

Postharvest Handling And Safety Of Perishable Crops

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 cull 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. *Advances in Postharvest Fruit and Vegetable Technology* examines how changes in community attitudes and associated pressures on industry are demanding changes in the way technology is used to minimize postharvest loss and maintain product quality. In particular, the book discusses important drivers for change, including: Using more natural chemicals or physical treatments to replace synthetic chemicals Increasing the efficiency of older, more traditional methods in combination with newer biocontrol treatments Leveraging a range of biomolecular research tools or "omics" to efficiently gather and assess mass information at molecular, enzymic, and genetic levels Using modelling systems to identify key changes and control points for better targeting of new treatments and solutions to postharvest problems The postharvest handling of fresh fruits and vegetables plays a critical role in facilitating a continuous supply of high-quality fresh produce to the consumer. Many new technologies developed and refined in recent years continue to make possible an ever-expanding supply of fresh products. This volume examines a range of recently developed technologies and systems that will help the horticulture industry to become more environmentally sustainable and economically competitive, and to minimize postharvest quality loss and generate products that are appealing and acceptable to consumers.

Since its publication in 1994, the *Small Farm Handbook* has been an essential resource for California's small farmers and the agricultural professionals advising them – selling over 4300 copies. Now this invaluable reference has been updated and expanded for today's small-scale producers. The handbook covers three essential areas: Background skills and knowledge, the business side, and the farming side Within these broad areas you'll find specific chapters on: Requirements for Successful Farming Growing Crops Raising Animals Farm and Financial Management Marketing and Product Sales Labor Management Also included are profiles of six small farm operators representing a sample of California's diverse agriculture. Throughout you'll get a look at emerging trends and issues for California agriculture and innovative methods for better production and management, all of which can lead to better farm performance. Drawing upon the knowledge of 32 experts from the University of California, No other publication covers the topics, issues, and facets of California's small-scale agriculture with this depth or level of expertise. From the basics to risk management, specialty crops to marketing and product sales, this guide covers the gamut.

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.

Microbial Safety of Fresh Produce covers all aspects of produce safety including pathogen ecology, agro-management, pre-harvest and post-harvest interventions, and adverse economic impacts of outbreaks. This most recent edition to the IFT Press book series examines the current state of the problems associated with fresh produce by reviewing the recent, high-profile outbreaks associated with fresh-produce, including the possible internalization of pathogens by plant tissues, and understanding how human pathogens survive and multiply in water, soils, and fresh fruits and vegetables.

"Horticultural crops not only provide nutritional and healthy foods to human beings, but also generate a considerable cash income for growers. However, horticultural crops typically have high moisture content, tender texture and high perishability. If not handled properly, a high value nutritious product can deteriorate and rot in a matter of days or hours. Losses occur after harvesting is known as post-harvest losses. It starts first from the field, after harvest, in grading and packing areas, in storage, during transportation and in the wholesale and retail markets. Several losses occur because of poor facilities, lack of know-how, poor management, market dysfunction or simply the carelessness of farmers. The most important goals of post-harvest handling are keeping the product cool, to avoid moisture loss and slow down undesirable chemical changes, and avoiding physical damage such as bruising, to delay spoilage. Sanitation is also an important factor, to reduce the possibility of pathogens that could be carried by fresh produce, for example, as residue from contaminated washing water. Healthy seeds and grains are the demanding enterprise of the recent era for the production of high yield in the next season. The seeds must be stored for the maintenance of high-yielding crop. During storage, major losses of seeds are caused by various biological and nonbiological factors. There is a need to examine reasonable factors of these crop losses, which ultimately affect the market value and quality of the seed. The quality of seeds can be maintained by using careful postharvest handling techniques. There is need to establish the well-suited methods to assess the losses during the process and to use the best technique to minimize the loss and to ensure the quality and safety of the crop. Importance of Postharvest Technology lies in the fact that it has capability to meet food requirement of growing world population by eliminating avoidable losses making more nutritive food items with higher values by proper processing, storage, packaging, transport and marketing. This book Post Harvest Technology covers postharvest food preservation and processing methods, with an emphasis on grains. It emphasizes on the aspects and postharvest techniques that are used to maintain seed quality. A comprehensive review of the better, economical, convenient, and productive methods is provided, focused on the needs of developing countries but also with relevance in more industrialized countries."

