

Genetic Characterization Of Guava Psidium Guajava L

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Fruit and Vegetable Flavour - B Brückner 2008-02-29

Consumer acceptance of food is highly dependent on flavour. This important collection reviews the chemical basis of fruit and vegetable flavour and current methods for improving the flavour of fruit and vegetable products. Opening chapters outline the economic importance of flavour in fruit and vegetables. Part one investigates the formation of fruit and vegetable flavour and how it deteriorates after harvest. Part three contains chapters on flavour management during horticultural and postharvest operations. Chapters discuss the possibilities and limitations for flavour improvement by selection and breeding, and the role of maturity for improved fruit and vegetable flavour. Part four concludes the volume with a discussion of emerging trends in flavour manipulation, especially how knowledge of the genetic background of quality attributes can be applied to flavour improvement. With its team of experienced international contributors Fruit and vegetable flavour: recent advances and future prospects is an essential reference for all those working in the food industry concerned with improving flavour in fruit and vegetables. Reviews the chemical basis of fruit and vegetable flavour and current methods for improvement Discusses the possibilities and limitations for flavour

enhancement by selection and breeding Illustrates how knowledge of the genetic background of quality attributes can be applied to flavour improvement

Polyphenols: Properties, Recovery, and Applications - Charis Michel Galanakis 2018-01-11

Polyphenols: Properties, Recovery, and Applications covers polyphenol properties, health effects and new trends in recovery procedures and applications. Beginning with coverage of the metabolism and health effects of polyphenols, the book then addresses recovery, analysis, processing issues and industrial applications. The book not only connects the properties and health effects of polyphenols with recovery, processing and encapsulation issues, but also explores industrial applications that are affected by these aspects, including both current applications and those under development. Covers the properties and health effects of polyphenols, along with trends in recovery procedures and applications Addresses recovery, analysis and processing issues Concludes with coverage of the industrial applications of polyphenols

Plant Biology and Biotechnology - Bir Bahadur 2015-06-19

Plant genomics and biotechnology have recently made enormous strides, and

hold the potential to benefit agriculture, the environment and various other dimensions of the human endeavor. It is no exaggeration to claim that the twenty-first century belongs to biotechnology. Knowledge generation in this field is growing at a frenetic pace, and keeping abreast of the latest advances and calls on us to double our efforts. Volume II of this two-part series addresses cutting-edge aspects of plant genomics and biotechnology. It includes 37 chapters contributed by over 70 researchers, each of which is an expert in his/her own field of research. Biotechnology has helped to solve many conundrums of plant life that had long remained a mystery to mankind. This volume opens with an exhaustive chapter on the role played by thale cress, *Arabidopsis thaliana*, which is believed to be the *Drosophila* of the plant kingdom and an invaluable model plant for understanding basic concepts in plant biology. This is followed by chapters on bioremediation, biofuels and biofertilizers through microalgal manipulation, making it a commercializable prospect; discerning finer details of biotic stress with plant-fungal interactions; and the dynamics of abiotic and biotic stresses, which also figure elsewhere in the book. Breeding crop plants for desirable traits has long been an endeavor of biotechnologists. The significance of molecular markers, marker assisted selection and techniques are covered in a dedicated chapter, as are comprehensive reviews on plant molecular biology, DNA fingerprinting techniques, genomic structure and functional genomics. A chapter dedicated to organellar genomes provides extensive information on this important aspect. Elsewhere in the book, the newly emerging area of epigenetics is presented as seen through the lens of biotechnology, showcasing the pivotal role of DNA methylation in effecting permanent and transient changes to the genome. Exclusive chapters deal with bioinformatics and systems biology. Handy tools for practical applications such as somatic embryogenesis and micropropagation are included to provide frontline information to entrepreneurs, as is a chapter on somaclonal variation. Overcoming barriers to

sexual incompatibility has also long been a focus of biotechnology, and is addressed in chapters on wide hybridization and hybrid embryo rescue. Another area of accomplishing triploids through endosperm culture is included as a non-conventional breeding strategy. Secondary metabolite production through tissue cultures, which is of importance to industrial scientists, is also covered. Worldwide exchange of plant genetic material is currently an essential topic, as is conserving natural resources in situ. Chapters on in vitro conservation of extant, threatened and other valuable germplasms, gene banking and related issues are included, along with an extensive account of the biotechnology of spices – the low-volume, high-value crops. Metabolic engineering is another emerging field that provides commercial opportunities. As is well known, there is widespread concern over genetically modified crops among the public. GM crops are covered, as are genetic engineering strategies for combating biotic and abiotic stresses where no other solutions are in sight. RNAi- and micro RNA- based strategies for crop improvement have proved to offer novel alternatives to the existing non-conventional techniques, and detailed information on these aspects is also included. The book's last five chapters are devoted to presenting the various aspects of environmental, marine, desert and rural biotechnology. The state-of-the-art coverage on a wide range of plant genomics and biotechnology topics will be of great interest to post-graduate students and researchers, including the employees of seed and biotechnology companies, and to instructors in the fields of plant genetics, breeding and biotechnology.

