

Technological Interventions In The Processing Of Fruits And Vegetables

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.

With a roster of international contributors, this volume offers an abundance of solutions to address agricultural water management challenges in today’s water-scarce areas of the world. The authors present studies on farmer-friendly irrigation scheduling methods, model-based analysis of crop water requirements, ways to optimize surface irrigation systems, and hydraulic design and management of surface water systems. The book goes on to highlight ways to improve soil properties by taking into account spatial, temporal, and spectral variability in soil properties. The volume also covers various innovative research studies on soil and water productivity of vegetable cultivation under water-stressed areas, application of coir geotextiles, and the role of biofertilizers in controlling soil degradation and maintaining fertile topsoil. Crop management strategies to enhance the efficient use of marginal and saline lands for nonconventional crops are also discussed. The book is divided into four sections, covering: engineering interventions in irrigation management technological interventions in management of soil properties technological inventions for soil and water conservation crop management for non-conventional use This volume will serve as an invaluable resource for academicians, researchers, engineers, agronomists, extension officers, students, and farmers in the broad discipline of agricultural and biological engineering.

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.

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.

In this era of climate change and food/water/natural resource crises, it is important that current advancements in technology are made taking into consideration the impact on humanity and the environment. This new volume, Food Technology: Applied Research and Production Techniques, in the Innovations in Agricultural and Biological Engineering book series, looks at recent developments and innovations in food technology and sustainable technologies. Advanced topics in the volume include food processing, preservation, nutritional analysis, quality control and maintenance as well as good manufacturing practices in the food industries. The chapters are highly focused reports to help direct the development of current food- and agriculture-based knowledge into promising technologies. Features: provides information on relevant technology makes suggestions for equipment and devices looks at standardization in food technology explores new and innovative packaging technology studies antimicrobial activities in food considers active constituents of foods and provides information about isolation, validation and characterization of major bioactive constituents discusses the effect of laws and regulatory guidelines on infrastructure to transform technology into highly value-added products Food Technology: Applied Research and Production Techniques will be a very useful reference book for food technologists, practicing food engineers, researchers, professors, students of these fields and professionals working in food technology, food science, food processing, and nutrition.

The book consists of 19 chapters on different subjects and in different dimensions, with particular emphasis on the post-harvest handling and processing of fruits and vegetables, including mushrooms. Scope for the technology on fruits and vegetables, non-destructive methods to evaluate fresh quality, radiation preservation, chemistry of pectin and pigments and their applications, nutraceutical compounds, membrane processing of liquid fruits, dehydrated and intermediate moisture products, importance of bamboo and mushrooms as food, influence of process conditions on product quality, food additives in product preparation, packaging aspects, microbiological safety concerns, relevant analytical methods, mushroom nutraceuticals and biotechnological interventions for improvement of banana with a final note on conclusions in the last

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.

Engineering Interventions in Agricultural Processing presents recent advanced research on biological engineering, bioprocessing technologies, and their applications in agricultural food processing, and their applications in agriculture science and agricultural engineering, focusing on biological science, biological engineering, and bioprocessing technology. With contributions from a broad range of leading researchers, this book presents several innovations in the areas of processing technologies in agriculture. The book is divided into three parts, covering agricultural processing: interventions in engineering technologies novel practices in agricultural processing agricultural processing: health benefits of medicinal plants With contributions from a broad range of leading researchers, this book presents several new innovations in the areas of processing technologies in agriculture that will be helpful to researchers, scientists, students, and industry professionals in agriculture.

[Engineering Interventions in Sustainable Trickle Irrigation](#)

[Processing Technologies for Milk and Milk Products](#)

[Agricultural, Physiological, and Adaptive Approaches](#)

[Food Process Modelling](#)

[Technological Interventions](#)

[Status, Applications, and Challenges](#)

[Engineering Practices for Management of Soil Salinity](#)

[The Emergence of Video Processing Tools](#)

[Flood Assessment](#)

[Engineering Interventions in Agricultural Processing](#)

[Production, Processing and Technology](#)

[Methods, Applications, and Energy Usage](#)

Technological Interventions in Processing of Fruits and Vegetables presents a wide selection of the latest concepts in the fast-changing field of processing of fruits and vegetables (FAV). It provides key information on many new and different techniques used for processing of fruits and vegetables while also exploring the pros and cons of the various methods. There is an urgent need to explore and investigate waste in the processing of fruits and vegetables and how different processing technologies can be used most effectively. This volume, in short, conveys the key concepts and role of different technology in processing of fruits and vegetables, keeping mind the special processing requirements of fruits and vegetables, waste issues, nutritional value, and consumer concerns. This volume offers a wealth of information on today’s technology for fruit and vegetable processing and will be a valuable resource for industry professionals, agricultural/food processing researchers, faculty and upper-level students, and others.

