

Bioactive Compounds In Different Cocoa Theobroma Cacao

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Primary Metabolism in Fruits - Franco Famiani 2022-02-23

Antioxidants in Cocoa - Dorota Żyżelewicz 2021-04-07

This Special Issue comprises articles related to the effects of genotype and processing conditions on the phenolic compound profile and antioxidant activity of cocoa-derived products, isolation and characterization of antioxidant compounds such as polyphenols and melanoidins from cocoa beans, and assessment of the antioxidant, antioxidative stress and anti-inflammatory effects of cocoa beans and cocoa-derived products. The results of these studies show that it is possible to maintain or increase the biological activity of cocoa beans and their derived products (cocoa powder and chocolate) by choosing appropriate processing conditions and cocoa genotype and origin. The papers published in this Special Issue confirm that cocoa beans and cocoa by-products can be considered as an attractive source material for manufacturing of functional foods and nutraceuticals. This is because they contain many bioactive compounds, mainly polyphenols, including flavonoids (proanthocyaninidins, monomeric flavan-3-ols, and anthocyanins) and phenolic acids, as well as melanoidins. Finally, the in vitro and in vivo studies demonstrate the importance of cocoa antioxidants for the prevention of oxidative stress and inflammation.

Phytochemicals in Human Health - Venketeshwer Rao 2020-02-12

Naturally present bioactive compounds in plants are referred to as "Phytochemicals" and are being studied extensively for their role in human health. Studies have shown that they can have an important role to play in the prevention and management of several human diseases. Recognizing the increasing interest in this area, this book is being published in response to the need for more current information globally about phytochemicals and their role in human health. Chapters of the book are authored by internationally recognized authors who are experts in their respective field of expertise. The chapters represent both original research as well as up-to-date and comprehensive reviews. We are sure that the book will be an important reference source meeting the needs of a wide range of interest groups.

Natural Bio-active Compounds - Mallappa Kumara Swamy 2019-09-19

Nature has consistently provided human beings with bioactive compounds that can be used directly as drugs or indirectly as drug leads. Some of the major classes of natural bioactive compounds include phenolics, alkaloids, tannins, saponins, lignin, glycosides, terpenoids, and many more. They possess a broad range of biological activities and are primarily useful in the treatment of various health issues. At the same time, the search for new and novel drugs is never-ending and, despite major advances in synthetic chemistry, nature remains an essential resource for drug discovery. Therefore, more and more researchers are interested in understanding the chemistry, clinical pharmacology, and beneficial effects of bioactive compounds in connection with solving human health problems. This book presents a wealth of information on natural metabolites that have been or are currently being used as drugs or leads for the discovery of new drugs. In addition, it highlights the importance of natural products against various human diseases, and their applications in the drug, nutraceuticals, cosmetics and herbal industries. Accordingly, the book offers a valuable resource for all students, educators, and healthcare experts involved in natural product research, phytochemistry, and pharmacological research.

The Agronomy and Economy of Important Tree Crops of the Developing World - K.P. Prabhakaran

Nair 2010-04-22

Major tree crops contribute substantially to the economy of many developing countries on the Asian, African and Latin American continents. For example, coffee is the main revenue earner for Kenya. This book provides a comprehensive review of the agronomy, botany, taxonomy, genetics, chemistry, economics, and future global prospects of a range of crops that have great food, industrial and economic value such as cocoa, coffee, cashew, oil palm and natural rubber. Discusses the major tree crops of great economic value to the developing world The author is an eminent scientist who has won numerous awards for his work in this area

Analysis of Phenolic Plant Metabolites - P. G. Waterman 1994-04-15

Phenolic plant secondary metabolites have assumed an important position in the examination of the impact of plant chemistry on a wide range of ecological interactions. This book outlines the various classes of phenolic compounds likely to be encountered by biologists, our present knowledge of their role(s), and deals in detail with methods for their quantitation, isolation and identification. Methods of quantitative analyses include detailed descriptions of both chemical and biochemical techniques, and discussion of problems with the interpretation of results. This volume differs from other recent publications on plant phenolics in that it is written primarily for biologists, both as a non-technical introduction to the chemistry of phenolic compounds and as a practical aid to their analysis by the non-specialist

Berries and Berry Bioactive Compounds in Promoting Health - Dorothy Klimis-Zacas 2022-06-01

This comprehensive book brings together international experts to review state-of-the-art research findings on the exponentially growing area of berries and berry bioactive compounds in promoting health.

Practical Polyphenolics - Edwin Haslam 1998-03-28

This book describes the scientific basis for the action of plant polyphenols in a wide range of phenomena.

