

Dairy Science Technology Icar

While also addressing the need for more effective processing technologies for increased safety and quantity, the dairy industry needs to address the growing customer demand for new and innovative dairy foods with enhanced nutritional value. This volume looks at new research, technology, and applications in the engineering of milk products, specifically covering functional bioactivities to add value while increasing the quality and safety of milk and fermented milk products. Chapters in the book look at the functional properties of milk proteins and cheese, functional fermented milk-based beverages, biofunctional yoghurt, antibiotic resistant pathogens, and other probiotics in dairy food products.

Processing of milk into various dairy foods, i.e. Dairy Technology is underpinned by disciplines such as chemistry and biochemistry, microbiology and process engineering. Strong emphasis on public health aspects and product quality demands that proper attention be given to the points in the production and processing chain where both pathogenic and spoilage microorganisms can be controlled effectively. Keeping above points in view, a very comprehensive book has been written encompassing entire gamuts of chemical, physical and microbiological characteristics of milk, processing and preservation of milk. The main objective of the book is to provide the latest information in a consolidated form at one point to meet the requirements of not only undergraduate and postgraduates students but also teachers and dairy professionals.

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

product developers and food processors will also benefit from this book.

Milk is nature's perfect food (lacking only iron, copper, and vitamin C) and is highly recommended by nutritionists for building healthy bodies. New technologies have emerged in the processing of milk. This new volume focuses on the processing of milk by novel techniques, emphasizing the conservation of energy and effective methods. This book is divided four parts that cover: applications of novel processing technologies in the dairy industry novel drying techniques in the dairy industry management systems and hurdles in the dairy industry energy conservation and opportunities in the dairy industry This book presents new information on the technology of ohmic heating for milk pasteurization. It goes on to provide an overview of the commercial thermal, non-thermal technologies, and hybrid technologies for milk pasteurization. There are non-thermal technologies such as pulse light, irradiation, ultra violet treatment, etc., that can be used in combination with other technologies for the processing of milk and milk products. This hybrid technology can provide multiple benefits, such extended shelf life, reduced energy costs, reduced heat treatment, and better organoleptic and sensory properties. The book also describes the different aspects of food safety management used in dairy processing. The book also looks at recent advances in microwave-assisted thermal processing of milk and the effects of microwaves on microbiological, physicochemical, and organoleptic properties of processed milk and milk products. Technological advances in value addition and standardization of the products have been reported, but well-established processes for mechanized production are recommended in the book for a uniform quality nutritious product produced under hygienic conditions. This new volume will be of interest to faculty, researchers, postgraduate students, researchers, as well as engineers in the dairy industry.

Non-thermal Processing of Foods

Dairy Technology

Microbial Cultures and Enzymes in Dairy Technology

5-volume set

Handbook of Plant and Animal Toxins in Food

Parameters and Perspectives : Essays in Honour of Prof. P.B. Mangla

The Handbook of Research on Food Processing and Preservation Technologies is a 5-volume collection that highlights various design, development, and applications of novel and innovative strategies for food processing and preservation. The roles and applications of minimal processing technologies (such as ozone treatment, vacuum drying, osmotic dehydration, dense phase carbon dioxide treatment, pulsed electric field, and high-pressure freezing) are discussed, along with a wide range of other applications. The handbook also explores some exciting computer-aided technologies in the food processing sector, such as robotics, radio frequency identification (RFID), three-dimensional food printing, artificial intelligence, and big data. An emphasis has also been given on nondestructive quality evaluation techniques (such as image processing, terahertz spectroscopy imaging, and hyperspectral imaging).