Roots and tubers are considered as the most important food crops after cereals and contribute significantly to sustainable development, income generation and food security especially in the tropical regions. The perishable nature of roots and tubers demands appropriate storage conditions at different stages starting from farmers to its final consumers. Because of their highly perishable nature, search for efficient and better methods of preservation/processing have been continuing alongside the developments in different arena. This book covers the processing and technological aspects of root and tuber foods, detailing the production and processing of roots and tubers such as taro, cassava, sweet potato, yam and elephant foot yam. Featuring chapters on anatomy, taxonomy and physiology, molecular and biochemical characterization, GAP, GMP, HACCP, Storage techniques, as well as the latest technological interventions in Taro, Cassava, Sweet potato, yam and Elephant foot Yam.

About 7,000 people lose their lives and nearly 100 million people are adversely affected by floods each year worldwide. Flooding occurs in almost every part of the world and is the result of extreme rainfall. Severe flooding also costs billions of dollars each year in damage and economic losses. This new volume focuses on two detailed studies that employ physically based hydrologic models to predict flooding in the particularly challenging environment of small watersheds with mountainous terrain and high intensity/high variability rainfall.

This volume looks at new and established processing technologies for fruits and vegetables, taking into consideration the physical and biochemical properties of fruits and vegetables and their products, the challenges of the processing industry, the effect of processing on nutritional content, economic utilization of bio-wastes and byproducts, and much more. Divided into several sections, the volume covers: processing and antioxidant/enzyme profiles of fruits and vegetables (role of antioxidants and enzymes in processing, use of solar energy in processing, and techniques used in making processed products from fruits and vegetables) novel processing technologies in fruits and vegetables (ultraviolet light, pulsed light technology, hurdle technology, physical and biochemical properties) the challenges and solutions in waste reduction, negative effects of processing, and effects of processing on vitamins of fruits and vegetables

The importance and value of foods from marine sources is ever-increasing, especially as the availability of arable land decreases due to climate change, increasing populations and urbanization, and other factors. This book looks at the importance of marine foods and their secondary metabolites for human health along with a number of novel processing techniques and applications for marine foods. It also provides some recent studies on microbiology and genomics of marine food products. The volume first looks at several pharmacological properties of marine-derived compounds and their applications. The volume goes on to present a number of scientific reports on new and effective processing technologies and applications for marine foods. These include various methods of freezing fish for later consumption and fermentation processes for fish products. Other industrial applications and issues are explored as well, such as waste management and utilization of fish byproducts. The issue of maintaining probiotic and nutritional value from fish products during industrial processing is also addressed, and the role of microbiology and genomics of marine food products is explored as well. This new volume, like the 7th in the Innovations in Agricultural & Biological Engineering book series, focuses on emerging trends, applications and challenges in food science and technology. While food science and technology is not a new field, it is constantly changing due to new technology, new science, and new demands. This multidisciplinary book not only considers food processing, preservation, and distribution, but it also taken into account the consumer’s wants and needs. Included is a report of the status of agricultural production and food processing industries in India with a national and international perspective. The book then goes on to explore new and emerging trends in the science and technology in the field, including • applications of nuclear magnetic resonance in food processing and packaging management • ultrasound processing • application of biocomposite polymers in food packaging • bioprocessing and bioferriery approaches for sustainable fisheries • adding value to food from food waste through biotechnological intervention • functional foods and the fortification of foods Covering a broad selection of topics in the field, the volume will be of interest to food scientists and technologists, food process engineers, researchers, faculty and students, and many others the food science and technology industry.

Improving agricultural water use efficiency (WUE) is vitally important in many parts of the world due to the decreasing availability of water resources and the increasing competition for water between different users. Micro irrigation is an effective tool for conserving water resources. Studies have revealed a significant water savings, ranging from 40% to 70% under drip irrigation compared with surface irrigation. This new volume, Engineering Interventions in Sustainable Trickle Irrigation: Irrigation Requirements and Uniformity, Fertigation, and Crop Performance, presents valuable research that evaluates crop water and fertigation requirements, examines optimum irrigation and fertigation scheduling, and analyzes the performance of agricultural crops under micro irrigation. With an interdisciplinary perspective, this volume addresses the urgent need to explore and investigates the current shortcomings and challenges of water resources engineering, especially in micro irrigation engineering. The volume discusses crop water requirements, fertigation technology, and performance of agricultural crops under best management practices. The chapter authors present research studies on drip irrigated tomato, chilies, cucumber, eggplant, cabbage, garlic, sugarcane maize, cashew nut, sapota, banana, mango, and blueberries. Removing the research gap, this volume provides new information that will be valuable to those involved in micro irrigation engineering.