Chocolate Science and Technology - Emmanuel Ohene Afoakwa 2011-08-24

This book provides an overview of the science and technology of chocolate manufacture from cocoa production, through the manufacturing processes, to the sensory, nutrition and health aspects of chocolate consumption. It covers cocoa cultivation and production with special attention paid to cocoa bean composition, genotypic variations in the bean, post-harvest pre-treatments, fermentation and drying processes, and the biochemical basis of these operations. The scientific principles behind industrial chocolate manufacture are outlined with detailed explanations of the various stages of chocolate manufacturing including mixing, refining, conching and tempering. Other topics covered include the chemistry of flavour formation and development during cocoa processing and chocolate manufacture; volatile flavour compounds and their characteristics and identification; sensory descriptions and character; and flavour release and perception in chocolate. The nutritional and health benefits of cocoa and chocolate consumption are also addressed. There is a focus throughout on those factors that influence the flavour and quality characteristics of the finished chocolate and that provide scope for process optimization and improvement. The book is designed to be a desk reference for all those engaged in the business of making and using chocolate worldwide; confectionery and chocolate scientists in industry and academia; students and practising food scientists and technologists; nutritionists and other health professionals; and libraries of institutions where food science is studied and researched. an overview of the science behind chocolate

manufacture covers the whole process from cocoa production, through manufacturing, to the nutrition and health aspects of chocolate consumption focuses on factors that influence chocolate flavour and quality, and that provide scope for process optimization and improvement.

Food Wastes and By-products - Rocio Campos-Vega 2020-02-03

A complete guide to the evolving methods by which we may recover by-products and significantly reduce food waste Across the globe, one third of cereals and almost half of all fruits and vegetables go to waste. The cost of such waste – both to economies and to the environment – is a serious and increasing concern within the food industry. If we are to overcome this crisis and move towards a sustainable future, we must do everything possible to utilize innovative new methods of extracting and processing valuable by-products of all kinds. Food Wastes and By-products represents a complete primer to this important and complex process. Edited and written by leading researchers, the text provides essential information on the supply of waste and its composition, identifies foods rich in valuable bioactive compounds, and explores revolutionary methods for creating by-products from fruit, vegetable, and seed waste. Other chapters discuss the nutraceutical properties of value-added by-products and their uses in the manufacturing of dietary fibers, food flavors, supplements, pectin, and more. This book: Explains how reconstituted by-products can best be used to radically reduce food waste Discusses the potential nutraceutical assets of recovered food waste Covers a broad range of by-product sources, such as mangos, cacao, flaxseed, and spent coffee grounds Describes novel extraction processes and the emerging use of nanotechnology A significant contribution to the field, Food Wastes and By-products is a timely and essential resource for food industry professionals, government agencies and NGOs involved in nutrition, agriculture, and food production, and university instructors and students in related areas.

Chocolate, Cocoa and Confectionery: Science and Technology - Bernard Minifie 2012-12-06

The second edition of this book achieved worldwide recognition within the chocolate and confectionery industry. I was pressed to prepare the third edition to include modern developments in machinery, production, and packaging. This has been a formidable task and has taken longer than anticipated. Students still require, in one book, descriptions of the fundamental principles of the industry as well as an insight into modern methods. Therefore, parts of the previous edition describing basic technology have been retained, with minor alterations where necessary. With over fifty years' experience in the industry and the past eighteen years working as an author, lecturer, and consultant, I have collected a great deal of useful information. Visits to trade exhibitions and to manufacturers of raw materials and machinery in many parts of the world have been very valuable. Much research and reading have been necessary to prepare for teaching and lecturing at various colleges, seminars, and manufacturing establishments. The third edition is still mainly concerned with science, technology, and production. It is not a book of formulations, which are readily available elsewhere. Formulations without knowledge of principles lead to many errors, and recipes are given only where examples are necessary. Analytical methods are described only when they are not available in textbooks, of which there are many on standard methods of food analysis.

Acknowledgments I am still indebted to many of the persons mentioned under "Acknowledgments" in the second edition. I am especially grateful to the following.

Plant-derived Bioactives - Mallappa Kumara Swamy 2020-05-11

Plants produce a vast number of bioactive compounds with different chemical scaffolds, which modulate a diverse range of molecular targets and are used as drugs for treating numerous diseases. Most present-day medicines are derived either from plant compounds or their derivatives, and plant compounds continue to offer limitless reserves for the discovery of new medicines. While different classes of plant compounds, like phenolics, flavonoids, saponins and alkaloids, and their potential pharmacological applications are currently being explored, their curative mechanisms are yet to be understood in detail. This book is divided into 2 volumes and offers detailed information on plant-derived bioactive compounds, including recent research findings. Volume 1, Plant-derived Bioactives: Chemistry and Mode of Action, discusses the chemistry of highly valued plant bioactive compounds and their mode of actions at the molecular level. Volume 2, Plant-derived Bioactives: Production, Properties and Therapeutic Applications, explores the sources, biosynthesis, production, biological properties and therapeutic applications of plant bioactives. Given their scope, these books are valuable resources for members of the scientific community wishing to further explore various

medicinal plants and the therapeutic applications of their bioactive compounds. They appeal to scholars, teachers and scientists involved in plant product research, and facilitate the development of innovative new drugs.

