Total Phenolic Total Flavonoid Tannin Content And

Phytochemical MethodsGrapes and WinesQuantification of Tannins in Tree and Shrub FoliageNatural Antioxidants and Anticarcinogens in Nutrition, Health and DiseasePhenolic CompoundsAntioxidant MethodologyMintMedicinal Plants of ChinaDietary TanninsFunctional FoodOxidative Stress and Chronic Degenerative DiseasesPlant Secondary MetabolitesPhenolic Compounds in Food and Their Effects on HealthPhenolic Characterization of Zinfandel Fruit and WineNatural AntioxidantsThe Chemistry and Biology of WinemakingNatural Products from Plants, Second EditionFood Factors for Cancer PreventionPharmacognosy, Phytochemistry, Medicinal PlantsTannin binding agents. Comparison of the effects of various tannin binding agents on nutritive value of leaves of tropical tannin rich fodder treesOxidative Damage to PlantsPlant PolyphenolsPhenolics in Food and NutraceuticalsGrape and Wine BiotechnologyNatural Products in Cancer Prevention and TherapyEcophysiology and Responses of Plants under Salt StressAntioxidants in Foods and Its ApplicationsPhenolic CompoundsAntimutagenesis and Anticarcinogenesis Mechanisms IIFrontiers and New Trends in the Science of Fermented Food and BeveragesPharmacological Assays of Plant-Based Natural ProductsSorghum and MilletsAnalysis of Phenolic Plant MetabolitesQuantification of Tannins in Tree and Shrub FoliageThe FlavonoidsBiodegradationDiabetes Mellitus and Human Health CareBiochemistry of Plant PhenolicsWine AnalysisPhenolic Compound Biochemistry

Phytochemical Methods

Grapes and Wines

Natural antioxidants and anticarcinogens in nutrition, health and disease represents the most recent information and state-of-the-art knowledge on the role of antioxidative vitamins, carotenoids and flavonoids in ageing, atherosclerosis, and diabetes, as well as the role of natural anticarcinogenic compounds, particularly lignans and isoflavonoids, and cancer prevention. It is highly interdisciplinary, and will be of importance to all scientists working in the medical, biomedical, nutritional and food sciences as well as the academics.

Quantification of Tannins in Tree and Shrub Foliage

Chemoprevention of Esophageal Squamous Cell Carcinoma with Berries, by Gary D. Stoner and Li-Shu Wang Cancer Prevention by Different Forms of Tocopherols, by Chung S. Yang and Nanjoo Suh Cancer Chemopreventive and Therapeutic Potential of Guggulsterone, by Inas Almazari and Young-Joon Surh Inhibition of UVB-Induced Nonmelanoma Skin Cancer: A Path from Tea to Caffeine to Exercise to Decreased Tissue Fat, by Allan H. Conney, You-Rong Lou, Paul Nghiem, Jamie J. Bernard, George C. Wagner and Yao-Ping Lu Cancer Chemoprevention and Nutri-Epigenetics: State of the Art and Future Challenges, by Clarissa Gerhauser A Perspective on Dietary Phytochemicals and Cancer Chemoprevention: Oxidative

Stress, Nrf2, and Epigenomics, by Zheng-Yuan Su, Limin Shu, Tin Oo Khor, Jong Hun Lee, Francisco Fuentes and Ah-Ng Tony Kong Keap1-Nrf2 Signaling: A Target for Cancer Prevention by Sulforaphane, by Thomas W. Kensler, Patricia A. Egner, Abena S. Agyeman, Kala Visvanathan, John D. Groopman, Jian-Guo Chen, Tao-Yang Chen, Jed W. Fahey and Paul Talalay Chemoprotection Against Cancer by Isothiocyanates: A Focus on the Animal Models and the Protective Mechanisms, by Albena T. Dinkova-Kostova Human Cancer Chemoprevention: Hurdles and Challenges, by Vaqar Mustafa Adhami and Hasan Mukhtar Personalizing Lung Cancer Prevention Through a Reverse Migration Strategy, by Kathryn A. Gold, Edward S. Kim, Ignacio I. Wistuba and Waun K. Hong Natural-Agent Mechanisms and Early-Phase Clinical Development, by Janet L. Wang, Kathryn A. Gold and Scott M. Lippman

