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**Plant and Human Health,
Volume 3** - Munir Ozturk
2019-02-11

Early anthropological evidence for plant use as medicine is 60,000 years old as reported from the Neanderthal grave in Iraq. The importance of plants as medicine is further supported by archeological

evidence from Asia and the Middle East. Today, around 1.4 billion people in South Asia alone have no access to modern health care, and rely instead on traditional medicine to alleviate various symptoms. On a global basis, approximately 50 to 80 thousand plant species are

used either natively or as pharmaceutical derivatives for life-threatening conditions that include diabetes, hypertension and cancers. As the demand for plant-based medicine rises, there is an unmet need to investigate the quality, safety and efficacy of these herbals by the “scientific methods”. Current research on drug discovery from medicinal plants involves a multifaceted approach combining botanical, phytochemical, analytical, and molecular techniques. For instance, high throughput robotic screens have been developed by industry; it is now possible to carry out 50,000 tests per day in the search for compounds which act on a key enzyme or a subset of receptors. This and other bioassays thus offer hope that one may eventually identify compounds for treating a variety of diseases or conditions. However, drug development from natural products is not without its problems. Frequent challenges encountered include the procurement of raw materials,

the selection and implementation of appropriate high-throughput bioassays, and the scaling-up of preparative procedures. Research scientists should therefore arm themselves with the right tools and knowledge in order to harness the vast potentials of plant-based therapeutics. The main objective of Plant and Human Health is to serve as a comprehensive guide for this endeavor. Volume 1 highlights how humans from specific areas or cultures use indigenous plants. Despite technological developments, herbal drugs still occupy a preferential place in a majority of the population in the third world and have slowly taken roots as alternative medicine in the West. The integration of modern science with traditional uses of herbal drugs is important for our understanding of this ethnobotanical relationship. Volume 2 deals with the phytochemical and molecular characterization of herbal medicine. Specifically, it will focus on the secondary

metabolic compounds which afford protection against diseases. Lastly, Volume 3 focuses on the physiological mechanisms by which the active ingredients of medicinal plants serve to improve human health. Together this three-volume collection intends to bridge the gap for herbalists, traditional and modern medical practitioners, and students and researchers in botany and horticulture.

Functional Foods and Nutraceuticals in Metabolic and Non-communicable Diseases - Ram B. Singh

2021-11-30

Functional Foods and Nutraceuticals in Metabolic and Non-communicable Diseases presents strategies for the prevention of non-communicable diseases and undernutrition through the use of functional foods and nutraceuticals. Research has shown that the use of certain functional foods and nutraceuticals, including spices, herbs, and millets, animal foods and plant foods can play a role in the treatment

and prevention of various diseases and in health promotion. Finally, the book explores epigenetic modulation as a new method for the development of functional foods and functional farming. Intended for nutritionists, food scientists and those working in related health science professions, this book contributes to the discussions focused on nutritional transition, globalization, how to administer foods in the treatment of metabolic syndrome, hypertension, diabetes, heart attacks, neuropsychiatric disorders, bone and joint diseases, and carcinogenesis. Places emphasis on food diversity to provide perfect combinations of nutritional ingredients Presents the utility and necessity of functional food production for health promotion Offers suggestions to increase functional food production while simultaneously decreasing production costs

Sustainable Agriculture

Reviews 39 - Eric Lichtfouse

2020-04-29

This book reviews recent research advances in sustainable agriculture, with focus on crop production, biodiversity and biofuels in Africa and Asia.

Medicinal and Aromatic Plants
- Tariq Aftab 2021-03-27

Before the concept of history began, humans undoubtedly acquired life benefits by discovering medicinal and aromatic plants (MAPs) that were food and medicine. Today, a variety of available herbs and spices are used and enjoyed throughout the world and continue to promote good health. The international market is also quite welcoming for MAPs and essential oils. The increasing environment and nature conscious buyers encourage producers to produce high quality essential oils. These consumer choices lead to growing preference for organic and herbal based products in the world market. As the benefits of medicinal and aromatic plants are recognized, these plants will have a special role for humans

in the future. Until last century, the production of botanicals relies to a large degree on wild-collection. However, the increasing commercial collection, largely unmonitored trade, and habitat loss lead to an incomparably growing pressure on plant populations in the wild. Therefore, medicinal and aromatic plants are of high priority for conservation. Given the above, we bring forth a comprehensive volume, "Medicinal and Aromatic Plants: Healthcare and Industrial Applications", highlighting the various healthcare, industrial and pharmaceutical applications that are being used on these immensely important MAPs and its future prospects. This collection of chapters from the different areas dealing with MAPs caters to the need of all those who are working or have interest in the above topic.