Utilisation of Bioactive Compounds from Agricultural and Food Production Waste - Quan V. Vuong 2017-09-07

The large quantity of waste generated from agricultural and food production remains a great challenge and an opportunity for the food industry. As there are numerous risks associated with waste for humans, animals and the environment, billions of dollars are spent on the treatment of agricultural and food waste. Therefore, the utilisation of bioactive compounds isolated from waste not only could reduce the risks and the costs for treatment of waste, but also could potentially add more value for agricultural and food production. This book provides comprehensive information related to extraction and isolation of bioactive compounds from agricultural and food production waste for utilisation in the food, cosmetic and pharmaceutical industries. The topics range from an overview on challenges and opportunities related to agricultural and food waste, the bioactive compounds in the waste, the techniques used to analyse, extract and isolate these compounds to several specific examples for potential utilisation of waste from agricultural and food industry. This book also further discusses the potential of bioactives isolated from agricultural and food waste being re-utilised in the food, cosmetic and pharmaceutical industries. It is intended for students, academics, researchers and professionals who are interested in or associated with agricultural and food waste.

Recovering Bioactive Compounds from Agricultural Wastes - Van Tang Nguyen 2017-06-12

A guide to the extraction, isolation and purification of bioactive compounds from agricultural wastes, and their applications Recovering Bioactive Compounds from Agricultural Wastes offers a guide to the many uses of agricultural wastes from the production of major food types including tea, coffee, cacao, cashew, fruit and vegetables, wine, edible oils, sugar, starch and more. Written by a noted expert in the field, the text explores the various methods for extraction, isolation and purification of bioactive compounds from agricultural wastes. The author also makes recommendations concerning the most effective applications of bioactive compounds and discusses the economics and market for recovered bioactive compounds. Recent studies reveal that bioactive compounds have been directly linked to biological activity such as antioxidant, anticancer, antidiabetic, anti-cardiovascular capacities, etc. In particular, agricultural wastes are considered as potential and inexpensive sources of bioactive compounds. Recovering Bioactive Compounds from Agricultural Wastes fills a gap in the literature by providing a text that explores this important topic and examines the: Sustainability of waste management and shows how to extract, isolate and purify bioactive compounds from agricultural wastes, and their most effective application Wide range of agricultural food produce that can be processed and the special techniques used for recovering the bioactive compounds from these sources Health applications of bioactive compounds that have been directly linked to pharmacological activities including antioxidant, anticancer, and more Designed for use by researchers and producers in the agriculture, pharmaceuticals and nutraceuticals, Recovering Bioactive Compounds from Agricultural Wastes contains the knowledge, history and definition, classification and synthesis, and extraction techniques of bioactive compounds.

Chocolate and Health - Rodolfo Paoletti 2012-01-26

Cocoa and chocolate are the subjects of much research in the fields of food chemistry, food technology, and health science. We now know that cocoa contains a remarkable number of bioactive compounds, and these are being tested in humans to verify their disease prevention characteristics. This state of the art text thoroughly explores the different aspects of the relationship between chocolate and health. After introductory discussion of the historical background, careful attention is devoted to technological developments designed to improve the health-giving qualities of chocolate and biochemical and clinical trials of cocoa and its components. Various health impacts of cocoa and chocolate are thoroughly evaluated, including acute vascular effects and effects on blood pressure, blood lipids, and platelets. Psychological drivers of chocolate consumption and craving are also considered. Readers will find this book to be a rich source of essential information on cocoa and chocolate, their purported health-giving qualities, and the advances that are being made in this area.

