Article Postharvest Technology Of Fruits And Vegetables

Proceedings of the seminar on “Postharvest handling of tropical and subtropical fruit crops”, held in Taichung, Taiwan ROC in November 1987, co-sponsored by the Taiwan Agricultural Research Institute. This book presents a comprehensive study of the handling of fresh fruits in the developing world from harvesting to the shelf. With annual losses ranging from 30-40% due to lack of knowledge on proper handling practices and value addition, this book’s information on postharvest handling and quality testing is crucial for reducing these losses and improving the quality and safety of fresh fruits in these areas.

With its added focus on marketing and organized retail aspects, Postharvest Quality Assurance of Fruits: Practical Approaches for Developing Countries covers the entire range of fruit handling, from transportation and packaging to quality assessment and commercial preparation. In presenting a fully comprehensive outline of the factors affecting postharvest quality and marketability of fruits, this work lays the foundation for understanding the proper storage, transportation and packaging methods to prevent losses and increase quality. With its study of prevailing marketing systems, supply chains and retail methods, this book presents the complete picture for the postharvest handling of fruits in the developing world.

This new volume shares a plethora of valuable information on the recent advances in packaging and storage technologies used for quality preservation of fresh fruits and vegetables. This book, with chapters from eminent researchers in the field, covers several essential aspects of packaging and storage methods and techniques generally used in fruit and vegetables. Important considerations on selection and characteristics of packaging materials, recent packaging methods, storage hygiene and sanitation issues along with recent trends in storage technology are discussed in this volume. Key features: Provides an inclusive overview of fruit and vegetable requirements and available packaging materials and storage systems Highlights an understanding of the fundamentals of the impact of packaging on the evolution of quality and safety of fruits and vegetables Covers fundamental aspects of packaging and storage requirements, including mathematical modeling and mechanical and engineering properties of packaging materials Provides an in-depth discussion of innovative packaging and storage technologies, such as MA/CA packaging, active packaging, intelligent packaging, eco-friendly materials, etc., applied to fruit and vegetables Packaging and Storage of Fruits and Vegetables: Emerging Trends will be useful for graduate and postgraduate students and teaching professionals of horticultural science, food science and technology, packaging technology and marketing. This book will provide valuable information for the need to the developing horticulture industries for preservation of quality characteristics of fruits and vegetables. The professional community involved in handling processing and commercialization of horticultural crops will benefit as well.

The stability and shelf-life of a food product are critical to its success in the market place, yet companies experience considerable difficulties in defining and understanding the factors that influence stability over a desired storage period. This book is the most comprehensive guide to understanding and controlling the factors that determine the shelf-life of food products.

This book covers the importance of post-harvest technology in horticultural crops, fruit growth, development and post harvest physiology, fruit maturity indices, harvesting of fruits and vegetables, initial handling of fruits and vegetable after harvesting, precoring of horticulture produce, transportation, etc.. It is a rich source of modern engineering technologies for income generating concept for agro based industries. The book is specially dedicated to the sub sector of the fruits and vegetables plants dealing with the fresh primary product from the product reception following the harvesting up to the storage and before launches it to the market. This book will serves as a comprehensive guide for all the people who focuses on post harvest management skills. Note: T&F does not sell or distribute the hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

In this note, we summa-rize new evidence from a recent IFPRI study that documents the relative importance of losses in value chains for staple foods in six countries, review the evidence on which crops are most affected by losses, and outline ways to mitigate PHL.

In this volume, several new food processing and preservation technologies have been investigated by researchers that have the potential to increase shelf life and preserve the quality of foods. This handbook introduces some emerging techniques in the food processing sector, focusing on nonthermal techniques such as high-pressure processing, ultrasonication of foods, microwave vacuum dehydration, thermoelectric refrigeration technology, advanced methods of encapsulation, ozonation, electrospinning, and mechanical expellers for dairy, food, and agricultural processing. These all have a wide range of application. The volume includes studies that show the successful application of these new technologies on a large number of juices, cheeses, yogurts, soups, egg whites and eggs, vegetable slices, purees, and milk, and the extraction, drying enhancement, and modification of enzymes are reported. This volume, part of the multi-volume Handbook of Research on Food Processing and Preservation Technologies will have tremendous application in different areas of the food industry, including food processing, preservation, safety, and quality evaluation. Other volumes of this handbook cover a wide of other emerging technologies. Handbook of Research on Food Processing and Preservation Technologies: Volume 2: Nonthermal Food Preservation and Novel Processing Strategies is an excellent reference resource for researchers, scientists, faculty and students, growers, traders, processors, industries, and others for looking for new nonthermal approaches for food processing and preservation.