near infrared, Fourier transform infrared spectroscopy technique, etc.) for food quality and safety evaluation. The significant roles of food processing in the design of specific foods and edible films have been elucidated as well. The first volume in this set, Volume 1: Nonthermal and Innovative Food Processing Methods, provides a detailed discussion of many nonthermal food process techniques. These include high-pressure processing, pulsed electric fields, light technology, microwave-assisted extraction, high pressure assisted freezing, microencapsulation, dense phase carbon dioxide aided extraction, to name a few. Volume 2: Nonthermal Food Preservation and Novel Processing Strategies introduces several new food processing and preservation technologies that have been investigated by researchers and which have the potential to increase shelf life and preserve the quality of food. It covers nonthermal techniques such as high-pressure processing, ultrasonication of foods, microwave vacuum dehydration, thermoelectric refrigeration technology, advanced methods of encapsulation, ozonation, electrospinning, and mechanical expellers for dairy, food, and agricultural products. Volume 3: Computer-Aided Food Processing and Quality Evaluation Techniques presents a number of exciting applications of computer-aided techniques for quality evaluation and secure food quality. The chapter authors present emerging nonthermal approaches for food processing and preservation including detailed discussions on color measurement techniques, RFID, 3D-food printing, potential of robotics, artificial intelligence, terahertz spectroscopy imaging technique, instrumentation techniques and transducers, and more. Volume 4: Design and Development of Functional Foods, Packaging Systems, and Food Safety presents new research on health food formulation, advanced packaging systems, and toxicology for food safety. This book covers in detail the design of functional foods for beneficial gut microflora and microbiota; composite probiotic products; encapsulation technology for development of specific foods; edible, biodegradable, and alternative food packaging technologies; surface modification of food packaging polymers; characterization applications and safety aspects of nanomaterials used in food and dairy products; and more. Volume 5: Emerging Techniques for Food Processing, Quality, and Safety Assurance discusses various emerging techniques for food preservation, formulation, and nondestructive quality evaluation techniques. Each chapter covers major aspects pertaining to principles, applications of various food processing and nondestructive quality evaluation techniques, such as low-temperature-based ultrasonic drying, high-pressure processing, viability of high-pressure technology, pulsed electric fields in food preservation, green nanotechnology, advanced methods of food processing, the use of robotic engineering for quality and safety, and more. Together, the 5 volumes of the Handbook of Research on Food Processing and Preservation Technologies will prove to be a valuable resource for researchers, scientists, students, growers, traders, processors, and other professionals in the food processing industry.

In the recent years, considerable research has been carried out evaluating natural substances as antioxidative additives in food products. This book discusses novel combinations of antioxidants and the development of novel food products. In addition to their antioxidative capacity, these natural substances have positive effects on the human body with documented health benefits. This valuable new book provides an overview of natural antioxidative sources, methods of extraction, regulatory aspects, and application techniques, specifically focusing on different foods of animal origin and their oxidative stability.

The essential goal of Objective Food Technology: Food Microbiology is to provide complete and simplified reach out to understanding of the concept of Food microbiology to the students of the Food Technology. This book contains 06 chapters which cover short notes and multiple choice questions on the syllabus as Characteristics of microorganisms, Microbial growth: growth and death kinetics, serial dilution technique. Food spoilage microorganisms in different food products, Toxins from microbes: pathogens and non-pathogens including Staphylococcus, Salmonella, Shigella, Escherichia, Bacillus, Clostridium, and Aspergillus genera. Fermented foods and beverages. This book is also beneficial to those students preparing who are ambitious of higher studies or going to appear in competitive examination such as GATE/NET/ARS/FSSAI examination.