Omics in Horticultural Crops - Gyana Ranjan Rout 2022-07-16

Omics in Horticulture Crops presents a comprehensive view of germplasm diversity, genetic evolution, genomics, proteomics and transcriptomics of fruit crops (temperate, tropical and subtropical fruits, fruit nuts, berries), vegetables, tuberous crops, ornamental and floricultural crops and medicinal aromatic plants. Information covering phenomics, genetic diversity, phylogenetic studies, genome sequencing, and genome barcoding through the utilization of molecular markers plays an imperative role in the characterization and effective utilization of diverse germplasm are included in the book. This is a valuable reference for researchers and academics seeking to improve cultivar productivity through enhanced genetic diversity while also retaining optimal traits and protecting the growing environment. Highlights perspectives, progress and promises of -omics application Provides a systematic overview of origin, progenitor and domestication process as well as genetic insights Includes full range of horticultural crops

Biogenic Amines and Food Safety - Maria Martuscelli 2021-08-31

Biogenic amines are bioactive compounds distributed in foods of all origins. Apart from their fundamental role in many bodily functions, there has recently been great interest in their toxicological potential, much research is being carried out to understand their occurrence related to both desired and undesired fermentative phenomena, chemical spoilage, low hygienic conditions, wrong handling, and criticism about technological factors of process and storage conditions. All these causes can contribute to a higher content of biogenic amines in food, particularly of those hazardous to human health. This book aims to collect scientific studies looking for new tools to limit the over-production of biogenic amines in food, search for new food sources of biogenic amines, and to spotlight the concept of safe food and bioactive amines content.

Bioactive Compounds - Leila Queiroz Zepka 2021-09-29

Bioactive Compounds - Biosynthesis, Characterization, and Applications is an authoritative compilation of chapters on bioactive compounds with proven activities. It provides valuable information about biosynthesized active compounds that can be used for the further development of products in various industries. Chapters cover such topics as biosynthesis, characterization, separation, and purification, and applications of bioactive molecules. It describes and discusses bioresources of animal, vegetal, and microbial origin as potential sources of flavonoids, polysaccharides, sterols, polyphenols, amino acids, and others. This book provides insight into future developments in the field and, as such, is an essential resource for academicians, industrial researchers, and practitioners in biomolecules with biological activity. Key features: • Describes several classes of bioactive compounds and their associated activities • Highlights potential contributions of bioactive compounds as alternatives in the prevention and/or treatment of diseases • Contains information relevant to the development and use of new products

Global Food Security and Wellness - Gustavo V. Barbosa-Cánovas 2017-05-05

This book is based on selected papers from keynote and symposium sessions given at the 16th International Union of Food Science and Technology (IUFoST) World Congress, held in Foz do Iguaçu, Brazil August, 2012. The theme of the Congress was the challenges faced by food science in both the developed and developing regions of the world. The symposia featured prominent world-renowned keynote and plenary speakers, young researchers, and the technical sessions covered the whole spectrum of basic and applied food science and technology, including consumer issues and education, diets and health, ethnic foods, and R&D.

Conceptualizing Plant-Based Nutrition - Ramesh S. V. 2022-10-10

This book deliberates on the various aspects of plant-based nutrition. Plant-based nutrition has numerous potential health benefits as it is low on calories nevertheless high on nutrient density and satiety, and also nutrient supplementation makes them wholesome diets. Starting with the importance of biodiversity contributing to the nutrition, the book discusses the development or utilization of nutrient-dense crops/foods with their bioavailability properties and health effects. Further, it deals with the enrichment of micronutrients through bio-fortification, fortification, the role of food matrix, and nutrient bioavailability, including the role of plant-based milk alternatives. The linkage between food and health is also being discussed in the context of anti-nutritional factors, metabolic fate of the food, and genomics. Finally, the implications of next-gen biotech crops and food safety issues imperative to define the concept of safe

nutrition are discussed. With contributions from plant nutrition experts, this book serves as a one-stop reference for plant scientists, food technologists, and nutritionists looking to understand the concept of plant-based nutrition and its linkage with human health.

Edible Food Packaging - Amrita Poonia 2022

This book discusses the various aspects of sustainable packaging edibles in food industry. It is divided into five main parts. The first section of the book addresses details of edible films, various sources, origin, scope and functions. Second section covers different sustainable alternatives such as seed gums, fruits and vegetable peels, sea weeds, fruits wastes, dairy by products & anti-oxidant edible packaging. This book also discusses about methods of improvements of mechanical properties of packaging edibles & their food applications, testing methods, innovations, limitations, challenges and nano edibles. It provides insights about the large quantity of wastes and by-products generated by food processing industries. Disposal of these wastes is a big problem due to their high biochemical oxygen demand (BOD) & chemical oxygen demand (COD) which causes severe problem of pollution to the environment. These wastes contain large amounts of proteins, carbohydrates, lipids, minerals, various bioactive compounds and have eco-friendly packaging potential. The book emphasizes on the fact that recycling these wastes as packaging edibles are sustainable and economical. As a world foreseeing food technology revolution, this book explores the unique topics in food packaging which possesses mammoth commercial applications and environmental potential. Due to its immense scope, this book is highly useful for researchers, food scientists, students and food packaging industry experts. .

