Oxidative rancidity is a major cause of food quality deterioration, leading to the formation of undesirable off-flavours as well as unhealthy compounds. Antioxidants are widely employed to inhibit oxidation, and with current consumer concerns about synthetic additives and natural antioxidants are of much interest. The two volumes of Oxidation in foods and beverages and antioxidant applications provide a comprehensive overview of the role of antioxidants in food and beverage systems.
applications review food quality deterioration due to oxidation and methods for its control. The second volume reviews problems associated with oxidation and its management in different industry sectors. Part one focuses on animal products, with chapters on the oxidation and protection of red meat, poultry, fish and dairy products. The oxidation of fish oils and foods enriched with omega-3 polyunsaturated fatty acids is also covered. Part two reviews oxidation in plant-based foods and beverages, including edible oils, fruit and vegetables, beer and wine. Oxidation of fried products and emulsion-based foods is also discussed. Final chapters examine encapsulation to inhibit lipid oxidation and antioxidant active packaging and edible films. With its distinguished international team of editors and contributors, the two volumes of Oxidation in foods and beverages and antioxidant applications is standard references for R&D and QA professionals in the food industry, as well as academic researchers interested in food quality. Reviews problems associated with oxidation and its management in different industry sectors Examines animal products, with chapters on the oxidation and protection of red meat, poultry and fish Discusses oxidation of fish oils and foods enriched with omega-3 and polyunsaturated fatty acids

An Evaluation of the Role of Microbiological Criteria for Foods and Food Ingredients

Over the past decade, new applications of genetic engineering in the fermentation of food products have received a great deal of coverage in scientific literature. While many books focus solely on recent developments, this reference book highlights these developments and provides detailed background and manufacturing information. Co-Edited by Fidel

Food Packaging and Shelf Life

As consumer demand for traditional carbonated drinks falls, the market for beverages with perceived health-promoting properties is growing rapidly. Formulating a nutritional, nutraceutical or functional beverage with satisfactory sensory quality and shelf-life can be challenging. This important collection reviews the key ingredients, formulation technology and health effects of the major types of functional and speciality beverage. Chapters in part one consider essential ingredients such as stabilizers and sweeteners, and significant aspects of formulation such as fortification technology and methods to extend shelf-life. Dairy-based beverages are the focus of Part two, with chapters covering methods to improve the nutritional and sensory
quality and technological functionality of milk, a crucial ingredient in many healthful beverages. Chapters on newer dairy ingredients, such as whey and milk-fat globule membrane complete the section. Part three then reviews advances in the significant plant-based beverage sector, with chapters on popular products such as fruit juices, sports drinks, tea and coffee. Soy proteins are also covered. Chapters on product development and the role of beverages in the diet complete the volume. With its distinguished editor and contributors, Functional and speciality beverage technology is an essential collection for professionals and academics interested in this product sector. Reviews the key ingredients, formulation technology and health effects of the major types of functional and speciality beverages Essential ingredients such as stabilizers and sweeteners, and significant aspects of formulation such as fortification technology and methods to extend shelf-life are considered Focuses on methods to improve the nutritional and sensory quality and technological functionality of milk

**Nutraceutical and Functional Food Components**

Food Storage Stability addresses one of the foremost problems faced by food processors - how to stabilize food once it is harvested. Using a holistic approach, the book discusses the changes responsible for food quality deterioration and considers strategies for minimizing or eliminating these degradative changes. Topics include: consumer perceptions and preferences, cellular changes, conversion of major constituents to more stable products, the effect of color and texture, packaging issues, and practical strategies for storing foods frozen, chilled, or at ambient temperature. Food Storage Stability is the only treatment of this subject that covers the diverse factors that influence quality retention in foods and integrates basic concepts in storage stability with practical applications. Food scientists and technologists concerned with changes in food quality are interested in ensuring that safe and appealing food products reach consumers - this is the book that will assist them with that important goal.