Natural Antioxidants and Anticarcinogens in Nutrition, Health and Disease

Phenolic compounds comprise a broad class of natural products formed mainly by plants, but also microorganisms and marine organisms that have the capacity to form them. Nowadays the interest in these compounds has increased mainly due to their diverse chemical structure and wide biological activity valuable in the prevention of some chronic or degenerative diseases. The functional foods are a rich source of these phytochemicals, and this is the starting point for this book, which shows the state of the art of the phenolic compounds and their biological activity. This book integrates eleven chapters that show the state of the art of diverse biological activity of the phenolic compounds, present in some crops or fruits.

Phenolic Compounds

With contributions that review research on this topic throughout the world, Oxidative Damage to Plants covers key areas of discovery, from the generation of reactive oxygen species (ROSs), their mechanisms, quenching of these ROSs through enzymatic and non-enzymatic antioxidants, and detailed aspects of such antioxidants as SOD and CAT. Environmental stress is responsible for the generation of oxidative stress, which causes oxidative damage to biomolecules and hence reduces crop yield. To cope up with these problems, scientists have to fully understand the generation of reactive oxygen species, its impact on plants and how plants will be able to withstand these stresses. Provides invaluable information about the role of antioxidants in alleviating oxidative stress Examines both the negative effects (senescence, impaired photosynthesis and necrosis) and positive effects (crucial role that superoxide plays against invading microbes) of ROS on plants Features contributors from a variety of regions globally

Antioxidant Methodology

Plant secondary metabolites have been a fertile area of chemical investigation for many years, driving the development of both analytical chemistry and of new synthetic reactions and methodologies. The subject is multi-disciplinary with chemists, biochemists and plant scientists all contributing to our current

understanding. In recent years there has been an upsurge in interest from other disciplines, related to the realisation that secondary metabolites are dietary components that may have a considerable impact on human health, and to the development of gene technology that permits modulation of the contents of desirable and undesirable components. Plant Secondary Metabolites: Occurrence, Structure and Role in the Human Diet addresses this wider interest by covering the main groups of natural products from a chemical and biosynthetic perspective with illustrations of how genetic engineering can be applied to manipulate levels of secondary metabolites of economic value as well as those of potential importance in diet and health. These descriptive chapters are augmented by chapters showing where these products are found in the diet, how they are metabolised and reviewing the evidence for their beneficial bioactivity.

Mint

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 witten 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

Medicinal Plants of China

Modern Methods of Plant Analysis When the handbook Modern Methods of Plant Analysis was first introduced in 1954 the considerations were: 1. the dependence of scientific progress in biology on the improvement of existing and the introduction of new methods; 2. the difficulty in finding many new analytical methods in specialized journals which are normally not accessible to experimental plant biologists; 3. the fact that in the methods sections of papers the description of methods is frequently so compact, or even sometimes so incomplete that it is difficult to reproduce experiments. These considerations still stand today. The series was highly successful, seven volumes appearing between 1956 and 1964. Since there is still today a demand for the old series, the publisher has decided to resume publication of Modern Methods of Plant Analysis. It is hoped that the New Series will be just as acceptable to those working in plant sciences and related fields as the early volumes undoubtedly were. It is difficult to single out the major reasons for success of any publication, but we believe that the methods published in the first series were up-to-date at the time and presented in a way that made description, as applied to plant material, complete in itself with little need to consult other publications. Contributing authors have attempted to follow these guidelines in this New Series of volumes.

Dietary Tannins

Free radicals and other reactive oxygen species are constantly formed in the human body and have been implicated in human diseases such as cancer, atherosclerosis, rheumatoid arthritis, Parkinson's disease, and malaria. This observation has raised the possibility that antioxidants could act as prophylactic agents. However, it remains to be fully established whether oxidative stress makes a significant contribution to the pathology of a given disease or whether it is an epiphenomenon. Indeed, development of specific assays applicable to humans would greatly contribute to our understanding of the role played by free radicals and their modulation by antioxidants in normal physiology and in human diseases. This book addresses the key methodological questions.