Clove (Syzygium

aromaticum) - Mohamed

Fawzy Ramadan 2022-07-22

Clove (*Syzygium aromaticum*):
Chemistry, Functionality and

Applications addresses the cultivation, composition and applications of clove, along with the chemistry, functionality and applications of clove fixed oil, clove essential oil, and clove extracts and their role in food and medicine. Specifically, the book delves into the functional, nutritional and pharmacological traits of clove by demonstrating the phytochemical profile, biological activities, and food and non-food applications of clove buds, clove oils, clove bioactive compounds, and clove extracts. This reference will be of use to food scientists, technologists, and chemists, nutritionists and pharmacists developing new pharmaceuticals and food products. Explores the chemistry and functionality of clove buds, clove oils and clove extracts Discusses clove bioactive phytochemicals and their health-promoting potential Presents the functional applications of clove buds, clove oils and clove extracts in food Includes

applications, literature reviews, and coverage of recent developments

Functional Bionanomaterials -
Devarajan Thangadurai
2020-07-08

This book focuses on the application of nanotechnology in medicine and drug delivery, including diagnosis and therapy. Nanomedicine can contribute to the development of a personalized medicine both for diagnosis and therapy. By interacting with biological molecules at nanoscale level, nanotechnology opens up an immense field of research and applications. Interactions between artificial molecular assemblies or nanodevices and biomolecules can be understood both in the extracellular medium and inside human cells. Operating at nanoscale allows exploitation of physical properties different from those observed at microscale, such as the volume to surface area ratio. A number of clinical applications of nanobiotechnology, such as disease diagnosis, target-

specific drug delivery, and molecular imaging are being investigated. Some promising new products are also undergoing clinical trials. Such advanced applications of this approach to biological systems will undoubtedly transform the foundations of diagnosis, treatment, and prevention of disease in the future.

Nanomedicine sales reached \$16 billion in 2015, with a minimum of \$3.8 billion in nanotechnology R&D being invested each year. Global funding for emerging nanotechnology increased by 45% per year in recent years, with product sales exceeding \$1 trillion in 2013. As the nanomedicine industry continues to grow, it is expected to have a significant impact on the global economy. This book provides clear, colorful and simple illustrations, tables, and case studies to clearly convey the content to a general audience and reader. This book also discusses the development of nanobiomaterials from biogenic (biological sources) systems for

healthcare and disease therapies. This book, therefore, is useful for researchers and academicians in the fields of nanotechnology, medicine, nano-biotechnology and pharmacology.

Production of Biofuels and Chemicals from Sustainable Recycling of Organic Solid Waste - Zhen Fang

This book covers sustainable recycling processes (e.g. physical, biological, chemical, and thermo-chemical) of multiple organic solid wastes, provides methods for material recycle of wastes into value-added products including fuels and commodity chemicals that are able to be directly applied to promote manufacturing processes. Aimed at improving the awareness of effective conversion protocols and for developing innovative biomass conversion processes, this text was conceived as a collection of studies on state-of-art techniques and know-how for production of biofuels and chemicals from sustainable recycling of organic solid wastes. Topics in the text are

discussed in terms of addressing recent advances, assessing and highlighting promising new methods or new technological strategies and direct conversion of organic solid wastes to process feeds. Highly-recognized authorities, experts and professionals have contributed individual chapters in selected areas to cover the overall topic in a comprehensive manner. .

Herbal Drugs for the Management of Infectious Diseases - Rakesh K. Sindhu
2022-07-22

Herbal Drug for the Management of Infectious Diseases The book is a comprehensive compilation of herbal drug applications for the treatment and management of infectious diseases and addresses issues related to development, challenges, and future prospects associated with the use of herbal medicine. The use of herbal medicines has evolved in various cultures around the world over many millennia. In many developing Asian and African countries, the use of

herbal medicines, as supplied by traditional medicinal practitioners, has always been popular. In the last two to three decades, many people in developed countries have begun to turn to alternative or complementary therapies, including the use of herbal medicines, nutraceuticals, functional foods, and other supplements. This resurgence in interest in plant-derived medicines is partly due to the growing dissatisfaction with allopathic medicines, as well as the perception that plant-derived medicines are natural and therefore pure and without side effects, and the progress in the production of higher quality herbal medicines including some with proven clinical efficacy and safety. Infectious diseases are generally caused by pathogenic microorganisms, like bacteria, viruses, parasites, or fungi, and are a significant cause of morbidity and mortality worldwide. Therefore, the 16 chapters of this book have been intentionally sequenced to cover the therapeutic potential

and applications of herbal extracts and phytochemicals for the management of various infectious diseases. Disease pathophysiology, an overview of current medication or treatment, in-vitro and in-vivo evaluations of relevant biological activities of herbal extracts and phytochemicals, mechanisms of action, clinical trials, and novel technologies for the delivery of herbal bioactive compounds as well as patents have also been included. Audience Chemists, pharmaceutical scientists, biologists, herbal/Ayurvedic/medicinal practitioners, as well all those in the medical sciences working on medicinal plants and infectious diseases.

