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Fundamentals of Wireless Sensor Networks - Waltenegus Dargie 2010-11-05
In this book, the authors describe the fundamental concepts and practical aspects of wireless sensor networks. The book provides a comprehensive view to this rapidly evolving field, including its many novel applications, ranging from protecting civil infrastructure to pervasive health monitoring. Using detailed examples and illustrations, this book provides an inside track on the current state of the technology. The book is divided into three parts. In Part I, several node architectures, applications and operating systems are discussed. In Part II, the basic architectural frameworks, including the key building blocks required for constructing large-scale, energy-efficient sensor networks are presented. In Part III, the challenges and approaches pertaining to local and global management strategies are presented – this includes topics on power management, sensor node localization, time synchronization, and security. At the end of each chapter, the authors provide practical exercises to help students strengthen their grip on the subject. There are more than 200 exercises altogether. Key Features: Offers a comprehensive introduction to the theoretical and practical concepts pertaining to wireless sensor networks Explains the constraints and challenges of wireless sensor network design; and discusses the most promising solutions Provides an in-depth treatment of the most critical technologies for sensor network communications, power management, security, and programming Reviews the latest research results in sensor network design, and demonstrates how the individual components fit together to build complex sensing systems for a variety of application scenarios Includes an accompanying website containing solutions to exercises (http://www.wiley.com/go/dargie_fundamentals) This book serves as an introductory text to the field of wireless sensor networks at both graduate and advanced undergraduate level, but it will also appeal to researchers and practitioners wishing to learn about sensor network technologies and their application areas, including environmental monitoring, protection of civil infrastructure, health care, precision agriculture, traffic control, and homeland security.
Counterfeit Medicines: Policy, economics, and countermeasures - Albert I. Wertheimer 2012
"Discusses the economic and financial consequences of pharmaceutical product counterfeiting and describes some of the measures that can be taken to counteract their impact"--Provided by publisher.
Total Diet Studies - Gerald G. Moy 2013-11-08
Unless a food is grossly contaminated, consumers are unable to detect through sight or smell the presence of low levels of toxic chemicals in their foods. Furthermore, the toxic effects of exposure to low levels of chemicals are often manifested slowly, sometimes for decades, as in the case of cancer or organ failure. As a result, safeguarding food from such hazards requires the constant monitoring of the food supply using sophisticated laboratory analysis. While the food industry bears the primary responsibility for assuring the safety of its products, the overall protection of people’s diets from chemical hazards must be considered one of the most important public health functions of any government. Unfortunately, many countries do not have sufficient capability and capacity to monitor the exposure of their populations to many potentially toxic chemicals that could be present in food and drinking water. Without such monitoring, public health authorities in many countries are not able to identify and respond to problems posed by toxic chemicals, which may harm their population and undermine consumer confidence in the safety of the food supply. From a trade perspective, those countries that cannot demonstrate that the food they produce is free of potentially hazardous chemicals will be greatly disadvantaged or even subject to sanctions in the international marketplace. The goal of a total diet study (TDS) is to provide basic information on the levels and trends of exposure to chemicals in foods as consumed by the population. In other words, foods are processed and prepared as typical for a country before they are analyzed in order to better represent actual dietary intakes. Total diet studies have been used to assess the safe use of agricultural chemicals (e.g., pesticides, antibiotics), food additives (e.g., preservatives, sweetening agents), environmental contaminants (e.g., lead, mercury, arsenic, cadmium, PCBs, dioxins), processing contaminants (e.g., acrylamide, polycyclic aromatic hydrocarbons, chloropropanols), and natural contaminants (e.g., aflatoxin, patulin, other mycotoxins) by determining whether dietary exposure to these chemicals are within acceptable limits. Total diet studies can also be applied to certain nutrients where the goal is to assure intakes are not only below safe upper limits, but also above levels deemed necessary to maintain good health. International and national organizations, such as the World Health Organization, the European Food Safety Agency and the US Food and Drug Administration recognize the TDS approach as one of the most cost-effective means of protecting consumers from chemicals in food, for providing essential information for managing food safety, including food standards, and for setting priorities for further investment and study. Total Diet Studies introduces the TDS concept to a wider audience and presents the various steps in the planning and implementation of a TDS. It illustrates how TDSs are being used to protect public health from chemicals in the food supply in many developed and developing countries. The book also examines some of the applications of TDSs to specific chemicals, including contaminants and nutrients.
The Packaging Value Chain - Claire Sand 2010
This book shows how the concepts of the value chain and value chain can improve packaging and create efficiencies. It gives packaging designers, manufacturers, suppliers and buyers new tools for understanding how their respective contribution to packaging development can be more effectively leveraged by understanding in practical terms how each fits within an extended set of people and groups adding value to a package. Using case studies from the packaging industry, the book reveals how value chain thinking solves technical and business problems. Here packaging specialists will find specific recommendations on contracts, innovation and knowledge management that will help them reduce costs, meet environmental regulations, and develop better products.
Advances in Food Traceability Techniques and Technologies - Montserrat Espiñeira 2016-06-18
Advances in Food Traceability Techniques and Technologies: Improving Quality Throughout the Food Chain covers in detail a topic of great importance to both the food industry which is obliged to provide clear and accurate labeling of their products and the government and other organizations which are tasked with verification of claims of food quality and safety. The traceability of food products is becoming ever more important as globalization continues to increase the complexity of food chains. Coverage in the book includes the wide range of technologies and techniques which have been utilized in the tracing of food products. In addition, the ways in which the misuse of food traceability will affect the quality of food is also covered throughout. The first part of the book introduces the concept of traceability in the food industry,