Medicinal Plants as Anti-infectives - Francois Chassagne 2022-03-31
Medicinal Plants as Anti-infectives: Current Knowledge and New Perspectives provides comprehensive and updated data on medicinal plants and plant-derived compounds used as antimicrobials in a range of locations (such as the Balkans, Colombia, India, Lebanon, Mali, Pakistan, Southeast Asia, South Africa, and West Africa). It also provides an overview on the most

recent innovations and regulations in the field of drug discovery from ethnobotanical sources. This book will help readers to better appreciate the role of plants and phytomedicines as anti-infectives, to better assess the health benefits of plant-derived products, to help implement new methodologies for studying medicinal plants, and to guide future researchers in the field.

Medicinal Plants as Anti-infectives: Current Knowledge and New Perspectives is a valuable resource for students, academic scientists, and researchers from the fields of ethnobotany, pharmacy, medicinal chemistry, and microbiology, as well as for professionals working in national or international health agencies, or in pharmaceutical industries. Provides an overview of new methods and tools developed in the field of drug discovery from ethnobotanical sources (e.g., DNA barcoding, metabolomics, quorum quenching) Contains real-world insights from experts in the field Presents specific research program results to inspire further research in additional regions

Proceedings of the 1st International Guava Symposium - R. K. Pathak 2007

Handbook of Fruits and Fruit Processing - Nirmal Sinha 2012-06-20

Fruits are botanically diverse, perishable, seasonal and predominantly regional in production. They come in many varieties, shapes and size, colors, flavors and textures and are an important part of a healthy diet and the global economy. Besides vitamins, minerals, fibers and other nutrients, fruits contain phenolic compounds that have pharmacological potential. Consumed as a part of a regular diet, these naturally occurring plant constituents are believed to provide a wide range of physiological benefits through their antioxidant, anti-allergic, anti-carcinogenic, and anti-inflammatory properties. **Handbook of Fruits and Fruit Processing** distills the latest developments and research efforts in this field that are aimed at improving production methods, post-harvest storage and processing, safety, quality and developing new processes

and products. This revised and updated second edition expands and improves upon the coverage of the original book. Some highlights include chapters on the physiology and classification of fruits, horticultural biochemistry, microbiology and food safety (including HACCP, safety and the regulation of fruits in the global market), sensory and flavor characteristics, nutrition, naturally present bioactive phenolics, postharvest physiology, storage, transportation and packaging, processing and preservation technologies. Information on the major fruits includes tropical and super fruits, frozen fruits, canned fruit, jelly, jam and preserves, fruit juices, dried fruits and wines. The 35 chapters are organized into five parts: Part I: Fruit physiology, biochemistry, microbiology, nutrition and health Part II: Postharvest handling and preservation of fruits Part III: Product manufacturing and packaging Part IV: Processing plant, waste management, safety and regulations Part V: Production, quality and processing aspects of major fruits and fruit products Each chapter has been contributed by professionals from around the globe representing academia, government institutions and industry. The book is designed to be a valuable source and reference book for scientists, product developers, students and all professionals with an interest in this field.

RNAi Technology - R. K. Gaur 2016-04-19

RNAi technology is used for large-scale screens that systematically shut down each gene in the cell, which can help identify the components necessary for a particular cellular process or an event such as cell division. Exploitation of the pathway is also a promising tool in biotechnology and medicine. Introducing new technology in the study of RNA

Biotechnology of Fruit and Nut Crops, 2nd Edition - Richard E. Litz 2020-01-29

This book covers the biotechnology of all the major fruit and nut species. Since the very successful first edition of this book in 2004, there has been rapid progress for many fruit and nut species in cell culture, genomics and genetic

transformation, especially for citrus and papaya. This book covers both these cutting-edge technologies and regeneration pathways, protoplast culture, in vitro mutagenesis, ploidy manipulation techniques that have been applied to a wider range of species. Three crop species, *Diospyros kaki* (persimmon), *Punica granatum* (pomegranate) and *Eriobotrya japonica* (loquat) are included for the first time. The chapters are organized by plant family to make it easier to make comparisons and exploitation of work with related species. Each chapter discusses the plant family and the related wild species for 38 crop species, and has colour illustrations. It is essential for scientists and post graduate students who are engaged in the improvement of fruit, nut and plantation crops.