The Emergence of Video Processing Tools presents stories of the development of early video tools and systems designed and built by artists and technologists during the late 1960s and 70s. Split over two volumes, the contributors examine the intersection of art and science and look at collaborations among inventors, designers, and artists trying to create new tools to capture and manipulate images in revolutionary ways. The contributors include “video pioneers,” who have been active since the emergence of the aesthetic, and technologists, who continue to design, build, and hack media tools. The book also looks at contemporary toolmakers and the relationship between these new tools and the past. Video and media production is a growing area of interest in art and this collection will be an indispensable guide to its origins and its future.

[Bioactive Compounds of Medicinal Plants](#)

[Food Engineering](#)

[Advanced Technologies and Their Applications](#)

[Emerging Technologies in Agricultural Engineering](#)

[Innovative Approaches in Processing, Preservation, and Analysis of Milk Products](#)

[State-of-the-Art Technologies in Food Science](#)

[An Interdisciplinary Approach](#)

[Engineering Practices for Milk Products](#)

[Applied Research and Production Techniques](#)

[Technology of fruits and vegetable processing](#)

[Soil Salinity Management in Agriculture](#)

[The Emergence of Video Processing Tools Volumes 1 & 2](#)

This book reviews the use of fermentation to develop healthy and functional foods and beverages, and the commercialization of some of the fermented food products through the use of biotechnology The first two sections cover the health and functional benefits of fermented foods and the latter two sections includes chapters on global and region-specific fermented foods that have crossed the geographical barriers to reach the supermarkets all over the world.

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, bifunctional yogurt, antibiotic resistant pathogens, and other probiotics in dairy food products. Fruits and vegetables are both real nourishment items in their own particular right and key fixings in many handled foods. There has been developing examination on their significance to wellbeing and procedures to protect the healthy and tangible qualities wanted by buyers. This read gathering outlines a portion of the key topics in this current research. Adopting a multidisciplinary strategy, this work examines the fundamentals and late developments in fresh-cut foods grown from the ground handling. It tends to logical advance in the fresh-cut range and talks about the business and the market for these products. They likewise inspect advancements in making sound and alluring items. Utilization of inventive bundling innovation that could enhance item quality and timeframe of realistic usability, new natural product blends with more assortment, consolidation of flavors, or the utilization of steamer sacks for vegetables are only a couple of contemplations that could grow the business sectors of fresh-cut items. With its attention on science, including biochemical, physiological, microbiological, and quality angles, and in addition health contemplations and customer science, this book gives an account of front line propels and the down to earth utilizations of these advances.

This immensely valuable book provides a comprehensive, easy-to-understand, and up-to-date glossary of technical and scientific terms used in the fields of bioengineering and biotechnology, including terms used in agricultural sciences. The volume also includes terms for plants, animals, and humans, making it a unique, complete, and easily accessible reference. Scientific and Technical Terminology in Bioengineering and Biotechnology opens with an introduction to bioengineering and biotechnology and presents an informative timeline covering the important developments and events in the fields, dating from 7000 AD to the present, and it even makes predictions for developments up the year 2050. From ab initio gene prediction to zymogen and from agrobacterium to zoonosis, this volume provides concise definitions for over 5400 specialized terms peculiar to the fields of bioengineering and biotechnology, including agricultural sciences. The use of consistent terminology is critical in presenting clear and meaningful information, and this helpful reference manual will be essential for graduate and undergraduate students of biomedical engineering, biotechnology, nanotechnology, nursing, and medicine and health sciences as well as for professionals who work with medicine and health sciences.

With contributions from a broad range of leading professors and scientists, this volume focuses on new areas of processing technologies in foods and plants to help meet the increasing food demand of the rapidly growing populations of the world. The first section of the book is devoted to emerging entrepreneurship and employment opportunities for rural peoples in food and agricultural processing, specifically beekeeping technology and honey processing; herbal formulations for treatment of dental diseases; and engineering interventions for the extraction of essential oils from plants. Part 2 contains three chapters that discuss technological interventions in foods and plants for human health benefits, looking particularly at coffee, tea, and green leaf vegetable processing technology. The volume goes to look at several management strategies in agricultural engineering, with a chapter on production technology of ethanol from various sources and its potential applications in various industries, including chemical, food, pharmaceutical as well as biofuel. Food grain storage structures are addressed as well, focusing on minimizing losses from nutritional pests as well as insect pests during grain storage by utilizing different efficient storage structures The volume provides a valuable resource for students, instructors, and researchers of foods and plants processing technology. In addition, food and plant science professionals who are seeking recent advanced and innovative knowledge in processing will find this book helpful.