Note for the electronic edition: This draft has been assembled from information prepared by authors from around the world. It has been submitted for editing and production by the USDA Agricultural Research Service Information Staff and should be cited as an electronic draft of a forthcoming publication. Because the 1986 edition is out of print, because we have added much new and updated information, and because the time to publication for so massive a project is still many months away, we are making this draft widely available for comment from industry stakeholders, as well as university research, teaching and extension staff.

Dates are an important fruit, especially in many African, Middle-Eastern and Asian countries. In recent years this fruit has gained significant importance in terms of global commerce. During the period 1990–2009, global production of dates saw an increase of 219% and this trend is expected to continue as per FAO projections. Some of the major challenges confronting date fruit production and commerce are issues related to postharvest handling technologies, use of appropriate processing and packaging

technologies, food safety aspects and quality assurance. Dates: Postharvest Science, Processing Technology and Health Benefits provides contemporary information that brings together current knowledge and practices in the value chain of dates, from production through to consumption. The important book published by Wiley Blackwell features coverage from leading experts on innovative processing technologies, packaging, quality management and pest control for dates. It is the only book to address the science and technology of the postharvest production of dates, a commercially important and growing sector of the food industry.

Postharvest losses remain a serious problem in the fresh produce sector. This collection reviews advances in preservation and disinfection, monitoring and management techniques to optimise safety and quality of fresh fruit and vegetables. 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.

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.

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

Postharvest and Postmortem Processing of Raw Food Materials, a volume in the Unit Operations and Processing Equipment in the Food Industry series, presents the processing operations and handling of agricultural crops, animal products, and raw food materials after their harvesting/slaughtering and entrance into food production factories. Chapters in this new release cover an Introduction to postharvest and postmortem technology, Primary operations in postharvest processing, Disintegration of raw agricultural crops, Disintegration with little changes in form (Husking, Shelling, Pitting, Coring, Snipping and Destemming), Disintegration with considerable changes in form (Cutting/dicing, crashing and grinding, Slaughtering, Shredding, Sheeting), and much more. Written by experts in the field of food engineering, and in a simple and dynamic way, this book targets all who are engaged in food processing operations worldwide, giving readers good knowledge on the basics of food engineering principles and applications. Thoroughly explores novel applications of postharvest/postmortem operations in processing food products Brings perspectives about the postharvest processing of different agricultural crops and postmortem processing of different animal meats Helps to improve the quality and safety of food products with postharvest/postmortem operations

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 depended 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

The urgent need for sustainability within the food producing industries and agriculture has turned the interest of research to investigate new non-thermal 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

Emphasis in agricultural research for many years has concentrated on crop production. This emphasis has become more important in recent years with the realization that the population worldwide is outstripping the food supply. There is, however, another side to increasing the availability of the food supply. This simply involves preservation of the harvested crop-for human consumption. The losses incurred in harvesting, handling, transportation, storage and marketing crops have become a greater problem as the distance from the farm to the ultimate consumer increases. In the Western world where modern transportation, storage facilities, and marketing technology are widely used, post-harvest technology requires a large input of energy which increases costs considerably. Therefore, losses are more significant and the ability to provide fresh fruits and vegetables, out of season, at reasonable costs will depend on reduced post-harvest losses throughout the marketing chain from the farm gate to the ultimate consumer. The reduction in post-harvest losses depends on proper use of current technology and further developments derived from a broad spectrum of scientific disciplines. Biochemistry, plant physiology, plant pathology, horticulture, agronomy, physics, engineering and agricultural economics, all provide knowledge which has been useful and will be useful in the future for improving post-harvest technology and crop preservation. This volume records the Proceedings of the NATO Advanced Study Institute on Post-Harvest Physiology and Crop Preservation, held at Sounion, Greece, April 28 - May 8, 1981.

