

Handbook Of Nutraceuticals And Functional Foods Second Edition

Handbook of Functional Beverages and Human Health provides potential applications and new developments in functional beverages, nutraceuticals, and health foods. In addition to serving as a reference manual, it summarizes the current state of knowledge in key research areas and contains novel ideas for future research and development. Additionally, Functional dairy products have been the focus of intense research and product development over the last two decades. At last, this valuable information has been compiled into one resource that reveals key advances in functional dairy ingredients and products and identifies directions for marketing and product development. Handbook of Functi

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

Due in part to an absence of universally accepted standardization methods, nutraceuticals and functional foods face regulatory ignorance, marketing incompetence and ethical impunity. Even though many researchers believe that there is a connection between nutraceuticals and functional foods and reduced health care expenses as well as disease prevent

"Functional food or medicinal food is any fresh or processed food claimed to have a health-promoting and/or disease-preventing property beyond the basic nutritional function of supplying nutrients, although there is no consensus on an exact definition of the term. This is an emerging field in food science, in which such foods are usually accompanied by health claims for marketing purposes, such as a company's 'cereal is a significant source of fiber. Studies have shown that an increased amount of fiber in one's diet can decrease the risk of certain types of cancer in individuals.' Functional foods are sometimes called nutraceuticals, a portmanteau of nutrition and pharmaceutical, and can include food that has been genetically modified. The general category includes processed food made from functional food ingredients, or fortified with health-promoting additives, like "vitamin-enriched" products, and also fresh foods (e.g., vegetables) that have specific claims attached. Fermented foods with live cultures are often also considered to be functional foods with probiotic benefits."

Scientific advances in this field have not only given us a better understanding of what is an optimal diet, but has allowed food and nutraceutical companies to market products with specific health claims, fortify existing foods, and even create new foods designed for a particular health benefit. Handbook of Nutraceuticals and Functional Foods, Second Edition, compiles the latest data from authoritative, scientific sources. It provides hard evidence on the prophylactic and medicinal properties of many natural foods. This handbook reviews more than 200 nutraceutical compounds. Each chapter includes the chemical properties, biochemical activity, dietary sources, and evidentiary findings for each compound. New topics include the use of exopolysaccharides from lactic acid bacteria, protein as a functional ingredient for weight loss, and nutraceuticals to be used in the adjunctive treatment of depression. Two new chapters discuss recent evidence on oxidative stress and the antioxidant requirements of athletes as well as the use of

nutraceuticals for inflammation. The scientific investigation of nutrition and lifestyle changes on the pain and debilitation of osteoarthritis is the subject of another new article. The book concludes with a look at future marketing opportunities paying particular attention to the alleviation of obesity. With contributions from a panel of leading international experts, Handbook of Nutraceuticals and Functional Foods, Second Edition, provides instant access to comprehensive, cutting edge data, making it possible for food scientists, nutritionists, and researchers to utilize this ever growing wealth of information.

As soon as Dr. Stephen DeFelice coined the phrase nutraceutical, product and supplement developers swung into action. Yet among the numerous books available on nutraceuticals, there is none that systematically lists, categorizes, and analyzes nutraceutical extracts and formulations in a pharmacopoeia-like manner. Handbook of Nutraceuticals, Volume 1: Ingredients, Formulations, and Applications lists information on many ingredients used in nutraceuticals, developing their formulations and applications. The book includes contributions from experts with pharmaceutical backgrounds, providing an examination of nutraceuticals from a pharmaceutical perspective. Building a foundation with coverage of historical background, definitions, and challenges, the book offers insight into nutraceutical ingredients from plant, animal, and mineral origin. It then covers the characterization of nutraceuticals' physicochemical, analytical, pharmacological, and pharmacokinetic classification, followed by information on regulatory requirements. The book highlights applications in cardiovascular disease, bone and joint treatments, diabetes management, weight management, skin health, probiotics and prebiotics, tranquilizing medicinal plants, dietary foods, and more. Interest in new diet regimens and new products for increased health and longevity will continue to grow, giving dietary supplements an increasing amount of cupboard space in most households. With quality of content unsurpassed by many resources, the book discusses the characterization processes for nutraceuticals based on the contributors' experience in pharmaceuticals. It then explores how those proven techniques may be applied to the development and manufacture of nutraceutical products.