**Understanding and Measuring the Shelf-Life of Food**

Trends in Beverage Packaging, volume 16 in the Science of Beverages series, presents an interdisciplinary approach that provides a complete understanding of packaging theories, technologies and materials. This reference offers a broad perspective regarding current trends in packaging research, quality control techniques, packaging strategies and current concerns in the industry. Consumer demand for bottled and packaged beverages has increased, and the need for scientists and
researchers to understand how to analyze quality, safety and control are essential. This is an all-encompassing resource for research and development in this flourishing field that covers everything from sensory and chemical composition, to materials and manufacturing. Includes information on the monitoring of microbial activity using antimicrobial packaging detection of food borne pathogens Presents the most up-to-date information on innovations in smart packaging and sensors for the beverages industry Discusses the uses of natural and unnatural compounds for food safety and good manufacturing practices

**Food Processing Technology**

The importance of food packaging hardly needs emphasizing since only a handful of foods are sold in an unpackaged state. With an increasing focus on sustainability and cost-effectiveness, responsible companies no longer want to over-package their food products, yet many remain unsure just where reductions can effectively be made. Food Packaging and

**Functional Food**

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**The Stability and Shelf Life of Food**

Ensuring that foods and beverages remain stable during the required shelf life is critical to their success in the market place, yet companies experience difficulties in this area. Food and beverage stability and shelf life provides a comprehensive guide to factors influencing stability, methods of stability and shelf life assessment and the stability and shelf life of major products. Part one describes important food and beverage quality deterioration processes, including microbiological
spoilage and physical instability. Chapters in this section also investigate the effects of ingredients, processing and packaging on stability, among other factors. Part two describes methods for stability and shelf life assessment including food storage trials, accelerated testing and shelf life modelling. Part three reviews the stability and shelf life of a wide range of products, including beer, soft drinks, fruit, bread, oils, confectionery products, milk and seafood. With its distinguished editors and international team of expert contributors, Food and beverage stability and shelf life is a valuable reference for professionals involved in quality assurance and product development and researchers focussing on food and beverage stability. A comprehensive guide to factors influencing stability, methods of stability and shelf life assessment and the stability and shelf life of major products Describes important food and beverage quality deterioration processes exploring microbiological spoilage and physical instability Investigate the effects of ingredients, processing and packaging on stability and documents methods for stability and shelf life assessment

The Technology of Vitamins in Food

Oxidative Stability and Shelf Life of Foods Containing Oils and Fats focuses on food stability and shelf life, both important factors in the improvement and development of food products. This book, relevant for professionals in the food and pet food industries, presents an evaluation of methods for studies on the oxidative stability and shelf life of bulk oils/fats, fried oils and foods, food emulsions, dried foods, meat and meat products, and seafood in food and pet food. Focuses on the application of various evaluation methods to studies of oxidative stability and shelf life in oils and fats and oils and fats-containing foods in the food and pet food industries Discusses oxidative stability and shelf life of low-moisture (dry) food, including dry pet food Discusses lipid co-oxidation with protein because a number of food products contain both lipids and proteins Directed mainly toward readers working in the food and pet food industries

Handbook of Food and Beverage Fermentation Technology

How we produce and consume food has a bigger impact on Americans' well-being than any other human activity. The food industry is the largest sector of our economy; food touches everything from our health to the environment, climate change, economic inequality, and the federal budget. From the earliest developments of agriculture, a major goal has been to attain sufficient foods that provide the energy and the
nutrients needed for a healthy, active life. Over time, food production, processing, marketing, and consumption have evolved and become highly complex. The challenges of improving the food system in the 21st century will require systemic approaches that take full account of social, economic, ecological, and evolutionary factors. Policy or business interventions involving a segment of the food system often have consequences beyond the original issue the intervention was meant to address. A Framework for Assessing Effects of the Food System develops an analytical framework for assessing effects associated with the ways in which food is grown, processed, distributed, marketed, retailed, and consumed in the United States. The framework will allow users to recognize effects across the full food system, consider all domains and dimensions of effects, account for systems dynamics and complexities, and choose appropriate methods for analysis. This report provides example applications of the framework based on complex questions that are currently under debate: consumption of a healthy and safe diet, food security, animal welfare, and preserving the environment and its resources. A Framework for Assessing Effects of the Food System describes the U.S. food system and provides a brief history of its evolution into the current system. This report identifies some of the real and potential implications of the current system in terms of its health, environmental, and socioeconomic effects along with a sense for the complexities of the system, potential metrics, and some of the data needs that are required to assess the effects. The overview of the food system and the framework described in this report will be an essential resource for decision makers, researchers, and others to examine the possible impacts of alternative policies or agricultural or food processing practices.