Metabolomics and Ethnopharmacology in the Development of Herbal and Traditional Medicine -

Sayeed Ahmad 2022-04-25

Recent Advances in Material Sciences - Satish Pujari
2019-08-06

This book comprises select proceedings of the

International Conference on Latest Innovations in Materials Engineering and Technology (ICLIET 2018). The book focuses on diverse engineering materials, their design and applications. The materials in discussion include those related to coatings, polymers, composites, tribology, acoustic insulators, lubricants, and cryogenics. The book also highlights emerging nano and micro materials, bio engineering materials, as well as new energy materials for solar cells and photovoltaic cells. This book will serve as an useful reference for students, researchers, and professionals working in the field of materials science and engineering.

Ethnopharmacology of Wild Plants - Mahendra Rai

2021-02-15

The book provides valuable information on wild plants and their ethnopharmacological properties, discussion on ethnobotany, phytotherapy, diversity, chemical and pharmacological properties including antifungal, anti-

inflammatory and antiprotozoal properties. The chapters include a wide range of case studies, giving updated evidence on importance of wild plant resources from different countries including Nepal, India, Brazil, Chile, Argentina, Colombia, Egypt, Peru, etc. In addition, some specific species are used to explain their potential properties.

Discussing traditional usage and pharmacological properties of wild plants, this book is entirely different from other related publications and useful for the researchers working in the areas of conservation biology, botany, ethnobiology, ethnopharmacology, policy making, etc.

Non-Timber Forest Products

- Azamal Husen 2021-07-30
Forests cover thirty-one percent of the world's land surface, provide habitats for animals, livelihoods for humans, and generate household income in rural areas of developing countries. They also supply other essential amenities, for

instance, they filter water, control water runoff, protect soil erosion, regulate climate, store nutrients, and facilitate countless non-timber forest products (NTFPs). The main NTFPs comprise herbs, grasses, climbers, shrubs, and trees used for food, fodder, fuel, beverages, medicine, animals, birds and fish for food, fur, and feathers, as well as their products, like honey, lac, silk, and paper. At present, these products play an important role in the daily life and well-being of millions of people worldwide. Hence the forest and its products are very valuable and often NTFPs are considered as the 'potential pillars of sustainable forestry'. NTFPs items like food, herbal drugs, forage, fuel-wood, fountain, fibre, bamboo, rattans, leaves, barks, resins, and gums have been continuously used and exploited by humans. Wild edible foods are rich in terms of vitamins, protein, fat, sugars, and minerals. Additionally, some NTFPs are used as important raw

materials for pharmaceutical industries. Numerous industry-based NTFPs are now being exported in considerable quantities by developing countries. Accordingly, this sector facilitates employment opportunities in remote rural areas. So, these developments also highlight the role of NTFPs in poverty alleviation in different regions of the world. This book provides a wide spectrum of information on NTFPs, including important references. We hope that the compendium of chapters in this book will be very useful as a reference book for graduate and postgraduate students and researchers in various disciplines of forestry, botany, medical botany, economic botany, ecology, agroforestry, and biology. Additionally, this book should be useful for scientists, experts, and consultants associated with the forestry sector.

Plant-Microbe Interaction: An Approach to Sustainable Agriculture - Devendra K. Choudhary 2017-02-08

The book addresses current

public concern about the adverse effect of agrochemicals and their effect on the agro-ecosystem. This book also aims to satisfy and contribute to the increasing interest in understanding the co-operative activities among microbial populations and their interaction with plants. It contains chapters on a variety of interrelated aspects of plant-microbe interactions with a single theme of stress management and sustainable agriculture. The book will be very useful for students, academicians, researcher working on plant-microbe interaction and also for policy makers involved in food security and sustainable agriculture.

Oilseeds: Health Attributes and Food Applications -

Beenu Tanwar 2020-10-30

Oilseeds offer a plethora of opportunities for the food and feed industry, thanks to their high oil and protein content. Their phytonutrients and functional components have attracted the interest of researchers, leading to the

development of functional foods. This book gathers the latest scientific information on the nutrients, phytonutrients and health benefits as well as the adverse effects of consuming various conventional and non-conventional oilseeds. In addition, each chapter includes a section comprehensively explaining the use of oilseeds in functional bakery, dairy, and other food products. Given its scope, the book is a valuable resource for students, researchers, nutritionists, food scientists and technologists, and for anyone involved in product development based on oilseed and its components.