Use this valuable book to make better food/diet/nutrition supplement choices for your clients (and yourself)! The Nutritionist provides an overview of the basic concepts involved in nourishing the human body in an organized and progressive first-person question-and-answer format. Its eminently readable style and easy-to-understand graphics will enhance your comprehension of applied nutrition topics such as energy nutrients, vitamins, and minerals as well as energy metabolism and body composition, exercise, heart disease, and cancers. Healthcare professionals, personal trainers, nutritionists, and lay readers will all find valuable, easily understood information in The Nutritionist. The book lays the foundation with a review of the basic concepts of body composition and related scientific concepts, which are invaluable in understanding the nutrition information that follows. It examines molecules, chemical reactions, energy, acids and bases (pH), free radicals and oxidation, and water solubility. With this foundation, concepts such as lipoproteins (LDL, HDL, blood cholesterol), antioxidants, energy, metabolism, body composition, exercise, heart disease, and cancer are easily understandable. This unique book's first-person, question-and-answer style brings you quick access to current information about nutrition and: energy metabolism energy nutrients weight control body composition

exercise vitamins and minerals nutrition supplements osteoporosis diabetes mellitus heart disease cancer and more! The Nutritionist provides straightforward answers to basic questions about the body and how to nourish it. Use it to make better choices for your clients and to help them reach the performance and health goals they set.

Current research on health, nutrition, and preventative care will always be in demand. As the battles against ailments such as diabetes and heart disease continue, medical professionals are seeking to create a healthier society through nutrition and dietary-based tactics. Nutraceutical and Functional Foods in Disease Prevention is a comprehensive publication providing current research on the dynamic fields of pharmaceutical and biomedical science in relation to nutrition. This book examines the interactions and associations between nutritive value and its therapeutic applications in human health. Touching on topics such as the impact of probiotics in human health and disease treatment, recent trends in functional foods for obesity management, and the clinical role of antioxidants in the treatment of diseases, this title proves a valuable resource for academicians, healthcare practitioners, medical researchers, and higher education students preparing for careers as health professionals.

This book shares an essential knowledge on nutraceuticals and natural products, their preparation techniques and their functional uses in nutrition and healthcare. Comprehensive outlook: this book covers biological, medicinal, and nutritional properties and applications of functional foods Highlights advanced technologies used in the extraction and functionalization of the nano components, with a major focus being nanomaterial and nanochemical aspects of these products Covers developmental research as well as user-level benefits of nutraceuticals and natural products Exclusive discussions of market analysis, quality assurance, and regulations of these products

This handbook provides key information on the clinical use of nutraceuticals, an increasingly common practice grounded in an understanding of the pharmacological activities of natural compounds and clinical evidence of efficacy and safety. Each chapter examines the effects of nutraceuticals in different therapeutic contexts, including nutraceuticals active on the digestive system, heart, lipid and glucose metabolism, and immune system. The authors also address relevant concerns such as relative and absolute contraindications, range of tested doses (efficacious and safe), possible side effects and pharmacological interactions, and the scientific level of clinical evidence for each product. Despite the availability of a large number of nutraceuticals on the market, the same compound is often offered by different industries at different dosages and concentrations, with different titration and often with different suggestions of efficacy. Available academic books on nutraceuticals prioritize summarizing information or focus on the pharmacological aspects on cells or animals models rather than on proof in humans. The handbook takes a unique and practical approach intended to assist clinicians, pharmacologists, nutritionists, and dietitians considering prescribing nutraceuticals for therapeutic use.

Renowned expert Professor Arrigo Cicero is known internationally for his work in nutraceuticals, and currently serves as President of the Italian Nutraceutical Society.

Flavors are an integral part of nutraceutical formulations. Flavors offer significant advantage to Nutraceuticals when it comes to palatability and get an edge over other products in an extremely competitive nutraceutical market. Flavors for Nutraceuticals and Functional Foods addresses different natural ingredients/botanicals used in various functional foods and nutraceutical products. The techniques of incorporating flavors in Nutraceutical products can be classified as conventional and using recently developed modern techniques such as nanotechnology are also covered in different chapters. These techniques are mainly used for masking the taste of nutraceutical and functional food products. The book discusses the basics of flavors and the significance of the flavor industry in relation to Nutraceuticals. This book covers various processes involved in incorporating flavor and improving product acceptability. It provides an overview on the potential applications of the main terpene based flavors as part of nutraceuticals formulations. This book will serve as a reference to academicians and industry people who are involved in Nutraceutical formulations and marketing.