The world population has been increasing day by day, and demand for food is rising. Despite that, the natural resources are decreasing, and production of food is getting difficult. At the same time, about one-quarter of what is produced never reaches the consumers due to the postharvest losses. Therefore, it is of utmost importance to efficiently handle, store, and utilize produce to be able to feed the world, reduce the use of natural resources, and help to ensure sustainability. At this point, postharvest handling is becoming more important, which is the main determinant of the postharvest losses. Hence, the present book is intended to provide useful and scientific information about postharvest handling of different produce.

The contents of s have been put up in the simplest language giving separate instructions for the students and teacher as well as relevant information on the topics so that conduct of practical becomes easy and systematic.

This book contains 14 chapters focusing on the usefulness of controlled atmosphere (CA) storage in the reduction of postharvest losses and maintenance of the nutritive value and organoleptic characteristics of various fruits and vegetables and extend their season of availability by making good eating quality fruits and vegetables available for extended periods at reasonable costs. The efficacy and shortcomings of various CA storage techniques and their potential as alternatives to the application of preservation and pesticide chemicals are also discussed.

The urgent need for sustainability within the food producing industries and agriculture has turned the interest of research to investigate new nonthermal technologies, nanotechnologies and other practices in postharvest treatment of crops and fruits. Subsequently, there is a need for a new guide covering the latest developments in this particular direction. Food Losses, Sustainable Postharvest and Food Technology provides solutions to postharvest treatment technologies. It explores modern non-thermal technologies, focusing on postharvest losses and quality of fresh-cut products. In addition, it discusses the implications for postharvest technology research, policies and practices. It also focuses on the most recent advances in the field, while it explores the potentiality and sustainability of already commercialized processes and products. Aimed at professionals working in the food industry and agriculture, it could also be utilized as a handbook for anyone dealing with sustainability issues of food production in spite of postharvest treatment. Thoroughly explores modern non-thermal technologies in postharvest treatment Discusses the implications for postharvest technology research, policies and...
practices Analyzes the potentiality and sustainability of already commercialized processes and products
Postharvest Technology of Perishable Horticultural Commodities describes all the postharvest techniques and technologies available to handle perishable horticultural food commodities. It includes basic concepts and important new advances in the subject. Adopting a thematic style, chapters are organized by type of treatment, with sections devoted to postharvest risk factors and their amelioration. Written by experts from around the world, the book provides core insights into identifying and utilizing appropriate postharvest options for maximum results. Presents the most recent developments in processing technologies in a single volume Includes a wide range of perishable products, thus chapters for transnational insight Appropriate for students and professionals Written by experts as a reference resource When asking the question what is wine? there are various ways to answer. Wine is extolled as a food, a social lubricant, an antimicrobial and antioxidant, and a product of immense economic significance. But there is more to it than that. When did humans first start producing wine and what are its different varieties? Are wines nutritious or have any therapeutic values—do they have any role in health or are they simply intoxicating beverages? How are their qualities determined or marketed and how are these associated with tourism? Concise Encyclopedia of Science and Technology of Wine attempts to answer all these questions and more. This book reveals state-of-the-art technology of winemaking, describing various wine regions of the world and different cultivars used in winemaking. It examines microbiology, biochemistry, and engineering in the context of wine production. The sensory qualities of wine and brandy are explored, and the composition, nutritive and therapeutic values, and toxicity are summarized. Selected references at the end of each chapter provide ample opportunity for additional study. Key Features: Elaborates on the recent trends of control and modeling of wine and the techniques used in the production of different wines and brandies Focuses on the application of biotechnology, especially genetic engineering of yeast, bioreactor technological concepts, enzymology, microbiology, killer yeast, stuck and sluggish fermentation, etc. Illustrates the biochemical basis of wine production including malolactic fermentation Examines marketing, tourism, and the present status of the wine industry Concise Encyclopedia of Science and Technology of Wine contains the most comprehensive, yet still succinct, collection of information on the science and technology of winemaking. With 45 chapters contributed by leading experts in their fields, it is an indispensable treatise offering extensive details of the processes of winemaking. The book is an incomparable resource for oenologists, food scientists, biotechnologists, postharvest technologists, biochemists, fermentation technologists, nutritionists, chemical engineers, microbiologists, toxicologists, organic chemists, and the undergraduate and postgraduate students of these disciplines.