Principles of Tropical Horticulture - David J Midmore 2015-04-07

Principles of Tropical Horticulture leads the reader through a background of environmental influences and plant physiology to an understanding of production and post-harvest systems, environmental adaptation techniques and marketing strategies. Focusing on the principles behind production practices and their scientific basis, rather than detailed biological traits of each crop, this text outlines successes and failures in practices to date and sets out how the quantity and quality of horticultural produce can improve in the future. Case studies are frequently used and chapters cover the production of vegetables, fruit and ornamental crops, including temperate zone crops adapted to grow in the tropics.

Microbial Genomics in Sustainable Agroecosystems - Vijay Tripathi
2019-11-05

In recent decades, significant advances in new methodologies like DNA sequencing and high-throughput sequencing have been used to identify microorganisms and monitor their interactions with different environments. Microbial genomics techniques are opening new approaches to microbiology by revealing how microorganisms affect human beings and the environment.

This book covers four major areas: 1) Environmental microbial genomics, 2) Microbial genomics in human health, 3) Microbial genomics in crop improvement and plant health protection, and 4) Genome analysis of microbial pathogens. Within these areas, the topics addressed include: microbial genome diversity, evolution, and microbial genome sequencing; bioinformatics and microarray-based genomic technologies; functional genomics of bioremediation of soil and water from organic and inorganic pollutants and carbon management; functional genomics of microbial pathogens and relevant microorganisms; functional genomics of model microorganisms; and applied functional genomics. Given its scope, the book offers a comprehensive source of information on the latest applications of microorganisms and microbial genomics to enhance the sustainability of agriculture and the environment.

Metabolism of Fruit Volatile Organic Compounds - Jinhe Bai 2022-06-29

Fruit Oils: Chemistry and Functionality - Mohamed Fawzy Ramadan
2019-05-08

Fruit Oils: Chemistry and Functionality presents a comprehensive overview of recent advances in the chemistry and functionality of lipid bioactive phytochemicals found in fruit oils. The chapters in this text examine the composition, physicochemical characteristics and organoleptic attributes of each of the major fruit oils. The nutritional quality, oxidative stability, and potential food and non-food applications of these oils are also extensively covered. The potential health benefits of the bioactive lipids found in these fruit oils are also a focus of this text. For each oil presented, the levels of omega-9, omega-6 and omega-3 fatty acids are specified, indicating the level of health-promoting traits exhibited in each. The oils and fats extracted from fruits generally differ from one another both in terms of their major and minor bioactive constituents. The methods used to extract oils and fats as well as the processing techniques such as refining, bleaching and deodorization affect their major and

minor constituents. In addition, different post-processing treatments of fruit oils and fats may alter or degrade important bioactive constituents. Treatments such as heating, frying, cooking and storage and major constituents such as sterols and tocopherols are extensively covered in this text. Although there have been reference works published on the composition and biological properties of lipids from oilseeds, there is currently no book focused on the composition and functionality of fruit oils. *Fruit Oils: Chemistry and Functionality* aims to fill this gap for researchers, presenting a detailed overview of the chemical makeup and functionality of all the important fruit oils.

Plant Breeding Abstracts - 1999

The Pomegranate - Ali Sarkhosh 2020-11-17

The pomegranate, *Punica granatum* L., is one of the oldest known edible fruits and is associated with the ancient civilizations of the Middle East. This is the first comprehensive book covering the botany, production, processing, health and industrial uses of the pomegranate. The cultivation of this fruit for fresh consumption, juice production and medicinal purposes has expanded more than tenfold over the past 20 years. Presenting a review of pomegranate growing, from a scientific and horticultural perspective, this book provides information on how to increase yields and improve short- and medium-term grower profitability and sustainability.

Genetic Engineering of Horticultural Crops - Gyana Ranjan Rout 2018-01-08

Genetic Engineering of Horticultural Crops provides key insights into commercialized crops, their improved productivity, disease and pest resistance, and enhanced nutritional or medicinal benefits. It includes insights into key technologies, such as marker traits identification and genetic traits transfer for increased productivity, examining the latest transgenic advances in a variety of crops and providing foundational information that can be applied to new areas of study. As modern biotechnology has helped to increase

crop productivity by introducing novel gene(s) with high quality disease resistance and increased drought tolerance, this is an ideal resource for researchers and industry professionals. Provides examples of current technologies and methodologies, addressing abiotic and biotic stresses, pest resistance and yield improvement Presents protocols on plant genetic engineering in a variety of wide-use crops Includes biosafety rule regulation of genetically modified crops in the USA and third world countries
Step Wise Protocols for Somatic Embryogenesis of Important Woody Plants - Shri Mohan Jain 2018-05-30