highlighting advantages of a robust traceability and the difficulties involved in implementing them. The second part looks at the technologies used to trace products, and the third section reviews the legal requirements for food traceability in the EU, the US, and the rest of the world. The final section contains a number of case studies which evaluate how food traceability has been successfully implemented in various foods focusing on the quality of the food. Provides a wide ranging overview of all recent advances in food traceability techniques and technologies Presents case studies covering when food traceability techniques have been applied to a range of food stuffs Covers the legal aspects of food traceability in the EU, the USA, and around the world

Food Safety Management - Yasmine Motarjemi 2013-11-01

Food Safety Management: A Practical Guide for the Food Industry with an Honorable Mention for Single Volume Reference/Science in the 2015 PROSE Awards from the Association of American Publishers is the first book to present an integrated, practical approach to the management of food safety throughout the production chain. While many books address specific aspects of food safety, no other book guides you through the various risks associated with each sector of the production process or alerts you to the measures needed to mitigate those risks. Using practical examples of incidents and their root causes, this book highlights pitfalls in food safety management and provides key insight into the means of avoiding them. Each section addresses its subject in terms of relevance and application to food safety and, where applicable, spoilage. It covers all types of risks (e.g., microbial, chemical, physical) associated with each step of the food chain. The book is a reference for food safety managers in different sectors, from primary producers to processing, transport, retail and distribution, as well as the food services sector. Honorable Mention for Single Volume Reference/Science in the 2015 PROSE Awards from the Association of American Publishers Addresses risks and controls (specific technologies) at various stages of the food supply chain based on food type, including an example of a generic HACCP study Provides practical guidance on the implementation of elements of the food safety assurance system Explains the role of different stakeholders of the food supply

Food and Nutrition - 1976

Food Traceability and Authenticity - Didier Montet 2017-11-22

Food traceability is a growing consumer concern worldwide. Traceability is undertaken primarily at the administrative level, where the use of advanced analytical tools is not available. Nevertheless, the determination of geographical origin is a requirement of the traceability system for the import and export of foodstuffs (EU regulation 178/2002). The topics covered in this book include the history of traceability; legislations and rules; the actual traceability techniques and the potential analytical techniques for food traceability such as molecular methods (e.g. DGGE, SSCP), next generation sequencers (NGS), bio-captors, chromatographic techniques, isotopic analysis that are used for discrimination of organic food, fish, oils. The chromatographic techniques help in the use of volatile compounds analysis. The isotope analysis helps in distinguishing between chicken meat and vegetable oils. Ambient mass spectrometry is used for studying mycotoxines and alkaloids in foodstuffs and their management, food and feed authentication in olive and other plant oils, and wine. Vibrational methods (e.g. NMR and NIRS) are used to trace food by global spectrum. The book reviews the current and future techniques including metabolomic techniques.

Food Security and Food Safety for the Twenty-first Century - Soraj Hongladarom 2016-10-09

This book is a collection of selected papers that were presented at the First International Conference of the Asia-Pacific Society for Agricultural and Food Ethics (APSAFE 2013), which was held at Chulalongkorn University from November 28 – 30, 2013. The papers are interdisciplinary, containing insights into food security and food ethics from a variety of perspectives, including, but not limited to, philosophy, sociology, law, sociology, economics, as well as the natural sciences. The theme of the conference was to consider the interplay and balance between food security and food ethics as the world approaches the middle part of the twenty-first century.