This new volume discusses the multitude of possibilities for new development in nanotechnology that focuses on overcoming the problems and challenges faced by the biomedical and food industries. The volume hopes to facilitate the development of devices and materials that benefit patients and their healthcare. The book is broken into three parts that cover: nanotechnology techniques for biomedical applications nanoparticles and materials for food, health, and pharmaceutical application potential applications of nanotechnology in food safety

This important volume, Soil Salinity Management in Agriculture, addresses the crucial issue of soil salinity of potential farmland and provides a comprehensive picture of the saline environment and plant interactions, along with management and reclamation methods and policies. With contributions from researchers from the fields of agricultural chemistry, soil science, biotechnology, agronomy, environmental sciences, and plant breeding and genetics, the volume emphasizes a multidisciplinary approach.

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 technologies.

[Processing of Fruits and Vegetables](#)

[Techniques, Management, and Energy Conservation](#)

[Tropical Roots and Tubers](#)

[Dairy Engineering](#)

[Emerging Trends in Research and Their Applications](#)

[Novel Strategies to Improve Shelf Life and Quality of Foods](#)

[Advances in Preservation and Processing Technologies of Fruits and Vegetables](#)

[Nanotechnology and Nanomimic Applications in Food, Health, and Biomedical Sciences](#)

[Technological Interventions in Dairy Science](#)

[Towards an Understanding of the Relationship between Spatial Processing Ability and Numerical and Mathematical Cognition](#)

[Fermented Foods, Part II](#)

[Television Becoming Unglued](#)

This volume sheds new light on the immense potential of medicinal plants for human health from different technological aspects. It presents new research on bioactive compounds in medicinal plants that provide health benefits, including those that have proven especially effective in treating and managing diabetes mellitus and hypertension. It looks at the medicinal properties, antioxidant capacity, and antimicrobial activity of plants and provides scientific evidence on the use of medicinal plants in the treatment of certain diseases. Many of the plants described in the chapters are easily accessible and are believed to be effective with fewer side effects in comparison to modern drugs in the treatment of different diseases.

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 nutritional and 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.

This edited volume explores Campylobacter species, which are some of the most important foodborne pathogens. Above all, contaminated poultry meat can cause human gastroenteritis in both developed and developing countries. The respective contributions reveal how these infections can also increase the risk of generalized paralytic diseases such as Guillain-Barré syndrome, Miller-Fisher syndrome, and Chinese paralytic syndrome. Due to their influence on the nervous system, circulatory system, and various organs, Campylobacter infections represent a serious public health concern. Campylobacter can be effectively combated by addressing the hygienic conditions in both food production and human lifestyles. Accordingly, the authors put forward a One Health perspective, which provides readers with essential insights into the basic biology of Campylobacter, as well as practical guidance on aspects ranging from food production to the clinical treatment of infections. Chapters "Population Biology and Comparative Genomics of Campylobacter Species" and "Natural Competence and Horizontal Gene Transfer in Campylobacter" are available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.

Continuous pharmaceutical manufacturing is currently receiving much interest from industry and regulatory authorities, with the joint aim of allowing rapid access of novel therapeutics and existing medications to the public, without compromising high quality. Research groups from different academic institutions have significantly contributed to this field with an immense amount of published research addressing a variety of topics related to continuous processing. The book is structured to have individual chapters on the different continuous unit operations involved in drug substance and drug product manufacturing. A wide spectrum of topics are covered, including basic principles of continuous manufacturing, applications of continuous flow chemistry in drug synthesis, continuous crystallization, continuous drying, feeders and blenders, roll compaction and continuous wet granulation. The underlying theme for each of these chapters is to present to the reader the recent advances in modeling, experimental investigations and equipment design as they pertain to each individual unit operation. The book also includes chapters on quality by design (QbD) and process analytical technology (PAT) for continuous processing, process control strategies including new concepts of quality-by-control (QbC), real-time process management and plant optimization, business and supply chain considerations related to continuous manufacturing as well as safety guidelines related to continuous chemistry. A separate chapter is dedicated to discussing regulatory aspects of continuous manufacturing, with description of current regulatory environment quality/GMP aspects, as well as regulatory gaps and challenges. Our aim from publishing this book is to make it a valuable reference for readers interested in this topic, with a desire to gain a fundamental understanding of engineering principles and mechanistic studies utilized in understanding and developing continuous processes. In addition, our advanced readers in this field will find that the technical content of Continuous Pharmaceutical Processing is at the forefront of recent technological advances, with coverage of future prospects and challenges for this technology.