Recent Advances in Sustainable Technologies -

Kanishka Jha 2021-05-17
This book presents select proceedings of the International Conference on Advances in Sustainable Technologies (ICAST 2020), organized by Lovely Professional University, Punjab, India. The topics covered in this book are multidisciplinary in nature. The

primary topics included in the book are from the domains of automobile engineering, mechatronics, material science and engineering, aerospace engineering, bio-mechanics, biomedical instrumentation, mathematical techniques, agricultural engineering, nuclear engineering, physics, biodynamic modelling and ergonomics etc. The contents of this book will be beneficial for beginners, researchers, and professionals alike.

Molecular Identification of Mosquito Vectors and Their Management -

Tapan Kumar Barik 2021-02-01

This book summarizes the recent advancements in identifying the mosquito vectors and discusses various strategies for their control. The book describes various molecular taxonomic methods, including DNA barcoding and single nucleotide polymorphism-based machine learning approach, which are used for the identification of mosquito vectors. It also presents the various mosquito control methods, namely,

phytochemicals, *Bacillus thuringiensis* toxins, nanotechnology, biological control agents, and environmental management strategies. It also highlights the importance of various repellents that are used for protection from different kinds of mosquito vectors. Finally, the book offers a comprehensive yet representative description of challenges associated with mosquito vector-borne diseases. The book is a useful resource for medical entomologists, health workers, and researchers working in mosquito-control and vector-borne diseases.

Handbook of 200 Medicinal Plants - Shahid Akbar

2020-04-21

This book is designed to provide pharmacologists and researchers of natural products a comprehensive review of 200 medicinal plants, their vernacular names in various languages and their medicinal uses around the world, and in some cases, a historical perspective. Chemical

constituents of each plant with the putative active constituent, and available up to date pharmacological studies (until 2017 on PubMed) with each medical activity explored and its relationship with traditional uses, are described for each plant. Any variations in chemical constituents and their effects on pharmacological studies outcome have been highlighted. All clinical trials conducted, with sufficient details, have been included. Nationalities and racial identities of participants of clinical trials are identified to impress upon the social, cultural and dietary influences on the clinical outcomes. Toxicity studies and potential interactions with prescribed drugs, and full spectrum of references are included.

Polyphenols-based Nanotherapeutics for Cancer Management - Shams Tabrez
2021-10-01

This book reviews the applications of polyphenols in cancer treatment. The initial chapter of the book classifies different polyphenols and

discusses their biological and chemical properties. The subsequent chapters then explore the diverse role of polyphenols in modulating signal transduction pathways in cancer including, cellular proliferation, differentiation, apoptosis, inflammation, angiogenesis, and metastasis. This book highlights the usefulness of polyphenol enriched seafood in modulating the anti-tumor and anti-inflammatory cytokine IFN- γ . The book also presents nanoformulation of polyphenol as a promising strategy for their enhanced bioavailability and targeted delivery. Lastly, the book examines the toxicity and safety evaluations of polyphenols as anticancer agents.

Biotechnological Production of Bioactive Compounds -

Madan L. Verma 2019-07-20
Biotechnological Production of Bioactive Compounds provides insights on the most recent innovations, trends, concerns, solutions and practical challenges encountered in the fields of enzyme technology

and nanobiotechnology for the production of bioactive materials with extra health benefits. As nanobiotechnology has improved the bioactive extraction process significantly, many bioactives, including bioflavonoids, omega-3 fatty acids, biopigments and low calorie sugar substitutes are a pivotal part of the food industry. The book highlights the production of extra health benefits "bioactives" from plants and microbes and explains how the extraction efficiency of bioactives molecules improves significantly with the recent advances in nanobiotechnology. Researchers in the fields of biochemical engineering, biotechnology, bioremediation, environmental sustainability and those in pharma industries will find the information in this book very helpful and illuminating. Outlines technological advances in bioactives extraction Covers bioflavonoids, biopigments, omega-3-fatty acids and low sugar substitutes Explains the

mechanisms of Green cargo (biogenic nanoparticles) for the delivery of bioactive molecules
Reviews on Indian Medicinal Plants: Ch-Ci - 2008

Herbal Product Development - Anil K. Sharma 2020-11-24

This new volume, *Herbal Product Development: Formulation and Applications*, addresses some of the challenges that hinder the path of successful natural products from laboratory to market. Highly skilled, experienced, and renowned scientists and researchers from around the globe offer up-to-date information that describes characteristics of herbs and herbal products, applications, evaluation techniques, and more. There is also a section dedicated to alternative medicinal strategies for the treatment and cure of diverse diseases. Also considered, of course, is the efficacy and safety of herbal products, which are of major concern. This valuable volume will be an important addition to the library of those involved in

herbal product development and testing, including researchers, scientists, academicians, industry professionals, and students in this area.

