
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 herbal by the “scientific methods”. Current research on drug discovery from medicinal plants involves the integrated approach combining botanical, phytochemical, pharmacological, clinical 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 ethnomedical 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.

This new guide and reference concisely presents in one volume key information on the most important chemical and functional properties of food constituents, and how these properties affect the consumption of these foods. It also provides important information on how these properties are affected by harvesting, processing and storage. Included are chapters on rheological properties, food safety and mutagenic/carcinogenic components. The information was prepared by a team of food scientists from around the world and is based on the current international literature as well as the authors’ expertise. The text is organized for easy reference, supplemented with numerous data tables, and illustrated by more than 40 schematics. Everybody expects food to be palatable, nutritious, and wholesome. These attributes are affected by the composition of the food, as well as by the properties and interactions of the constituents. They can be controlled by the recipe of the formulation, the conditions of storage and processing, and the enzymatic or chemical modifications of the components, mainly lipids, proteins, saccharides, and vitamins. The effectiveness of control depends on the understanding of the chemical and functional properties of the food components. Thus, food chemistry is a must for food technologists and for other technical personnel involved in food handling.

Advances in Food and Nutrition Research recognizes the integral relationship between the food and nutritional sciences and brings together outstanding and comprehensive reviews that highlight this relationship. Contributions detail the scientific developments in the broad areas of food science and nutrition, and are intended to ensure that food scientists in academia and industry as well as professional nutritionists and dieticians are kept informed concerning emerging research and developments in these important disciplines. Series established since 1948 Advisory Board consists of 8 respected scientists Unique series as it combines food science and nutrition research

This comprehensive new book provides up-to-date information on many types of Asian prepared foods- their origin, preparation methods, processing principles, technical innovation, quality factors, nutritional values, and market potential. Written by experts who specialize in the field, it includes information on Asian dietary habits and the health significance of Asian diets. Asian Foods also discusses differences in preparations and varieties among diverse Asian ethnic groups and regions, cultural aspects associated with the consumption of the products, and the market status or potential of more than 400 varieties of Asian foods. These foods include products made from rice, wheat, other starchy grains, soybeans, meat, poultry, fish, fruits, and vegetables, as well as functional foods and alcoholic beverages. This timely book will be of interest to food professionals in product development, dieticians interested in Asian diets and dietary habits, business developers seeking market potential for Asian prepared foods, and food science and human nutrition students who need supplemental information.

The world’s most comprehensive, well documented, and well illustrated book on this subject. With extensive subject and geographical index. 378 photographs and illustrations - mostly color. Free of charge in digital PDF format on Google Books.

A comprehensive guide that covers the banana's full value chain – from production to consumption The banana is the world’s fourth major fruit crop. Offering a unique and in-depth overview of the fruit’s entire value chain, this important new handbook charts its progression from production through to harvest, postharvest, processing, and consumption. The most up-to-date data and best
Whole grains play an important role in healthy diets, due to their potential role in minimizing the risk factors for several diseases. Thus the need for a comprehensive work that addresses all aspects of whole grain technology including processing, product development and nutrition values. This book covers the technological, nutritional and product development aspects of all whole grains including wheat, rice, barley, rye, sorghum, millet, maize, and oats among others. The book will review and summarize current knowledge in whole grains with the intent of being helpful to the food industry in the development of high-quality whole grain products. Key Features: Covers the technology for whole grain processing Promotes the utilization of whole grain products Provides the information about the nutritional components of whole grains Explores the health benefits of whole grains Presents the latest trends and safety concerns of whole grains The chapters include amaranth, barley, brown rice, buckwheat, maize, millets, oats, quinoa, rye, sorghum, and wheat. In addition, current trends in processing technology and product development for whole grains are explained in detail in a separate chapter. The last chapter deals with the food safety management of whole grains. Contributions from global experts in this field make this book a key reference material for all aspects of whole grains. This book is suitable for students, scientists, and professionals in food science, food engineering, food technology, food processing, product development, food marketing, nutrition and other health sciences.