Bioactive Compounds in Nutraceutical and Functional Food for Good Human Health - Kavita Sharma 2021-04-07

Bioactive compounds are abundant in nature, particularly in plants, which have the capacity to synthesize phenolics, flavonoids, caffeine, carotenoids, and much more. Different bioactive compounds can change or alter the life process due to their different biological activities. This book examines bioactive compounds and their sources, structures, and potential uses in various industries, including pharmaceuticals, medicine, cosmetics, and food processing.

2nd International Students Science Congress Proceedings - Mahamat Ali Amine Ouchar

The aim of this study is to determine PstI polymorphism in the exon 6 region of the Pituitary-specific Transcription Factor (Pit-1) gene which is regarded as a candidate gene in mammals in regulating growth and development in 6 different goat breeds reared in Turkey. PstI polymorphism in Pit-1 gene (450 bp) was investigated by Restriction Fragment Length Polymorphism (RFLP) method in a total of 217 goats including 36 Hair, 18 Angora, 43 Kilis, 37 Honamlı, 46 Halep and 37 heads of Saanen breeds.

Cocoa, Chocolate and Human Health - Sabine Ellinger 2020-05-23

This book entitled "Cocoa, Chocolate, and Human Health" presents the most recent findings about cocoa and health in 14 peer-reviewed chapters including nine original contributions and five reviews from cocoa experts around the world. Bioavailability and metabolism of the main cocoa polyphenols, i.e., the flavanols like epicatechin, are presented including metabolites like valerolactones that are formed by the gut microbiome. Many studies, including intervention studies or epidemiological observations, do not focus on single compounds, but on cocoa as a whole. This proves the effectiveness of cocoa as a functional food. A positive influence of cocoa on hearing problems, exercise performance, and metabolic syndrome is discussed with mixed results; the results about exercise performance are contradictory. Evidence shows that cocoa flavanols may modulate some risk factors related to metabolic syndrome such as hypertension and disorders in glucose and lipid metabolism. However, several cardiometabolic parameters in type 2 diabetics were not affected by a flavanol-rich cocoa powder as simultaneous treatment with pharmaceuticals might have negated the effect of cocoa. The putative health-promoting components of cocoa are altered during processing like fermentation, drying, and roasting of cocoa beans. Chocolate, the most popular cocoa product, shows remarkable losses in polyphenols and vitamin E during 18 months of storage.

Herbal Principles in Cosmetics - Bruno Burlando 2010-06-23

Interest in the molecular and mechanistic aspects of cosmetic research has grown exponentially during the past decade. Herbal Principles in Cosmetics: Properties and Mechanisms of Action critically examines the

botanical, ethnopharmacological, phytochemical, and molecular aspects of botanical active ingredients used in cosmetics. Along with dermato

Neotropical Endophytic Fungi - Luiz Henrique Rosa 2021-04-14

This pioneering book focuses on Neotropical endophytic fungi, providing a comprehensive overview of their diversity, ecology, and biotechnological applications in medicine, agriculture, and industry. Despite their rich diversity, the endophytic fungi associated with plants of Central and South American biomes remain largely unknown. The book addresses that knowledge gap by offering insights into Neotropic endophytic fungal community.

Natural Bioactive Compounds from Fruits and Vegetables as Health Promoters Part I - Luis Rodrigues da Silva 2016-05-03

Plants have been widely used to treat diseases, owing to the presence of bioactive compounds (phytochemicals) which play important roles in health promotion and disease prevention. In recent years, advances in chemical extraction techniques, lifestyle and dietary choices for human health have increased the interest in the consumption and study of fruits, vegetables, and foods enriched with bioactive compounds and nutraceuticals. Thousands of dietary phytochemicals, such as flavonoids, phenolic acids, glucosinolates, terpenes and alkaloids, have been identified and categorized further according to a diverse array of biochemical properties. Many of these phytochemicals have been hypothesized to reduce the risk of several pathological conditions which include life threatening diseases such as heart disease and cancer, to name a few. *Natural Bioactive Compounds from Fruits and Vegetables as Health Promoters* is a 2 book set which presents a summary of different classes of phytochemicals commonly found in common edible food sources. Each chapter details the general chemical structures of compounds, naturally present in specific fruits, vegetables and grains, their biological importance and mechanisms of action. The book set is an essential handbook for anyone interested in the natural product chemistry of these common crops. Part 1 of this set covers details about different fruits (banana, citrus fruits, pears, etc.). Part 2 covers legumes, nuts, seeds and cereals.