World population is increasing at an alarming rate and this has resulted in increasing tremendously the demand for tree products such as wood for construction materials, fuel and paper, fruits, oils and medicines etc. This has put immense pressure on the world's supplies of trees and raw material to industry and will continue to do so as long as human population continues to grow. Also, the quality of human diet, especially nutritional components, is adversely affected due to limited genetic improvement of most of fruit trees. Thus there is an immediate need to increase productivity of trees. Improvement has been made through conventional breeding methods, however, conventional breeding is very slow due to long life cycle of trees. A basic strategy in tree improvement is to capture genetic gain through clonal propagation. Clonal propagation via organogenesis is being used for the production of selected elite individual trees. However, the methods are labour intensive, costly, and produce low volumes. Genetic gain can now be captured through somatic embryogenesis. Formation of embryos from somatic cells by a process resembling zygotic embryogenesis is one of the most important features of plants. In 1958, Reinert in Germany and Steward in USA independently reported somatic embryogenesis in carrot cultures. Since then, tremendous progress in somatic embryogenesis of woody and non-woody plants has taken place. It offers a potentially large-scale propagation system for

superior clones.

Agricultural Biotechnology: Latest Research and Trends - Dinesh Kumar Srivastava 2022-01-08

This book caters to the need of researchers working in the ever-evolving field of agricultural biotechnology. It discusses and provides in-depth information about latest advancements happening in this field. The book discusses evolution of plant tissue culture techniques, development of doubled haploids technology, role of recombinant-DNA technology in crop improvement. It also provides an insight into the global status of genetically modified crops, use of RNAi technology and mi-RNAs in plant improvement. Chapters are also dedicated for different branches of 'omics' science including genomics, bioinformatics, proteomics, metabolomics and phenomics along with the use of molecular markers in tagging and mapping of various genes/QTLs of agronomic importance. This book also covers the role of enzymes and microbes in agriculture in productivity enhancement. It is of interest to teachers, researchers of biotechnology and agriculture scientists. Also the book serves as additional reading material for undergraduate and postgraduate students of biotechnology, agriculture, horticulture, forestry, ecology, soil science, and environmental sciences. National and international biotechnologists and agricultural scientists will also find this to be a useful read.

Molecular Genetics and Genomics Tools in Biodiversity Conservation - Ashwani Kumar 2022

This book provides insight into the use of molecular and genomic techniques to the study of populations of critically important species at various geographical scales. It delves into a wide range of issues relevant to biodiversity conservation, such as population differentiation, landscape genomics, ecological interactions, phylogenetics, phylogeography, metagenomics, molecular methods, and data processing. The current rate of

biodiversity loss is unprecedented and valuable genetic resources are being lost at an alarmingly rate. Effective strategies to conserve these genetic resources are essential to maintain healthy ecosystems with inter-dependent species. The book is an invaluable resource for training undergraduate and graduate students, postdoctoral fellows, and for young researchers. This book is particularly useful for the policy makers and academics who want to learn about important concepts in population and conservation genetics and genomics.

Antioxidants in Fruits: Properties and Health Benefits - Gulzar Ahmad Nayik 2020-12-15

This book provides a comprehensive review of the antioxidant value of widely consumed fruits. Each chapter covers the botanical description, nutritional & health properties of these popular fruits. Fruits are one of the most important indicators of dietary quality and offer protective effects against several chronic diseases such as cardiovascular diseases, obesity, and various types of cancer. In order to effectively promote fruit consumption, it is necessary to know and understand the components of fruits. In addition to underscoring the importance of fruit consumption's effects on human diet, the book addresses the characterization of the chemical compounds that are responsible for the antioxidant proprieties of various fruits. Given its scope, the book will be of interest to graduate and post-graduate students, research scholars, academics, pomologists and agricultural scientists alike. Those working in various fruit processing industries and other horticultural departments will also find the comprehensive information relevant to their work.

The Papaya - Sisir Mitra 2020-09-01

"Global papaya production has grown significantly over the last few years, mainly as a result of increased production in India. This is the first comprehensive book authored by an international team of experts at the

forefront of research and covers botany, biotechnology, production, postharvest physiology and processing"--

Conservation and Utilization of Horticultural Genetic Resources - P.E.

Rajasekharan 2019-06-25

The conservation of crop genetic resources is one of the important elements in efforts to sustainably increase agricultural production in low-income countries, and to guarantee long-term food security, especially for the low-income population groups in these countries. Horticultural crops, as high-value crops, have an important role to play in revitalizing rural economies and can add significantly to national economies. Moreover, horticulture provides more than twice the number of jobs compared to traditional cereal crop production, and the shifting of conventional agriculture towards high-value horticulture has increased employment opportunities in developing countries. To exploit this potential, researchers need a vast array of horticultural genetic resources and information on new traits. Horticultural crops, which are only a part of PGRFA (Plant Genetic Resources for Food and Agriculture), are characterized by a wide and varied range of species. In fact, there are five major horticultural crop groups: fruit and nut crops, vegetables, food legumes, roots and tubers, and lastly the ornamental and medicinal group. In this context, the present book provides a comprehensive overview of the current state of conservation and utilization of horticultural genetic resources, addressing contemporary approaches to conservation in connection with different technologies, including biotechnological approaches as practised in India and in some cases, globally. It includes a brief chapter on the unique nature of horticultural genetic resources, providing a rationale for viewing them as being distinct from field crop genetic resources. Subsequent chapters share insights on protocols for the conservation of selected horticultural crops ex situ, and focus on the increased need to complement these efforts with in situ conservation approaches. Geospatial tools are also briefly described,

