and claim substantiation of these foods and dietary supplements, as well as the intricate aspects of manufacturing procedures. Including regulations from South America, Canada, European Union, Australia, New Zealand, Africa, Japan, Korea, China, India and Southeast Asia as well as the United States, Nutraceutical and Functional Food Regulations in the United States and Around the World provides a valuable resource for understanding the key considerations of operating in this rapidly expanding area. Overview of nutraceutical and functional food regulations around the world Discusses the important of GRAS status and DSHEA regulations Provides insight on quality manufacturing techniques, cGMP and standardized analytical techniques Includes salient features on overcoming regulatory hurdles Addresses the importance of safety, efficacy and human clinical studies for worldwide acceptance Highlights anti-terrorism safety assurance through traceability Explores the significance of intellectual property, trademark and branding on marketing

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

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.

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.

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.

Functional foods offer specific benefits that enhance life and promote longevity, and the active compounds responsible for these favorable effects can be analyzed through a range of techniques. Handbook of Analysis of Active Compounds in Functional Foods presents a full overview of the analytical tools available for the analysis of active ingredien

This two-volume handbook supplies food chemists with essential information on the physical and chemical properties of nutrients, descriptions of analytical techniques, and an assessment of their procedural reliability. The new edition includes two new chapters that spotlight the characterization of water activity and the analysis of inorganic nutrients, and provides authoritative rundowns of analytical techniques for the sensory evaluation of food, amino acids and fatty acids, neutral lipids and phospholipids, and more. The leading reference work on the analysis of food, this edition covers new topics and techniques and reflects the very latest data and methodological advances in all chapters.

Handbook of Milk Composition Elsevier

This fourth edition of this successful textbook succinctly presents the engineering concepts and unit operations used in food processing, in a unique blend of principles with applications. Depth of coverage is very high. The authors use their many years of teaching to present food engineering concepts in a logical progression that covers the standard course curriculum. Both are specialists in engineering and world-renowned. Chapters describe the application of a particular principle followed by the quantitative relationships that define the related processes, solved examples and problems to test understanding. Supplemental processes including filtration, sedimentation,

centrifugation, and mixing Extrusion processes for foods Packaging concepts and shelf life of foods Expanded information on Emerging technologies, such as high pressure and pulsed electric field; Transport of granular foods and powders; Process controls and measurements; Design of plate heat exchangers; Impact of fouling in heat transfer processes; Use of dimensional analysis in understanding physical phenomena

This authoritative reference covers food-manufacturing principles, and details the processing and manufacturing of products in the fields of: Health, Meat, Milk, Poultry, Seafood, and Vegetables. * Includes an overview of food manufacturing principles *

Presents details of commercial processing for each commodity including (where appropriate) a general introduction, ingredients, technologies, types and evaluation of industrial products, special problems, types and evaluation of consumer products, and processing and product trends * For each commodity, information includes the details of commercial processing of several representative foods.

Completely revised, this new edition updates the chemical and physical properties of major food components including water, carbohydrates, proteins, lipids, minerals vitamins and enzymes. Chapters on color, flavor and texture help the student understand key factors in the visual and organoleptic aspects of food. The chapter on contaminants and additives provides an updated view of their importance in food safety. Revised chapters on beer and wine production, and herbs and spices, provide the student with an understanding of the chemistry associated with these two areas which are growing rapidly in consumer interest. New to this edition is a chapter on the basics of GMOs. Each chapter contains new tables and illustrations, and an extensive bibliography, providing readers with ready access to relevant literature and links to the internet where appropriate. Just like its widely used predecessors, this new edition is valuable as a textbook and reference.

Risk Management for Food Allergy is developed by a team of scientists and industry professionals who understand the importance of allergen risk assessment and presents practical, real-world guidance for food manufacturers. With more than 12 million Americans suffering from food allergies and little indication of what is causing that number to continue to grow, food producers, packagers and distributors need to appropriately process, label and deliver their products to ensure the safety of customers with allergic conditions. By identifying risk factors during processing as well as determining appropriate "safe" thresholds of ingredients, the food industry must take increasingly proactive steps to avoid direct or cross-contamination as well as ensuring that their products are appropriately labeled and identified for those at risk. This book covers a range of critical topics in this area, including the epidemiology of food allergy, assessing allergen thresholds and risk, specifics of gluten management and celiac disease, and much more. The practical advice on factory risk management, catering industry practices, allergen detection and measurement and regulatory controls is key for food industry professionals as well as regulators in government and other public bodies. Science-based insights into the potential risks of food allergens Focused section on determining thresholds Practical guidance on food allergen risk management, including case studies