“The Emergence of video processing tools presents stories of the development of early video tools and systems designed and built by artists and technologists during the late 1960s and 1970s. Split over two volumes, the contributors examine the intersection of art and science and look at collaborations among inventors, designers, and artists trying to create new video tools to capture and manipulate images in fascinating and revolutionary ways. Volume two includes the section “Tools” that describes the particular collaborations and technologies that created these custom-made video instruments. The contributors include “video pioneers” who have been active since the emergence of the aesthetic, and technologists who continue to design, build, and hack media tools.”–Back cover.

[Food Process Engineering](#)

[Advanced Aseptic Processing Technology](#)

[Modeling & Parameterization](#)

[Bioactive Compounds, Industrial Applications, and Genomics](#)

[Technological Interventions in the Processing of Fruits and Vegetables](#)

[Human Health, Emerging Issues and Specialty Topics](#)

[Technological Interventions in Management of Irrigated Agriculture](#)

[Continuous Pharmaceutical Processing](#)

[Developing Technologies in Food Science](#)

[Technological Processes for Marine Foods, From Water to Fork](#)

[Emerging Issues, Modeling, and Applications](#)

[Scientific and Technical Terms in Bioengineering and Biological Engineering](#)

This book covers an array of issues on emerging agricultural engineering and technology, featuring new research and studies. The volume is broken into three parts: emerging technologies, energy management in agriculture, and management of natural resources, in which particular attention is paid to water management, a necessary consideration for successful crop production, especially in water-scarce regions. Topics include: alleviating drainage congestion solar energy for agriculture anaerobic digestion by inoculation with compost self-propelled inter-cultivators agrobiodiversity watershed development and management This volume offers academia, engineers, technologists, students, and others from different disciplines information to gain knowledge on the breadth and depth of this multifaceted field of agricultural engineering. There is an urgent need to explore and investigate the current shortcomings and challenges of the current innovations and challenges. This new volume presents a selection of recent advances and emerging trends in food process engineering from several disciplines. Exploring the key concepts of food engineering, Food Engineering: Emerging Issues, Modeling, and Applications presents the information in four parts: Modeling in food engineering; Research advances in food engineering; Role of food engineering in human health; Emerging issues and applications in food engineering.

The preparation of sterile products using aseptic processing is considered perhaps the most critical process in the pharmaceutical industry and has witnessed continual improvement over the last half century. New approaches that have transformed classical aseptic production methods are appearing almost daily. This book reviews emerging technologies for aseptic processing that will markedly reduce the level of contamination risk for sterile products and includes coverage on: The use of isolator and barrier concepts for aseptic processing and assembly. The application of robotics as an alternative to gowned personnel. The increasing reliance on automation to minimize or eliminate operator intervention. The design, operational, monitoring and compliance changes necessary for success with advanced aseptic processing. Advanced Aseptic Processing Technology is an essential reference for anyone working with sterile products, and is recommended for individuals in manufacturing, compliance, regulatory affairs, microbiology, environmental monitoring, sterility testing, sterilization, validation, engineering, development, facility and equipment design, component and equipment suppliers, automation, and robotics.

Abiotic stresses are known to adversely impact agricultural productivity on millions of hectares globally, and it is projected that these problems are likely to increase, primarily due to anthropogenic interventions as well as climatic changes. Understanding abiotic stresses—especially salt stress on soil—calls for an interdisciplinary approach because salt-stressed soils need hydro-technical, chemical, and agronomic interventions as well as an understanding of plant response when exposed to these stresses. This volume explores and conveys the latest information on emerging technologies in the management of abiotic salt stress and their field applications. It brings together experts from various fields (academia, technology, and engineering) to provide the latest information and knowledge on this important challenge. From Farm to Fork

[Fighting Campylobacter Infections](#)

[Towards a One Health Approach](#)

[Food Technology](#)

[Engineering Interventions in Foods and Plants](#)

[Novel Dairy Processing Technologies](#)

[Irrigation Requirements and Uniformity, Fertigation, and Crop Performance](#)

[Dairyceuticals, Novel Technologies, and Quality](#)

[Engineering Practices for Agricultural Production and Water Conservation](#)

[Technological Advances and Applications](#)

[Properties and Potential for Human Health](#)