The Handbook of Food Products Manufacturing is a definitive master reference, providing an overview of food manufacturing in general, and then covering the processing and manufacturing of more than 100 of the most common food products. With editors and contributors from 24 countries in North America, Europe, and Asia, this guide provides international expertise and a truly global perspective on food manufacturing.

Food Nanotechnology: Applications and Approaches is the definitive guide on all aspects of nano-sized ingredients and devices for the food sector. The book brings science and applications together on the nano-scale into nano-structured food materials, with an emphasis on their production, processing, engineering, characterization, and applications of food materials containing true nano-sized dimensions or nano-structures that enable novel/enhanced properties or functions. All chapters emphasize original results relating to experimental, theoretical, computational, and/or applications of nano-materials in food. Topics such as the application of nanotechnology in food processing operations, functional ingredients, quality control, nutraceutical delivery, and packaging of food products are very attractive and beneficial to both academics and practitioners. Finally, the safety of applying nano ingredients and nano devices is covered. Brings novel applications of nanotechnology in processing food products Shows how to improve the formulation of food products with nano-structured ingredients Explores new opportunities in food packaging through nano-structured materials

Within the last few years, knowledge about vitamins has increased dramatically, resulting in improved understanding of human requirements for many vitamins. This new edition of a bestseller presents comprehensive summaries that analyze the chemical, physiological, and nutritional relationships, as well as highlight newly identified functions, for a

This book summarizes available fiber sources and how they can be incorporated into new food products to provide improved health benefits. It rigorously examines health claims, recent research, and contradictory data; covers fiber for weight and glycemic control, and intestinal regularity; and discusses how food producers can find fiber sources and include fiber in their products. Critically examining current research and future directions, this resource blends coverage of the latest scientific information on the health benefits of fiber with information on how to formulate foods with higher concentrations of this vital nutrient.

This fully revised and updated edition begins with insights into the scope, importance and continuing growth opportunities in the nutraceutical and functional food industries and explores the latest regulatory changes and their impacts. The book demonstrates the global scenario of the acceptance and demand for these products and explores the regulatory hurdles and claim substantiation of these foods and dietary supplements, as well as addressing the intricate aspects of manufacturing procedures. As the public gains confidence in the quality of these products based on sophisticated quality control, a broad spectrum of safety studies and GRAS, peer-reviewed publications and cutting-edge human clinical studies have emerged. An increasing number of additional populations around-the-world now recognize the efficacy and functions of nutraceuticals and functional foods as established by those scientific research studies. As a result, a number of structurally and functionally active novel nutraceuticals and several new functional beverages have been introduced into the marketplace around the world. Features fully revised and updated information with current regulations from around the world, including GRAS status and DSHEA regulators. Offers 45% new content including three new chapters –NSF: Ensuring the Public Health and Safety Aspects of Nutraceuticals and Functional Foods; Role of the United States Pharmacopoeia in the Establishment of Nutraceuticals and Functional Food Safety; An Overview on the New Dietary Ingredient (NDI) and Generally Recognized as Safe (GRAS) Status, and the addition of cGMP regulations for dietary supplements. Includes insight into working with regulatory agencies, processes and procedures. Provides a link to the contact information for most regulatory bodies for readers wishing to gain further knowledge.

Presents the latest research on the analysis, metabolism, function, and physicochemical properties of fiber, fiber concentrates, and bioactive isolates--exploring the effect of fiber on chronic disease, cardiovascular health, cancer, and diabetes. Examines food applications and the efficacy and safety of psyllium, sugar beet fiber, pectin, alginate, gum arabic, and rice bran.

This new volume provides important information on potential applications and new developments in functional health foods and nutraceuticals. It looks at the health-promoting properties in functional foods and beverages as well as nutraceuticals. Some health issues that are considered in conjunction with these foods and nutraceuticals include oxidative stress, obesity, pharyngitis, low cognitive concentration, among others. Research topics include the antioxidant properties of certain products, the development of functional and medicinal beverages, nutraceuticals and functional foods for alternative therapies, and more.