The Handbook of Postharvest Technology presents methods in the manufacture and supply of grains, fruits, vegetables, and spices. It details the physiology, structure, composition, and characteristics of grains and crops. The text covers postharvest technology through processing, handling, drying and milling to storage, packaging, and distribution. Additionally, it examines cooling and preservation techniques used to maintain the quality and the decrease spoilage and withering of agricultural products.

The preservation of freshness of fruits and vegetables until their consumption is the aim of many research activities. The quality losses of fresh fruit and vegetables during cold chain are frequently attributable to an inappropriate use of postharvest technologies. Moreover, especially when fresh produce is transported to distant markets, it is necessary to adopt proper storage solutions in order to preserve the initial quality. Nowadays, for each step of the supply chain (packing house, cold storage rooms, precooling center, refrigerate transport, and distribution), innovative preservation technologies are available that, alone or in combination, could preserve the fresh products in order to maintain the principal quality and nutritional characteristics. In this Special Issue, these preservation technologies will be described, highlighting their effect on quality maintenance.

Focusing on new technological interventions involved in the postharvest management of fruits, this volume looks at the research on maintaining the quality of fruits from farm to table. The volume examines the factors that contribute to shortening shelf life as well as innovative solutions to maintaining quality while increasing the length of time fruit remains fresh, nutritious, and edible. The volume considers the different needs of the diversity of fruits and covers a variety of important topics, including: • factors affecting the postharvest quality of fruits • microbial spoilage • decontamination of fruits by non-thermal technologies • new kinds of packaging and edible coatings • ozone as shelf-life extender of fruits. Emerging Technologies for Shelf-Life Enhancement of Fruits considers the fundamental issues and will be an important reference on shelf-life extension of fruits. Highlighting the trends in future research and development, it will provide food technologists, food engineers, and food industry professionals with new insight for prolonging the shelf life of fruits.

Postharvest Handling, Third Edition takes a global perspective in offering a system of measuring, monitoring, and managing produce processing to improve food quality, minimize food waste, reduce risks and uncertainties, and maximize time and resources. This unique source provides an overview of the postharvest system and its role in the food value chain, and offers essential tools to monitor and control the handling process. It shows how to predict and combat unexpected events (e.g., spoilage), and manage the food quality and safety within a facility. Proven research methods and applications from various viewpoints are available to help you maintain high-quality produce and achieve the highest yields possible. The book also explores current challenges—including oversupply, waste, food safety, lack of resources, sustainability—and best practices for production to thrive in spite of these challenges. Presents current research methods and applications in temperature control and heat treatments to help minimize moisture content, to prevent spoilage and mold, and more Addresses challenges of traceability and sustainability Presents testing and measurement techniques and applications Provides technological tools to create crop value and improve both food safety and food quality

This publication on Postharvest Technology of Kinnow provides an insight into practices used by Punjab growers and their awareness about available scientific methods of postharvest handling of fruits and vegetables. The book is divided into five chapters and a bibliography section. this book covers almost all the aspects related to enhancement of shelf life of fruits and vegetables, development of prototype and its evaluation, and quality characteristics and recent developments in quality determination techniques.

The Third Edition of the University of California's definitive manual on postharvest technology has been completely updated and expanded. Five new chapters cover consumer issues in quality and safety, preharvest factors affecting fruit and vegetable quality, waste management and culf utilization, safety factors, and processing methods. A new appendix presents a summary of optimal conditions and the potential storage life of 200 fruits and vegetables.

Postharvest losses of fresh produce have always been an obstacle in agriculture. About one third of global fresh fruits and vegetables are lost because their quality has dropped below an acceptance limit. The postharvest quality and shelf life of fresh produce are also determined before harvest. However, postharvest quality is also affected by many practices during and after harvest such as temperature management, controlled and modified atmosphere, coatings, physical treatments, biocntrol, and more. This Special Issue on “Postharvest Disease Development: Pre and/or Postharvest Practices” gathers papers that deal with preharvest and postharvest factors that affect and maintain fresh produce quality after harvest.
Postharvest is an important element of getting fresh, high-quality fruit to the consumer and technological advances continue to outpace infrastructure. This book provides valuable, up-to-date information on postharvest handling of seven fruit and nut crops: almond, fig, peach, persimmon, pistachio, pomegranate and table grape. These crops are of particular importance in the Mediterranean region, but also to those countries that export and import these crops, where intensive economic resources are dedicated to developing information to understand and solve their postharvest problems. Written by a team of internationally-recognized postharvest experts, this manual collates and verifies essential, but often difficult to access, information on these important crops, that is pertinent to the world's agricultural economy and affects agricultural communities.