Phytotherapy in the Management of Diabetes and Hypertension: Volume 3

- Mohamed Eddouks
2020-11-12

Medicinal plants are a source of potential therapeutic compounds. Phytotherapy can give patients long term benefits with less or no side effects. This is the third volume of the series which features monographs on selected natural products used to treat diabetes and hypertension. This volume brings 7 chapters contributed by 22 researchers, that cover updates on the biochemistry of diabetes, information on anti-diabetic and antihypertensive properties of oil bearing plants, herbs, fruits and vegetables, medicinal plants from Asia, as well as the medicinal value of specific plants such as, star apple (*Chrysophyllum cainito*). In terms of therapeutic agents,

two reviews in this volume focus on terpenoids and glucagon-like peptide - 1 are also included. Each review covers different plant species or medicinal agents where applicable, providing readers essential information about their role in the treatment of diabetes and hypertension. Both academic and professional pharmacologists as well as clinicians will find comprehensive information on a variety of therapeutic agents in this volume.

Genetics and Genomics of Cucurbitaceae - Rebecca Grumet 2017-10-13

This book provides an overview of the current state of knowledge of the genetics and genomics of the agriculturally important Cucurbitaceae plant family, which includes crops such as watermelon, melon, cucumber, summer and winter squashes, pumpkins, and gourds. Recent years have resulted in tremendous increases in our knowledge of these species due to large scale genomic and transcriptomic studies and production of draft

genomes for the four major species, *Citrullus lanatus*, *Cucumis melo*, *Cucumis sativus*, and *Cucurbita* spp. This text examines genetic resources and structural and functional genomics for each species group and across species groups. In addition, it explores genomic-informed understanding and commonalities in cucurbit biology with respect to vegetative growth, floral development and sex expression, fruit growth and development, and important fruit quality traits.

Dietary Supplements, Botanicals and Herbs at The Interface of Food and Medicine - Alessandra Durazzo 2022-07-28

Bioenergy and Biochemical Processing Technologies - Augustine O. Ayeni 2022-08-01
This book presents novel techniques, current trends, and cutting-edge technologies in energy and biochemical processes. The authors explore recent advances that solve challenges related to the

implications and commercialization of these processes by introducing new techniques or modifying existing technologies to meet future demands for food materials, bioproducts, fossil fuels, biofuels, and bioenergy. Divided into three parts, the first section of the book addresses issues related to the utilization and management of energy towards the efficient characterization and conversion of wastes or raw-/bio- materials to useful products. The second section focuses largely on studies on molecular detection of analytes, purification, and characterization of products recovered from biochemical, enzymatic, food, and phytochemicals, as well as biostimulation and bioaugmentation processes. The final section discusses areas related to heat and mass transfer, fuel processing technologies, nanofluids, and their applications.

Exploring the Realms of Nature for Nanosynthesis -

Ram Prasad 2018-10-24

Nature, by dint of its constitution, harbors many unassuming mysteries broadly manifested by its constituent cohorts. If physics is the pivot that holds nature and chemistry provides reasons for its existence, then the rest is just manifestation.

Nanoscience and technology harbor the congruence of these two core subjects, whereby many phenomenon may be studied in the same perspective. That nature operates at nanoscale—obeying the principles of thermodynamics and supramolecular chemistry—is a well understood fact manifested in a variety of life processes: bones are restored after a fracture; clots potentially leading to cerebral strokes can be dissolved. The regeneration of new structures in our system follows a bottom-up approach. Be it a microbe (benign or pathogenic), plant (lower or higher), plant parts/organs, food beneficiaries, animal (lower), higher animal processing wastes, these all are found to

deliver nanomaterials under amenable processing conditions. Identically, the molecules also seem to obey the thermodynamic principles once they get dissociated/ionized and the energy captured in the form of bonding helps in the synthesis of a myriad of nanomaterials. This edited volume explores the various green sources of nanomaterial synthesis and evaluates their industrial and biomedical applications with a scope of scaling up. It provides useful information to researchers involved in the green synthesis of nanomaterials in fields ranging from medicine to integrated agricultural management.