Sensory Analysis for Food and Beverage Quality Control

The last few years have seen a growing consumer awareness of nutrition and healthy eating in general. As a consequence, the food industry has become more concerned with the nutritional value of products and the maintenance of guaranteed micronutrient levels. While the food industry has the responsibility of producing foods that provide a realistic supply of nutrients, including vitamins, it is now also required to offer produce with a high degree of convenience and a long shelf life. Vitamins are relatively unstable, being affected by factors such as heat, light and other food components, but also by the processes needed to preserve the goods or to convert them into consumer products (such as pasteurization, sterilization, extrusion and irradiation). The result of these interactions may be a partial or total degradation of the vitamins. Food technology is concerned with both
the maintenance of vitamin levels in foods and the restoration of the vitamin content to foods where losses have occurred. In addition, foods designed for special nutritional purposes, such as infant food and slimming goods, need to be enriched or fortified with vitamins and other micronutrients. This book reviews vitamins as ingredients of industrially manufactured food products. The technology of their production and use is covered from the food technologist's and engineer's points of view. Detailed coverage is also provided of other technical aspects such as analysis, stability and the use of vitamins as food technological aids.

Processing and Impact on Active Components in Food

Fermentation is used in a wide range of food and beverage applications, and the technology for enhancing this process is continually evolving. This book reviews the use of fermentation in foods and beverages and key aspects of fermented food production. Part one covers the health benefits of fermented foods. Part two includes chapters on fermentation microbiology, while part three looks at ways of controlling and monitoring the quality and safety of fermented foods. Part four covers advances in fermentation technology. Finally, part five covers particular fermented food products.

Food and Beverage Service, 10th Edition

Flavor of Foods and Beverages Chemistry and Technology covers the proceedings of an international conference sponsored by the Agricultural and Food Chemistry Division of the American Chemical Society held in Athens, Greece on June 27-29, 1978. It presents information on the flavor of foods and beverages. This book discusses wide ranging subjects, such as flavor of meat, meat analogs, chocolate and cocoa substitutes, cheese aroma, beverages, baked goods, confections, tea, citrus and other fruits, olive oil, and sweeteners. It also examines new analytical methodology on taste and aroma, as well as flavor production, stability, and composition. This book will be useful for students, chemists, technologists, and manufacturers involved in any facet of producing foods and beverages.

Proceedings of the Convention of the Food & Beverage Trades Department, AFL-CIO.

Nanoemulsions: Formulation, Applications, and Characterization provides detailed information on the production, application and characterization of food nanoemulsion as presented by experts who
share a wealth of experience. Those involved in the nutraceutical, pharmaceutical and cosmetic industries will find this a useful reference as it addresses findings related to different preparation and formulation methods of nanoemulsions and their application in different fields and products. As the last decade has seen a major shift from conventional emulsification processes towards nanoemulsions that both increase the efficiency and stability of emulsions and improve targeted drug and nutraceutical delivery, this book is a timely resource. Summarizes general aspects of food nanoemulsions and their formulation Provides detailed information on the production, application, and characterization of food nanoemulsion Reveals the potential of nanoemulsions, as well as their novel applications in functional foods, nutraceutical products, delivery systems, and cosmetic formulations Explains preparation of nanoemulsions by both low- and high-energy methods

Functional and Speciality Beverage Technology

Nutraceutical and Functional Food Components: Effects of Innovative Processing Techniques presents the latest information on the chemistry, biochemistry, toxicology, health effects, and nutrition characteristics of food components and the recent trends and practices that the food industry (e.g. the implementation of non-thermal technologies, nanoencapsulation, new extraction techniques, and new sources, like by-products, etc.) has adopted. This book fills the gap in knowledge by denoting the impact of recent food industry advances in different parameters of food components (e.g. nutritional value, physical and chemical properties, bioavailability and bioaccessibility characteristics) and final products (e.g. applications, shelf-life, sensory characteristics). Provides a holistic view of the interactions between novel processing techniques and food components Explains how innovative techniques, such as non-thermal, nano-encapsulation, waste recovery, and novel extraction and processing methods impact the nutritional value of ingredients commonly used in functional food and nutraceutical products Covers food applications, shelf-life, and sensory characteristics

Methods for Developing New Food Products

The second edition of The Stability and Shelf-life of Food is a fully revised and thoroughly updated edition of this highly-successful book. This new edition covers methods for shelf-life and stability evaluation, reviewing the modelling and testing of the deterioration of products as well as the use of sensory evaluation methods for testing food spoilage.
Where To Download Food And Beverage Stability And Shelf Life Woodhead Publishing Series In Food Science Technology And Nutrition