Marama bean (Tylosema esculentum (Burch) A. Schreib) is an underutilised, drought-tolerant legume native to the drier parts of Botswana, Namibia and South Africa. The bean is comparable to soya beans in protein content and quality whereas its oil content is comparable to that of peanuts. By adding value to the marama bean through processing into protein-rich flours, its utilisation may be increased. Therefore, one of the objectives of this study was to adopt suitable low-cost processing technologies used for soya to processing to produce protein-rich marama bean flours. The effect of dry heating of whole marama beans on lipoxigenase enzymes of its defatted flour was determined since oxidative rancidity catalysed mainly by lipoxigenase enzymes can reduce the shelf-life of the flour. The presence of trypsin inhibitors can affect the protein digestibility of the marama bean flour adversely. The effect of dry heating of whole marama beans on in-vitro protein digestibility and amino acid content of its defatted flour was determined. Lastly, the effect of dry heating of whole marama beans on its in-vitro protein digestibility was determined. The results of the study revealed that heating significantly increased in-vitro protein digestibility of marama and soya bean flours probably due to protein denaturation and inactivation of trypsin inhibitors. Heating generally decreased the amino acid contents of marama and soya bean flours possibly due to chemical modification of the amino acids. UMF and HMF can be used to improve protein quality in marama-cereal composite flours, porridges and breads. Heating significantly decreased the nitrogen solubility index (NSI) and emulsifying capacity (EC) of marama and soya bean flours possibly due to protein denaturation and Maillard browning reactions. This may explain the applications in emulsion-based food products such as sauces and mayonnaise because protein denaturation and Maillard browning reactions are critical during processing of sausages. Heating significantly decreased the foaming capacity of soya flour but did not have an effect on that of marama bean flour probably due to their high residual fat content which may have disrupted protein films during foaming. UMF has a potential to be used in comminuted meat products because of its relatively high NSI, EC and DAC. The laboratory process used in this study can be modified and adopted by SME’s to produce defatted marama bean flours with potential applications in bakery and meat products as a protein supplement in composite marama-cereal products.
ingredients in food formulations is growing and several factors are contributing to this drive. Pulse Foods: Processing, Quality and Nutraceutical Applications is the first book to provide up-to-date information on novel and emerging technologies for the processing of whole pulses, techniques for fractionating pulses into ingredients, their functional and nutritional properties, as well as their potential applications in that the food industry is increasingly interested in this knowledge. This book brings together essential information on the processing technology of pulses Addresses processing challenges relevant to legume and pulse grain processors Delivers insights into the current state-of-art and emerging processing technologies In depth coverage of developments in nutraceutical applications of pulse protein and carbohydrate based foods

Here in one easy-to-understand volume are the statistical procedures and techniques the agricultural researcher needs to know in order to design, implement, and interpret the results of most experiments with crops. Designed specifically for the non-statistician, this valuable guide focuses on the practical problems of the field researcher. Throughout, it emphasizes the use of statistics as a tool of research—one that will help pinpoint research problems and select remedial measures. Whenever possible, mathematical formulations and statistical jargon are avoided. Originally published by the International Rice Research Institute, this widely respected guide has been totally updated and much expanded in this Second Edition. It now features new chapters on the analysis of multi-observation data and experiments conducted over time and space. Also included is a chapter on experiments in farmers' fields, a subject of major concern in developing countries where agricultural research is commonly conducted outside experiment stations. Statistical Procedures for Agricultural Research, Second Edition will prove equally useful to students and professional researchers in all agricultural and biological disciplines. A wealth of examples of actual experiments help readers to choose the statistical method best suited for their needs, and enable even the most complicated procedures to be easily understood and directly applied. An International Rice Research Institute Book

This book focuses on food security and safety issues in Africa; a continent presently challenged with malnutrition and food insecurity. The continuous increase in the human population of Africa will lead to higher food demands, and climate change has already affected food production in most parts of Africa, leading in drought, reduced crop yields, and loss of stock and income. For Africa to be food-secure, safe and nutritious food has to be available, well-distributed, and sufficient to meet people's food requirements. Contributors to Food Security and Safety: African Perspectives offer solutions to the lack of adequate safe and nutritious food in sub-Saharan Africa, as well as highlight the positive efforts being made to address this lack through a holistic approach. The book discusses the various mechanisms used to enhance food security, processing, and breeding for improved yield and resistance to diseases. The authors emphasize the importance of hygiene and food safety in food preparation and preservation, and address how the constraints of climate change could be overcome using smart crops. As a comprehensive reference text, Food Security and Safety: African Perspectives seeks to address challenges specific to the African continent while enhancing the global knowledge base around food security, food safety, and food production in an era of rapid climate change. Professor Olubukola Oliuraradi Babalola (Pr.Sci.Nat, MASSAF) is the Vice President of the Organization for Women in Science for the Developing World, and a National Research Foundation rated established, scientist. She is the Research Director of Food Security and Safety at North-West University, Mmabatho, South Africa.