also valuable to the students of the Food Processing, Dairy and Food Engineering, Food Science and Technology, Process and Food Engineering, Food Technology, Dairy Science and Technology, Post-Harvest Engineering and Technology, Agricultural Structure and Process Engineering, Horticulture (specialized in Post-Harvest Technology) and Home Science (Food and Nutrition) etc., and also those are preparing for the examination such as ICAR/CSIR/UGC fellowships, NET, ARS, SRF, JRF, and for the written exam and interviews of RA/SRF/SMS/Assistant Professor, Food Safety officers, Food inspector, Public analyst and also for national and multinational food process industries and so on. The prevalence of naturally occurring toxins in plant and animal foods represents one of the most significant food safety issues, drawing the attention of both scientists and regulators alike. This unexplored area related to food quality is indeed a big concern for consumers, various regulatory authorities, and food industries. Apart from essential nutrients, several food crops are capable of producing a vast array of nonnutritive metabolic products. These toxins produced as secondary metabolites have the potential to exhibit both beneficial and deleterious effects on humans and animals. Nevertheless, there has been huge progress in agricultural practices and food processing technologies, but still the nonnutritive substances and naturally derived toxins persist in our diet. Handbook of Plant and Animal Toxins in Food: Occurrence, Toxicity, Prevention, focuses on various selected toxins in foods derived from plants as well as animals. The prominent plant toxins include solanine, chaconine, mushroom toxins, phytates, tannins, oxalates, goitrogens, gossypol, phytohemagglutinins, erucic acid, saponins, cyanogenic glycosides, enzyme inhibitors, BOAA (lathyragens), toxic amino acids and toxic fatty acids. The prominent animal toxins covered in the book include seafood toxins, shellfish toxins and biogenic amines. Key Features: Presents complete information about a plethora of toxins Provides quick access to data on major plant and animal toxins Covers distribution of toxins in the plant and animal kingdom Provides comprehensive information on the chemistry, safety and precautions of each toxin Commencing with a brief introduction of food toxins, this book is designed in such a way that readers will be introduced to toxicity, safety and occurrence of each toxin selected. It also discusses the in-depth detailed information on the prevention and its prevention. The book will also shed light on foodborne illness associated with toxins. The primary audience for this work will be food toxicologists, university scholars and college students. Furthermore, the book will be of immense help for public health officials, plant and food safety officers who are involved with enforcing regulations meant to ensure the safety of a particular food.

Nanotechnology Applications in Dairy Science

Microbiome and Metabolome in Diagnosis, Therapy, and other Strategic Applications

Annual Report - National Dairy Research Institute

Handbook of Milk of Non-Bovine Mammals

Methods, Applications, and Energy Usage

Rumen Microbiology: From Evolution to Revolution

The objective of this book is to provide complete course content of beverage processing related subjects in ICAR, CSIR and UGC institutions in Food Technology, Dairy Technology, Food & Nutrition, Post Harvest Technology, Agricultural and Food Process Engineering discipline. The book contains fourteen chapters on the topics such as Introduction to Beverages, Role of Ingredients and Additives in Beverages, Fruit Juice Processing, Processing of Specific Fruits & Vegetables Juices, Cereal Based Beverages, Soft Carbonated Beverages, Alcoholic Beverages, Dairy Based Beverages, Sports Beverages, Tea Processing, Technology of

Coffee Manufacture, Cocoa and Chocolate Based Beverages, Packaging of Beverages & Functional Beverages. The content of the book will be helpful for B.Tech, M.Tech, M.Sc. & Ph.D. students of above mentioned disciplines. These topics will also be helpful for the students preparing for competitive exams.

The objective of this book is to provide single platform for preparation of competitive examinations in Food Science and Technology discipline. The book contains over 10000 objective questions on the subjects such as Food Chemistry, Food Microbiology, Food Engineering, Dairy Technology, Fruits and Vegetables Technology, Cereals Technology, Meat Fish and Poultry Processing, Food Additives, Foods and Nutrition, Bioprocess Technology, Food Packaging, food Analysis, Functional Foods, Emerging Food Processing Technologies, Food Biochemistry and Miscellaneous topics. The book also contains 1500 subjective keynotes for above mentioned topics. Previous five years (2013-2017) ICAR NET Exam solved question papers (memory based) are also included in this addition. Special Features of the Book: 1. More than 10,000 MCQs for ASRB-NET, ICAR JRF-SRF and IIT GATE examination 2. Five years ICAR-NET solved question papers 3. Revised and updated 1500 subjective keynotes.

Contributed articles.

Milk-Based Beverages, Volume 9 in The Science of Beverages series, presents current status, developments, and technologies for researchers and developers to meet consumer demand and understand consumer trends toward healthy drinks. This resource takes a multidisciplinary approach to address issues in safety and quality control, while also discussing the nutritional and functional information that professionals in the beverage industry need. The book presents a framework for researchers, product developers, engineers, and regulators in the beverages industry for understanding new research developments in milk-based products to meet industry needs in producing competitive products. Covers the most recent advances in various milk-based products Includes a solid review of safety and hygiene for the development of new products Presents engineering techniques and applications using novel technologies