Functional Foods and their Implications for Health Promotion - Ioannis Zabetakis 2022-12-02

Functional Foods and Their Implications for Health Promotion presents functional foods, from raw ingredients to the final product, providing a detailed explanation on how these foods work and an overview of their impact on health. The book presents the functions of food against disease and discusses how healthier foods can be produced. Broken into four parts, the book presents a deep dive into plant-derived functional foods, dairy foods, marine food and beverages. The book includes case studies, applications, literature reviews and coverage of recent developments. Intended for nutritionists, dieticians, food technologists, as well as students and researchers working in nutrition, dietetics, and food science, this book is sure to be a welcomed resource. Uses flow diagrams to highlight the effects of processing on produced functional foods Combines information on the production/formulation of the food with data on bioactivities and bioavailability Presents whole foods and not food components while also focusing on functionality and availability

Protective Agents: Advances in Research and Application: 2011 Edition - 2012-01-09

Protective Agents: Advances in Research and Application: 2011 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Protective Agents. The editors have built *Protective Agents: Advances in Research and Application: 2011 Edition* on the vast information databases of ScholarlyNews.™ You can expect the information about Protective Agents in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of *Protective Agents: Advances in Research and Application: 2011 Edition* has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

Native Crops in Latin America - Ritva Repo-Carrasco-Valencia 2022-03-24

Functional foods improve health and can reduce the risk of different diseases. In this sense, a variety of bioactive compounds present in functional foods are able to modulate inflammatory responses or exhibit

interesting bioactivities such as antihypertensive, antioxidants, anticancer, antimicrobials, anticariogenics, among others. There is a revalorization and mounting characterization on ancient grain crops of Latin America such as chia, amaranth, quinoa, Andean lupin, sacha inchi. This area also possesses a huge variety of native fruits such as camu camu, goldenberry, lucuma, which have health-promoting compounds. *Native Crops in Latin America: Biochemical, Processing, and Nutraceutical Aspects* explores recent investigations related to the potential use of the native crops as sources of bioactive compounds (proteins, hydrolysates, peptides, antioxidants, essential lipids, dietary fiber, pre- and probiotics) and as ingredients in functional foods. Key Features: Contributes to increasing knowledge of Latin American crops Contains information of various native crops and nutraceutical potentiality Discusses characterization of their by-products Explores reevaluation and food application for enrichment food matrices This book contains recent findings impacting research in subjects such as cardiovascular and gastrointestinal systems, gut microbiota, delivery systems, product development, and gastronomy. Such information on Latin American crops may significantly influence the well-being, health, and nutrition of consumers. This will be a useful resource for food scientists, food technologists, nutritionists, ingredient manufacturers, and health care professionals, and relevant knowledge for any University's Food Science department. Also available in the Food Biotechnology and Engineering series: *Volatile Compounds Formation in Specialty Beverages*, edited by Felipe Richter Reis and Caroline Mongruel Eleutério dos Santos (ISBN: 9780367631901) For a complete list of books in this series, please visit our website at:

<https://www.routledge.com/Food-Biotechnology-and-Engineering/book-series/CRCFOOBIOENG>

Cocoa and Coffee Fermentations - Rosane F. Schwan 2014-10-09

Cocoa and coffee beans are some of the most traded agricultural commodities on international markets. Combined, they provide raw materials for a global industry valued in excess of \$250 billion. Despite this, few people know that microorganisms and microbial fermentation play key roles in their production and can have major impacts on product quality, safety, and value. *Cocoa and Coffee Fermentations* explores the scientific principles behind cocoa and coffee fermentation. The book covers botanical and production backgrounds, methods of bean fermentation and drying, microbial ecology and activities of fermentation, the biochemistry of fermentation, product quality and safety, and waste utilization. The book aims to optimize cocoa and coffee processing based on scientific evidence to enhance traditional processing methods that often give rise to inefficiencies and inconsistencies in product quality. It also aims to provide a better understanding of the complex microbial ecology in cocoa and coffee fermentations which involve interactions between species of yeasts, bacteria, and filamentous fungi. *Cocoa and Coffee Fermentations* hopes to inspire further research linking the microbiology and biochemistry of cocoa and coffee bean fermentations with the development of better controlled fermentations, implementation of quality assurance programs, and ultimately improvement of the sensory attributes of the final product.