The first part of the book focuses on deteriorative processes and factors influencing shelf-life, covering aspects such as chemical deterioration, physical instability and microbiological spoilage. The effects of process and packaging on the stability and shelf-life of products are also covered in this part. Part Two reviews the methods for shelf life and stability evaluation. These include sensory evaluation methods and instrumental methods to determine food quality deterioration. The final section of the book covers stability of important ingredient categories, from oils and fats, to beverages such as beer, wine, coffee and fruit juices, in addition to bakery products and meats. With updated chapters reflecting advances made in the field and with the addition of new chapters covering the stability and shelf-life a variety of products, this new edition will provide the latest research for both academics working in the field of food quality as well as providing essential information for food scientists working in industry. Thoroughly revised and updated edition of a very popular and well regarded book Includes dedicated chapters covering the shelf-life and stability of specific products making this book ideal for those working in industry Provides a wide coverage of the processes and factors influencing shelf-life, the evaluation of stability and shelf-life and the stability and shelf-life of particular products makes this book valuable for both academics and those working in industry.

Colour Additives for Foods and Beverages

For a food product to be a success in the marketplace it must be stable throughout its shelf-life. Quality deterioration due to chemical changes and alterations in condition due to physical instability are not always recognised, yet can be just as problematic as microbial spoilage. This book provides an authoritative review of key topics in this area. Chapters in part one focus on the chemical reactions which can negatively affect food quality, such as oxidative rancidity, and their measurement. Part two reviews quality deterioration associated with physical changes, such as moisture loss, gain and migration, crystallization and emulsion breakdown. Contributions in the following section outline the likely effects on different foods and beverages, including bakery products, fruit and vegetables, ready-to-eat meals and wine. With contributions from leaders in their fields, Chemical deterioration and physical instability of food and beverages is an essential reference for R&D and QA staff in the food industry and researchers with an interested in this subject. Examines chemical reactions which can negatively affect food quality and measurement Reviews quality deterioration associated with physical changes such as moisture loss, gain and migration, and crystallization Documents deterioration in specific food and beverage products including bakery


**Practical Food and Beverage Cost Control**

This introductory textbook provides a thorough guide to the management of food and beverage outlets, from their day-to-day running through to the wider concerns of the hospitality industry. It explores the broad range of subject areas that encompass the food and beverage market and its five main sectors - fast food and popular catering, hotels and quality restaurants and functional, industrial, and welfare catering. New to this edition are case studies covering the latest industry developments, and coverage of contemporary environmental concerns, such as sourcing, sustainability and responsible farming. It is illustrated in full colour and contains end-of-chapter summaries and revision questions to test your knowledge as you progress. Written by authors with many years of industry practice and teaching experience, this book is the ideal guide to the subject for hospitality students and industry practitioners alike.

**Oxidation in Foods and Beverages and Antioxidant Applications**

Biotechnology, particularly eco-friendly enzyme technologies, has immense potential for the augmentation of diverse food products utilizing vast biodiversity, resolving environmental problems owing to waste disposal from food and beverage industries. In addition to introducing the basic concepts and fundamental principles of enzymes, Enzymes in Food

**Soda Politics**

**A Framework for Assessing Effects of the Food System**

Microencapsulation is being used to deliver everything from improved nutrition to unique consumer sensory experiences. It’s rapidly becoming one of the most important opportunities for expanding brand potential. Microencapsulation in the Food Industry: A Practical Implementation Guide is written for those who see the potential benefit of using microencapsulation but need practical insight into using the technology. With coverage of the process technologies, materials, testing, regulatory and even economic insights, this book presents the key considerations for putting microencapsulation to work. Application examples as well as online access to published and issued patents.
provide information on freedom to operate, building an intellectual property portfolio, and leveraging ability into potential in licensing patents to create produce pipeline. This book bridges the gap between fundamental research and application by combining the knowledge of new and novel processing techniques, materials and selection, regulatory concerns, testing and evaluation of materials, and application-specific uses of microencapsulation. Practical applications based on the authors’ more than 50 years combined industry experience Focuses on application, rather than theory Includes the latest in processes and methodologies Provides multiple "starting point" options to jump-start encapsulation use

Quality of Fresh and Processed Foods

Quality is a composite term encompassing many characteristics of foods. These include color, aroma, texture, general nutrition, shelf-life, stability, and possible presence of undesirable constituents. Obviously deterioration of quality may lead to changes in the attributes that characterize the food in its fresh or freshly processed state. In addition, quality enhancement of products may be carried out using appropriate processing techniques. Interaction of different components present with one another could have a profound effect on sensory quality of products. Meanwhile, presence of extraneous matter such as pesticides and debris may also contribute to a compromise in the quality of foods. In addition, processing often brings about changes in many attributes of food including its nutritional value. Thus, examination of process-induced changes in food products is important. In this book, a cursory account of quality attributes of fresh and processed foods is provided. The book is of interest to food scientists, nutritionists and biochemists in academia, government and industry.