Functional Food

In recent years, the concern of society about how food influences the health status of people has increased. Consumers are increasingly aware that food can prevent the development of certain diseases, so in recent years, the food industry is developing new, healthier products taking into account aspects such as trans fats, lower caloric intake, less salt, etc. However, there are bioactive compounds that can improve the beneficial effect of these foods and go beyond the nutritional value. This book provides information on impact of bioactive ingredients (vitamins, antioxidants, compounds of the pulses, etc.) on nutrition through food, how functional foods can prevent disease, and tools to evaluate the effects of bioactive ingredients, functional foods, and diet.

Oxidative Stress and Chronic Degenerative Diseases

For thousands of years mint has enjoyed an honored place in pharmacopoeias and kitchen cupboards in India, China, Europe, North America, and elsewhere. Today the amount of essential oils produced from the four major mint species (cornmint, peppermint, Native spearmint, and Scotch spearmint) exceeds 23,000 metric tonnes annually with a market value

Plant Secondary Metabolites

Free radicals are atoms or molecules containing unpaired electrons. Damage occurs when the free radical encounters another molecule and seeks to find another electron to pair its unpaired electron. Free radicals can cause mutation in different biological compounds such as protein, nucleic acids, and lipids, and the damage caused by the free radicals lead to various diseases (cancer, cardiovascular disease, aging, etc.). Antioxidants are helpful in reducing and preventing damage from free radical reactions because of their ability to donate electrons, which neutralize the radical without forming another. Ascorbic acid, for example, can lose an electron to a free radical and remain stable itself by passing its unstable electron around the antioxidant molecule. Unfortunately, new data indicate that the synthetic antioxidants used in the industry could have carcinogenic effects on human cells, thus fueling an intense search for new, natural, and efficient antioxidants. Therefore, the current book discusses the role and source of antioxidant compounds in nutrition and diets. Also, the current book includes nine chapters contributed by experts around the world, and the chapters

are categorized into two sections: "Antioxidant Compounds and Biological Activities" and "Natural Antioxidants and Applications."

Phenolic Compounds in Food and Their Effects on Health

Revised and updated for the second edition, this reference volume draws on biosynthetic relationships to describe both the primary and secondary classes of matabolites and the drugs from which they originate.

Phenolic Characterization of Zinfandel Fruit and Wine

Phenolics in Food and Nutraceuticals is the first single-source compendium of essential information concerning food phenolics. This unique book reports the classification and nomenclature of phenolics, their occurrence in food and nutraceuticals, chemistry and applications, and nutritional and health effects. In addition, it describes antioxidant activity of phenolics in food and nutraceuticals as well as methods for analysis and quantification. Each chapter concludes with an extensive bibliography for further reading. Food scientists, nutritionists, chemists, biochemists, and health professionals will find this book valuable.

Natural Antioxidants

This book contains a collection of different biodegradation research activities where biological processes take place. The book has two main sections: A) Polymers and Surfactants Biodegradation and B) Biodegradation: Microbial Behaviour.

The Chemistry and Biology of Winemaking

This volume provides information on how to select and screen plants for their medicinal properties. It describes phytopharmacological techniques for extracting and qualitatively and quantitatively analyzing a plant’s phytochemicals. After a detailed in vitro investigation including nutritional and anti-nutritional analyses, medicinal properties were tested with various in vivo models for anti-inflammatory, analgesic, anti-pyretic, anticancer and anti-diabetic properties, as well as wound healing, neurodegenerative diseases, etc. Compound identification and purification techniques include, among others, TLC and column chromatography, as well as molecular docking with specific proteins.