While presenting the latest scientific research on the major pathogens associated with meat, poultry, produce, and other foods, *Pre-Harvest and Post-Harvest Food Safety: Contemporary Issues and Future Directions* goes beyond other professional reference

books by identifying the research needed to assure food safety in the future. The editors and authors not only review the current, cutting-edge literature in each of their areas, but provide insights and forward thinking into the development of new and innovative approaches and research strategies. Scientists and researchers from academia, government, and industry have collaborated to examine the high-priority food safety areas recognized by the federal government: pathogen/host interactions; ecology, distribution and spread of foodborne hazards; antibiotic resistance; verification tests; decontamination and prevention strategies; and risk analysis. A worthy new edition to the IFT Press series of food science and technology titles, *Pre-Harvest and Post-Harvest Food Safety* describes what we now know in food safety and provides a framework and focus for future research to improve diagnostic capabilities and intervention strategies for enteropathogens.

Basic approaches to maintaining the safety and quality of horticultural produce are the same, regardless of the market to which this produce is targeted. This bulletin reviews the factors which contribute to quality and safety deterioration of horticultural produce, and describes approaches to assuring the maintenance of quality and safety throughout the post-harvest chain. Specific examples are given to illustrate the economic implications of investing in and applying proper post-harvest technologies. Criteria for the assessment of post-harvest needs, the selection of post-harvest technologies appropriate to the situation and context, and for extending appropriate levels of post-harvest information are also discussed.

Postharvest Handling: A Systems Approach introduces a new concept in the handling of fresh fruits and vegetable. Traditional treatments have been either physiologically based with an emphasis on biological tissue or technologically based with an emphasis on storage and handling. This book integrates all processes from production practices through consumer consumption with an emphasis on understanding market forces and providing fresh product that meets consumer expectations. Postharvest physiologists and technologists across the disciplines of agricultural economics, agricultural engineering, food science and horticulture along with handlers of minimally-processed products within the fresh produce fruit and vegetable processing industries will find this to be an invaluable source of information. Uses a systems approach that provides a unique perspective on the handling of fresh fruits and vegetables Designed with the applied perspective to complement the more basic perspectives provided in other treatments Provides the integrated, interdisciplinary perspective needed in research to improve the quality of fresh and minimally processed products Emphasizes that the design of handling systems should be market-driven rather than concentrating on narrow specifics

Postharvest Handling: A Systems Approach Academic Press

Postharvest; Biology; Harvesting; Preparation for fresh market; Packages; Cooling operations; Storage; Modified atmospheres; Ethylene; Disease by handling practices and strategies for control; Insect control; Transportation.

A comprehensive introduction to the physiology, biochemistry, and molecular biology of produce growth, paired with cutting-edge technological advances in produce preservation Revised and updated, the second edition of *Postharvest Biology and Nanotechnology* explores the most recent developments in postharvest biology and nanotechnology. Since the publication of the first edition, there has been an increased understanding of the developmental physiology, biochemistry, and molecular biology during early growth,

maturation, ripening, and postharvest conditions. The contributors—noted experts in the field—review the improved technologies that maintain the shelf life and quality of fruits, vegetables, and flowers. This second edition contains new strategies that can be implemented to remedy food security issues, including but not limited to phospholipase D inhibition technology and ethylene inhibition via 1-MCP technology. The text offers an introduction to technologies used in production practices and distribution of produce around the world, as well as the process of senescence on a molecular and biochemical level. The book also explores the postharvest value chain for various produce, quality evaluation techniques, and the most current nanotechnology applications. This important resource:

- Expands on the first edition to explore in-depth postharvest biology with emphasis on developments in nanotechnology
- Contains contributions from leaders in the field
- Includes the most recent advances in postharvest biology and technology, including but not limited to phospholipase D and 1-MCP technology
- Puts the focus on basic science as well as technology and practical applications
- Applies a physiology, biochemistry, and biotechnology approach to the subject

Written for crop science researchers and professionals, horticultural researchers, agricultural engineers, food scientists working with fruits and vegetables, *Postharvest Biology and Nanotechnology, Second Edition* provides a comprehensive introduction to this subject, with a grounding in the basic science with the technology and practical applications.