Oxidative Stability and Shelf Life of Foods Containing Oils and Fats

According to an August 2009 report from PricewaterhouseCoopers, the United States market for functional foods in 2007 was US$ 27 billion. Forecasts of growth range from between 8.5% and 20% per year, or about four times that of the food industry in general. Global demand by 2013 is expected to be about $100 billion. With this demand for new products comes a demand for product development and supporting literature for that purpose. There is a wealth of research and development in this area and great scope for commercialization, and this book provides a much-needed review of important opportunities for new products, written by authors with in-depth knowledge of as yet
unfulfilled health-related needs. This book addresses functional food product development from a number of perspectives: the process itself; health research that may provide opportunities; idea creation; regulation; and processes and ingredients. It also features case studies that illustrate real product development and commercialization histories. Written for food scientists and technologists, this book presents practical information for use in functional food product development. It is an essential resource for practitioners in functional food companies and food technology centres and is also of interest to researchers and students of food science. Key features: A comprehensive review of the latest opportunities in this commercially important sector of the food industry Includes chapters highlighting functional food opportunities for specific health issues such as obesity, immunity, brain health, heart disease and the development of children. New technologies of relevance to functional foods are also addressed, such as emulsion delivery systems and nanoencapsulation. Includes chapters on product design and the use of functional ingredients such as antioxidants, probiotics and prebiotics as well as functional ingredients from plant and dairy sources Specific examples of taking products to market are provided in the form of case studies e.g. microalgae functional ingredients Part of the Functional Food Science and Technology book series (Series Editor: Fereidoon Shahidi)

Food and Beverage Management

Value-Added Ingredients and Enrichment of Beverages, Volume Fourteen in The Science of Beverages series, takes a multidisciplinary approach in addressing what consumers demand in natural beverages. This in-depth reference covers both natural and unnatural ingredients and explains their impact on consumer health and nutrition. Sweeteners, vitamins, oils and other natural ingredients to improve beverages are included. The book addresses some of the most common enrichments used in the industry, including those with biomedical and nutritional applications. This volume will be useful to anyone in the beverages industry who needs a better understanding of advances in the industry. Discusses health-related benefits and risks, along with the potential harmful effects of additives and preservatives Provides research examples of health promoting ingredients in beverages to further research and development Presents key steps in designing formulations of enriched beverages, analysis, product development, shelf life, cost-benefit ratio and compliance with WHO regulations

Handbook on Natural Pigments in Food and Beverages

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With so much emphasis on reducing food and beverage cost, while improving quality and maximizing service, Practical Food and Beverage Cost Control, 2e takes the guess work out of managing today's restaurant. The book combines the financial aspect with the need to understand the consumer's ever-increasing quest for value. Each chapter in the book provides specific information needed to avoid pitfalls and focus on improving the bottom line. Many examples are included to demonstrate theories and concepts in practice. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

**Food and Beverage Packaging Technology**

Flavour is a critical aspect of food production and processing, requiring careful design, monitoring and testing in order to create an appealing food product. This book looks at flavour generation, flavour analysis and sensory perception of food flavour and how these techniques can be used in the food industry to create new and improve existing products. Part one covers established and emerging methods of characterising and analysing taste and aroma compounds. Part two looks at different factors in the generation of aroma. Finally, part three focuses on sensory analysis of food flavour. Covers the analysis and characterisation of aromas and taste compounds Examines how aromas can be created and predicted Reviews how different flavours are perceived

**Chemical Deterioration and Physical Instability of Food and Beverages**

The shelf-life of a product is critical in determining both its quality and profitability. This important collection reviews the key factors in determining shelf-life and how it can be measured. Part one examines the factors affecting shelf-life and spoilage, including individual chapters on the major types of food spoilage, the role of moisture and temperature, spoilage yeasts, the Maillard reaction and the factors underlying lipid oxidation. Part two addresses the best ways of measuring the shelf-life of foods, with chapters on modelling food spoilage, measuring and modelling glass transition, detecting spoilage yeasts, measuring lipid oxidation, the design and validation of shelf-life tests and the use of accelerated shelf-life tests. Understanding and measuring the shelf-life of food is an important reference for all those concerned with extending the shelf-life of food. Reviews the key factors in determining shelf-life and how they can be measured Examines the importance of the shelf-life of a product in determining its quality and
profitability Brings together the leading international experts in the field