Natural Products from Plants, Second Edition

2008 NOMINEE The Council on Botanical and Horticultural Libraries Annual Award for a Significant Work in Botanical or Horticultural Literature From medicinal, industrial, and culinary uses to cutting-edge laboratory techniques in modern research and plant conservation strategies, Natural Products from Plants, Second Edition reveals a vastly expanded understanding of the natural products that plants produce. In a single volume, this bookoffers a thorough inventory of the various types of plant-derived compounds. It covers their chemical composition, structure, and properties alongside the most effective ways to identify, extract,

analyze, and characterize new plant-derived compounds. The authors examine new information on the chemical mechanisms plants use to deter predators and pathogens, attract symbiotic organisms, and defend themselves against environmental stress—insights which are key for adapting such mechanisms to human health. Along with updated and revised information from the highly acclaimed first edition, the second edition presents seven new chapters and features more than 50% new material relating to plant constituents, natural product biochemistry, and molecular biology. The book incorporates in-depth treatment of natural product biosynthesis with new collection and extraction protocols, advanced separation and analytical techniques, up-to-date bioassays, as well as modern molecular biology and plant biotechnology for the production of natural products. Unique in its breadth and coverage, Natural Products from Plants, Second Edition belongs on the shelf of interested researchers, policymakers, and consumers— particularly those involved in disease prevention, treatment, and pharmaceutical applications—who need a complete guide to the properties, uses, and study of plant natural products.

Food Factors for Cancer Prevention

Chemoprevention is currently regarded as one of the most promising avenues for the control of cancer, with human epidemiological and animal studies indicating that the risk of cancer may be modified by changes in diet. Over 100 papers are collected in this volume, the proceedings of the International Conference on Food Factors: Chemistry and Cancer Prevention, held in Hamamatsu, Japan, in December 1995. Special emphasis is placed on chemical, biological, and molecular properties of phytochemicals in teas, fruit, vegetables, herbs, and spices, and on their potential for cancer prevention. Also discussed are the cancer-preventive effects of vitamins, lipids, carotenoids, flavonoids, and other components of diet. The findings presented here will be invaluable to all who are interested in diet and cancer prevention, and especially to biochemists, pharmacologists, food scientists, and nutritionists.

Pharmacognosy, Phytochemistry, Medicinal Plants

Here is the most complete guide available for the analysis of tannins. A battery of tannin methodologies is presented in a simple, clear and easy-to-understand manner. This unique guide covers chemical, biological and radio isotopic tannin assays. Comprehensive step-by-step protocols are presented for each method. The protocols enable non-specialists and specialists alike to implement the methods easily in the laboratory. It is an ideal laboratory manual for research scientists, graduate students, and laboratory personnel working in the fields of animal nutrition, soil nutrient management, wild life-plant interactions, and plant breeding.

Tannin binding agents. Comparison of the effects of various tannin binding agents on nutritive value of leaves of tropical tannin rich fodder trees

The papers are arranged in eight sections, addressing: antimutagens in food; antimutagens and anticarcinogens in environmental toxicology; free radicals;

antitumor initiators; antitumor promoters; aspects of mammalian and human genetics; molecular aspects of mutagenesis and antimutageneis; and oncog

Oxidative Damage to Plants

The flavonoids, one of the most numerous and widespread groups of natural constituents, are important to man not only because they contribute to plant colour but also because many members (e.g. coumestrol, phloridzin, rotenone) are physiologically active. Nearly two thousand substances have been described and as a group they are universally distributed among vascular plants. Although the anthocyanins have an undisputed function as plant pigments, the raison d'etre for the more widely distributed colourless flavones and flavonols still remains a mystery. It is perhaps the challenge of discovering these yet undisc10sed functions which has caused the considerable resurgence of interest in flavonoids during the last decade. This book attempts to summarize progress that has been made in the study of these constituents since the first comprehensive monograph on the chemistry of the flavonoid compounds was published, under the editorship of T. A. Geissman, in 1962. The present volume is divided into three parts. The first section (Chapters 1-4) deals with advances in chemistry, the main emphasis being on spectral techniques to take into account the re cent successful applications of NMR and mass spectral measurements to structural identifications. Recent developments in isolation techniques and in synthesis are also covered in this section. Advances in chemical knowledge of individual c1asses of flavonoid are mentioned inter aha in later chapters of the book.

Plant Polyphenols

From time immemorial fermented foods have undoubtedly contributed to the progress of modern societies. Historically, ferments have been present in virtually all human cultures worldwide, and nowadays natives from many ancient cultures still conduct a wide variety of food fermentations using deep-rooted recipes and processes. Within the last four centuries, scientific research has started to unravel many aspects of the biological process behind fermentations, which has contributed to the improvement of many industrial processes. During our journey in the research field, we have always been attracted to the development of scientific research around fermentations, especially autochthonous ferments: a natural repository of novel biomolecules and biological processes that will positively impact on many application fields from health, to food, to materials.