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 allowing for translational insight Appropriate for students and professionals Written by experts as a reference resource

The book will address selected topics in postharvest pathology aiming at highlighting recent development in the science, technology and control strategies of postharvest diseases to reduce losses and enhance safety of harvested agricultural products. Topics will include: 1) Introduction: Perspectives and challenges in postharvest pathology 2) Elucidating host-pathogen interactions 3) Next generation technologies for management and detection of postharvest pathogens 4) Food safety in postharvest pathology 5) Alternative postharvest diseases control strategies 6) Chemical control of postharvest diseases.

Tropical and sub-tropical fruits have gained significant importance in global commerce. This book examines recent developments in the area of fruit technology including: postharvest physiology and storage; novel processing technologies applied to fruits; and in-depth coverage on processing, packaging, and nutritional quality of tropical and sub-tropical fruits. This contemporary handbook uniquely presents current knowledge and practices in the value chain of tropical and subtropical fruits world-wide, covering production and post-harvest practices, innovative processing technologies, packaging, and quality management. Chapters are devoted to each major and minor tropical fruit (mango, pineapple, banana, papaya, date, guava, passion fruit, lychee, coconut, logan, carambola) and each citrus and non-citrus subtropical fruit (orange, grapefruit, lemon/lime, mandarin/tangerine, melons, avocado, kiwifruit, pomegranate, olive, fig, cherimoya, jackfruit, mangosteen). Topical coverage for each fruit is extensive, including: current storage and shipping practices; shelf life extension and quality; microbial issues and food safety aspects of fresh-cut products; processing operations such as grading, cleaning, size-reduction, blanching, filling, canning, freezing, and drying; and effects of processing on nutrients and bioavailability. With chapters compiled from experts worldwide, this book is an essential reference for all professionals in the fruit industry.

International trade in high value perishables has grown enormously in the past few decades. In the developed world consumers now expect to be able to eat perishable produce from all parts of the world, and in most cases throughout the year. Perishable plant products are, however, susceptible to physical damage and often have a potential storage life of only a few days. Given their key importance in the world economy, *Crop Post-Harvest Science and Technology: Perishables* devotes itself to perishable produce, providing current and comprehensive knowledge on all the key factors affecting post-harvest quality of fruits and vegetables. This volume focuses explicitly on the effects and causes of deterioration, as well as the many techniques and practices implemented to maintain quality through correct handling and storage. As highlighted throughout, regular losses caused by post-harvest spoilage of perishable products can be as much as 50%. A complete understanding, as provided by this excellent volume, is therefore vital in helping to reduce these losses by a significant percentage. Compiled by members of the world-renowned Natural Resources Institute at the United Kingdom's University of Greenwich, with contributions from experts around the world, this volume is an essential reference for all those working in the area. Researchers and upper-level students in food science, food technology, post-harvest science and technology, crop protection, applied biology and plant and agricultural sciences will benefit from this landmark publication. Libraries in all research establishments and universities where these subjects are studied and taught should ensure that they have several copies for their shelves.

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, precooling 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 serve as a comprehensive guide for all the people who focus on post harvest management skills. Note: T&F does not sell or distribute the hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

The book post harvest technology attracts incredible consideration amid late years since preservation of agricultural produce is an essential need to maintain agricultural generation. It includes estimation of deliver, in this manner having incredible breadth for work age at the creation catchments. In this book, the writers have endeavored to solidify distinctive techniques for post harvest technology of products of the soil concentrating on late advances. This book will profit both honing sustenance technologist/post harvest technologist who are scanning for answers to basic specialized inquiries of post harvest technology. Further, it will be valuable to agricultural specialists, nourishment processors, sustenance researcher, analysts and dynamic ranchers and to the individuals who are working in applicable fields. It is planned to fill a hole in directly accessible post harvest technology writing". A definitive objective of yield creation is to give quality deliver to shoppers at sensible rates. Most new produce is profoundly perishable, and postharvest misfortunes are critical under the present techniques for administration in numerous nations. Be that as it may, noteworthy accomplishments have been made amid the most recent couple of years to reduce postharvest misfortunes in crisp deliver and to guarantee sustenance security and wellbeing also. These incorporate progressions in rearing green products for quality change; postharvest physiology; postharvest pathology and entomology; postharvest administration of natural products, vegetables, and blossoms; nondestructive advances to survey deliver quality; insignificant preparing of leafy foods; and additionally developments in bundling and capacity technology of new produce.