emphasizing their utility with regard to mapping and managing resources.

The book also explores the wild gene pool in horticulture crops; discusses legal aspects related to horticultural genetic resources and biotechnological aspects; and describes the key aspects of sustainable management and replenishment.

Given its scope, the book offers a valuable resource for all horticulturists, graduate students, researchers, policymakers, conservationists, and NGOs engaged in horticulture in particular and biodiversity in general.

OMICS Applications in Crop Science - Debmalya Barh 2013-12-16

Merging topical data from recently published review and research articles, as well as the knowledge and insight of industry experts, Omics Applications in Crop Science delves into plant science, and various technologies that use omics in agriculture. This book concentrates on crop breeding and environmental applications, and examines the applicatio

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

Proceedings of the Second International Symposium on Guava and Other Myrtaceae - Wolfgang Rohde 2010

Functional analysis of species-specific noncoding RNAs in plants - Yuepeng Song 2023-02-01

Genomics of Tree Crops - R.J. Schnell 2012-08-01

Trees that are indispensably supportive to human life pose a formidable challenge to breed them to suit to human needs. From soft drinks to breweries to beverages to oil to tires, the value added products from trees give a spectrum of products to human kind. While attempts to tap these resources through conventional breeding are underway, the quick and elegant way of manipulating the genetic systems at the genome level is an essential chapter of modern science. Books featuring genomics of tree crops

are few, and genomics is such a science that changes rapidly. Genomics of Tree Crops is an earnest attempt towards compiling genomics of tree crops. Plant genomics has made monumental strides in the last decade providing insights into intra-genomic phenomena such as heterosis, epistasis, pleiotropy and other interactions between loci and alleles within the genome. In contrast, the investigation of the roles and functions of single genes is a primary focus of molecular biology and is a common topic of modern genetic research. A genome is the sum total of all of an individual organism's genes. Thus, genomics is the study of all the genes of a cell, or tissue, at the DNA (genotype), mRNA (transcriptome), or protein (proteome) levels. The complete sequencing of the three billion base pair human genome with 25,000 genes identified and the invention of DNA microarrays ushered in a new era in the science of genomics leading to explosive advancements in oncology diagnostics. This impetus into the genomics era lead the way toward advances in plant genomics which started with *Arabidopsis thaliana* and went through an array of crops such as rice, maize, papaya, various cereals and legumes, with pigeon pea added to the list towards the end of 2011. Trees, on the other hand, are the least attended taxa with regard to genomic research. Some of the areas that attained attention of the scientists are: DNA sequencing, bioinformatics, genomics of flowering, gene flow, spatial structure, local adaptation and assisted migration in trees, transformation of fruit trees, genomics of tropical and temperate fruit trees, genomics of *Hevea* rubber, genomics of papaya and genomics of palms. Genomics of Tree Crops compiles this information with chapters authored by experts on these crops.

Breeding Plantation Tree Crops: Tropical Species - Shri Mohan Jain
2008-10-08

Tree species are indispensable to support human life. Due to their long life cycle and environmental sensitivity, breeding trees to suit day-to-day human needs is a formidable challenge. Whether they are edible or industrial crops,

improving yield under optimal, sub-optimal and marginal areas calls for unified efforts from the scientists around the world.

While the uniqueness of coconut (*Palmyra*) (Sanskrit - meaning tree-of-life) marks its presence in every continent from Far East to South America, tree crops like cocoa, oil palm, rubber, apple, peach, grapes and walnut prove their environmental sensitivity towards tropical, sub-tropical and temperate climates. Desert climate is quintessential for date palm. Thus, from soft drinks to breweries to beverages to oil to tyres, the value addition offers a spectrum of products to human kind, enriched with nutritional, environmental, financial, social and trade related attributes. Taxonomically, tree crops do not confine to a few families, but spread across a section of genera, an attribute so unique that contributes immensely to genetic biodiversity even while cultivated at the commercial scale. Many of these species influence other flora to nurture in their vicinity, thus ensuring their integrity in preserving the genetic biodiversity. While wheat, rice, maize, barley, soybean, cassava and banana make up the major food staples, many fruit tree species contribute greatly to nutritional enrichment in human diet. The edible part of these species is the source of several nutrients that makes additives for the daily diet of humans, for example, vitamins, sugars, aromas and flavour compounds, and raw material for food processing industries. Tree crops face an array of agronomic and horticultural problems in propagation, yield, appearance, quality, diseases and pest control, abiotic stresses and poor shelf-life.