Preservatives and Preservation Approaches in Beverages

Producing products of reliable quality is vitally important to the food and beverage industry. In particular, companies often fail to ensure that the sensory quality of their products remains consistent, leading to the sale of goods which fail to meet the desired specifications or are rejected by the consumer. This book is a practical guide for all those tasked with using sensory analysis for quality control (QC) of food and beverages. Chapters in part one cover the key aspects to consider when designing a sensory QC program. The second part of the book focuses on methods for sensory QC and statistical data analysis. Establishing product sensory specifications and combining instrumental and sensory methods are also covered. The final part of the book reviews the use of sensory QC programs in the food and beverage industry. Chapters on sensory QC for taint prevention and the application of sensory techniques for shelf-life assessment are followed by contributions reviewing sensory QC programs for different products, including ready meals, wine and fish. A chapter on sensory QC of products such as textiles, cosmetics and cars completes the volume. Sensory analysis for food and beverage quality control is an essential reference for anyone setting up or operating a sensory QC program, or researching sensory QC. Highlights key aspects to consider when designing a quality control program including sensory targets and proficiency testing Examines methods for sensory quality control and statistical data analysis Reviews the use of sensory quality control programs in the food and beverage industry featuring ready meals, wine and fish

Food and Beverage Stability and Shelf Life

This revised and updated edition of our bestselling and internationally respected title is the essential reference source for trainers, practitioners and anyone working towards professional qualifications in food and beverage service. - Covers contemporary trends and issues in food and beverage service and offers broad and in-depth coverage of key concepts, skills and knowledge, with developed focus on the international nature of the hospitality industry. - Supports students in gaining a comprehensive overview of the industry, from personal skills, service areas and equipment, menus and menu knowledge, beverages and service techniques, to specialised forms of service, events and supervisory aspects. - Supports a range of professional qualifications as well as in-company training programmes. - Aids visual learners with
over 250 photographs and illustrations demonstrating current service conventions and techniques.

Advances in Fermented Foods and Beverages

Now in a fully revised and updated second edition, this volume provides a contemporary overview of food processing/packaging technologies. It acquaints the reader with food preservation processes, shelf life and logistical considerations, as well as packaging materials, machines and processes necessary for a wide range of packaging presentations. The new edition addresses environmental and sustainability concerns, and also examines applications of emerging technologies such as RFID and nanotechnology. It is directed at packaging technologists, those involved in the design and development of packaging, users of packaging in food companies and those who specify or purchase packaging. Key Features: An up-to-date and comprehensive handbook on the most important sector of packaging technology. Links methods of food preservation to the packaging requirements of the common types of food and the available food packages. Covers all the key packaging materials - glass, plastics and paperboard. Fully revised second edition now covers sustainability, nanotechnology and RFID.

Handbook of Food and Beverage Stability

Food colour additives have been the focus of much research in the last few years, and there is increasing consumer demand for natural and safer synthetic colours. This book reviews the natural and synthetic colours available, their properties and applications, as well as regulatory, sensory and analytical issues. Part one covers the development and safety of food colour additives. Part two covers properties and methods of analysis, and part three focuses on specific food product applications and future trends. Reviews the natural and synthetic colour additives available for foods and beverages, looking at their properties and applications as well as regulatory, sensory and analytical issues. Expert analysis of natural origin colours, synthetic origin colours, overview of regulations, safety analysis and consumer health. Comprehensive coverage of properties and development in food colours: chemical purity, colour stability, and consumer sensory perception.

Flavour Development, Analysis and Perception in Food and Beverages

Widely regarded as a standard work in its field, this book introduces...
where the range of processing techniques that are used in food manufacturing. It explains the principles of each process, the processing equipment used, operating conditions and the effects of processing on micro-organisms that contaminate foods, the biochemical properties of foods and their sensory and nutritional qualities. The book begins with an overview of important basic concepts. It describes unit operations that take place at ambient temperature or involve minimum heating of foods. Subsequent chapters examine operations that heat foods to preserve them or alter their eating quality, and explore operations that remove heat from foods to extend their shelf life with minimal changes in nutritional quality or sensory characteristics. Finally, the book reviews post-processing operations, including packaging and distribution logistics. The third edition has been substantially rewritten, updated and extended to include the many developments in food technology that have taken place since the second edition was published in 2000. Nearly all unit operations have undergone significant developments, and these are reflected in the large amount of additional material in each chapter. In particular, advances in microprocessor control of equipment, ‘minimal’ processing technologies, genetic modification of foods, functional foods, developments in ‘active’ or ‘intelligent’ packaging, and storage and distribution logistics are described. Developments in technologies that relate to cost savings, environmental improvement or enhanced product quality are highlighted. Additionally, sections in each chapter on the impact of processing on food-borne micro-organisms are included for the first time.