While products such as bananas, pineapples, kiwifruit and citrus have long been available to consumers in temperate zones, new fruits such as lychee, longan, carambola, and mangosteen are now also entering the market. Confirmation of the health benefits of tropical and subtropical fruit may also promote consumption further. Tropical and subtropical fruits are particularly vulnerable to postharvest losses, and are also transported long distances for sale. Therefore maximising their quality postharvest is essential and there have been many recent advances in this area. Many tropical fruits are processed further into purees, juices and other value-added products, so quality optimisation of processed products is also important. The books cover current state-of-the-art and emerging post-harvest and processing technologies. Volume 1 contains chapters on particular production stages and issues, whereas Volumes 2, 3 and 4 contain chapters focused on particular fruit. Chapters in Volume 4 review the factors affecting the quality of different tropical and subtropical fruits from mangosteen to white sapote. Important issues relevant to each product are discussed, including means of maintaining quality and minimising losses postharvest, recommended storage and transport conditions and processing methods, among other topics. With its distinguished editor and international team of contributors, Volume 4 of Postharvest biology and technology of tropical and subtropical fruits, along with the other volumes in the collection, are essential references 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 4 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. Reviews factors affecting the quality of different tropical and subtropical fruits, concentrating on postharvest biology and technology Important issues relevant to each particular fruit are discussed, such as postharvest physiology, preharvest factors affecting postharvest quality and pests and diseases.

Postharvest Handling and Diseases of Horticultural Produce describes all the postharvest techniques, handling, pre-cooling, postharvest treatment, edible coating and storage of the horticultural produce available to handle perishable horticultural food commodities, covering the areas of horticulture, agricultural process engineering, postharvest technology, plant pathology and microbiology. Postharvest diseases of major fruits and vegetables, with their causal agents, are described. The integrative strategies for management of postharvest diseases include effectively inhibiting the growth of pathogens, enhancing the resistance of hosts and improving environmental conditions, with results that are favourable to the host and unfavourable to the pathogen growth including biotechnological approaches. Adopting a thematic style, chapters are organized by type of treatment, with sections devoted to postharvest risk factors and their amelioration. The chapters are written by experts in the fields of plant pathology, horticulture, food science etc., and core insights into identifying and utilizing appropriate postharvest options for minimizing postharvest losses and enhancing benefits to end-users are provided. Features Presents the most recent developments in the field of postharvest handling technologies and diseases in a single volume Includes postharvest diseases of cut flowers, fruits, vegetables and tuber crops. Appropriate for students, researchers and professionals Written by experts and can be used as a reference resource.

Written by noted experts in the field, Handbook of Mango Fruit: Production, Postharvest Science, Processing Technology and Nutrition offers a comprehensive resource regarding the production, trade, and consumption of this popular tropical fruit. The authors review the geographic areas where the fruit is grown and harvested, including information on the ever-expanding global marketplace that highlights United States production, imports and exports, and consumption, as well as data on the outlook for the European market. Handbook of Mango Fruit outlines the postharvest handling and packaging techniques and reviews the fruit’s processed products and byproducts that are gleaned from the processing of waste. The authors include information on the nutritional profile of the mango and review the food safety considerations for processing and transport of mangoes. This comprehensive resource: Reviews global mango production trends and countries that are the major exporters and importers of mangoes Explores the burgeoning marketplace for mangoes with special emphasis on the US and European marketplace Assesses latest trends in packaging of and shipping of mangoes Provides in depth coverage on value-added processing and by-products utilization Offers vital information on the innovative processing technologies and nutritional profile of popular tropical fruit Written for anyone involved in the production, marketing, postharvest handling, processing and by-products of mangoes, Handbook of Mango Fruit is a vital resource offering the most current information and guidelines on the burgeoning marketplace as well as the safe handling, production, and distribution of mangoes.

Eco-Friendly Technology for Postharvest Produce Quality presents the scope of emerging eco-friendly technologies to maintain the postharvest quality of fresh produce in terms of safety and nutrition. The book covers an analysis of the alternative and traditional methodologies pointing out the significant advantage and limitations of each technique. It provides a standard reference work for the fresh produce industry in postharvest management to extend shelf life by ensuring safety first and then nutritional or sensory quality retention. Fruits and vegetables are a huge portion of the food supply chain and are dependent on globally for good health and nutrition. The supply of good food, however, greatly depends on good postharvest handling practices. Although substantial research has been carried out to preserve the quality of fresh horticultural produce, further research—especially on safety—is still required. This book provides foundational insights into current practices yielding best results for produce handling. Includes appropriate approaches, technologies, and control parameters necessary to achieve shelf-life extension without compromising produce quality Presents successful food safety methods between the time produce is harvested to consumption Includes the latest information on preservation technologies using novel chemical methods, active packaging, and monitoring the effect of environmental stresses on quality and shelf life of agricultural produce.

