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Future Foods - Rajeev Bhat 2021-12-04

Future Foods: Global Trends, Opportunities, and Sustainability Challenges highlights trends and sustainability challenges along the entire agri-food supply chain. Using an interdisciplinary approach, this book addresses innovations, technological developments, state-of-the-art based research, value chain analysis, and a summary of future sustainability challenges. The book is written for food scientists, researchers, engineers, producers, and policy makers and will be a welcomed reference. Provides practical solutions for overcoming recurring sustainability challenges along the entire agri-food supply chain Highlights potential industrial opportunities and supports circular economy concepts Proposes novel concepts to address various sustainability challenges that can affect and have an impact on the future generations

Introduction to Fats and Oils Technology - Richard D. O'Brien 2000

Since the first edition was introduced, the fats and oils industry has undergone a number of changes and challenges that have prompted the development of new and revised products, technologies, and processing techniques. This second edition provides a more complete coverage of the pertinent subjects in fats and oils technology. At the same time it follows the original objective, i.e., to provide an overview of the fats and oils industry and serve as a starting point for new fats and oils scientists and engineers. This edition has been expanded from 19 to 29 chapters and subdivided into five sections, covering raw materials, processing, quality, applications, and new developments. The material covered in the 16 chapters retained from the first edition has been updated to include the advances in technology and practice. Thirteen new chapters that pertain to new areas of fats and oils technology have been added to supplement the original material.

Fats and Oils - Richard D. O'Brien 2008-12-05

In the interest of consumer health, many fats and oils processors continuously strive to develop healthier preparation procedures. Following in the footsteps of its previous bestselling editions, *Fats and Oils: Formulating and Processing for Applications*, Third Edition delineates up-to-date processing procedures and formulation techniques as well as

Bailey's Industrial Oil and Fat Products, 7 Volume Set - Fereidoon Shahidi 2020-05-04

The new seventh edition of the industry bible of oils and fats processing, extensively revised, expanded, and updated. *Bailey's Industrial Oil and Fat Products* is the definitive reference source on the food chemistry and processing technology of edible oils and oil-derived nonedible byproducts. Spanning seven themed volumes, this comprehensive work features contributions from more than 100 internationally recognized experts in their respective fields. The new seventh edition has been exhaustively updated and expanded to reflect the latest technical developments and industry trends. Each volume covers a specific area, including edible oil and fat products and applications, processing technologies, chemistry, properties, and safety. This edition includes extensive new or revised content in every chapter, featuring a brand new eighteen-chapter volume focusing on lipids and their relationship to human health and disease. New topics include polar lipids, analysis of lipid triacylglycerols, toxicity of lipid oxidation products, improving oils and oilseeds through crop genetics, marine oils as biodiesel, camelina and other high alpha-linolenic acid oils, medium-chain oils, fats and oils in fish feed formulation, new zero trans formulations, lipids in neurodegenerative diseases, and many more. The industry-standard reference for over seven decades, this authoritative work: Provides the most comprehensive coverage of the field available Represents a 50% expansion over the previous edition, featuring more than 100 chapters Features 30 new chapters and exhaustive revisions throughout Includes thorough coverage of industrial and specialty oils and oil products Available as a complete seven-volume set, individual print volumes, and a fully searchable online product, *Bailey's Industrial Oil and Fat Products*,

Seventh Edition remains the primary source of information on oils and fats for industry, government, and academia.

Edible Oil Processing - Wolf Hamm 2013-08-05

Oils and fats are almost ubiquitous in food processing, whether naturally occurring in foods or added as ingredients that bring functional benefits. Whilst levels of fat intake must be controlled in order to avoid obesity and other health problems, it remains the fact that fats (along with proteins and carbohydrates) are one of the three macronutrients and therefore an essential part of a healthy diet. The ability to process oils and fats to make them acceptable as part of our food supplies is a key component in our overall knowledge of them. Without this ability, the food that we consume would be totally different, and much of the flexibility available to us as a result of the application of processing techniques would be lost. Obviously we need to know how to process fatty oils, but we also need to know how best to use them once they have been processed. This second edition of *Edible Oil Processing* presents a valuable overview of the technology and applications behind the subject. It covers the latest technologies which address new environmental and nutritional requirements as well as the current state of world edible oil markets. This book is intended for food scientists and technologists who use oils and fats in food formulations, as well as chemists and technologists working in edible oils and fats processing.