Comprehensive Foodomics - 2020-11-12

Comprehensive Foodomics offers a definitive collection of over 150 articles that provide researchers with innovative answers to crucial questions relating to food quality, safety and its vital and complex links to our health. Topics covered include transcriptomics, proteomics, metabolomics, genomics, green foodomics, epigenetics and noncoding RNA, food safety, food bioactivity and health, food quality and traceability, data treatment and systems biology. Logically structured into 10 focused sections, each article is authored by world leading scientists who cover the whole breadth of Omics and related technologies, including the latest advances and applications. By bringing all this information together in an easily navigable reference, food scientists and nutritionists in both academia and industry will find it the perfect, modern day compendium for frequent reference. List of sections and Section Editors: Genomics - Olivia McAuliffe, Dept of Food Biosciences, Moorepark, Fermoy, Co. Cork, Ireland Epigenetics & Noncoding RNA - Juan Cui, Department of Computer Science & Engineering, University of Nebraska-Lincoln, Lincoln, NE Transcriptomics - Robert Henry, Queensland Alliance for Agriculture and Food Innovation, The University of Queensland, St Lucia, Australia Proteomics - Jens Brockmeyer, Institute of Biochemistry and Technical Biochemistry, University Stuttgart, Germany Metabolomics - Philippe Schmitt-Kopplin, Research Unit Analytical BioGeoChemistry, Neuherberg, Germany Omics data treatment, System Biology and Foodomics - Carlos Leon Canseco, Visiting Professor, Biomedical Engineering, Universidad Carlos III de Madrid Green Foodomics - Elena Ibanez, Foodomics Lab, CIAL, CSIC, Madrid, Spain Food safety and Foodomics - Djuro Josić, Professor Medicine (Research) Warren Alpert Medical School, Brown University, Providence, RI, USA & Sandra Kraljević Pavelić, University of Rijeka, Department of Biotechnology, Rijeka, Croatia Food Quality, Traceability and Foodomics - Daniel Cozzolino, Centre for Nutrition and Food Sciences, The University of Queensland, Queensland, Australia Food Bioactivity, Health and Foodomics - Miguel Herrero, Department of Bioactivity and Food Analysis, Foodomics Lab, CIAL, CSIC, Madrid, Spain Brings all relevant foodomics information together in one place, offering readers a ‘one-stop,’ comprehensive resource for access to a wealth of information Includes articles written by academics and practitioners from various fields and regions Provides an ideal resource for students, researchers and professionals who need to find relevant information quickly and easily Includes content from high quality authors from across the globe

Food Safety - Richard J. Marshall 2006-12-22

Food Safety: A Practical and Case Study Approach, the first volume of the ISEKI-Food book series, discusses how food quality and safety are connected and how they play a significant role in the quality of our daily lives. Topics include methods of food preservation, food packaging, benefits and risks of microorganisms and process safety.

Hospitality Management Education - Kaye Sung Chon 2013-04-03

Help students succeed now and in the future in any aspect of the hospitality field! Hospitality Management Education focuses on the academic aspect of hospitality--the mechanisms of hospitality education programs, their missions, their constituents, and the outcomes of their efforts. This book examines why people study hospitality management, the vast opportunities the field offers, and ways to best prepare students for a career in the industry or in academia. Within Hospitality Management Education, you'll find exhibits, figures, tables, and insight into innovative practice methods that will strengthen your skills as an educator and contributor to the growing success of this discipline. Containing research and first-hand accounts, Hospitality Management Education offers you insight into qualities and strategies that make educators or employees effective and successful in the industry. You'll find useful information to help you better prepare students and enhance your teaching skills, such as: understanding the history and advances of hospitality management education during the past 75 years stressing the difference between the hospitality industry and other industries to help prospective hospitality students understand the unique rigors of hospitality examining degree programs in the United Kingdom, Australia, and the United States to identify common global teaching trends, differences, and program outcomes enhancing student learning and education programs by linking academic hospitality programs to industry through internships, involvement with industry associations, and advisory councils assuring quality in academic programs through accreditation, certification, outside peer reviews, outside reviews by the industry, and administrative reviews of the faculty preparing for a professional academic career through strategic career planning, networking, and targeting hospitality programs Hospitality Management Education discusses educational trends as a whole over the past decade to give you insight into future directions of hospitality such as increased specialization, growing numbers of faculty, more funding, and increased academic focus

on research and scholarship. In this valuable volume, you'll find methods and suggestions that will make you a more knowledgeable and effective educator!

Food Security in Asia and the Pacific - Asian Development Bank 2013-08-01

This synthesis report is the result of close, collaborative research initiated by the Asian Development Bank in partnership with Foreign Affairs, Trade and Development Canada; the Asia-Pacific Economic Cooperation; and the Liu Institute for Global Issues at the University of British Columbia. Fourteen background papers were commissioned to investigate food security issues particularly pertinent for Asia and the Pacific. The report synthesizes and collates the primary findings from these papers to articulate key policy challenges and opportunities related to food security in the region.

Probiotic Dairy Products - Adnan Y. Tamime 2018-02-05

Probiotic Dairy Products, 2nd Edition The updated guide to the most current research and developments in probiotic dairy products The thoroughly revised and updated second edition of Probiotic Dairy Products reviews the recent advancements in the dairy industry and includes the latest scientific developments in regard to the 'functional' aspects of dairy and fermented milk products and their ingredients. Since the publication of the first edition of this text, there have been incredible advances in the knowledge and understanding of the human microbiota, mainly due to the development and use of new molecular analysis techniques. This new edition includes information on the newest developments in the field. It offers information on the new ‘omic’ technologies that have been used to detect and analyse all the genes, proteins and metabolites of individuals’ gut microbiota. The text also includes a description of the history of probiotics and explores the origins of probiotic products and the early pioneers in this field. Other chapters in this resource provide valuable updates on genomic analysis of probiotic strains and aspects of probiotic products’ production and quality control. This important resource: Offers a completely revised and updated edition to the text that covers the topic of probiotic dairy products Contains 4 brand new chapters on the following topics: the history of probiotics, prebiotic components, probiotic research, and the production of vitamins, exopolysaccharides (EPS), and bacteriocins Features a new co-editor and a host of new contributors, that offer the latest research findings and expertise Is the latest title in Wiley's Society of Dairy Technology Technical Series Probiotic Dairy Products is an essential resource for dairy scientists, dairy technologists and nutritionists. The text includes the results of the most reliable research in field and offers informed views on the future of, and barriers to, the progress for probiotic dairy products.