Phenolics in Food and Nutraceuticals

Grape and Wine Biotechnology

Here is the most complete guide available for the analysis of tannins. A battery of tannin methodologies is presented in a simple, clear and easy-to-understand manner. This unique guide covers chemical, biological and radio isotopic tannin assays. Comprehensive step-by-step protocols are presented for each method. The protocols enable non-specialists and specialists alike to implement the methods

easily in the laboratory. It is an ideal laboratory manual for research scientists, graduate students, and laboratory personnel working in the fields of animal nutrition, soil nutrient management, wild life-plant interactions, and plant breeding.

Natural Products in Cancer Prevention and Therapy

Someone once said that 'wine is a mixture of chemistry, biology and psychology'. It has certainly fascinated people over the centuries and without a doubt been enjoyed by many. Indeed, from its serendipitous roots as an attempt to store fruit, wine has been woven into the fabric of society; from its use in religion to today's sophisticated products sampled over a meal. The Chemistry and Biology of Winemaking not only discusses the science of winemaking but also aims to provide the reader with a wider appreciation of the impact of oenology on human society. Beginning with a history of wine the book discusses a wide range of topics, with particular emphasis on the organisms involved. Starting with the role of yeast in fermentation, it goes on to discuss so-called 'killer yeasts', lactic acid bacteria and the role that genetically modified organisms may have in the future. This book is ideal for anyone interested in the process of winemaking and will be of particular use for those with an interest in the chemical and biological sciences.

Ecophysiology and Responses of Plants under Salt Stress

This book provides state-of-the-art discussion of natural antioxidants from dietary sources, their occurrence, health effects, chemistry, and methodologies. The book summarizes data on the occurrence of antioxidative compounds in cereals and legumes, oilseeds, herbs and spices, vegetables, teas, muscle foods, and other commodities. The antioxidant vitamins and enzymes also are thoroughly discussed. The potential beneficial effects of dietary antioxidants, the chemistry of food antioxidants, and methodologies to assess lipid oxidation and antioxidant activity also have been covered.

Antioxidants in Foods and Its Applications

This work responds to the need to find, in a sole document, the affect of oxidative stress at different levels, as well as treatment with antioxidants to revert and diminish the damage. Oxidative Stress and Chronic Degenerative Diseases - a Role for Antioxidants is written for health professionals by researchers at diverse educative institutions (Mexico, Brazil, USA, Spain, Australia, and Slovenia). I would like to underscore that of the 19 chapters, 14 are by Mexican researchers, which demonstrates the commitment of Mexican institutions to academic life and to the prevention and treatment of chronic degenerative diseases.

Phenolic Compounds

The book "Grapes and Wines: Advances in Production, Processing, Analysis, and Valorization" intends to provide to the reader a comprehensive overview of the current state-of-the-art and different perspectives regarding the most recent knowledge related to grape and wine production. Thus, this book is composed of three different general sections: (1) Viticulture and Environmental Conditions, (2)

Wine Production and Characterization, and (3) Economic Analysis and Valorization of Wine Products. Inside these 3 general sections, 16 different chapters provide current research on different topics of recent advances on production, processing, analysis, and valorization of grapes and wines. All chapters are written by a group of international researchers, in order to provide up-to-date reviews, overviews, and summaries of current research on the different dimensions of grape and wine production. This book is not only intended for technicians actively engaged in the field but also for students attending technical schools and/or universities and other professionals that might be interested in reading and learning about some fascinating areas of grape and wine research.

Antimutagenesis and Anticarcinogenesis Mechanisms II

Grape and Wine Biotechnology is a collective volume divided into 21 chapters focused on recent advances in vine pathology and pests, molecular tools to control them, genetic engineering and functional analysis, wine biotechnology including molecular techniques to study Saccharomyces and non-Saccharomyces yeast in enology, new fermentative applications of nonconventional yeasts in wine fermentation, biological aging on lees and wine stabilization, advanced instrumental techniques to detect wine origin and frauds, and many other current applications useful for researchers, lecturers, and vine or wine professionals. The chapters have been written by experts from different universities and research centers of 13 countries being representative of the knowledge, research, and know-how of many wine regions worldwide.