Functionality, Health Benefits, and Applications

Volume 2: Nonthermal Food Preservation and Novel Processing Strategies

Applications in Foods of Animal Origin

Fermented Milk and Dairy Products

Volume 5: Emerging Techniques for Food Processing, Quality, and Safety Assurance

Occurrence, Toxicity, and Prevention

This book focuses on advanced research and technologies in dairy processing, one of the most important branches of the food industry. It addresses various topics, ranging from the basics of dairy technology to the opportunities and challenges in the industry. Following an introduction to dairy processing, the book takes readers through various aspects of dairy engineering, such as dairy-based peptides, novel milk products and bio-fortification. It also describes the essential role of microorganisms in the industry and ways to detect them, as well as the use of prebiotics, and food safety. Lastly, the book examines the challenges faced, especially in terms of maintaining quality across the supply chain. Covering all significant areas of dairy science and processing, this interesting and informative book is a valuable resource for post-graduate students, research scholars and industry experts.

Handbook of Research on Food Processing and Preservation Technologies Volume 5: Emerging Techniques for Food Processing, Quality, and Safety Assurance CRC Press

This new volume, Nanotechnology Applications in Dairy Science, is designed to provide new insight into the utilization of nanotechnology in dairy science and food science. It focuses on applications of nanotechnology in packaging and drying of dairy and meat products, nanofiltration use in the dairy industry, and whey processing and dairy encapsulation. In addition, this book will facilitate the necessary understanding of the different aspects and concerns with regard to the new technological advances that nanotechnologies are contributing to the dairy industry. It also addresses several of the challenges that are overcome by the continuing development of nanotechnology applications in the food and dairy industries. Nanotechnology has the potential to provide healthier, safer, and better tasting foods as well as improved food packaging. It will also play a major role in food safety and agricultural sustainability. Nanotechnology application in the food industry has also contributed to the exponential progress in research and new material formulations due to its unique physicochemical properties useful to a number of other fields.

This volume takes an in-depth look at various biological and chemical hazards in food and food products that pose health threats. It also outlines methods and practices for the diagnosis, prevention, and management of these hazards in food production processes. The new scientific research and case studies presented in the volume cover mycotoxins, foodborne pathogens, antibiotic residues from dairy animals, pesticide residues, the presence of heavy metals in food, and more. Chapters also address food allergy management and offer lessons and practices in food recall situations. The authors discuss the various

food toxins, their sources, as well as management, mitigation, and prevention strategies. Also addressed are the specific adverse effects on people with health problems such as diabetes, hypertension, cancer, neurodegenerative diseases, and more. This book is organized in such a way that each chapter treats one major food safety hazard and offers novel control methods for health, food safety, and quality enhancement through various means. Biological and Chemical Hazards in Food and Food Products: Prevention, Practices, and Management will aid researchers and policymakers as it illustrates the various aspects of food safety hazards and how to analyze and control these potential health threats.

Library and Information Science

Engineering Practices for Milk Products

Processing Technologies for Milk and Milk Products

Entrepreneurship and Skill Development in Horticultural Processing

Innovative Approaches in Processing, Preservation, and Analysis of Milk Products

This book offers an in-depth description of different groups of microbes (i.e. bacteria, protozoa, fungi and viruses) that exist in the rumen microbial community, and offers an overview of rumen microbiology, the rumen microbial ecosystem of domesticated ruminants, and rumen microbial diversity. It provides the latest concepts on rumen microbiology for scholars, researchers and teachers of animal and veterinary sciences. With this goal in mind, throughout the text we focus on specific areas related to the biology and complex interactions of the microbes in rumen, integrating significant key issues in each respective area. We also discuss rumen manipulation with plant secondary metabolites, microbial feed additives, utilization of organic acids, selective inhibition of harmful rumen microbes, and 'omics' approaches to manipulating rumen microbial functions. A section on the exploration and exploitation of rumen microbes addresses topics including the current state of knowledge on rumen metagenomics, rumen: an underutilized niche for industrially important enzymes and ruminal fermentations to produce fuels. We next turn our attention to commercial applications of rumen microbial enzymes and to the molecular characterization of euryarcheal communities within an anaerobic digester. A section on intestinal disorders and rumen microbes covers acidosis in cattle, urea/ ammonia metabolism in the rumen and nitrate/ nitrite toxicity in ruminant diets. Last, the future prospects of rumen microbiology are examined, based on the latest developments in this area. In summary, the book offers a highly systematic collection of essential content on rumen microbiology. This volume focuses on food preservation prior to distribution and sale, which is a major challenge in the tropical climates of most developing nations. In order to assure that food products are safe for human