Nano-food Engineering - Umesh Hebbar 2020-08-06

This extensive and singular work focuses on current applications of nanotechnology in food systems. The functionality and applicability of food-related nanotechnology is covered in depth, presenting a view on the food processing, packaging,storage and safety assessment of nanotechnology in the food industry. Multiple nanostructures are covered, each with their specific ingredient choice, production strategy, functionality and application in food engineering. Individual chapters focus on current processing methods and applications of nanotechnology in foods. Nano-food Engineering Volume One brings together panels of highly accomplished experts in the field of composites, nanotechnology and chemical engineering and food technology. The work encompasses basic studies and addresses novel issues, covering all engineering aspects, opportunities and challenges and solutions of nano-foods.

Dairy Foods - Adriano Gomes Da Cruz 2021-09-22

Dairy Foods: Processing, Quality, and Analytical Techniques provides comprehensive knowledge on the different factors involved in the development and safety precautions behind dairy foods, including special references to both theoretical and practical aspects. The book presents relevant information about the quality of dairy foods, including raw milk quality, predictive microbiology and risk analysis, food defense and food fraud. In addition, it looks into environmental aspects and consumer perception and goes on to cover methods and practices to process dairy products and analytical techniques behind dairy product development. Techniques explored include time domain magnetic resonance, thermal analysis and chemometric methods. This will be a valuable resource for researchers and practitioners in the dairy industry, as well as students in dairy science courses. Offers a comprehensive accounting on the latest analytical methods used in the dairy industry Focuses on the processing of dairy foods, including emerging and novel dairy products with low sodium and sugar contents Sourced from a team of editors with relevant expertise in dairy food processing

Food Traceability - Jennifer McEntire 2019-05-11

This book provides a picture of food traceability for all aspects of the food system, recognizing the unique differences, challenges, and “states of the industry” in different types of food products, as well as the different pressures and opportunities at different points in the supply chain and the research that has already been done. It also provides some historical context, along with the types of solutions available to the food industry, and the benefits associated with better recordkeeping that go beyond the public good and impact the bottom line. Whenever a food related outbreak occurs, traceability is called into question. When lives are at stake, it is critical that the root of the problem is quickly identified to prevent further illness. Once the problem is found, it’s just as important to contain it quickly. Too often, recalls expand because implicated product is not readily accounted for. Mention of traceability stirs fear for many in the food industry for several reasons: within a company, it’s not clear if responsibility for traceability lies with food safety professionals involved in recalls, supply chain professionals who understand product movement, IT professionals who build and maintain the recordkeeping systems, or regulatory professionals who need to respond to government requests for information. There is also a sense that traceability is someone else’s problem. Few firms admit that they are the weak link and instead tout how quickly they can perform mock recalls. But traceability is about more than just recalls. It is about the connectivity of the supply chain as a product and its constituents travel from the farm to the consumer. Because it is a systems issue, there is a sense that the investment by a single firm will be meaningless if supply chain partners don’t have comparable abilities. This book will address both these surrounding issues and solutions.

Handbook of Farm, Dairy and Food Machinery Engineering - Myer Kutz 2019-06-15

Handbook of Agricultural and Farm Machinery, Third Edition, is the essential reference for understanding the food industry, from farm machinery, to dairy processing, food storage facilities and the machinery that processes and packages foods. Effective and efficient food delivery systems are built around processes that maximize efforts while minimizing cost and time. This comprehensive reference is for engineers who design and build machinery and processing equipment, shipping containers, and packaging and storage equipment. It includes coverage of microwave vacuum applications in grain processing, cacao processing, fruit and vegetable processing, ohmic heating of meat, facility design, closures for glass containers, double seaming, and more. The book's chapters include an excellent overview of food engineering, but also regulation and safety information, machinery design for the various stages of food production, from tillage, to processing and packaging. Each chapter includes the state-of-the art in technology for each subject and numerous illustrations, tables and references to guide the reader through key concepts. Describes the latest breakthroughs in food production machinery Features new chapters on engineering properties of food materials, UAS applications, and microwave processing of foods Provides efficient access to fundamental information and presents real-world applications Includes design of machinery and facilities as well as theoretical bases for determining and predicting behavior of foods as they are handled and processed

How to Feed the World - Jessica Eise 2018-03-15

By 2050, we will have ten billion mouths to feed in a world profoundly altered by environmental change. How will we meet this challenge? In How to Feed the World, a diverse group of experts from Purdue University break down this crucial question by tackling big issues one-by-one. Covering population, water, land, climate change, technology, food systems, trade, food waste and loss, health, social buy-in, communication, and equal access to food, the book reveals a complex web of challenges. Contributors unite from different perspectives and disciplines, ranging from agronomy and hydrology to economics. The resulting collection is an accessible but wide-ranging look at the modern food system.