Frontiers and New Trends in the Science of Fermented Food and Beverages

While there are many books available on methods of organic and biochemical analysis, the majority are either primarily concerned with the application of a particular technique (e.g. paper chromatography) or have been written for an audience of chemists or for biochemists work ing mainly with animaltissues. Thus, no simple guide to modern metho ds of plant analysis exists and the purpose of the present volume is to fill this gap. It is primarily intended for students in the plant sciences, who have a botanical or a general biological background. It should also be of value to students in biochemistry, pharmacognosy, food science and 'natural products' organic chemistry. Most books on chromatography, while admirably covering the needs of research workers, tend to overwhelm the student with long lists of solvent systems and spray reagents that can be applied to each class of organic constituent. The intention here is to simplify the situation by listing only a few specially recommended techniques that have wide currency in phytochemical laboratories. Sufficient details are provided to allow the student to use the techniques for themselves and most sections contain some introductory practical experiments which can be used in classwork.

Pharmacological Assays of Plant-Based Natural Products

Sorghum and Millets: Chemistry, Technology and Nutritional Attributes, Second Edition, is a new, fully revised edition of this widely read book published by AACC

International. With an internationally recognized editorial team, this new edition covers, in detail, the history, breeding, production, grain chemistry, nutritional quality and handling of sorghum and millets. Chapters focus on biotechnology, grain structure and chemistry, nutritional properties, traditional and modern usage in foods and beverages, and industrial and non-food applications. The book will be of interest to academics researching all aspects of sorghum and millets, from breeding to usage. In addition, it is essential reading for those in the food industry who are tasked with the development of new products using the grains. Updated version of the go-to title in sorghum and millets with coverage of developments from the last two decades of research Brings together leading experts from across the field via a world leading editorial team Published in partnership with the AACCI - advancing the science and technology of cereals and grains

Sorghum and Millets

Analysis of Phenolic Plant Metabolites

Plants are arranged alphabetically by scientific names. "Intended for use by biologists, chemists, and the interested layman as a guide to the Chinese medicinal plant resources and their uses." Entries give popular names, uses, chemistry, and notes. Contains drawings.

Quantification of Tannins in Tree and Shrub Foliage

Phenolic compounds as a large class of metabolites found in plants have attracted attention since long time ago due to their properties and the hope that they will show beneficial health effects when taken as dietary supplements. This book presents the state of the art of some of the natural sources of phenolic compounds, for example, medicinal plants, grapes or blue maize, as well as the modern methods of extraction, quantification, and identification, and there is a special section discussing the treatment, removal, and degradation of phenols, an important issue in those phenols derived from the pharmaceutical or petrochemical industries.

The Flavonoids

These are just a few examples that illustrate the chemical diversity and use of phenolic compounds, the topic of ‘Phenolic Compound Biochemistry’. This book is written for researchers, instructors, advanced undergraduate students and beginning graduate students in the life sciences who wish to become more familiar with these and many other intriguing aspects of phenolic compounds. Topics covered include nomenclature, chemical properties, biosynthesis, including an up-to-date overview of the genetics controlling phenolic metabolism, isolation and characterization of phenolic compounds, phenolics used in plant defense, and the impact of phenolics on human health. The book is written in an accessible style, and assumes only basic knowledge of organic chemistry, biochemistry and cell physiology. More than 300 chemical structures and reaction schemes illustrate the text. Wilfred Vermerris is Associate Professor of Agronomy at the University of

Florida Genetics Institute in Gainesville, FL. His research focuses on the genetic control of phenolic compounds that impact agro-industrial processing of crop plants. Ralph Nicholson is Professor of Botany and Plant Pathology at Purdue University in West Lafayette, IN. He is an expert on phenolic compounds involved in the plant's defense against pathogenic fungi and bacteria.