consumption, due importance must be given to the quality and safety aspects of production, processing, and distribution. This volume provides an informative overview of recent research on the therapeutic potential of various new and natural compounds along with novel technologies for enhanced shelf-life longevity and food safety. It also looks at the antimicrobial constituents of different sources and the history of their use as biopreservatives. It includes scientific evaluations of their use as alternative or potential biopreservatives. Focusing on real-life applications in consumer and food products, the book is divided into three parts, covering health and quality aspects of food preservation, applications of novel biomolecules for quality and safety of foods, and novel research techniques in food biopreservation.

Microorganisms are an integral part of the fermentation process in food products and help to improve sensory and textural properties of the products. As such, it is vital to explore the current uses of microorganisms in the dairy industry. Microbial Cultures and Enzymes in Dairy Technology is a critical scholarly resource that explores multidisciplinary uses of cultures and enzymes in the production of dairy products. Featuring coverage on a wide range of topics such as dairy probiotics, biopreservatives, and fermentation, this book is geared toward academicians, researchers, and professionals in the dairy industry seeking current research on the major role of microorganisms in the production of many dairy products. Microbiome and Metabolome in Diagnosis, Therapy, and Other Strategic Applications is the first book to simultaneously cover the microbiome and the metabolome in relevant clinical conditions. In a pioneering fashion, it addresses not only the classic intestinal environment, but also the oral, gastric, lung, skin and vaginal microbiome that is in line with the latest investigations. Nonbacterial microbiomes, such as fungi and viruses are not overlooked, and the plasma microbiome is also discussed. As plasma, brain, placenta, tumor cells, and other sterile fluids and tissues, are increasingly recognized to potentially host a microbiome, albeit a limited one, this is a timely resource. The book's editors were fortunate to have the input of renowned collaborators from nearly all continents. This is truly an international effort that brings the latest in the field to students and professionals alike. Provides comprehensive coverage on diagnosis, therapy, pharmacotherapy and disease prevention in context of the microbiome and metabolome Focuses on the proposed physiological or pathological conditions Presents an up-to-date, useful reference

Volume 9: The Science of Beverages

Dairy Processing: Advanced Research to Applications

Prevention, Practices, and Management

Handbook of Research on Food Processing and Preservation Technologies

Novel Dairy Processing Technologies

Advances in Dairy Microbial Products

Advances in Dairy Microbial Products presents a thorough reference that explains the makeup of these products in a scientifically

sound, yet simple manner. It offers both established and cutting-edge solutions on the numerous challenges commonly encountered in the industrial processing of milk and the production of milk products. It is an ideal resource for researchers and practitioners involved in dairy science, particularly those who wish to gain the most thorough and up-to-date information on dairy microbial products. In addition, it will appeal to beginners seeking to understand how advanced dairy technologies can be used to increase the efficiency of current techniques. Examines the advances of dairy products in healthcare, environment and industry Elaborates upon advanced perspectives, wide applications, traditional uses and modern practices of harnessing potential of microbial products Includes helpful illustrations of recent trends in dairy product research

The demand for quality milk products is increasing throughout the world. Food patterns are changing from eating plant protein to animal protein due to increasing incomes around the world, and the production of milk and milk products is expanding with leaps and bounds. This book presents an array of recent developments and emerging topics in the processing and manufacturing of milk and dairy products. The volume also devotes a special section on alternative energy sources for dairy production along with solutions for energy conservation. With contributions for leading scientists and researchers in the field of dairy science and technology, this valuable compendium covers innovative techniques in dairy engineering processing methods and their applications in dairy industry energy use in dairy engineering: sources, conservation, and requirements In line with the modern industrial trends, new processes and corresponding new equipment are reviewed. The volume also looks at the development of highly sensitive measuring and control devices have made it possible to incorporate automatic operation with high degree of mechanization to meet the huge demand of quality milk and milk products. Processing Technologies for Milk and Milk Products: Methods, Applications, and Energy Usage will be a valuable resource for those in those involved in the research and production of milk and milk products.