Trans Fats Replacement Solutions - Dharma R. Kodali 2014-04-22

Epidemiological studies have continued to increase awareness of how trans fats impact human nutrition and health. Because of the adverse effects, trans fats labeling regulations were introduced in 2006. Since then, the fats and oils industry and food product manufacturers have researched and implemented a number of novel, practical, and cost-effective solutions for replacing trans fats with alternate products. This book provides a comprehensive understanding of the trans fats chemistry, labeling regulations, and trans fat replacement technologies. It also deals with world-wide trends and scenarios in terms of regulations and trans fat replacement solutions. Includes details on how trans fats became a part of our food chain, why they remain a health issue, and

what replacement solutions exist Offers in-depth analysis of the structure, properties, and functionality of fats and oils Describes trans fats regulations and scenarios in different geographies around the world

Food Processing - Stephanie Clark 2014-04-03

Food Processing: Principles and Applications second edition is the fully revised new edition of this best-selling food technology title. Advances in food processing continue to take place as food scientists and food engineers adapt to the challenges imposed by emerging pathogens, environmental concerns, shelf life, quality and safety, as well as the dietary needs and demands of humans. In addition to covering food processing principles that have long been essential to food quality and safety, this edition of Food Processing: Principles and Applications, unlike the former edition, covers microbial/enzyme inactivation kinetics, alternative food processing technologies as well as environmental and sustainability issues currently facing the food processing industry. The book is divided into two sections, the first focusing on principles of food processing and handling, and the second on processing technologies and applications. As a hands-on guide to the essential processing principles and their applications, covering the theoretical and applied aspects of food processing in one accessible volume, this book is a valuable tool for food industry professionals across all manufacturing sectors, and serves as a relevant primary or supplemental text for students of food science.

Beckett's Industrial Chocolate Manufacture and Use - Steve T. Beckett 2017-05-08

Since the publication of the first edition of Industrial Chocolate Manufacture and Use in 1988, it has become the leading technical book for the industry. From the beginning it was recognised that the complexity of the chocolate industry means that no single person can be an expert in every aspect of it. For example, the academic view of a process such as crystallisation can be very different from that of a tempering machine operator, so some topics have more than one chapter to take this into account. It is also known that the biggest selling chocolate, in say the USA, tastes very different from that in the UK, so the authors in the book were chosen from a wide variety of countries

making the book truly international. Each new edition is a mixture of updates, rewrites and new topics. In this book the new subjects include artisan or craft scale production, compound chocolates and sensory. This book is an essential purchase for all those involved in the manufacture, use and sale of chocolate containing products, especially for confectionery and chocolate scientists, engineers and technologists working both in industry and academia. The new edition also boasts two new co-editors, Mark Fowler and Greg Ziegler, both of whom have contributed chapters to previous editions of the book. Mark Fowler has had a long career at Nestle UK, working in Cocoa and Chocolate research and development - he is retiring in 2013. Greg Ziegler is a professor in the food science department at Penn State University in the USA.

Gourmet and Health-Promoting Specialty Oils - Robert Moreau 2015-08-25

The third volume in the AOCS PRESS MONOGRAPH SERIES ON OILSEEDS is a unique blend of information focusing on edible oils. These oils contain either unique flavor components that have lead to their being considered "gourmet oils," or contain unique health-promoting chemical components. Each chapter covers processing, edible and non-edible applications, lipids, health benefits, and more related to each type of oil. Includes color illustrations of over 20 health-promoting specialty oils Comprehensive resource for the chemical and physical properties and extraction and processing methods of these specialty oils Describes and includes the health effects of over 50 different oils from plants, algae, fish, and milk

Bailey's Industrial Oil and Fat Products - Daniel Swern 2000

Nutraceutical and Specialty Lipids and their Co-Products - Fereidoon Shahidi 2006-03-14

While certain saturated and trans fats continue to face scrutiny as health hazards, new evidence indicates that, in addition to supplying foods with flavor and texture, fats also provide us with dietary components that are absolutely critical to our well-being. The importance of essential fatty

acids and fat-soluble vitamins and other minor components delivered by lipids is well known, as are the benefits and essentiality of long-chain omega-3 and omega-6 fatty acids. And now, with new research connecting lipids to heart health, mental health, and brain and retina development, the market has responded by providing health-conscious consumers with lipid foods, including spreads, breads, cereals, juices, and dairy products. *Nutraceutical and Specialty Lipids and their Co-Products* presents a thorough assessment of the current state of the chemistry, nutrition, and health aspects of specialty fats and oils. Fereidoon Shahidi, editor-in-chief of the *Journal of Food Lipids* and a past chair and co-founder of the Nutraceuticals and Functional Foods Division of the Institute of Food Technologists, brings together top researchers to address the potential application and delivery of lipids in functional foods. Sharing much of their own research, they offer an unparalleled view of the field that covers basic lipid chemistry, as well as the most progressive findings concerning the nutritional value of beneficial lipids. They include research on cereal grain, marine, fruit seed, and tree nut oils, as well as oilseed medicinals, fat replacers, and many other sources of lipids. They also consider stability issues and the latest tools being used for lipids purification. Covering the full range of these essential diet components, this cutting-edge volume serves to meet the needs of scientists and students in research and product development, as well as health and nutrition specialists.

Processing and Nutrition of Fats and Oils - 2013-07-25

Processing and Nutrition of Fats and Oils reviews current and new practices of fats and oils production. The book examines the different aspects of fats and oils processing, how the nutritional properties are affected, and how fats interact with other components and nutrients in food products. Coverage includes current trends in the consumption of edible fats and oils; properties of fats, oils and bioactive lipids; techniques to process and modify edible oils; nutritional aspects of lipids; and regulatory aspects, labeling and certifications of fats and oils in foods.