This book demonstrates a successful and sustainable model for value addition to millets from production to consumption. Within the work the authors outline practical interventions to revive the demand for millets as a convenient and nutritious option for consumers, whilst presenting a reliable model that can be adapted for the development of other commodities. Based on practical experience and the output of a National Agricultural Innovation Project, Millets Value Chain for Nutritional Security: A Replicable Success Model from India explores the development of an integrated approach to value addition to millets. The development of successful value chains to revive demand for traditional cereals such as millets plays an important role in ensuring health and nutrition security in India. As such, this book is an invaluable resource for researchers and advanced students in the fields of agriculture, food science and business management, in addition to policy makers, manufacturers and breeders.

Microbial applications encompass areas including biotechnology, chemical engineering, and alternative fuel development. Research on their technological developments cover many aspects of work using microbes as cell factories. The fields of biotechnology, chemical engineering, pharmaceuticals, diagnostics and medical device development also employ these microbial products. There is an urgent need to integrate all these disciplines that caters to the need of all those who are interested to work in the area of microbial technologies. This book is a step forward to integrate the aforesaid frontlines branches into an interdisciplinary research work quenching the needs of research that can be focused towards microbes in the respectability of biotechnologies, chemical engineering, and pharmaceuticals. All the chapters in this book are related to important research on microbial applications, written by international specialists for researchers and academics in the concerned disciplines. This publication aims to provide a detailed compendium of experimental work and information used to investigate different aspects of microbial technologies, their products as well as interdisciplinary interactions including biochemistry of metabolites, in a manner that reflects the recent developments of relevance to researchers/scientists investigating microbes.

Food Science and Technology: Trends and Future Prospects presents different aspects of food science i.e., food microbiology, food chemistry, nutrition, process engineering that should be applied for selection, preservation, processing, packaging, and distribution of quality food. The authors focus on the fundamental aspects of food and also highlight emerging technology and innovations that are changing the food industry. The chapters are written by leading researchers, lecturers, and experts in food chemistry, food microbiology, biotechnology, nutrition, and management. This book is valuable for researchers and students in food science and technology and it is also useful for food industry professionals, food entrepreneurs, and farmers.

During the 10 years that have passed since the first edition of Rice: Production and Utilization was published in 1980, much new information on processing and utilization of rice cereal has appeared in the liter ature. The 15 chapters of Volume 2 cover rice foods in baking, rice e nrichment, parboiled rice, rice quality and grades, quick-cooking rice, canning, freezing and freeze-drying rice breakfast cereals and baby foods, fermented rice products, rice snack foods, rice vinegar, rice h ulls, rice oil, and rice bran. A chapter on the nutritional quality of rice endosperm is also presented.

Flour and Breads and Their Fortification in Health and Disease Prevention, Second Edition, presents the healthful benefits of flours and flour products and guides the reader on how to identify opportunities for improving health through the use of flour and fortified flour products. The book examines flour and bread related agents that affect metabolism and other health-related conditions, explores the impact of compositional differences between flours, including differences based on country of origin and processing technique, and includes methods for the analysis of flours and bread-related compounds in other foods. This revised, updated edition contains new research on diverse flours with an emphasis on nutrients and nutraceuticals as supplements, thus making this content a timely reference for both nutritionists and food scientists. Presents the healthful benefits of flours and flour products Guides the reader in identifying opportunities for improving health through the use of flour and fortified flour products Examines flour and bread related
Where To Download Functional Properties Of Flours Prepared From
agents that affect metabolism and other health-related conditions. Explores the impact of compositional differences between flours, including differences based on country of origin and processing technique.

This book is a compilation of recent research on the use of new food proteins to improve the economics, nutrition, and health of foods. The book places particular emphasis on the use of new plant protein sources in the diet, the development of new foods, and the modification of existing foods to improve human health. It also reviews potential sources of new protein foods, the use of soy proteins in foods, and new low-fat protein foods that can help prevent obesity and heart disease in people of all ages. The book is unique in its presentation of both western and Soviet research in protein foods. New Protein Foods in Human Health: Nutrition, Prevention, and Therapy is an important book for anyone involved in protein food research.

Serine Proteinase Inhibitors—Advances in Research and Application: 2012 Edition is a ScholarlyBrief™ that delivers timely, authoritative, comprehensive, and specialized information about Serine Proteinase Inhibitors in a concise format. The editors have built Serine Proteinase Inhibitors—Advances in Research and Application: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Serine Proteinase Inhibitors 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 Serine Proteinase Inhibitors—Advances in Research and Application: 2012 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/

The world's most comprehensive, well-documented, and well-illustrated book on this subject. With extensive index. 28 cm.