Vinegars of the World - Laura Solieri 2009-08-29

Vinegars can be considered as acidic products of special importance for the enrichment of our diet, and resulting from the desired or controlled oxidation of ethanol containing (liquid) substrates. The traditional use and integration of vinegars in numerous cultures can be traced back to ancient times. In fact, the cultural heritage of virtually every civilization includes one or more vinegars made by the souring action (of micro-organisms) following alcoholic fermentation. It has been documented that the Egyptians, Sumerians and Babylonians had experience and technical knowledge in making vinegar from barley and any kind of fruit. Vinegar was very popular both in ancient Greece and Rome, where it was used in food preparations and as remedy against a great number of diseases. In Asia, the first records about vinegar date back to the Zhou Dynasty (1027-221 BC) and probably China's ancient rice wines may have originally been derived from fruit, for which (malted) rice was substituted later. The historical and geographical success of vinegars is mainly due to the low technology required for their production, and to the fact that several kinds of raw materials rich in sugars may easily be processed to give vinegar. In addition, vinegars are well-known and accepted as safe and stable commodities that can be consumed as beverages, health drinks or added to food as preservatives or as flavoring agents.

Ingredients Extraction by Physicochemical Methods in Food - Alexandru Mihai Grumezescu 2017-07-26

Ingredients Extraction by Physico-chemical Methods, Volume Four, the latest release in the Handbook of Food Bioengineering series, reveals the most investigated extraction methods of ingredients and their impact on the food industry. This resource describes types of ingredients that may be extracted through physico-chemical methods (i.e. specific plants, fruits, spices, etc.), along with their particularities to help readers understand their biological effect and solve research problems. The extraction methods of bioactive compounds and functional ingredients are discussed, along with information on green ingredient extraction strategies to help reduce harmful environmental and health effects. Extraction methods in this book can be applied for multiple purposes within the food industry, such as ingredients separation for food development, the purification and separation of toxic compounds from a food mixture, and the recovery of natural bioactive compounds. Offers advanced knowledge and skills of physiochemical analysis for ingredient extraction Presents various methods for food component analysis to evaluate structure function relations in changing environments Discusses the importance of enzymes during processing and storage of foods Includes methods to evaluate and enhance extraction, such as ultrasound, to produce novel foods more efficiently

Bioactive Dietary Factors and Plant Extracts in Dermatology - Ronald Ross Watson 2012-11-28

The role of Bioactive Dietary Factors and Plant Extracts in Preventive Dermatology provides current and concise scientific appraisal of the efficacy of foods, nutrients, herbs, and dietary supplements in preventing dermal damage and cancer as well as improving skin health. This important new volume reviews and presents new hypotheses and conclusions on the effects of different bioactive foods and their components derived particularly from vegetables, fruits, and herbs. Primary emphasis is on treatment and prevention of dermal damage focusing on skin cancers with significant health care costs and mortality. Bioactive Dietary Factors and Plant Extracts in Preventive Dermatology brings together expert clinicians and researchers working on the different aspects of supplementation, foods, and plant extracts and nutrition and skin health. Their expertise provides the most current knowledge in the field and will serve as the foundation for advancing future research.

Chocolate in Health and Nutrition - Ronald Ross Watson 2012-08-04

Chocolate in Health and Nutrition represents the first comprehensive compilation of the newest data on the actions of the flavonoids and microorganisms associated with the beneficial effects of chocolate. This unique text provides practical, data-driven resources based upon the totality of the evidence to help the reader understand the basics, treatments and preventive strategies that are involved in the understanding of the role chocolate may play in healthy individuals as well as those with cardiovascular disease, diabetes or neurocognitive declines. Of equal importance, critical issues that involve patient concerns, such as dental caries and food preferences in children, potential effects on weight gain, addiction and withdrawal are included in well-referenced, informative chapters. The latest research on the role of chocolate in normal health areas including mood, pain and weight management, cardiovascular disease and related conditions are presented. Chocolate in Health and Nutrition provides health professionals in many areas of research and practice with the most up-to-date, well referenced and comprehensive volume on the current state of the science and medical uses of chocolate.

Trends in Sustainable Chocolate Production - Charis M. Galanakis 2022

Chocolate is consumed by people of all ages in all segments of society throughout the world. However, recent changes in legislative frameworks, environmental concerns and increasing attention towards sustainability have stimulated the chocolate industry to reconsider their management policy. Current books in the market cover chocolate manufacture without taking into account sustainable practices of production, consumption and market aspects. Trends in Sustainable Chocolate Production fills this knowledge gap by covering all the important aspects of chocolate industry (manufacture, functionality, sustainability of the supply chain, commercialization aspects and market characteristics) in one reference. Starting with the health outcomes of chocolate and an overview of its manufacture, the book explores techniques to improve the functionality, flavor and microstructure of chocolate, as well as its environmental impact through sustainable practices and supply chains. By connecting research to industry and consumer interests, this text aims to support members of the scientific community, professionals and enterprises working to develop a sustainable chocolate sector.