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

Omics in Horticulture Crops presents a comprehensive view of germplasm diversity, genetic evolution, genomics, proteomics and transcriptomics of fruit crops (temperate, tropical and subtropical fruits, fruit nuts, berries), vegetables, tuberous crops, ornamental and floricultural crops and medicinal aromatic plants. Information covering phenomics, genetic diversity, phylogenetic studies, genome sequencing, and genome barcoding through the utilization of

molecular markers plays an imperative role in the characterization and effective utilization of diverse germplasm are included in the book. This is a valuable reference for researchers and academics seeking to improve cultivar productivity through enhanced genetic diversity while also retaining optimal traits and protecting the growing environment. Highlights perspectives, progress and promises of -omics application Provides a systematic overview of origin, progenitor and domestication process as well as genetic insights Includes full range of horticultural crops

Nutritional Composition of Fruit Cultivars - Monique Simmonds 2015-10-16

Nutritional Composition of Fruit Cultivars provides readers with the latest information on the health related properties of foods, making the documentation of the nutritive value of historical cultivars especially urgent, especially before they are lost and can't be effectively compared to modern cultivars. Because there is considerable diversity and a substantial body of the compositional studies directed towards commercial varieties, this information is useful for identifying traits and features that may be transposed from one variety to another. In addition, compositional and sensory features may also be used for commercialization and to characterize adulteration. Detailed characterization of cultivars can be used to identify "super-foods".

Alternatively, unmasked historical cultivars may be the focus of reinvigorated commercial practices. Each chapter in this book has sections on the botanical aspects, the composition of traditional or ancient cultivars, the composition of modern cultivars, a focus on areas of research, the specialty of the communicating author of each chapter, and summary points. Presents the botanical aspects and composition of both traditional and modern plants, including in-depth insight into current research, and overall summary points for each fruit for consistent comparison and ease of reference Provides important information in the consideration of preservation, transference, or re-introduction of historical/traditional cultivars into current crop science

Provides details on compositional and sensory parameters, from aroma and taste to micro- and macronutrients Includes data on nutraceuticals and novel components that have proven to impact on, or be important in, food quality, storage, processing, storage, and marketing

Understanding Invasive Species in the Galapagos Islands - María de Lourdes Torres 2018-02-15

This book investigates the introduction of invasive species and their behavior in oceanic islands. How can we define invasive species? What is their history? How did they come to dominate and transform ecosystems? These are relevant questions when trying to understand the behavior of invasive species—primarily in fragile ecosystems such as islands—and to understand the biological, ecological, social and economic impacts of invasions. We chose the Galapagos Islands, a place well-known to be unique in the study of evolution, as a laboratory to analyze the interactions between invasive and endemic species, to understand the makeup of the ecosystems emerging after invasions have occurred, to describe the relationships of invasives with the people that live in these islands, and to try to develop comprehensive analyses on this topic from multi-scalar and multi-disciplinary points of view. For a long time, the discussion has been about how proper management of the species could achieve two main goals: the eradication of the species to recover affected ecosystems and the conservation of endemic species. The discussion has taken on other nuances, including the suggestion that an invasive species, when it is already adapted to an ecosystem, forms an integral part of it, and thus eradication would in itself go against conservation. On the other hand, some invasive species are not only part of the biological compound of the island ecosystems, but they also form part of the social and cultural history of the inhabited islands. Some of these identified by the local inhabitants are species of real or potential economic value.

Bibliography of Agriculture - 1971-07

Guava - Sisir Mitra 2021-05-27

Guava (*Psidium guajava* L.) is an exquisite, nutritionally and economically valuable crop of tropical and subtropical regions of the world. It outshines other tropical fruits in productivity, hardiness, adaptability, nutritional value, and ensures higher economic returns to growers. Guava is commercially grown in over 70 countries, and is gaining in popularity as a 'super fruit' due to its nutritional and health benefits. With contributions from international experts, this is a valuable resource for researchers and students in horticulture, and guava-industry support personnel.