The mushroom is a wide number of medicinal properties such as being an antioxidant, antimicrobial, anticancer, anti-diabetic, immune enhancer, and also used for the treatment of various diseases such as anhemtic, anti-inflammatory, antipyretics, etc. According to current information, there are approximately twelve-thousand species in the world, and out of them, 2000 species are reported as being edible. Around 35 edible mushroom varieties are cultivated commercially, whereas almost 200 wild species could be used for medicinal purposes. This book also covers the diversity of edible mushrooms and describes several applications as an alternative source for food production and clinical approach. This book includes: - the diverse types of mushroom and their enzymatic activity * Importance of nutritional properties along with their food product development * Industrial and clinical applications of macro fungi, i.e., degradation of dyes, anticancer, antimicrobial, antioxidant, etc.

Food powders are an increasingly important aspect of processed food worldwide. Essential factors such as ease of storage and transport and usage convenience have greatly benefited the food industry and promise further advancements in processing techniques. Food powders can be stored for a longer period of time than other food products, making them essential for food supply in many regions of the world. There have been numerous research works on food powders properties and characterization, but there has not been an updated comprehensive review in this field. Food Powders Properties and Characterization is designed as an essential reference for individuals in the food industry and academia seeking a singular source that covers most of the basic aspects of food powders. With chapters focusing on the general properties of food powders, characterization of particle and bulk properties, adhesion and surface properties, this text presents comprehensive and fully up to date coverage of this challenging and important field.

The Special Issue “Extractable and Non-Extractable Antioxidants” gives an updated view on antioxidants—both in their extractable and non-extractable form—in the different food groups, their products thereof, and food preparations as well as byproducts and biomass waste. The potential beneficial properties of these compounds and nutraceutical formulations are described in the various studies covered in this Special Issue.

The Technology of Wafers and Waffles: Operational Aspects is the definitive reference book on wafer and waffle technology and manufacture. It covers specific ingredient technology (including water quality, wheat flour, starches, dextrins, oils and fats) and delves extensively into the manufacturing elements and technological themes in wafer manufacturing, including no/lowlow sugar wafers, hygroscopic wafers, fillings and enrobing. The book explains, in detail, operating procedures such as mixing, baking, filling, cooling, cutting and packaging for every type of wafer: flat and shaped wafers for making biscuits, ice cream cones, cups, wafer reeals, wafer sticks (flute wafers) and biscuit wafers. It also explores the various types of European (Belgian) waffles and North American frozen waffles. Serves as a complete reference book on wafer and waffle technology and manufacturing, the first of its kind Covers specific ingredient technology such as water quality, wheat flour, starches, dextrins, oils and fats for wafer and waffles Explores wafer and waffle product types, development, ingredients, manufacturing and quality assurance Explains the scientific background of wafer and waffle baking informs both artisan and industrial bakers about many related areas of bakery product manufacturing

While cereals remain the world’s largest food yield - with more than 2.3 billion metric tons produced annually - consumer demands are on the rise for healthier cereal products with greater nutrition. Cereal Grains: Properties, Processing, and Nutritional Attributes provides a complete exploration of the scientific principles related to domesticalico

Bamboo is an ordinary plant with extraordinary properties. With its high growth rate and self-renewing ability, bamboo’s sustainability is unrivaled. Bamboo is an important material for use in many applications and its shoots hold manifold nutritional benefits. Based on 18 years of research, Bamboo Shoot: Superfood for Nutrition, Health and Medicine details health-promoting bioactive compounds found in bamboo and offers practical guidance on how to extract bamboo shoot, is used for food fortification. Already a delicacy in many Asian countries, bamboo shoots aid in the prevention of cardiovascular disease, cancer, diabetes, hypertension and obesity. Exploring the tradition and culture of bamboo in Asian countries, this book also provides information on the science behind the nutritional value of bamboo shoots. Written by individuals with expertise in bamboo shoot nutrition and fully illustrated in colour, this book reveals the antioxidant activity of bamboo shoots and discusses the potential for bamboo to be used as an ingredient in functional foods and nutraceuticals. This highly practical book discusses processing and packaging of bamboo shoots for long term storage and using bamboo in the development of novel food products. Features: Elucidates the nutrients and phytochemicals in over 30 bamboo species and includes a glossary of scientific names Highlights the nutraceutical and antioxidant properties of bamboo Describes novel healthy food products fortified with bamboo shoots and provides food recipes using bamboo Explains how bamboo can help countries achieve their sustainable development goals, from poverty reduction, food security, improved nutrition and prevention of diseases to climate change mitigation and inclusive green economic development. Aimed at professionals in the nutrition and food processing industry, this book appeals to those with an interest in incorporating bamboo into a healthier lifestyle. Endorsements This is a unique book interestingly crafted to highlight the important nutritional, health and medicinal aspects of Bamboo, an area that is greatly underexplored. It will bring awareness that bamboo shoots are a low calorie, high fibre nutritious vegetable packed with vitamins and minerals. - Prof. Cherla Sastry,
Where To Download Functional Properties Of Flours Prepared From