Food Regulation - Neal D. Fortin 2016-10-25

Featuring case studies and discussion questions, this textbook – with revisions addressing significant changes to US food law – offers accessible coverage appropriate to a wide audience of students and professionals. Overviews the federal statutes, regulations, and regulatory agencies concerned with food regulation and introduces students to the case law and statutory scheme of food regulation Focuses updated content on the 2011 FDA Food Safety Modernization Act (FSMA), the biggest change to US food

law since the 1930s Contains over 20% new material, particularly a rewritten import law chapter and revisions related to food safety regulation, health claims, and food defense Features case studies and discussion questions about application of law, policy questions, and emerging issues

Blind Spots - Max H. Bazerman 2012-12-23

When confronted with an ethical dilemma, most of us like to think we would stand up for our principles. But we are not as ethical as we think we are. In Blind Spots, leading business ethicists Max Bazerman and Ann Tenbrunsel examine the ways we overestimate our ability to do what is right and how we act unethically without meaning to. From the collapse of Enron and corruption in the tobacco industry, to sales of the defective Ford Pinto, the downfall of Bernard Madoff, and the Challenger space shuttle disaster, the authors investigate the nature of ethical failures in the business world and beyond, and illustrate how we can become more ethical, bridging the gap between who we are and who we want to be. Explaining why traditional approaches to ethics don't work, the book considers how blind spots like ethical fading--the removal of ethics from the decision--making process--have led to tragedies and scandals such as the Challenger space shuttle disaster, steroid use in Major League Baseball, the crash in the financial markets, and the energy crisis. The authors demonstrate how ethical standards shift, how we neglect to notice and act on the unethical behavior of others, and how compliance initiatives can actually promote unethical behavior. They argue that scandals will continue to emerge unless such approaches take into account the psychology of individuals faced with ethical dilemmas. Distinguishing our "should self" (the person who knows what is correct) from our "want self" (the person who ends up making decisions), the authors point out ethical sinkholes that create questionable actions. Suggesting innovative individual and group tactics for improving human judgment, Blind Spots shows us how to secure a place for ethics in our workplaces, institutions, and daily lives.

Encyclopedia of Food Chemistry - 2018-11-22

Encyclopedia of Food Chemistry is the ideal primer for food scientists, researchers, students and young professionals who want to acquaint themselves with food chemistry. Well-organized, clearly written, and abundantly referenced, the book provides a foundation for readers to understand the principles, concepts, and techniques used in food chemistry applications. Articles are written by international experts and cover a wide range of topics, including food chemistry, food components and their interactions, properties (flavor, aroma, texture) the structure of food, functional foods, processing, storage, nanoparticles for food use, antioxidants, the Maillard and Strecker reactions, process derived contaminants, and the detection of economically-motivated food adulteration. The encyclopedia will provide readers with an introduction to specific topics within the wider context of food chemistry, as well as helping them identify the links between the various sub-topics. Offers readers a comprehensive understanding of food chemistry and the various connections between the sub-topics Provides an authoritative introduction for non-specialists and readers from undergraduate levels and upwards Meticulously organized, with articles structured logically based on the various elements of food chemistry

Threats to Food and Water Chain Infrastructure - Virginia Koukouliou 2009-12-02

vi of a large number of people due to the enormous quantities of radioactive material that would be required to reach high levels of contamination in mass-produced or distributed supplies. Although, based on data presented at the Workshop concerning the more than 30,000 missing radioactive sources all over the word, the radioactive contamination of food or water is also a scenario that must be taken seriously into consideration. During the last two decades there have been several emerging hazards linked to animal diseases or originating in animal products for example: Avian Influenza (AI), Bovine Spongiform Encephalopathy (BSE), West Nile Fever, Severe Acute Respiratory Syndrome (SARS), and Ebola virus. All these diseases or events directly or indirectly affect food security and/or food safety. Approximately 75% of all emerging diseases are zoonotic by either an association with animal populations or an evolution of the disease in a- mals making it possible to move from animal species to humans. Participants were presented the primary results of the ongoing NATO- SPS Pilot Study on “Food Chain Security”. These results focused mainly on (i) an overview of the food system; (ii) prevention, surveillance and detection systems and (iii) response system. The importance of issues such as: vuln- ability assessments, risk communication in risk analysis, risk perception, traceability, preparedness – awareness, communication, have to be cons- ered when working on food chain security.

Interconnected Economies Benefiting from Global Value Chains - OECD 2013-05-28

This book examines how global value chains have evolved and the policy challenges they have created.

Agro-industries for Development - Carlos A. Da Silva 2009

The development of competitive agro-industries is crucial for creating employment and income opportunities as well as enhancing the quality of and demand for farm products. Agro-industries can have a real effect on international development by increasing economic growth and reducing poverty in both rural and urban areas of developing countries. However, in order to avoid adverse effects to vulnerable countries and people, sound policies and strategies for fostering agro-industries are needed. Agro-Industries for Development highlights the current status and future course for agro-industries and brings attention to the contributions this sector can make to international development. The book includes contributions from agro-industry specialists, academic experts and UN technical agencies, chapters address the strategies and actions required for improving agro-industrial competitiveness in ways that can create income, generate employment and fight poverty in the developing world. This book is a co-publication with FAO and UNIDO.