Understanding what the consumer wants and will accept are two of the most significant hurdles faced by anyone in new product development. Whether the concern is the proper mouth-feel of a potato chip, the sense of freshness" evoked by a chewing gum, or the weight and texture of a

cosmetic, if the consumer doesn't find the product acceptable, it won't sell. Sensory evaluation testing is the process that establishes the consumer acceptability of a product. It can help identify issues before general production is begun and potentially bring to light issues that hadn't previously been considered a factor in the success of the project. Emphasizes the importance of a scientific sensory methodology used to measure and understand consumer perception Illustrates the importance of planning, managing, and communicating product sensory information in a way that is actionable to developers and marketers Presents demonstrated methods for test selection, application and measurement, and testing with the right consumer, including more typical usage environments Includes worked examples for interpreting and displaying results

No one can deny the fact that the cow is the primary dairy animal species to provide humans with nutritious dairy foods through its abundance of lacteal secretion. The goat or other minor dairy species will never be able to compete with the cow in terms of the volume of milk production. Yet, the contribution of milks from other secondary domesticated dairy species to the survival and well-being of mankind around the world is immense and invaluable. Testament to the importance of non-bovine milk is that more people drink the milk of goats than that of any other single species in the world. In developing and under-developed counties, the secondary dairy species play a crucial role in supplying the food and nutritional needs of the people in those regions. Due to the unavailability of cow milk and the low consumption of meat, the milks of minor species such as goat, buffalo, sheep, and camel are critical daily food sources of protein, phosphate and calcium. Furthermore, because of important and inherent hypoallergenic properties, milks of certain species such as goat milk have been recommended as substitutes in diets for those with cow milk allergies. Editors Park and Haenlein have assembled dairy and nutrition experts from around the world to contribute to the Handbook of Milk of Non-Bovine Mammals. Secondary dairy species addressed are the goat, sheep, buffalo, mare, camel, yak, deer (reindeer), sow, llama, alpaca, moose, musk ox, caribou, ass, elk, pinniped, polar bear and human. The book comprehensively covers the most important aspects of milk production including: trends and methods of raw milk production in different regions; compositional, nutritional, therapeutic, physico-chemical, and microbiological characteristics of the milks; processing technology; and types, distribution and consumption of the manufactured products from minor species milks. Of special note is coverage comparing specific human health attributes of milk from the various species, including nutritional, allergenic, immunological, and cultural factors. Because secondary dairy species have such a significant impact on human well-being and survival in many parts of the world, the Handbook of Milk of Non-Bovine Mammals is an essential reference book of leading-edge information for dairy scientists, nutritionists, food chemists, allergy specialists, health professionals, and allied professionals.

Milk is the one food that sustains life and promotes growth in all newborn mammals, including the human infant. By its very nature, milk is nutritious. Despite this, it has received surprisingly little attention from those interested in the cultural impact of food. In this fascinating volume, Stuart Patton convincingly argues that milk has become of such importance and has so many health and cultural implications that everyone should have a basic understanding of it. This book provides this much-needed introduction. Patton's approach to his subject is comprehensive. He begins with how milk is made in the lactating cell, and proceeds to the basics of cheese making and ice cream manufacture. He also gives extensive consideration to human milk, including breasts, lactation, and infant feeding. Pro and con arguments about the healthfulness of cows' milk are discussed at length and with documentation. Patton explores the growing gap between the public's impressions of milk, and known facts about milk and dairy foods. He argues that the layperson's understanding of milk has deteriorated as a result of propaganda from activists anxious to destroy milk's favorable image, misinformation in the

media, and scare implications from medical research hypotheses. Stuart Patton is professor emeritus of food science at Pennsylvania State University.

The rapidly expanding field of food safety includes many new developments in the understanding of the entire range of toxic compounds found in foods -- whether naturally occurring or having been introduced by industry or food processing methods. This 2e of Introduction to Food Toxicology explores these developments while continuing to provide a core understanding of the basic principles of food toxicology. Solid-phase extraction, immunoassay, and LC/MS Mechanisms of regulation of xenobiotic activation and deactivation Developments in the modes of action and impact of natural toxins in food plants A comprehensive review of the issues surrounding dioxins The function of antioxidants and their toxicological aspects Acrylamide, its occurrence, toxicity and regulation on its use Phytochemicals, their beneficial effects and the modes of action of this growing group of nutraceuticals from food plants Diet and drug interactions