Here is a comprehensive summary of new research and advancements in the unique functional and nutraceutical therapeutic and physicochemical aspects of dairy foods. The book explores the specific health benefits of dairy ingredients in nutraceuticals and functional foods as well as delves into production techniques that enhancement their therapeutic value. The first section of the book looks at the physicochemical and technological aspects of milk-derived components, discussing production, extraction and purification, and functional and technological applications of various functional dairy ingredients (such as lactulose, casein and whey protein-derived bioactive peptides). The volume also considers the therapeutic aspects of dairy ingredients, detailing the physiological and health effects of colostrum, oligosaccharides, conjugated linoleic acid, and lactoferrin. The third section focuses on enhancing the functionality of dairy foods by assessing the functional attributes that can be augmented by the addition of nutraceuticals such as probiotics, vitamins, and minerals or by the removal of cholesterol. Functional Dairy Ingredients and Nutraceuticals: Physicochemical, Technological, and Therapeutic Aspects provides an abundance of important research on the use of dairy ingredients in functional foods and nutraceuticals that will be valued by researchers, scientists, students, growers, traders, processors, industries, and others involved with the physicochemical, technological and therapeutic aspects of various

nutraceuticals and functional dairy ingredients and their application in food and dairy industry.

The Indian economy is predominantly dependent upon Agriculture and the live stock sector contributes substantially in enhancing the income, National security, employment and even reducing the incidents of poverty amongst the rural population. The development of Dairy Science and the Dairy Scenario progressing into a viable industry since 1920, and continues the evolutionary progress should also keep pace with or even anticipate the changing conditions of the industry. Immense wealth of knowledge has been accumulated and the dairying has developed in leaps and bounds and we can conclude today that milk is delicately balanced bio-chemical fluid. The Veterinary Council of India, New Delhi has formulated and introduced a uniform syllabus and felt an urgent need for a common co-ordinated program me with a view to maintain the standards in Vet. Education throughout the country leading to BVSc and AH degree. The purpose of this text book is a sincere venture and effort to provide the basic fundamentals in a compact, simple, varied, and vivid picture of Milk and Milk products Technology comprehensively in a concise manner covering all the aspects . The sole objective of this book is aimed to help the Vet. Students; it is also beneficial to the students of Dairy Technology, Food Technology and even to the Dairy Industry as well. The text book apart from providing the basic information on the Dairy Scenario, Milk and its composition, properties, legal standards, nutritional importance, different dairy processes, technology of preparing various milk products, the microbiology of milk, quality control of milk and milk products themselves have a good buffering capacity. Thus maintaining a standard throughout the text book, necessary information has been provided lucidly in a comprehensive manner in the form of tables, flow diagrams thus enabling the authors to provide the vast accumulated data in the subject of dairying with a clarity and simplicity. Efforts have also been made by the authors to provide a practical manual to the benefit of the students and teachers in order to maintain the uniform standards

Milk and Milk Products Technology

Annual Report

Biological and Chemical Hazards in Food and Food Products

State-of-the-Art Technologies in Food Science

Dairy Engineering

Natural Antioxidants

The book mainly comprises of novel food processing techniques and the equipment requirement for installation. The book also provides the scope and opportunities of entrepreneurship in the major horticultural crops like banana, mango, pine-apple, and some under-utilized fruits and vegetables. The book also enlightens the readers about the marketing strategies, business plan preparation, safety and quality issues etc. It covers almost all important aspects of entrepreneurship development in food processing sector.

Note: T&F does not sell or distribute the hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka. This title is co-published with NIPA.