Analytical Methods in the Determination of Bioactive Compounds and Elements in Food - Magdalena Jeszka-Skowron 2021-02-02

Most bioactive compounds have antioxidant activity, particularly tocochromanols, phenolics (flavonoids and phenolic acids), methylxantines and capsaicinoids. Some of these compounds have also other properties important for human health. For example, vitamin E protects against oxidative stress, but it is also known for its "non-antioxidant" functions, including cell signalling and antiproliferation. Selenium compounds and indoleamines are the components of the antioxidant enzymes. Selenium makes vitamin E acquisition easier and controls its physiological functions. In taking part in enzymatic reactions and protecting the cell against free radicals, selenium shows immunomodulative, antiphlogistic, and antiviral activity. Capsaicinoids possess not only antioxidant, but also antibacterial, analgesic, weight-reducing and thermoregulation properties. Studies have also demonstrated their gastroprotective and anticancer properties. Analytical Methods in the Determination of Bioactive Compounds and Elements in Food explores both the influence of particular compounds on human health and the methods used for their determination. Chapters describe various aspects of food and plant analysis, including chromatographic and non-chromatographic approaches as well as hyphenated techniques. Readers of this book will gain a comprehensive understanding of the important groups of bioactive compounds relevant to human health.

Processing and Impact on Active Components in Food - Victor R. Preedy 2014-05-27

From beef to baked goods, fish to flour, antioxidants are added to preserve the shelf life of foods and ensure consumer acceptability. These production-added components may also contribute to the overall availability of essential nutrients for intake as well as the prevention of the development of unwelcome product characteristics such as off-flavours or colours. However, there are processes that reduce the amount of naturally occurring antioxidants and awareness of that potential is just as important for those in product research and development. There is a practical need to understand not only the physiological importance of antioxidants in terms of consumer health benefit, but how they may be damaged or enhanced through the processing and packaging phases. This book presents information key to understanding how antioxidants change during production of a wide variety of food products, with a focus toward how this understanding may be translated effectively to other foods as well. Addresses how the composition of food is altered, the analytical techniques used, and the applications to other foods Presents in-chapter summary points and other translational insights into concepts, techniques, findings and approaches to processing of other foods Explores advances in analytical and methodological science within each chapter

Natural Products and Drug Discovery - Pinarosa Avato 2020-04-22

Natural products hold a prominent position in the current discovery and development of drugs and have diverse indications for both human and animal health. Plants, in particular, play a leading role as a source of specialized metabolites with medical effects. Other organisms, such as marine and terrestrial animals and microorganisms, produce very important drug candidate molecules. Specialized metabolites from these varied natural sources can be used directly as bioactive compounds or drug precursors. In addition, due to their broad chemical diversity, they can act as drug prototypes and/or be used as pharmacological tools for different targets. Some examples of natural metabolites that have been developed into useful medical drug are cardiotoxic digoxin from *Digitalis sp.*, antimalarial artemisinin from *Artemisia annua*, anti-cancer taxol from *Taxus sp.*, or podophyllotoxin from *Podophyllum peltatum*, which served as a synthetic model for the anti-cancer etoposide. The study of natural products is still attracting great scientific attention and their current importance, as a valuable lead for drug discovery, is undebatable. I cordially invite authors to contribute original articles, as well as survey articles, that give the readers of *Molecules* **MOLECULES NEEDS TO BE ITALICIZED** updated and new perspectives on natural products in drug discovery, including but not limited to natural sources, identification and separation of bioactive phytochemicals, standardization, new biological targets, pre-clinical and clinical trials, pharmacological effects/side effects, and bioassays.

Biochemical Targets of Plant Bioactive Compounds - Gideon Polya 2003-05-15

When introduced to the human body, bioactive metabolites produced by plants for self defense bind to particular biochemical targets, most notably to proteins involved in signaling by hormones and neurotransmitters. This, essentially, is the basis for the effects of herbal medicine. While herbal medicine

preparations may act by complex synergistic interactions, molecular explanations of herbal medicine efficacy and side effects ultimately require definition of the biochemical targets of individual plant bioactive constituents. *Biochemical Targets of Plant Bioactive Compounds* is a comprehensive and user-friendly reference guide to biochemical targets of plant defensive compounds. With 500 pages of tables, it presents a mine of succinctly summarized information relating to bioactive compound structures, plant sources,

biochemical targets and physiological effects that can be readily accessed via chemical compound, plant genus, plant common name and subject indexes. With introductory chapters providing reviews of the structural diversity of plant defensive compounds and biochemistry, this book is an invaluable reference for biomedical professionals in the fields of alternative/complementary medicine, natural product chemistry, toxicology, pharmacology, and botany.