Pollination Biology, Vol.1 - Dharam P. Abrol 2015-11-16

The book covers interplay between pest management strategies and safety of pollinators. Detailed information is provided on pests and pollinators of temperate, subtropical and tropical fruit crops. Most of the fruit crops are highly cross pollinated and depend upon insects or benefit from insect pollination for fruit set. Insect pests on the other hand cause major economic damage on fruit crops in tropics, subtropics and temperate. Evidently, pest management in fruit crops on one hand and providing safety to the pollinators on the other is a challenging task in the context of increasing horticultural productivity without upsetting the ecological balance. This book aims to integrate and develop pest control strategies in a way to minimize their impact on beneficial insect species such as natural enemies and pollinators to enhance fruit production and quality. The book covers interplay between pest management strategies and safety of pollinators. Detailed information is provided on pests and pollinators of temperate, subtropical and tropical fruit crops. Pollinators play a crucial role in flowering plant reproduction and in the production of most fruits and vegetables. Most of the fruit crops are highly cross pollinated and depend upon insects or benefit from insect pollination for fruit set. Insect pests on the other hand cause major economic damage on fruit crops in tropics, subtropics and temperate. Evidently, pest management in

fruit crops on one hand and providing safety to the pollinators on the other is a challenging task in the context of increasing horticultural productivity without upsetting the ecological balance. This book aims to integrate and develop pest control strategies in a way to minimize their impact on beneficial insect species such as natural enemies and pollinators to enhance fruit production and quality. Most of the fruit crops are highly cross pollinated and depend upon insects or benefit from insect pollination for fruit set. Insect pests on the other hand cause major economic damage on fruit crops in tropics, subtropics and temperate. Evidently, pest management in fruit crops on one hand and providing safety to the pollinators on the other is a challenging task in the context of increasing horticultural productivity without upsetting the ecological balance. This book aims to integrate and develop pest control strategies in a way to minimize their impact on beneficial insect species such as natural enemies and pollinators to enhance fruit production and quality. The book covers interplay between pest management strategies and safety of pollinators.

Biotechnology to Enhance Sugarcane Productivity and Stress Tolerance - Kalpana Sengar 2018-01-12

Sugarcane is the most important plant source for sugar and alcohol production and is cultivated in more than 80 countries in tropical and subtropical areas. However, environmental factors negatively influence its yield and jeopardize the prospect to meet the increasing demand for sugar, other sugarcane derived by products and bioethanol. The development of stress tolerant plants is fundamental for the maintenance and increase of crop yields. *Biotechnology to Enhance Sugarcane Productivity and Stress Tolerance* provides a comprehensive account of both theoretical and practical aspects of sugarcane production. It contains extensive coverage of genome mapping and molecular breeding in sugarcane and presents the status of the elucidation and improvement of plant genomes of economic interest. Through 14 chapters

written by eminent scientists with global influence, this book examines various methods for sugarcane improvement through biotechnology. The book focuses on genetic and physical mapping, positioning, cloning, and monitoring of desirable genes using biotechnological approaches for high sugarcane productivity and the development of stress tolerance. Additional information includes the bioengineering of sugarcane, procedures to boost productivity, genetics and assessments for resistance to drought and salinity, genetics for high yields, and various topics of research on sugarcane genetics. It serves as a detailed reference source for cane growers, sugar and sugarcane technologists, students, and professors.

Postharvest Biology and Technology of Tropical and Subtropical Fruits -

Elhadi M Yahia 2011-09-19

Tropical and subtropical fruits are popular products, but are often highly perishable and need to be transported long distances for sale. The four volumes of Postharvest biology and technology of tropical fruits review essential aspects of postharvest biology, postharvest technologies, handling and processing technologies for both well-known and lesser-known fruits. Volume 1 contains chapters on general topics and issues, while Volumes 2, 3 and 4 contain chapters focused on individual fruits, organised alphabetically. Volume 1 provides an overview of key factors associated with the postharvest quality of tropical and subtropical fruits. Two introductory chapters cover the economic importance of these crops and their nutritional benefits. Chapters reviewing the postharvest biology of tropical and subtropical fruits and the impact of preharvest conditions, harvest circumstances and postharvest technologies on quality follow. Further authors review microbiological safety, the control of decay and quarantine pests and the role of biotechnology in the improvement of produce of this type. Two chapters on the processing of tropical and subtropical fruit complete the volume. With its distinguished editor and international team of contributors, Volume 1 of Postharvest biology

and technology of tropical and subtropical fruits, along with the other volumes in the collection, will be an essential reference both for professionals involved in the postharvest handling and processing of tropical and subtropical fruits and for academics and researchers working in the area. Along with the other volumes in the collection, Volume 1 is an essential reference for professionals involved in the postharvest handling and processing of tropical and subtropical fruits and for academics and researchers working in the area. Focuses on fundamental issues of fruit physiology, quality, safety and handling relevant to all those in the tropical and subtropical fruits supply chain. Chapters include nutritional and health benefits, preharvest factors, food safety, and biotechnology and molecular biology.