Flavor of Foods and Beverages

Handbook on Natural Pigments: Industrial Applications for Improving Food Colour is unique in its approach to the improvement of food colors. The book is written with industrial applications in mind, with each chapter focusing on a color solution for a specific commodity that will provide food scientists with a one-stop, comprehensive reference on how to improve the color of a particular food product. The first section of the book looks at the legal frameworks which underpin natural food colorings, also investigating the consumer expectations of food color. The second section of the book focuses on specific industrial applications of natural colorants with chapters covering the use of natural colorants in aqueous food products, cereal-based foods, and meat products, amongst many other topics. The various pigments which can be used to effectively color these commodities are presented with information on safety and testing included throughout. The final section in the book looks at recent developments and future perspectives in natural food colorings. There are chapters which cover
the health benefits of natural pigments, the use of novel fruits and vegetables in pigments, and stable natural solutions for blue colorings. Presents recent advances in consumer demand and worldwide legislation regarding natural food colorants Discusses the use of natural food colorants for one specific product category per chapter rather than one pigment class per chapter - this makes the book extremely useable for industrialists working in a specific sector Contains a comprehensive array of product-specific coloration approaches, from using pigment-enriched feed additives to the direct addition of color formulations

Nanoemulsions

FROM THE PREFACE: Fortunately, chemistry--the root of all life processes--is becoming better understood and more accessible. A strong synergism between the chemical, agricultural, and related sciences is highly desirable. This handbook attempts to provide in easily accessible detail up-to-date information relevant to the stability of foods and beverages. Highly qualified scientists have compiled an extraordinary amount of data on the chemical, biochemical, and microbiological stability, along with sensory aspects, of selected foods and beverages. These data have been distilled and are presented mostly in tabular form, with a minimum of commentary whenever possible.****A total of 17 chapters (10 on food, 7 on beverages) by renowned experts in their particular fields from the United States, Europe, and Japan present a wealth of food and beverage stability information in handbook format. In particular, the chapters on fish and shellfish, cheese, and meat are remarkable in presenting data not readily available in an easily digestible form.****This handbook, encompassing as it does aging, shelf life, and stability--in short, the knowledge necessary to ensure preservation of our food supply--should help to bring about the above-mentioned synergism between chemical, agricultural, and related sciences. It is expected to fill a need, especially through the convenience of its tabular presentations. A valuable reference book containing useful information for food scientists and technologists. As the application of science to world food supply needs becomes increasingly important, there is a greater need for improved stability and shelf life of foods and beverages. This handbook distills a great amount of information on all aspects of food and beverage stability into easily accessible, uncluttered tabular form.**A wealth of carefully selected, up-to-date information is compiled on a wide variety of foods and beverages, including:**meat and meat products**fish and shellfish**dairy products**fruits, legumes, and vegetables**bakery goods and more.**Expert researchers in the field present new information, unpublished results, and previously hard-
Value-Added Ingredients and Enrichments of Beverages