The Handbook of Research on Food Processing and Preservation Technologies covers a vast abundance of information on various design, development, and applications of novel and innovative strategies for food processing and preservation. The roles and applications of minimal processing techniques (such as ozone treatment, vacuum drying, osmotic dehydration, dense phase carbon dioxide treatment, pulsed electric field, and high-pressure assisted freezing) are discussed, along with a wide range of applications. The handbook also explores some exciting computer-aided techniques emerging in the food processing sector, such as robotics, radio frequency identification (RFID), three-dimensional food printing, artificial intelligence, etc. Some emphasis has also been given on nondestructive quality evaluation techniques (such as image processing, terahertz spectroscopy imaging technique, near infrared, Fourier transform infrared spectroscopy technique, etc.) for food quality and safety evaluation. The significant roles of food properties in the design of specific foods and edible films have been elucidated as well. Volume 5: Emerging Techniques for Food Processing, Quality, and Safety Assurance discusses various emerging techniques for food preservation, formulation, and nondestructive quality evaluation techniques. Each chapter covers major aspects pertaining to principles, design, and applications of various food processing methods, such as low temperature-based-ultrasonic drying of foods, hypobaric processing of foods, viability of high-pressure technology, application of pulsed electric fields in food preservation, green nanotechnology for food processing and preservation, advanced methods of encapsulation, basics and methods of food authentication, imaging techniques for quality inspection of spices and nuts, FTIR coupled with chemometrics for food quality and safety, and the use of robotic engineering for quality and safety. Other volumes in the 5-volume set include: Volume 1: Nonthermal and Innovative Food Processing Methods Volume 2: Nonthermal Food Preservation and Novel Processing Strategies Volume 3: Computer-Aided Food Processing and Quality Evaluation Techniques Volume 4: Design and Development of Specific Foods, Packaging Systems, and Food Safety Together with the other

volumes in the set, the Handbook of Research on Food Processing and Preservation Technologies will be a valuable resource for researchers, scientists, students, growers, traders, processors, industries, and others.

Technological innovations, customer expectations, and economical situations have been forcing the dairy industry to adapt to changes in technologies and products. The goal of this book is to present some new approaches on dairy processing. It will provide several applications on the use of some novel technologies in various dairy products, the improvement of functionalities and quality systems of dairy products, and the advances in dairy wastewater treatment. The book will be useful for both practicing professionals and researchers in the dairy field. I would like to send my sincere thanks to all the authors for their hard work and contributions.

There has been a growing interest in the health benefits derived from fruits and vegetables and the food products based on them. Many foods contain various phytochemicals, flavonoids, fibers, macronutrients and micronutrients, minerals, etc. that are good for health and essential for keeping good health. This volume provides a global perspective of the current state of food and health research, innovation, and emerging trends. It focuses on topics of food for better health, including functional foods and nutraceutical foods. The book is divided into several sections, covering:

- Foods for Human Health Promotion and Prevention of Diseases, which include fruits, vegetables, and grains: their peels and fiber for better human health, health prospects of bioactive peptides derived from seed storage proteins, mushrooms as a novel source of antihyperlipidemic agents, and emerging foodborne illnesses and their prevention.
- Specific Fruits, Spices and Dairy-Based Functional Foods for Human Health, which looks at the functional medicinal values of fenugreek, fruits as functional foods, and functional fermented dairy products.
- Issues, Challenges, and Specialty Topics in Food Science, which focuses mainly on the stability issues of whole wheat flour, physicochemical properties and quality of food lipids, methods for food analysis and quality control, and interventions of ohmic heating technology in foods.

The volume will be of interest to health practitioners, food specialists, nutrition producers and suppliers, practicing

food process engineers, food technologists, researchers, food industry professionals, and faculty and upper-level students in food science.

Report

Objective Food Science & Technology, 3rd Ed.

Guide to Science and Technology in the Asia/Pacific Area

Functional Dairy Ingredients and Nutraceuticals

Beverages : Processing and Technology

Food Technology

In this volume, several new food processing and preservation technologies have been investigated by researchers that have the potential to increase shelf life and preserve the quality of foods. This handbook introduces some emerging techniques in the food processing sector, focusing on nonthermal techniques such as high-pressure processing, ultrasonication of foods, microwave vacuum dehydration, thermoelectric refrigeration technology, advanced methods of encapsulation, ozonation, electrospinning, and mechanical expellers for dairy, food, and agricultural processing. These all have a wide range of application. The volume includes studies that show the successful application of these new technologies on a large number of juices, cheeses, yogurts, soups, egg whites and eggs, vegetable slices, purees, and milk, and the extraction, drying enhancement, and modification of enzymes are reported. This volume, part of the multi-volume Handbook of Research on Food Processing and Preservation Technologies will have tremendous application in different areas of the food industry, including food processing, preservation, safety, and quality evaluation. Other volumes of this handbook cover a wide of other emerging technologies. Handbook of Research on Food Processing and Preservation Technologies: Volume 2: Nonthermal Food Preservation and Novel Processing Strategies is an excellent reference resource for researchers, scientists, faculty and students, growers, traders, processors, industries, and others for looking for new nonthermal approaches for food processing and preservation.