Postharvest 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

Consideration of the interactions between decisions made at one point in the supply chain and its effects on the subsequent stages is the core concept of a systems approach. Postharvest Handling is unique in its application of this systems approach to the handling of fruits and vegetables, exploring multiple aspects of this important process through chapters written by experts from a variety of backgrounds. Newly updated and revised, this second edition includes coverage of the logistics of fresh produce from multiple perspectives, postharvest handling under varying weather conditions, quality control, changes in consumer eating habits and other factors key to successful postharvest handling. The ideal book for understanding the economic as well as physical impacts of postharvest handling decisions. Key Features:

- *Features contributions from leading experts providing a variety of perspectives
- *Updated with 12 new chapters
- *Focuses on application-based information for practical implementation
- *System approach is unique in the handling of fruits and vegetables

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. Presents the important pre-harvest factors that influence harvest quality Includes up-to-date information on pre-harvest factors that modulate post-harvest biology Identifies potential methodologies and technologies to enhance pre-harvest interventions Consumption of fresh fruits and vegetables has increased dramatically in the last several decades. This increased consumption has put a greater burden on the fresh produce industry to provide fresher product quality, combined with a high level of food safety. Therefore, postharvest handling, storage and shipment of horticultural crops, including fruit and vegetable products has increased in importance. Novel Postharvest Treatments of Fresh Produce focuses mainly on the application of novel treatments for fruits and vegetables shipping and handling life. A greater emphasis is placed on effects of postharvest treatments on senescence and ripening, bioactive molecule contents and food safety. The work presented within this book explores a wide range of topics pertaining to novel postharvest treatments for fresh and fresh-cut fruits and vegetables including applications of various active agents, green postharvest treatments, physical treatments and combinations of the aforementioned.

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 optimization 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 3 of this important collection review factors affecting the quality of different tropical and subtropical fruits, concentrating on postharvest biology and technology. Important issues relevant to each specific product are discussed, such as postharvest physiology, preharvest factors affecting postharvest quality, quality maintenance postharvest, pests and diseases and value-added processed products, among other topics. Along with the other volumes in the collection, Volume 3 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. Covers current state-of-the-art and emerging post-harvest and processing technologies. Important issues relevant to each particular fruit are discussed, such as postharvest physiology, preharvest factors affecting postharvest quality and pests and diseases. As tree nuts and peanuts become increasingly recognised for their health-promoting properties, the provision of safe, high quality nuts is a growing concern. Improving the safety and quality of nuts reviews key aspects of nut safety and quality management. Part one explores production and processing practices and their influence on nut contaminants. Chapters discuss agricultural practices to reduce microbial contamination of nuts, pest control in postharvest nuts, and the impact of nut postharvest handling, de-shelling, drying and storage on quality. Further chapters review the validation of processes for reducing the microbial load on nuts and integrating Hazard Analysis Critical Control Point (HACCP) and Statistical Process Control (SPC) for safer nut processing. Chapters in part two focus on improving nut quality and safety and highlight oxidative rancidity in nuts, the impact of roasting on nut quality, and advances in automated nut sorting. Final chapters explore the safety and quality of a variety of nuts including almonds, macadamia nuts, pecans, peanuts, pistachios and walnuts. Improving the safety and quality of nuts is a comprehensive resource for food safety, product development and QA professionals using nuts in foods, those involved in nut growing, nut handling and nut processing, and researchers in food science and horticulture departments interested in the area. Reviews key aspects of nut safety and quality management and addresses the influences of production and processing practices on nut safety. Analyses particular nut contaminants, safety management in nut processing and significant nut quality issues, such as oxidative rancidity. Places focus on quality and safety in the production and processing of selected types of nuts.

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