Handbook of Nutraceuticals and Functional Foods, Second Edition is a thorough revision of an extremely successful professional handbook that is also used in advanced and graduate courses. This book offers a snapshot of the most current topics in this important field of nutraceuticals and functional foods. It is an ideal all-in-one reference for food scientists, academic professors, nutritional scientists and pharmaceutical scientists. For this new edition, seven brand new chapters have been added: Vitamin E; Nutritional Supplements and Inflammation; Whey Protein; Personalized Nutrition; Fruits; Beverages; and Cereals. Other chapters have been cut and remaining chapters

have been updated and revised.

Fermented foods have been an important part of the human diet in many cultures for many centuries. Modern research, especially on the immune system, is revealing how these foods and their active ingredients impact human health. Handbook of Fermented Functional Foods presents the latest data on fermented food products, their production processes, an

Written for the upper-level undergrad or graduate level majors course, Advanced Human Nutrition, Third Edition provides an in-depth overview of the human body and details why nutrients are important from a biochemical, physiological, and molecular perspective. Through its writing style and numerous figures and illustrations, the Third Edition clearly outlines metabolism and the molecular functions of nutrients. A variety of pedagogical elements within the text, such as Here's Where You Have Been and Here's Where You Are Going, help clarify key points from the chapter and provide real-world examples that bring the content to life. New and Key Features of the Third Edition: Includes new chapters on Fiber and Nutraceuticals and Functional Foods Before You Go On sections asks students to reflect upon what they've just read, urging them to go back and re-read portions of the text if they do not readily grasp the material. Special Feature boxes on focused topics add depth to the chapter and, in some cases, allow the student to view the application of basic science. The end-of-chapter summary reiterates key points from the chapter and helps students prepare for future exams."

Consumer demand is creating rapid growth in the functional foods market - a market soon to reach \$20 billion worldwide. As a result, the food industry has stepped up the development of functional lipids. These lipids impart health benefits when consumed and also impact food product functionalities. While many books have touched on the correlation b

With contributions from a panel of leading international experts, the Handbook of Nutraceuticals and Functional Foods, Second Edition, provides a collection of the most current topics in nutraceuticals and functional foods. This edition features new and revised chapters, including the topics of vitamin E, nutritional supplements and inflammation, whey protein, cereals, beverages, and fruits.

Regulation of Functional Foods and Nutraceuticals: A Global Perspective offers a comprehensive resource for information on regulatory aspects of the growing and economically important functional food industry. Regulatory systems and definitions of key terms-food, supplement, drug, etc-vary from country to country. A thorough understanding of laws and regulation within and among key countries with regard to functional foods, herbal extracts or drugs, and nutritional supplements is critical to the direction of food companies that are developing products for these markets. International experts with legal and/or scientific expertise address relevant topics from quality issues, to organic foods to labeling. Innovative product development within the framework of existing regulations will be addressed in individual chapters. Overview chapters will discuss global principles, inter-country trading issues, and present a comparison of the laws and regulations within different countries graphically. A "must-have" handbook for research professionals, management, and marketing strategists in the worldwide functional foods/nutritional supplements business. Food technicians and engineers responsible for manufacturing quality in this industry should add it to their library to ensure that they have a thorough knowledge of the applicable legal requirements. The book will also serve as an indispensable shelf reference for lawyers in the food industry and government health professionals with regulatory responsibilities.

Contains new and expanded material on antioxidants in beverages and herbal products, nitric oxide and selenium, and the effect of vitamin C on cardiovascular disease and of lipoic acid on aging, hyperglycemia, and insulin resistance! Offering over 4200 contemporary references-2000 more than the previous edition-the Second Edition of the Handbook of Antioxidants is an up-to-the-minute source for

nutritionists and dietitians, cell biologists and biochemists, cardiologists, oncologists, dermatologists, and medical students in these disciplines.