Biodegradation

Scientific Study from the year 2012 in the subject Biology - Botany, , language: English, abstract: The study report here was undertaken to evaluate the nutritive value of leaves from tannin rich tropical multipurpose tree species with or without various tannin binding agents (TBAs). The studied species included Albizia gummifera, Carissa edulis, Draceana steudneri, Ficus sycomorus, Grewia ferruginea, Millettia ferruginea, Prunus africana, Rhus glutinosa, Syzygium guineense and Ekebergia capensis. Six independent samples per species were collected separately. The species were subjected to proximate, detergent and polyphenolic analysis. Dry matter and organic matter digestibility (DMD & OMD) of the plant leaves were determined following two stage in vitro enzymatic analysis. Dried plant species were incubated in two runs with three replications per run with rumen liquid collected from three Boran □ Holstein-Friesian crossbred steers and gas production measured at 2, 4, 6, 8, 12, 24, 32, 48, 58, 72 and 96 h of incubation.

Diabetes Mellitus and Human Health Care

This book will enlighten on some of the recent progress in diabetic care and therapy. Diabetes mellitus is a group of metabolic diseases in which a person has high blood sugar, either because the body does not produce enough insulin, or because of the inability of cells to respond to the insulin that is produced. According to the recent report of World Health Organization, 346 million people worldwide are suffering from diabetes, and in 2004, approximately 3.4 million people died as a result of high blood sugar. This book explores applying both classical and modern approaches to the management of diabetes by focusing on a holistic approach. Great attention has been focused on global trends in diabetes, epidemiology of diabetes, inhibitors in diabetes and diabetes therapy, vitamins and diabetes, and the role of dietary fats in diabetes in this book. Topics include: • diabetic foot ulcers and therapeutic footwear • Withania coagulans. Dunal as an antidiabetic herb • the pharmacological interventions for diabetic cardiomyopathy • the use of saliva as a noninvasive tool to monitor glycemic control in diabetic patients • a cutting-edge biomedical device for continuous in vivo glucose monitoring • the temporal effect of repeated stress in the pathophysiology of T2DM • nanosensor technology for glucose detection The editors and authors emphasize a holistic approach toward the diagnosis, treatment, and management of diabetes by joining hands with experts from various disciplines Medical students and doctors of modern medicine, Ayurveda, homeopathy, etc., medical reserachers, researchers in the area of diabetes, pharma professionals.

Biochemistry of Plant Phenolics

This book was developed from the proceedings of the 2nd North American Tan nin Conference held in Houghton, Michigan, June, 1991. The objective of this con ference was to bring together people with a common interest in plant polyphenols and to promote interdisciplinary interactions that will lead to a bet ter understand ing of the importance of these substances. Another objective of this conference was to extend the 'tannin family' by making special efforts to encourage participation by scientists outside the United States, obtain more coverage of the hydrolyzable tannins, and further broaden the scope of coverage from the initial concentration on forestry and forest products. Com parison of the contents of this book with 'Chemistry and Significance of Condensed Tannins' that resulted from the proceedings of the 1st North American Tannin Conference shows the degree that these objectives were met. In developing the second conference, care was taken to assure that this book extends rather than duplicates the coverage of the first conference. Therefore, the two books should be taken together to obtain an up to date coverage of the broad area of chemistry and significance of plant polyphenols. Our thanks go to the authors who so kindly contributed chapters and so pa tiently responded to our requests. We thank the Conference Assistance Staff of Michigan Technological University for their help in planning and conducting the conference.

Wine Analysis

This book will shed light on the effect of salt stress on plants development, proteomics, genomics, genetic engineering, and plant adaptations, among other topics. Understanding the molecular basis will be helpful in developing selection strategies for improving salinity tolerance. The book will cover around 25 chapters with contributors from all over the world.

Phenolic Compound Biochemistry

This concisely written book presents information on types of plant phenolics. The sole focus of this volume is on dietary tannins. It reviews the fact that tannins interact with dietary proteins, carbohydrates, minerals, vitamins, digestive enzymes, and lower nutrient availability. This work reveals that in certain parts of the world, tannins also have been reported as carcinogenic. This literature comprehensively reviews chemistry and plant biochemistry, and methods of extraction. It also explains the harmful and toxic effects and remedies to alleviate dietary tannins. This useful resource is a must for all food scientists, nutritionists, biochemists, and animal scientists throughout the world.