Significance, Prevention and Control of Food Related Diseases - Hussaini Makun 2016-04-13

Food-borne diseases are major causes of morbidity and mortality in the world. It is estimated that about 2.2 million people die yearly due to food and water contamination. Food safety and consequently food security are therefore of immense importance to public health, international trade and world economy. This book, which has 10 chapters, provides information on the incidence, health implications and effective prevention and control strategies of food-related diseases. The book will be useful to undergraduate and postgraduate students, educators and researchers in the fields of life sciences, medicine, agriculture, food science and technology, trade and economics. Policy makers and food regulatory officers will also find it useful in the course of their duties.

Ensuring Global Food Safety - Christine Boisrobert 2009-11-11

Taking into account toxicity levels at normal consumption levels, intake per kg bodyweight and other acknowledged considerations, each chapter in this book will be based on one or more proven examples. It is intended to provide specific examples and potential improvements to the safety of the world's food supply, while also increasing the amount of food available to those in undernourished countries. This book is designed to to provide science-based tools for improving legislation and regulation. Benefits: Reduce amount of food destroyed due to difference in regulations between nations Positively impact the time-to-market of new food products by recognizing benefit of "one rule that applies to all" Use the comparison of regulations and resulting consequences to make appropriate, fully-informed decisions Employ proven science to obtain global consensus for regulations Understand how to harmonize test protocols and analytical methods for accurate measurement and evaluation Take advantage of using a risk/benefit based approach rather than risk/avoidance to maximize regulatory decisions

Improving Import Food Safety - Wayne Ellefson 2012-10-22

Food safety has been a global concern for many years. While global sourcing of foods and ingredients provides great opportunity for variety and diversity of cultural products, there are significant risks. Programs that regulate food safety and quality in countries around the world vary in their scope and effectiveness, with many being underfunded. Rapidly developing countries may lack the expertise, laboratory resources for testing, and established inspection programs to adequately promote the safety of foods. Rather, these countries may be more focused on providing enough food for their citizens. Lack of documentation or traceability in the exporting country can further exacerbate the situation. Of course, safety problems in food imported from more developed countries also occur, and the source of food borne disease outbreaks are found regularly within the United States. Improving Import Food Safety gathers together vital information on the food safety programs of national governments, the food industry, and the testing industry. Chapters have been contributed by authors from the United States, Latin America, Europe, and Asia. Readers will learn about a variety of regulatory approaches to food safety at the federal and state levels in the United States, as well as in selected countries and within the food industry itself. They will also gain insights into the nature and source of safety problems, in addition to approaches to food safety around the world. The book is divided into three sections: Highlighting Key Issues: authors illustrate the millions of

permutations for the origin of ingredients, discussing the difficulty if policing imports, providing a unique perspective on the economic situation in China and insight into development of support for small farm producers in Mexico. Legal and Regulatory Issues/Structures in the USA and Abroad: describes the legal and regulatory system in the European Union, the United States, and China, plus a chapter addressing global approaches to fraud. Potential Strategies to Improve Import Safety: presents strategies to deal with what are ultimately global issues, but on multiple levels. Perspectives are provided by authors from Industry, and industry trade association, academia, and a recently semi-retired, global ambassador or food safety. Readers will find this book noteworthy because of the diverse topics and perspectives offered on the challenges of keeping food safe in a global economy. Authors come from a variety of backgrounds, and each has provided a unique perspective on this critical topic. The volume is aimed at importers and exporters of food and ingredients; food microbiologists, food safety and QC/QA personnel; regulatory and legal personnel in food manufacturing companies; food policy makers and regulatory officials and facility and graduate students in food science.

The future of food safety - FAO/WHO 2020-06-01

This technical summary prepared by FAO and the World Health Organization (WHO) reports on the two international food safety conferences held in Addis Ababa and Geneva in February and April 2019. It recalls the key actions and strategies presented to address current and future challenges to food safety globally and the steps required to strengthen commitment at the highest political level to scale up food safety in the 2030 Agenda for Sustainable Development. At a pivotal moment focussing international attention on actions needed to bolster food safety, this publication recalls the priorities discussed so that food safety strategies and approaches can be aligned across sectors and borders, reinforcing efforts to reach the Sustainable Development Goals and supporting the UN Decade of Action on Nutrition.