The global market for seafood products continues to increase year by year. Food safety considerations are as crucial as ever in this sector, and higher standards of quality are demanded even as products are shipped greater distances around the world. The current global focus on the connection between diet and health drives growth in the industry and offers commercial opportunities on a number of fronts. There is great interest in the beneficial effects of marine functional compounds such as omega-3 polyunsaturated fatty acids. Seafoods are well-known as low calorie foods, and research continues into the nutritional effects on, for example, obesity and heart disease. In addition, by-products of marine food processing can be used in nutraceutical applications. This book is a resource for those interested in the latest advances in the science and technology of seafood quality and safety as well as new developments in the nutritional effects and applications of marine foods. It includes chapters on the practical evaluation of seafood quality; novel approaches in preservation techniques; flavour chemistry and analysis; textural quality and measurement; packaging; the control of food-borne pathogens and seafood toxins. New research on the health-related aspects of marine food intake are covered, as well as the use of seafoods as sources of bioactives and nutraceuticals. The book is directed at scientists and technologists in academia, government laboratories and the seafood industries, including quality managers, processors and sensory scientists.

Mineral supplements are receiving a great deal of attention and experiencing a tremendous period of growth. Despite their popularity, questions continue to arise regarding the research behind their claims, the efficacy of different forms, and their overall safety. It is critical for the health care community and the general public to have an unbiased source of authoritative information. Handbook of Minerals as Nutritional Supplements provides a comprehensive presentation and interpretation of the current state of research on various mineral supplements. It discusses the science behind the major minerals, the latest research on the mineral's ability to correct deficiencies that may compromise health, and some of the popular health claims. Each chapter focuses on a particular mineral and features the same headings, ensuring that the retrieval of information is quick and easy. As the first book on supplements written by a university mineral researcher specifically for the biomedical research and professional health care community, the information is technical enough to satisfy a biomedical audience, yet avoids jargon used mainly by mineral specialists. The author presents various perspectives on controversial issues, and then offers his knowledgeable opinion on the best course of action, all in an effort to provide guidance on the wise use of mineral supplements. Therapeutic Foods, Volume 8 in the Handbook of Food Bioengineering series, is an essential resource for anyone investigating foods that may be utilized as therapeutic agents. Plants and animal products have been utilized since ancient times as medicine to treat diseases, and the properties within foods and ingredients are still investigated for food therapy and prophylaxis. The book is a comprehensive resource for researchers and scientists already in the field or those just entering. It covers many spices, plant extracts, essential oils and vegetal mixtures that have immune-stimulatory effects and can be efficiently utilized in the treatment of infections and cancer. Presents introductory chapters for background and practical examples of therapeutic foods used in different diseases to aid in research Provides scientific methods to help eliminate food spoilage and bacterial contamination in food packaging Includes benefits of the applications of functional properties of food and food ingredients to benefit health and well-being

A growing awareness of the contributions that functional foods, bioactive compounds, and nutraceuticals make to health is creating a tremendous market for these products. In order for manufacturers to match this demand with stable, high volume production while

maintaining defined and reliable composition, they must have ready access to the very lat

The proper nutrition can aid disease prevention and ensure an overall healthy lifestyle. In nutrition, certain natural and processed foods are particularly useful in achieving and maintaining health goals. Nutraceuticals and Innovative Food Products for Healthy Living and Preventive Care is a comprehensive reference source for the latest research findings on food components that provide health and medical benefits, including the prevention, treatment, and cures for numerous diseases. Featuring extensive coverage on relevant areas such as functional foods, alternative medicine, and nutrition, this publication is an ideal resource for medical practitioners, nutritionists, upper-level students, researchers, and academicians seeking information on the use of food products in health management.

In the last three decades, revolutionary achievements have taken place in nutraceutical and functional food research including the introduction of a number of cutting-edge dietary supplements supported by human clinical trials and strong patents. Novel manufacturing technologies including unique extraction processes, bioavailability improvements th

Functional foods and nutraceuticals are food products that naturally offer or have been modified to offer additional health benefits beyond basic nutrition. As such products have surged in popularity in recent years, it is crucial that researchers and manufacturers understand the concepts underpinning functional foods and the opportunity they represent to improve human health, reduce healthcare costs, and support economic development worldwide. Functional Foods and Nutraceuticals: Bioactive Components, Formulations and Innovations presents a guide to functional foods from experienced professionals in key institutions around the world. The text provides background information on the health benefits, bioavailability, and safety measurements of functional foods and nutraceuticals. Subsequent chapters detail the bioactive components in functional foods responsible for these health benefits, as well as the different formulations of these products and recent innovations spurred by consumer demands. Authors emphasize product development for increased marketability, taking into account safety issues associated with functional food adulteration and solutions to be found in GMP adherence. Various food preservation methods aimed at enhancing the quality and shelf life of functional food are also highlighted. Functional Foods and Nutraceuticals: Bioactive Components, Formulations and Innovations is the first of its kind, designed to be useful to students, teachers, nutritionists, food scientists, food technologists and public health regulators alike.