Texture is one of the most important attributes used by consumers to assess food quality. This quality is particularly important for the growing number of semi-solid foods from sauces and dressings to yoghurt, spreads and ice cream. With its distinguished editor and international team of contributors, this authoritative book summarises the wealth of recent research on what influences texture in semi-solid foods and how it can be controlled to maximise product quality. Part one reviews research on the structure of semi-solid foods and its influence on texture, covering emulsion rheology, the behaviour of biopolymers and developments in measurement. Part two considers key aspects of product development and enhancement. It includes chapters on engineering emulsions and gels, and the use of emulsifiers and hydrocolloids. The final part of the book discusses improving the texture of particular products, with chapters on yoghurt, spreads, ice cream, sauces and dressings. With its summary of key research trends and their practical implications in improving product quality, Texture in food Volume 1: semi-solid foods is a standard reference for the food industry. It is complemented by a second volume on the texture of solid foods. Summarises the wealth of recent research on what influences texture in semi-solid foods and how it can be controlled to maximise product quality Reviews research on the structure of semi-solid foods and its influence on texture, covering emulsion rheology, the behaviour of biopolymers and developments in measurement Considers key aspects of product development and enhancement and includes chapters on engineering emulsions and gels and the use of emulsifiers and hydrocolloids

Mineral elements are found in foods and drink of all different types, from drinking water through to mother's milk. The search for mineral elements has shown that many trace and ultratrace-level elements present in food are required for a healthy life. By identifying and analysing these elements, it is possible to evaluate them for their specific health-giving properties, and conversely, to isolate their less desirable properties with a view to reducing or removing them altogether from some foods. The analysis of mineral elements requires a number of different techniques -- some methods may be suitable for one food type yet completely unsuited to another. The Handbook of Mineral Elements in Food is the first book to bring together the analytical techniques, the regulatory and legislative framework, and the widest possible range of food types into one comprehensive handbook for food scientists and technologists. Much of the book is based on the authors' own data, most of which is previously unpublished, making the Handbook of Mineral Elements in Food a vital and up-to-the-minute reference for food scientists in industry and academia alike. Analytical chemists, nutritionists and food policy makers will also find it an invaluable resource. Showcasing contributions from international researchers, and constituting a major resource for our future understanding of the topic, the Handbook of Mineral Elements in Food is an essential reference and should be found wherever food science and technology are researched and taught.

The third edition of this long-serving successful reference work is a 'must-have' reference for

anyone needing or desiring an understanding of the structure, chemistry, properties, production and uses of starches and their derivatives. * Includes specific information on corn, wheat, potato, rice, and new chapters on rye, oat and barley (including waxy barley) starches * Covers the isolation processes, properties, functionalities, and uses of the most commonly used starches. * Explores the genetics, biochemistry, and physical structure of starches * Presents current and emerging application trends for starch

Dairy foods account for a large portion of the Western diet, but due to the potential diversity of their sources, this food group often poses a challenge for food scientists and their research efforts. Bringing together the foremost minds in dairy research, Handbook of Dairy Foods Analysis, Second Edition, compiles the top dairy analysis techniques and methodologies from around the world into one well-organized volume. Exceptionally comprehensive in both its detailing of methods and the range of dairy products covered, this handbook includes tools for analyzing chemical and biochemical compounds and also bioactive peptides, prebiotics, and probiotics. It describes noninvasive chemical and physical sensors and starter cultures used in quality control. This second edition includes four brand-new chapters covering the analytical techniques and methodologies for determining bioactive peptides, preservatives, activity of endogenous enzymes, and sensory perception of dairy foods, and all other chapters have been adapted to recent research. All other chapters have been thoroughly updated. Key Features: Explains analytical tools available for the analysis of the chemistry and biochemistry of dairy foods Covers a variety of dairy foods including milk, cheese, butter, yogurt, and ice cream Analysis of nutritional quality includes prebiotics, probiotics, essential amino acids, bioactive peptides, and healthy vegetable-origin compounds Includes a series of chapters on analyzing sensory qualities, including color, texture, and flavor. Covering the gamut of dairy analysis techniques, the book discusses current methods for the analysis of chemical and nutritional compounds, and the detection of microorganisms, allergens, contaminants, and/or other adulterations, including those of environmental origin or introduced during processing. Other methodologies used to evaluate color, texture, and flavor are also discussed. Written by an international panel of distinguished contributors under the editorial guidance of renowned authorities, Fidel Toldrá and Leo M.L. Nollet, this handbook is one of the few references that is completely devoted to dairy food analysis – an extremely valuable reference for those in the dairy research, processing, and manufacturing industries.

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