Cereals, pulses, roots, and tubers are major food sources worldwide and make a substantial contribution to the intake of carbohydrates, protein, and fiber, as well as vitamin E and B. The Handbook of Cereals, Pulses, Roots, and Tubers: Functionality, Health Benefits, and Applications provides information about commercial cereals, pulses, and their nutritional profile, as well as health benefits and their food and non-food applications. Split into four sections, this handbook covers all the recent research about the related crops and outlines matters needing further research in the field of agriculture sciences. Both qualitative and quantitative analysis of nutrients and bio-actives, and their beneficial effects on human health, are highlighted in this book. The conclusions drawn and future perspectives proposed in each chapter will also help researchers to take more focused approaches. FEATURES Covers the full spectrum of cereals, pulses, roots, and tubers grain production, processing, and their use for foods, feeds, fuels, and industrial materials, and other uses Contains the latest information from grain science professionals and food technologists alike Provides comprehensive

knowledge on the nutritional and non-nutritional aspects of cereals, pulses, and tubers Discusses the latest development in modification of native starch Provides information in enhancing shelf life and its utilization in phytochemical rich product development The result of various well-versed researchers across the globe sharing their knowledge and experience, this handbook will be a valuable resource for students, researchers, and industrial practitioners who wish to enhance their knowledge and insights on cereals, pulses, roots, and tubers.

*Increased knowledge of the number, potency, and importance of bioactive compounds in fermented milk and dairy products has spiked their popularity across the globe. And the trend shows no sign of abating any time soon. An all-in-one resource, **Fermented Milk and Dairy Products** gathers information about different fermented milk and dairy products, **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.*

Advanced Technologies and Their Applications

Novel Strategies to Improve Shelf-Life and Quality of Foods

Technological Approaches for Novel Applications in Dairy Processing

Technological Interventions in Dairy Science

Milk-Based Beverages

Objective Food Microbiology

Written for and by dairy and food engineers with experience in the field, this new volume provides a wealth of valuable information on dairy technology and its applications. The book covers devices, standardization, packaging, ingredients, laws and regulatory guidelines, food processing methods, and more. The coverage of each topic is comprehensive enough to serve as an overview of the most recent and relevant research and technology.

This volume covers a selection of important novel technological interventions in dairy science, from the physical properties of milk and other milk products to nonthermal processing of milk. It also discusses safety methods in dairy science, which includes cleaning-in-place and techniques to determine adulteration in milk. Milk is a perishable commodity, and being rich in nutrients, it acts as the perfect substrate for the growth of microflora (sometimes dangerous for consumption). To reduce this, different thermal and nonthermal techniques are used. Thermal treatments are common techniques used for extending the shelf life of milk, such as, for example, pasteurization, sterilization, and UHT, but loss of nutrients is a concern associated with these treatments. Nonthermal treatments like high-pressure processing, pulse electric field, ultra-sonication, and irradiation are also explored in the processing of milk to minimize the loss of nutrients as compared to thermal treatment. Post-process contamination is also a major factor that can affect the shelf life of milk, and safe packaging plays an important role when the milk and milk products are stored at refrigeration or ambient temperature. Many advances in these dairy technologies are presented in this informative volume. Technological Interventions in Dairy Science: Innovative Approaches in Processing, Preservation, and Analysis of Milk Products will prove valuable for industrial professionals, scientists, regulatory personnel, consultants, academics, students and field-related personnel. The book also attempts to bridge the gap between research and industrial application of recent techniques.

*A Reference Guide to Science and Technology in the Asia/Pacific Area
Packaging, Processing, and Preservation
Techniques, Management, and Energy Conservation*

*Dairyceuticals, Novel Technologies, and Quality
Physicochemical, Technological, and Therapeutic Aspects
Human Health, Emerging Issues and Specialty Topics*