Natural Products in Clinical Trials: Volume 2 - Atta-ur-Rahman 2020-08-20

Natural compounds continue to play a key role in drug development. Many clinically approved drugs are either unmodified natural products or their semi-synthetic derivatives. This book series presents reviews of exciting new bioactive natural products

that have huge potential as drugs. Each volume presents comprehensive chapters contributed by eminent scientists. The volumes focus on drug candidates which are in the later stages of drug development and are being evaluated in clinical trials. The series, therefore, highlights the importance of natural products in our lives. The second volume covers the following topics: - A review of recent patents and natural products in clinical trials to treat schistosomiasis - Natural products: the new intervention regimen for metabolic disorders - Fluorine-containing drugs and drug candidates derived from natural products - Natural products for the management of cardiovascular diseases - Implication of natural compounds for the prevention of ocular diseases.

Anti-diabetes and Anti-obesity Medicinal Plants and Phytochemicals - Bashar Saad 2017-05-11

This work presents a systematic review of traditional herbal medicine and their

active compounds, as well as their mechanism of action in the prevention and treatment of diabetes and obesity. The side effects and safety of herbal-derived anti-diabetic and anti-obesity phytochemicals are detailed in depth, and the text has a strong focus on current and future trends in anti-diabetic medicinal plants. This unique and comprehensive text is the only current book on the market focusing exclusively on medicinal plants used to combat obesity and diabetes. An introductory chapter focuses on diabetes and obesity and introduces the major causes and main treatments of this increasing epidemic in modern society. Readers are then introduced to medicinal plants, including details on their therapeutic aspects, plus side effects and safety. Following chapters focus on anti-diabetic and anti-obesity medicinal plants, as well as phytochemical natural products in the treatment of each. The text closes by focusing on present and future trends and

challenges in these medicinal plants. *Anti-diabetes and Anti-obesity Medicinal Plants and Phytochemicals: Safety, Efficacy, and Action Mechanisms* is a much-needed and truly original work, finally presenting in one place all the necessary information on medicinal plants used in conjunction with obesity and diabetes prevention.

Ethnopharmacology in Central and Eastern Europe in the Context of Global Research Developments -

Judit Hohmann 2019-07-25

This eBook is a collection of articles from a Frontiers Research Topic. Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research

area! Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office: frontiersin.org/about/contact.

Neuroprotective Effects of Phytochemicals in Neurological Disorders -

Tahira Farooqui 2017-01-03
Phytochemicals are naturally occurring bioactive compounds found in edible fruits, plants, vegetables, and herbs. Unlike vitamins and minerals, phytochemicals are not needed for the maintenance of cell viability, but they play a vital role in protecting neural cells from inflammation and oxidative stress associated with normal aging and acute and chronic age-related brain diseases. *Neuroprotective Effects of Phytochemicals in Neurological Disorders* explores the advances in our understanding of the potential neuroprotective benefits that these naturally occurring chemicals contain.

Neuroprotective Effects of Phytochemicals in Neurological Disorders explores the role that

a number of plant-based chemical compounds play in a wide variety of neurological disorders. Chapters explore the impact of phytochemicals on neurotraumatic disorders, such as stroke and spinal cord injury, alongside neurodegenerative diseases such as Alzheimer's and Parkinson's Disease, as well as neuropsychiatric disorders such as depression and schizophrenia. The chapters and sections of this book provide the reader with a big picture view of this field of research. *Neuroprotective Effects of Phytochemicals in Neurological Disorders* aims to present readers with a comprehensive and cutting edge look at the effects of phytochemicals on the brain and neurological disorders in a manner useful to researchers, neuroscientists, clinical nutritionists, and physicians. *Edible Plants in Health and Diseases - Mubashir Hussain Masoodi* 2022-01-13

The book provides significant information on some of the promising edible medicinal

plants and how these possess both nutritive as well as medicinal value. The significance of these edible plants in traditional medicine, their distribution in different regions and the importance of their chemical constituents are discussed systematically concerning the role of these plants in ethnomedicine in different regions of the world. The current volume focuses on the economic and culturally important medicinal uses of edible plants and a detailed survey of the literature on scientific researches of pharmacognostical characteristics, traditional uses, scientific validation, and phytochemical composition, and pharmacological activities. This book is a single-source scientific reference to explore the specific factors that contribute to these potential health benefits, as well as discussing how to maximize those potential benefits. Chemists, food technologists, pharmacologists, phytochemists as well as all professionals involved with

quality control and standardization will find in this book a valuable and updated basis for their work.