Founding Director General INBAR and Adjunct Professor, University of Toronto, Canada

This book brings a series of answers to all questions related to bamboo as a superfood [and will] enlighten readers how to transform bamboo shoots using either traditional or modern techniques, how to package them and how to use them as a functional and nutraceutical food. It also provides a series of cooking recipes for healthy eating while we enjoy our food. - Ximena Londoño, Founder, A Bamboo and Guadua Paradise, Colombia

Fruits and vegetables are an important nutritional requirement of human beings as these foods not only meet the quantitative needs to some extent but also supply vitamins & minerals which improve the quality of the diet & maintain health. Fruit, vegetables & oil seeds processing is one of the pillars of the food & edible oil industry. India is the second largest producer of both fruits and vegetables. Fruits and vegetables are the reservoir of vital nutrients. Being highly perishable, 20 to 40% of the total production of fruits and vegetables goes waste from the time of harvesting till they reach the consumers. It is, therefore, necessary to make them available for consumption throughout the year in processed or preserved form and to save the sizeable amount of losses. At present, about 2% of the total produce is processed in India mainly for domestic consumption. Fruits and vegetables have great potential for value addition and diversification to give a boost to food industry, create employment opportunities and give better returns to the farmers. Oil seeds also play an important role in the food sector & daily life. Edible oils constitute an important component of Indian households. Domestic edible oil consumption in India is increasing. Self sufficiency in edible oils today stands at in recent years, availabilities of non conventional oil, rice bran oil, soybean oil, palmolein oil and cottonseed have increased. Oils are essential components of all plants. However, commercial oil production facilities only utilize plants that accumulate large amounts of oil and are readily available. In order to improve the nutritional status of the people & also to exploit the export potential of processed products there is need to increase the productivity of processed food in the country. Currently, India accounts for 7.0% of world oilseeds output; 7.0% of world oil meal production; 6.0% of world oil meal export; 6.0% of world veg. oil production; 14% of world veg. oil import; and 10 % of the world edible oil consumption. Some of the fundamentals of the book are preservation of pineapple, mango and papaya chunks by hurdle technology, effect of boiling on beta-carotene content of forest green leafy vegetables consumed by tribals of south India, process development for production of pure apple juice in natural colour of choice, physical refining of rice bran and soybean oils, anti nutrients and protein digestibility of fababean and ricebean as affected by soaking, dehulling and germination, quality changes in banana (musa acuminate) wines on adding pectolase and passion fruit, essential oil composition of fresh and osmotically dehydrated galgal peels, development of cold grinding process, packaging and storage of cumin powder, bakery products and confections, etc. This book deals completely on the basic principles & methodology of fruits, vegetables, corn & oilseed processing & its preservation. This will be very resourceful to readers especially to technocrats, engineers, upcoming entrepreneurs, scientists, food technologists etc.

The world’s most comprehensive, well documented, and well illustrated book on this subject. With extensive subject and geographic index. 245 photographs and illustrations - mostly color. Free of charge in digital format on Google Books

This book is devoted to amaranth, a plant to which 45 species are indigenous to the Mesoamerican region and 10 others originated in Africa, Asia, and Europe. Amaranth was the foundation of the extensive North and South American ancient civilizations and is still important in the agriculture of more recent Indian cultures. However, this plant nearly disappeared after the Spanish conquest. In view of the outstanding agronomic performance of the plant and the high nutritional value of the grain, it is now becoming an important crop in various regions of the world. Progress in the utilization of amaranth is directly related to scientific and technical information on its biological, physical, and chemical properties. Amaranth: Biology, Chemistry, and Technology begins with a chapter on the use of tissue culture, molecular biology, and genetic engineering techniques for crop improvement. The next few chapters deal with classical genetics, traditional plant breeding, and plant physiology. Following chapters review the properties of storage and leaf proteins, carbohydrates (especially starch), and seed oil. The potential of amaranth for new food products and popping is discussed, and commercialization and marketing of amaranth and its products are described. The book also emphasizes the outstanding nutritional properties of amaranth.

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