Health and healing foods have a long history in the Asian cultures. Those of Eastern culture have long believed that food and medicine are from the same source and can treat illnesses and promote a healthier life. This volume covers certain traditional Asian functional foods, their history, functionality, health benefits, physiological properties, mechanisms of anti-cancer and anti-aging action. In addition, it covers processing technology, storage, material sources, marketing, social, and economical aspects. Expanding on geographical areas covered in previous works, the authors consider foods that originate from all over upper and lower Asian as well as the Middle East.

The nutritional and medicinal value of metals, such as zinc, calcium, and iron, has been known in traditional medicine for a long time. Other metals, such as silver and gold, may also have therapeutic and health benefits. Ancient medicines have long incorporated their use in the treatment of diseases, and they have also more recently been explored for treatment in allopathic medicine, birthing the concept of metallonutraceuticals. The challenge of using metals in the human body is to find forms that are safe and effective. Handbook of Metallonutraceuticals presents basic concepts related to the nutritional and therapeutic use of metals, product development strategies, and some ideas ready to be applied for condition-specific metallonutraceuticals. The book begins with an overview of the nutraceuticals field and the need for metallonutraceuticals. It considers the roles of various metals in metabolism, reviews the ethnopharmacology and ethnomedicine of metals, and covers the characterization and possible properties of metallonutraceuticals. It also examines bioavailability and drug interactions, and therapeutic applications of nanometals including use as imaging agents, in cancer diagnosis and treatment, as antibacterials and antivirals, in ocular disease, and in neurodegenerative diseases. The book explores the use of metals in traditional Chinese medicine, potential applications for metalloenzymes, the use of nanosilver in nutraceuticals, and the potential of gold nanoparticles as a drug delivery system. In addition, it addresses intellectual property rights and regulatory considerations regarding metallonutraceuticals. Using an interdisciplinary approach, this user-friendly text provides a knowledge base and inspiration for new research in this exciting field.

An A to Z Catalog of Innovative Spices and Flavorings Designed to be a practical tool for the many diverse professionals who develop and market foods, the Handbook of Spices, Seasonings, and Flavorings combines technical information about spices—forms, varieties, properties, applications, and quality specifications — with information about trends, spice history, and the culture behind their cuisines. The book codifies the vast technical and culinary knowledge for the many professionals who develop and market foods. While many reference books on spices include alphabetized descriptions, the similarity between this book and others ends there. More than just a list of spices, this book covers each spice's varieties, forms, and the chemical components that typify its flavor and color. The author includes a description of spice properties, both chemical and sensory, and the culinary information that will aid in product development. She also explains how each spice is used around the world, lists the popular global spice blends that contain the spice, describes each spice's folklore and traditional medicine usage, and provides translations of each spice's name in global languages. New to this edition is coverage of spice labeling and a chapter on commercial seasoning formulas. Going beyond the scope of most spice books, this reference describes ingredients found among the world's cuisines that are essential in providing flavors, textures, colors, and nutritional value to foods. It explores how these ingredients are

commonly used with spices to create authentic or new flavors. The author has created a complete reference book that includes traditionally popular spices and flavorings as well as those that are emerging in the US to create authentic or fusion products. Designed to help you meet the challenges and demands of today's dynamic marketplace, this book is a complete guide to developing and marketing successful products.

This Handbook of Research in Food Science and Technology consists of three volumes focusing on food technology and chemistry, food biotechnology and microbiology, and functional foods and nutraceuticals. The volumes highlight new research and current trends in food science and technology, looking at the most recent innovations, emerging technologies, and strategies focusing on taking food design to sustainable levels. In particular, the handbooks includes relevant information on the modernization in the food industry, sustainable packaging, food bioprocesses, food fermentation, food microbiology, functional foods and nutraceuticals, natural products, nano- and microtechnology, healthy product composition, innovative processes/bioprocesses for utilization of by-products, development of novel preservation alternatives, extending the shelf life of fresh products, alternative processes requiring less energy or water, among other topics.

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