Physiological and Molecular Perspectives of Stress

Tolerance in Vegetables -

Masayoshi Shigyo 2022-10-14

Nanobiotechnology

Applications in Plant Protection

- Kamel A. Abd-Elsalam

2018-08-14

Nanotechnology can target specific agricultural problems related to plant pathology and provide new techniques for crop disease control. Plant breeders and phytopathologists are needed who can apply nanogenomics and develop nanodiagnostic technologies to accurately advance the improvement process and take advantage of the potential of genomics. This book serves as a thorough guide for researchers working with nanotechnology to address plant protection problems. Novel nanobiotechnology methods describe new plant gene transfer tools that improve crop resistance

against plant diseases and increase food security. Also, quantum dots (QDs) have emerged as essential tools for fast and accurate detection of particular biological markers. Biosensors, QDs, nanostructured platforms, nanoimaging, and nanopore DNA sequencing tools have the potential to raise sensitivity, specificity, and speed in pathogen detection, thereby facilitating high-throughput analysis and providing high-quality monitoring and crop protection. Also, this book deals with the application of nanotechnology for quicker, more cost-effective, and precise diagnostic procedures of plant diseases and mycotoxins. Applications of nanotechnology in plant pests and disease control, antimicrobial mechanisms, pesticides remediation and nanotoxicity on plant ecosystem and soil microbial communities are discussed in detail. Moreover, the application of specific nanomaterials including silver, copper, carbon- or polymer-

based nanomaterials and nanoemulsions are also discussed. Crops treated with safe nanofertilizers and nanopesticides will gain added value because they are free of chemical residues, decay and putative pathogens for human health, sustaining the global demand for high product quality.

Unconventional Oilseeds and Oil Sources - Abdalbasit Adam

Mariod Alnadif 2017-04-14

Unconventional Oilseeds and New Oil Sources: Chemistry and Analysis is presented in three parts, with each section dedicated to different types of oil sources. Part One deals with plants (vegetable, herbs, shrubs), such as Hibiscus, Mexican Poppy, Cucumber, Squashes, Sesame, etc. Part Two presents unconventional oils found in trees (like *Balanites aegyptiaca*, *Annona squamosa* and *Catunaregam nilotica*), and Part Three deals with new oils found in insects, as in the water melon bug and sorghum bug. This book will be of interest to researchers in oilseed production, research

and development personnel, food scientists, plant breeders, product development personnel, and government agency personnel involved in the production, transportation, distribution, and processing of oilseeds. Compiles information on unconventional oilseeds and new sources of oil found worldwide, including those from plants (vegetables, herbs, shrubs), trees, and insects. Presents the physico-chemical properties of the seed oils, in addition to their mineral compositions and chemical analyses. Thoroughly explores the chemistry of new oils, their composition, bioactive compounds, such as fatty acids, tocopherols, and sterols. Introduces the composition of new oil sources, their content of minor and bioactive components, and the most used official methods for analysis.

Evidence-Based Validation of Herbal Medicine - Pulok K. Mukherjee 2015-02-17

Evidence-Based Validation of Herbal Medicines brings together current thinking and practice in the areas of

characterization and validation of natural products. This book reviews all aspects of evaluation and development of medicines from plant sources, including their cultivation, collection, phytochemical and phyto-pharmacological evaluation, and therapeutic potential. Emphasis is placed on describing the full range of evidence-based analytical and bio-analytical techniques used to characterize natural products, including -omic technologies, phyto-chemical analysis, hyphenated techniques, and many more. Includes state-of-the-art methods for detecting, isolating, and performing structure elucidation by degradation and spectroscopic techniques. Covers biosynthesis, synthesis, and biological activity related to natural products. Consolidates information to save time and money in research. Increases confidence levels in quality and validity of natural products.

Multiple Biological Activities of Unconventional Seed Oils - Abdalbasit Adam

Mariod 2022-01-31

Multiple Biological Activities of Unconventional Seed Oils

brings detailed knowledge concerning the biological properties of oils (antioxidant, antimicrobial, antidiabetic, antitumor, anti-inflammatory, etc.), the content of individual substances with health-promoting properties, methods for biological properties assay, the influence of raw material quality and technological processes on the quality of oils, and possible raw materials and oil contaminants with adverse health effects. The book's chapters also highlight the unique properties of new oils, along with their biological activities. Less than a decade ago, the vegetable oils on grocery store shelves were derived from conventional oil seeds e.g., cotton, groundnut, sesame, corn sunflower and soybean. However, as consumers began to understand how fat intake affects overall health, researchers, plant growers and food manufacturers started to produce oils from

unconventional sources. This book highlights what we've learned in the process.