With the increasing need and demand for fresh fruits and vegetables, the field of postharvest science is continuously evolving. Endeavors are being made by scientists involved in postharvest...
research for maintenance of the quality and safety of fresh horticultural produce to enhance the postharvest life and to extend the availability of the produce in both time and space. This volume, Emerging Postharvest Treatment of Fruits and Vegetables, addresses the demand for the development and application of effective technologies for preservation of perishable food products, particularly fresh fruits and vegetables. It provides an abundance of up-to-date information about postharvest treatments. The chapters discuss a number of innovative technologies to prolong and enhance postharvest fruits and vegetables. This book will be valuable for those concerned with horticulture and postharvest technology. It provides essential information for students, teachers, professors, scientists, and entrepreneurs engaged in fresh horticultural produce handling related to this field.

The ultimate goal of crop production is to provide quality produce to consumers at reasonable rates. Most fresh produce is highly perishable, and postharvest losses are significant under the present methods of management in many countries. However, significant achievements have been made during the last few years to curtail postharvest losses in fruits and vegetables. This book presents a wide selection of the latest concepts in the fast-changing field of postharvest technologies for controlling and maintaining quality and safety. Both academics and postgraduate students studying fresh produce supply chains and industry professionals will find this book extremely useful. Split into three broad themes, the book brings to light the latest developments on the biochemical and physiological basis for the quality of fruit and vegetables, the industrial approaches to quality management of fruit and vegetables, and the latest advances in postharvest technologies for controlling and maintaining quality. Covers the biochemical and physiological basis for quality of fruit and vegetables Highlights industrial approaches to quality management of fruit and vegetables Provides information on advances in pre- and postharvest technologies for controlling and maintaining quality

Preharvest Modulation of Postharvest Fruit and Vegetable Quality is the first book to focus on the potential yield quality, quantity and safety benefits of intervention during growth. Of the many factors responsible for overall quality of produce, about 70 percent comes from pre-harvest conditions. Written by an international team of experts, this book presents the key opportunities and challenges of pre-harvest interventions. From selecting the most appropriate growing scenario, to treating plants during the maturation process, to evaluating for quality factors to determine appropriate interventions, this book provides an integrated look at maximizing crop yield through preventative means. In fact, with the very best of postharvest knowledge and technologies available, the best that can be achieved is a reduction in the rate at which products deteriorate as they progress through their normal developmental pattern of maturation, ripening and senescence. Therefore, it is very important to understand what pre-harvest factors influence the many important harvest quality attributes that affect the rate of postharvest deterioration and, subsequently, the consumers’ decision to purchase the product in the marketplace.

Preharvest Disinfection of Fruits and Vegetables describes available technologies to reduce microbial infection for maintaining postharvest quality and safety. The book analyzes alternative and traditional methodologies and points out the significant advantages and limitations of each technique, thus facilitating both cost and time savings. This reference is for anyone in the fresh produce industry who is involved in postharvest handling and management. It discusses, in detail, the latest disinfection approaches, low-cost treatment strategies, management and protocols to control fresh produce qualities, diseases and insect infestation. Includes methods to reduce microbial contamination using chlorination, ozone, pulsed light, irradiation and plasma technology Provides practical applications of recently developed, natural anti-microbial agents for eco-friendly and sustainable solutions Explores various disinfection technologies for quality assurance and for the development of potential new technologies Fresh-Cut Fruits and Vegetables: Technologies and Mechanisms for Safety Control covers conventional and emerging technologies in one single source to help industry professionals maintain and enhance nutritional and sensorial quality of fresh-cut fruits and vegetables from a quality and safety perspective. The book provides available literature on different approaches used in fresh-cut processing to ensure safety and quality. It discusses techniques with the aim of preserving quality and safety in sometimes unpredictable environments. Sanitizers, antioxidants, texturizers, natural additives, fortificants, probiotics, edible coatings, active and intelligent packaging are all presented. Both advantages and potential consequences are included to ensure microbial safety, shelf-life stability and preservation of organoleptic and nutritional quality. Industry researchers, professionals and students will all find this resource essential to understand the feasibility and operability of these techniques in modern-day processing to make informed choices. Provides current information on microbial infection, quality preservation, and technology with in-depth discussions on safety mechanisms Presents ways to avoid residue avoidance in packaging and preservation Includes quality issues of microbial degradation and presents solutions for pre-harvest management