Functional Characterization of Insect Chemoreceptors: Receptivity Range, Expression and Evolution - William B. Walker 2016-06-11

Olfaction and taste are of critical importance to insects and other animals, since vital behaviours, including mate, food and host seeking, as well as predator and toxin avoidance, are guided by chemosensory cues. Mate and habitat choice are to a large extent determined by chemical signals, and chemoreceptors contribute accordingly to pre-mating isolation barriers and speciation. In addition to fundamental physiological, ecological and evolutionary consideration, the knowledge of insect taste and especially olfaction is also of great importance to human economies, since it facilitates a more informed approach to the management of insect pests of agricultural crops and forests, and insect vectors of disease. Chemoreceptors, which bind to external chemical signals and then transform and send the sensory information to the brain, are at the core of the peripheral olfactory and gustatory system and have thus been the focus of recent research in chemical ecology. Specifically, emphasis has been placed on functional characterization of olfactory receptor genes, which are derived from three large gene families, namely the odorant receptors, gustatory receptors and ionotropic receptors.

Spatial expression patterns of olfactory receptors in diverse chemosensory tissues provide information on divergent functions, with regards to ecologically relevant behaviours. On the other hand, characterization of olfactory receptor activation profiles, or “deorphanization”, provides complimentary data on the molecular range of receptivity to the fundamental unit of the olfactory sense. The aim of this Research Topic is to give an update on the breadth and depth of research currently in progress related to understanding the molecular mechanisms of insect chemoreception, with specific emphasis on the olfactory receptors.

Genomic Designing for Abiotic Stress Resistant Fruit Crops - Chittaranjan Kole 2022-09-20

This book presents deliberations on molecular and genomic mechanisms underlying the interactions of crop plants to the abiotic stresses caused by heat, cold, drought, flooding, submergence, salinity, acidity, etc., important to develop resistant crop varieties. Knowledge on the advanced genetic and genomic crop improvement strategies including molecular breeding, transgenics, genomic-assisted breeding, and the recently emerging genome editing for developing resistant varieties in fruit crops is imperative for addressing FHNEE (food, health, nutrition, energy, and environment) security. Whole genome sequencing in many of these crops followed by genotyping-by-sequencing has provided precise information regarding the genes conferring resistance useful for gene discovery, allele mining, and shuttle breeding which in turn opened up the scope for 'designing' crop genomes with resistance to abiotic stresses. The seven chapters each dedicated to a fruit crop and a fruit crop group in this volume elucidate different types of abiotic stresses and their effects on and interaction with the crops; enumerate the available genetic diversity with regard to abiotic stress resistance among available cultivars; illuminate the potential gene pools for utilization in interspecific gene transfer; present brief on classical genetics of

stress resistance and traditional breeding for transferring them to their cultivated counterparts; depict the success stories of genetic engineering for developing abiotic stress-resistant crop varieties; discuss on molecular mapping of genes and QTLs underlying stress resistance and their marker-assisted introgression into elite varieties; enunciate different genomics-aided techniques including genomic selection, allele mining, gene discovery, and gene pyramiding for developing adaptive crop varieties with higher quantity and quality of yields, and also elaborate some case studies on genome editing focusing on specific genes for generating abiotic stress-resistant crops.

Laboratory Protocols in Fungal Biology - Vijai Kumar Gupta 2012-12-09

Laboratory Protocols in Fungal Biology presents the latest techniques in fungal biology. This book analyzes information derived through real experiments, and focuses on cutting edge techniques in the field. The book comprises 57 chapters contributed from internationally recognised scientists and researchers. Experts in the field have provided up-to-date protocols covering a range of frequently used methods in fungal biology. Almost all important methods available in the area of fungal biology viz. taxonomic keys in fungi; histopathological and microscopy techniques; proteomics methods; genomics methods; industrial applications and related techniques; and bioinformatics tools in fungi are covered and compiled in one book. Chapters include introductions to their respective topics, list of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and notes on troubleshooting. Each chapter is self-contained and written in a style that enables the reader to progress from elementary concepts to advanced research techniques. Laboratory Protocols in Fungal Biology is a valuable tool for both beginner research workers and experienced professionals. Coming Soon in the Fungal Biology series: Goyal, Manoharachary / Future Challenges in Crop Protection Against Fungal Pathogens Martín, García-Estrada, Zeilinger / Biosynthesis and Molecular Genetics of Fungal Secondary Metabolites

Zeilinger, Martín, García-Estrada / Biosynthesis and Molecular Genetics of Fungal Secondary Metabolites, Volume 2 van den Berg, Maruthachalam / Genetic Transformation Systems in Fungi Schmoll, Dattenbock / Gene Expression Systems in Fungi Dahms / Advanced Microscopy in Mycology

Breeding Innovations in Underutilized Temperate Fruit Trees - Giuseppe Ferrara 2022-01-18

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