Food Fraud Prevention - John W. Spink 2019-10-18

This textbook provides both the theoretical and concrete foundations needed to fully develop, implement, and manage a Food Fraud Prevention Strategy. The scope of focus includes all types of fraud (from adulterant-substances to stolen goods to counterfeits) and all types of products (from ingredients through to finished goods at retail). There are now broad, harmonized, and thorough regulatory and standard certification requirements for the food manufacturers, suppliers, and retailers. These requirements create a need for a more focused and systematic approach to understanding the root cause, conducting vulnerability assessments, and organizing and implementing a Food Fraud Prevention Strategy. A major step in the harmonizing and sharing of best practices was the 2018 industry-wide standards and certification requirements in the Global Food Safety Initiative (GFSI) endorsed Food Safety Management Systems (e.g., BRC, FSSC, IFS, & SQF). Addressing food fraud is now NOT optional – requirements include implementing a Food Fraud Vulnerability Assessment and a Food Fraud Prevention Strategy for all types of fraud and for all products. The overall prevention strategy presented in this book begins with the basic requirements and expands through the criminology root cause analysis to the final resource-allocation decision-making based on the COSO principle of Enterprise Risk Management/ ERM. The focus on the root cause expands from detection and catching bad guys to the application of foundational criminology concepts that reduce the overall vulnerability. The concepts are integrated into a fully integrated and inter-connected management system that utilizes the Food Fraud Prevention Cycle (FFPC) that starts with a pre-filter or Food Fraud Initial Screening (FFIS). This is a comprehensive and all-encompassing textbook that takes an interdisciplinary approach to the most basic and most challenging questions of how to start, what to do, how much is enough, and how to measure success.

Understanding Natural Flavors - J. R. Piggott 2013-12-14

There has been increasing interest in recent years in the concept and production of natural foods. Advertising claims that food is natural, without additives or artificial ingredients, have taken on great importance in marketing. Consumption of food that can be considered natural is currently central to the sophisticated lifestyle. However, there is only a limited published literature on what constitutes natural food flavours. Much of the flavour and fragrance industry has worked on development of synthetic or 'nature-identical' flavours which represent a chemist's simu lation of the natural character. As marketing claims become more strident it is necessary to gain a better understanding of natural food flavours in order to safeguard food quality and for prevention of fraud. There have been great advances recently in analytical chemistry, and partly as a result of this progress there seems to be a never-ending increase in the number of volatile compounds identified in foods. Unfortunately, this has not always been matched by an equal increase in the understanding of how these volatile compounds arise, or how they contribute to the sensation which we call flavour. Throughout the development of Western society, quality of food, particularly flavour, has been highly regarded. The amateur or professional cook with the skills to optimize and maintain standards in flavour has been held in the highest respect.

Chemical Changes During Processing and Storage of Foods - Delia B. Rodriguez-Amaya 2020-11-25

Chemical Changes During Processing and Storage of Foods: Implications for Food Quality and Human Health presents a comprehensive and updated discussion of the major chemical changes occurring in foods during processing and storage, the mechanisms and influencing factors involved, and their effects on food quality, shelf-life, food safety, and health. Food components undergo chemical reactions and interactions that produce both positive and negative consequences. This book brings together classical and recent knowledge to deliver a deeper understanding of this topic so that desirable alterations can be enhanced and undesirable changes avoided or reduced. Chemical Changes During Processing and Storage of Foods provides researchers in the fields of food science, nutrition, public health, medical sciences, food security, biochemistry, pharmacy, chemistry, chemical engineering, and agronomy with a strong knowledge to support their endeavors to improve the food we consume. It will also benefit undergraduate and graduate students working on a variety of disciplines in food chemistry Offers a comprehensive overview of the major chemical changes that occur in foods at the molecular level and discusses the positive and negative effects on food quality and human health Describes the mechanisms of these chemical changes and the factors that impede or accelerate their occurrence Helps to solve daily industry problems such as loss of color and nutritional quality, alteration of texture, flavor deterioration or development of off-flavor, loss of nutrients and bioactive compounds or lowering of their bioefficacy, and possible formation of toxic compounds

Food Safety in China - Joseph Jwu-Shan Jen 2017-05-08

From contaminated infant formula to a spate of all-too familiar headlines in recent years, food safety has emerged as one of the harsher realities behind China's economic miracle. Tainted beef, horse meat and dioxin outbreaks in the western world have also put food safety in the global spotlight. Food Safety in China: Science, Technology, Management and Regulation presents a comprehensive overview of the history and current state of food safety in China, along with emerging regulatory trends and the likely future needs of the country. Although the focus is on China, global perspectives are presented in the chapters and 33 of the 99 authors are from outside of China. Timely and illuminating, this book offers invaluable insights into our understanding of a critical link in the increasingly globalized complex food supply chain of today's world.