Sodas are astonishing products. Little more than flavored sugar-water, these drinks cost practically nothing to produce or buy, yet have turned their makers--principally Coca-Cola and PepsiCo--into a multibillion-dollar industry with global recognition, distribution, and political power. Billed as "refreshing," "tasty," "crisp," and "the real thing," sodas also happen to be so well established to contribute to poor dental hygiene, higher calorie intake, obesity, and type-2 diabetes that the first line of defense against any of these conditions is to simply stop drinking them. Habitually drinking large volumes of soda not only harms individual health, but also burdens societies with runaway healthcare costs. So how did products containing absurdly inexpensive ingredients become multibillion dollar industries and international brand icons, while also having a devastating impact on public health? In Soda Politics, the 2016 James Beard Award for Writing & Literature Winner, Dr. Marion Nestle answers this question by detailing all of the ways that the soft drink industry works overtime to make drinking soda as common and accepted as drinking water, for adults and children. Dr. Nestle, a renowned food and nutrition policy expert and public health advocate, shows how sodas are principally miracles of advertising; Coca-Cola and PepsiCo spend billions of dollars each year to promote their sale to children, minorities, and low-income populations, in developing as well as industrialized nations. And once they have stimulated that demand, they leave no stone unturned to protect profits. That includes lobbying to prevent any measures that would discourage soda sales, strategically donating money to health organizations and researchers who can make the science about sodas appear confusing, and engaging in Corporate Social Responsibility (CSR) activities to create goodwill and silence critics. Soda Politics follows the money trail wherever it leads, revealing how hard Big Soda works to sell as much of their products as possible to an increasingly obese world. But Soda Politics does more than just diagnose a problem--it encourages readers to help find solutions. From Berkeley to Mexico City and beyond, advocates are successfully countering the relentless marketing, promotion, and political protection of sugary drinks. And their actions are having an impact--for all of the hardball and softball tactics the soft drink industry employs to maintain the status quo, soda consumption has been flat or falling for years. Health advocacy campaigns are now the single greatest threat to soda companies' profits. Soda Politics provides readers with the tools they need to keep up pressure on Big Soda in order to build healthier and more sustainable food systems.
Microencapsulation in the Food Industry

From beef to baked goods, fish to flour, antioxidants are added to preserve the shelf life of foods and ensure consumer acceptability. These production-added components may also contribute to the overall availability of essential nutrients for intake as well as the prevention of the development of unwelcome product characteristics such as off-flavours or colours. However, there are processes that reduce the amount of naturally occurring antioxidants and awareness of that potential is just as important for those in product research and development. There is a practical need to understand not only the physiological importance of antioxidants in terms of consumer health benefit, but how they may be damaged or enhanced through the processing and packaging phases. This book presents information key to understanding how antioxidants change during production of a wide variety of food products, with a focus toward how this understanding may be translated effectively to other foods as well. Addresses how the composition of food is altered, the analytical techniques used, and the applications to other foods Presents in-chapter summary points and other translational insights into concepts, techniques, findings and approaches to processing of other foods Explores advances in analytical and methodological science within each chapter

Trends in Beverage Packaging

Preservatives for the Beverage Industry, Volume Fifteen, a new release in The Science of Beverages series, is a valuable resource that discusses preservatives and their impact in the beverage industry, including potential health impacts. The book takes a broad, multidisciplinary approach to explore both conventional and novel approaches of the types and uses of preservatives. The latest applications and techniques to reduce the use of non-natural or health-threatening preservation elements are also covered. This is a must-have reference for anyone who needs to increase their technical-scientific knowledge in this field. Includes information on the use of hurdle technology in the preservation of beverages Provides the latest research and impact of antimicrobial use in the beverages industry Presents the benefits and risks of preservatives to ensure safety in beverage products

Food Analysis Laboratory Manual

Explains the basics of food technology and new product development from initial planning through formulation, market research,
manufacturing and product launch. Carefully outlined test protocols plus quantified sensory, financial and feasibility analysis. Recaps key technical concepts across the entire food science curriculum. Developed as a comprehensive guide to how food products are planned, budgeted, manufactured and launched, this original textbook forms a cohesive introduction to all phases of food product development. A unique feature of the book is that it reviews the main concepts of food chemistry, ingredient functionality, additives, processing, quality control, safety, package labeling and more—virtually the entire food technology curriculum. With this specialized information as context, the book spells out the procedures needed to formulate, cost-justify and test market safe and profitable new products that meet regulatory guidelines and consumer expectations. The technical exposition is highlighted by case studies of novel food items introduced by U.S. companies. Syllabus-ready and furnished with back-of-chapter questions and projects, the volume is highly suited for university courses, including the capstone, as well as in-house and team training short courses in industry.

Food Storage Stability

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

Functional Food Product Development

This second edition laboratory manual was written to accompany Food Analysis, Fourth Edition, ISBN 978-1-4419-1477-4, by the same author. The 21 laboratory exercises in the manual cover 20 of the 32 chapters in the textbook. Many of the laboratory exercises have multiple sections to cover several methods of analysis for a particular food component of characteristic. Most of the laboratory exercises include the following: introduction, reading assignment, objective, principle of method, chemicals, reagents, precautions and waste disposal, supplies, equipment, procedure, data and calculations, questions, and
references. This laboratory manual is ideal for the laboratory portion of undergraduate courses in food analysis.

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