Explores unconventional oils, their different sources, and where they grow worldwide Explains the medicinal uses of unconventional oils Details the biological activities, antioxidant and physico-chemical composition of unconventional oils

Antioxidant-Antidiabetic Agents and Human Health -

Oluwafemi Oguntibeju

2014-02-05

The human system employs the use of endogenous enzymatic as well as non-enzymatic antioxidant defence systems against the onslaught of free radicals and oxidative stress. Enzymatic antioxidants and non-enzymatic antioxidants work synergistically with each other, using different mechanisms against different free radicals and stages of oxidative stress. Dietary and lifestyle modifications are seen as the mainstay of treatment and management of chronic diseases such as diabetes mellitus. The major aims of

dietary and lifestyle changes are to reduce weight, improve glycaemic control and reduce the risk of coronary heart disease, which accounts for 70-80% of deaths among those with diabetes. It is also important to note that medicinal plants have been used as medicines since ancient time, and continue to play significant role even in modern medicine in management and treatment of chronic diseases. Impressive numbers of modern therapeutic agents have been developed from plants. Phytochemicals have been isolated and characterised from fruits such as grapes and apples, vegetables such as broccoli and onion, spices such as turmeric, beverages such as green tea and red wine, as well as many other sources. The WHO estimates that approximately 80% of the worlds inhabitants rely on traditional medicine for their primary health care and many medicinal plants have ethno-medical claims of usefulness in the treatment of diabetes and other chronic

diseases globally, and have been employed empirically in antidiabetic, antihyperlipidemic, antihypertensive, antiinflammatory and antiparasitic remedies. This book examines the role of antioxidant-rich natural products in management and treatment of diabetes and other chronic diseases.

Bioactive Food as Dietary Interventions for Diabetes -

Ronald Ross Watson

2019-02-02

Bioactive Food as Dietary Interventions for Diabetes, Second Edition is a valuable scientific resource that explores the latest advances in bioactive food research and the potential benefits of bioactive food choice on diabetic conditions. Written by experts from around the world, it presents important information that can help improve the health of those at risk for diabetes and diabetes related conditions using food selection as its foundation. This important resource for those involved in the dietary and

nutritional care of diabetic patients is also ideal for researchers seeking information on alternative bioactive food-based solutions. Serves as a starting point for in-depth discussions in academic settings that can lead to revised and updated treatment options for diabetes. Offers detailed, well-documented reviews outlining the ability of bioactive foods to improve and treat diabetes and obesity. Includes updated research on the global epidemic of diabetes. Presents global perspectives and coverage of regional foods.

Secondary Metabolites of Medicinal Plants - Bharat Singh 2020-03-03

Covers the structurally diverse secondary metabolites of medicinal plants, including their ethnopharmacological properties, biological activity, and production strategies. Secondary metabolites of plants are a treasure trove of novel compounds with potential pharmaceutical applications. Consequently, the nature of these metabolites as

well as strategies for the targeted expression and/or purification is of high interest. Regarding their biological and pharmacological activity and ethnopharmacological properties, this book offers a comprehensive treatment of 100 plant species, including Abutilon, Aloe, Cannabis, Capsicum, Jasminum, Malva, Phyllanthus, Stellaria, Thymus, Vitis, Zingiber, and more. It also discusses the cell culture conditions and various strategies used for enhancing the production of targeted metabolites in plant cell cultures. Secondary Metabolites of Medicinal Plants: Ethnopharmacological Properties, Biological Activity and Production Strategies is presented in four parts. Part I provides a complete introduction to the subject. Part II looks at the ethnomedicinal and pharmacological properties, chemical structures, and culture conditions of secondary metabolites. The third part examines the many strategies of secondary metabolites

production, including: biotransformation; culture conditions; feeding of precursors; genetic transformation; immobilization; and oxygenation. The last section concludes with an overview of everything learned. -Provides information on cell culture conditions and targeted extraction of secondary metabolites confirmed by relevant literature -Presents the structures of secondary metabolites of 100 plant species together with their biological and pharmacological activity -Discusses plant species regarding their distribution, habitat, and ethnopharmacological properties -Presents strategies of secondary metabolites production, such as organ culture, pH, elicitation, hairy root cultures, light, and mutagenesis Secondary Metabolites of Medicinal Plants is an important book for

students, professionals, and biotechnologists interested in the biological and pharmacological activity and ethnopharmacological properties of plants.

Green Materials for Wastewater Treatment - Mu. Naushad 2019-07-03

This book reviews health hazards associated with wastewater use and water pollutants. Chapters present applications of green materials made of agricultural waste, activated carbon and magnetic materials for wastewater treatment. The removal of toxic metals using algal biomass and the removal of toxic dyes using chitosan composite materials are also discussed. The book includes reviews on the removal of phenols, pesticides, and on the use of ionic liquid-modified activated carbon for the treatment of textile wastewater.