Nutraceutical and Functional Food Components - Charis M. Galanakis 2021-10-24

Nutraceutical and Functional Food Components: Effects of Innovative Processing Techniques, Second Edition highlights the impact of recent food industry advances on the nutritional value, functional properties, applications, bioavailability, and bioaccessibility of food components. This second edition also assesses shelf-life, sensory characteristics, and the profile of food products. Covering the most important groups of food components, including lipids, proteins, peptides and amino acids, carbohydrates, dietary fiber, polyphenols, carotenoids, vitamins, aromatic compounds, minerals, glucosinolates, enzymes, this book addresses processing methods for each. Food scientists, technologists, researchers, nutritionists, engineers and chemists, agricultural scientists, other professionals working in the food industry, as well as students studying related fields, will benefit from this updated reference. Focuses on nutritional value, functional properties, applications, bioavailability and bioaccessibility of food components Covers food components by describing the effects of thermal and non-thermal technologies Addresses shelf-life, sensory characteristics and health claims

Protected Disclosures - South African Law Reform Commission 2004

Food Chain Integrity - Jeffrey Hoorfar 2011-03-15

Improving the integrity of the food chain, making certain that food is traceable, safe to eat, high quality and

genuine requires new diagnostic tools, the implementation of novel information systems and input from all food chain participants. Food chain integrity reviews key research in this fast-moving area and how it can be applied to improve the provision of food to the consumer. Chapters in part one review developments in food traceability, such as food 'biotracing', and methods to prevent food bioterrorism. Following this, part two focuses on developments in food safety and quality management. Topics covered include advances in understanding of pathogen behaviour, control of foodborne viruses, hazard ranking and the role of animal feed in food safety. Chapters in part three explore essential aspects of food authenticity, from the traceability of genetically modified organisms in supply chains to new methods to demonstrate food origin. Finally, part four focuses on consumer views on food chain integrity and future trends. With its distinguished editors and expert team of contributors, Food chain integrity is a key reference for all those tasked with predicting and implementing actions to prevent breaches in the integrity of food production. Reviews key research in this fast-moving area and how it can be applied to improve the provision of food to the consumer Examines developments in food traceability, such as food 'biotracing', and methods to prevent food bioterrorism Focuses on developments in food safety and quality management featuring advances in understanding pathogen behaviour and control of foodborne viruses

Bioactive Compounds in Foods - Tung-Ching Lee 2002

This text examines bioactive compounds as food is processed - covering a wide range of products and examining the response to many different processing operations in regard to positive or negative effects on health.

Food Safety Culture - Frank Yiannas 2008-12-10

Food safety awareness is at an all time high, new and emerging threats to the food supply are being recognized, and consumers are eating more and more meals prepared outside of the home. Accordingly, retail and foodservice establishments, as well as food producers at all levels of the food production chain, have a growing responsibility to ensure that proper food safety and sanitation practices are followed, thereby, safeguarding the health of their guests and customers. Achieving food safety success in this changing environment requires going beyond traditional training, testing, and inspectional approaches to managing risks. It requires a better understanding of organizational culture and the human dimensions of food safety. To improve the food safety performance of a retail or foodservice establishment, an organization with thousands of employees, or a local community, you must change the way people do things. You must change their behavior. In fact, simply put, food safety equals behavior. When viewed from these lenses, one of the most common contributing causes of food borne disease is unsafe behavior (such as improper hand washing, cross-contamination, or undercooking food). Thus, to improve food safety, we need to better integrate food science with behavioral science and use a systems-based approach to managing food safety risk. The importance of organizational culture, human behavior, and systems thinking is well documented in the occupational safety and health fields. However, significant contributions to the scientific literature on these topics are noticeably absent in the field of food safety.

Code of Practice for Fish and Fishery Products - Food and Agriculture Organization of the United Nations 2020-10-09

The Codex Alimentarius, "the food code", has a fundamental role in protecting consumers all around the world and ensuring fair practices in food trade. The Code of Practice for Fish and Fishery Products is the essential reference point for technical guidance on the harvesting, processing, transport and sale of fish and fishery products.

Terrorist Threats to Food - World Health Organization. Food Safety Department 2002

While only a few cases of intentional contamination of food have been proven, the risk of possible terrorist threats to food should be given serious consideration by public health authorities and the food industry.This document examines means of establishing basic prevention, surveillance and response capacities. Because both unintentionally and deliberately caused outbreaks of foodborne disease may be managed by many of the same mechanisms, the WHO recommendations concentrate on working with national governments on integrating terrorism prevention and response measures into existing national food safety and disease surveillance programmes.Preventive measures by governments and the food industry are discussed. Industry involvement is encouraged from the outset, as the food industry possesses the primary means and greatest ability to minimize food-related risks. Existing food safety management programmes can be enhanced, WHO says, while putting in place appropriate security measures to protect food production and distribution systems. The document provides suggestions for specific measures for consideration by industry.The document provides guidance on strengthening existing communicable disease control systems to ensure that surveillance systems are sufficiently sensitive to meet the threat of any food safety emergency.The guidance document emphasizes the need to strengthen existing emergency alert and response systems by improving links with all relevant agencies and with the food industry. Many developed and most developing countries are not yet adequately prepared to deal with a large-scale food safety emergency. All countries should undertake preparedness and response planning to be able to cope with food safety emergencies regardless of their cause. In this regard, the services of various technical programmes of WHO as well as other organizations that may be of assistance to countries in addressing this newly emerging public health concern are also described in the document.Experts from national agencies in Australia, Germany, Ireland, Japan, Russia, Spain, United Kingdom, and United States of America, and from organizations including the European Commission, the Food and Agriculture Organization of the United Nations and the Industry Council for Development contributed to the development of the document.