Specialty Oils and Fats in Food and Nutrition - Geoff Talbot

2015-06-29

Specialty Oils and Fats in Food and Nutrition: Properties, Processing and Applications examines the main specialty oils and fats currently in use in food processing, as well as those with significant potential. Specialty oils and fats have an increasing number of applications in the food industry, due to growing consumer interest in “clean label functional foods and the emerging markets in “free-from and specialist foods. Part One of this book covers the properties and processing of specialty oils and fats, with a focus on the chemistry, extraction, and quality of different fats and oils, including chapters on shea butter, tropical exotic oils, and structured triglycerides. Part Two looks at the applications of specialty oils and fats in different food and nutraceutical products, such as confectionary, ice cream, and margarine. *Specialty Oils and Fats in Food and Nutrition* is a key text for R&D managers and product development personnel working in the dairy, baking, and dairy analogue sectors, or any sector using fats and oils. It is a particularly useful reference point for companies reformulating their products or developing new products to alter fat content, as well as academics with a research interest in the area, such as lipid scientists or food scientists. Authored by an industry expert with 35 years of experience working for Unilever and Loders Croklaan Broad coverage encompasses tropical exotic oils, tree nut oils, algal oils, GM vegetable oils, and more Addresses growing application areas including nutraceuticals, infant formula, and ice cream and confectionery
Recent Advances in Edible Fats and Oils Technology - Yee-Ying Lee

Trans Fat Alternative - Dharma R. Kodali 2019-07-26

Responding to government regulations that require declaration of the amount of trans fat present in foods, *Trans Fats Alternatives* provides cutting-edge research and insights into this major industry issue. With contributions from major fats and oils suppliers, including Aarhus, ADM, Bunge, Cargill, Loders Croklaan, and Premium Vegetable Oils, the book covers the new regulations in detail, includes methods to analyze for trans fat, explores consumer reaction to trans fat labeling, discusses the nutrition facts, and supplies approaches to trans fat

replacement/reformulation. It is an indispensable guide for everyone who is interested in trans fats.

Science and Technology of Enrobed and Filled Chocolate,

Confectionery and Bakery Products - Geoff Talbot 2009-06-26

Enrobed and filled confectionery and bakery products, such as praline-style chocolates, confectionery bars and chocolate-coated biscuits and ice-creams, are popular with consumers. The coating and filling can negatively affect product quality and shelf-life, but with the correct product design and manufacturing technology, the characteristics of the end-product can be much improved. This book provides a comprehensive overview of quality issues affecting enrobed and filled products and strategies to enhance product quality. Part one reviews the formulation of coatings and fillings, with chapters on key topics such as chocolate manufacture, confectionery fats, compound coatings and fat and sugar-based fillings. Product design issues, such as oil, moisture and ethanol migration and chocolate and filling rheology are the focus of Part two. Shelf-life prediction and testing are also discussed. Part three then covers the latest ingredient preparation and manufacturing technology for optimum product quality. Chapters examine tempering, enrobing, chocolate panning, production of chocolate shells and deposition technology. With its experienced team of authors, *Science and Technology of Enrobed and Filled Chocolate, Confectionery and Bakery Products* is an essential purchase for professionals in the chocolate, confectionery and bakery industries. Provides a comprehensive review of quality issues affecting enrobed and filled products. Reviews the formulation of coatings and fillings, addressing confectionery fats, compound coatings and sugar based fillings. Focuses on product design issues such as oil, moisture and chocolate filling rheology.

Edible Oleogels - Alejandro G. Marangoni 2018-06-11

Edible Oleogels, Structure and Health Implications, Second Edition presents a novel strategy on how to eliminate trans fats from our diets. Topics covered include how to avoid excessive amounts of saturated fat by structuring oil to make it behave like crystalline fat and how to develop trans fat free, low saturate, functional shortenings for the food

industry. The major approach to form these materials is covered, helping manufacturers incorporate specific molecules (polymers, amphiphiles, waxes) into oil components. As such, this is an ideal resource for those in product development and anyone interested in understanding the role of trans and saturated fats in health and nutrition. In an effort to provide alternatives to trans and saturated fats, scientists have been busy modifying the physical properties of oils to resemble those of fats. Many food products requiring a specific texture and rheology can be made with these novel oil-based materials without causing significant changes to final product quality. Hence, this book provides a valuable resource on new advancements. Presents emerging science on beta gels using natural triglycerides, ethylcellulose oleogels, and oleotropic liquid crystals. Suggests a novel strategy to eliminate trans fats from our diets and avoid excessive amounts of saturated fat by structuring oil to make it behave like crystalline fat. Reviews the structuring of edible oils to form new mesoscale and nanoscale structures, including nanofibers, mesophases, and functionalized crystals and crystalline particles. Identifies evidence on how to develop trans fat free, low saturate, functional shortenings for the food industry.

Seed Oil - Alexis Varnham 2014-01-01

The importance of fats for humans, animals and plants lies in their high content of energy. In addition, fats allow humans and animals to consume fat-soluble vitamins and provide them with essential fatty acids (FAs), which are indispensable because their bodies are unable to synthesise themselves. Vegetable oils are used for many food and industrial purposes. Although a wide variety of sources of vegetable oils, global consumption is dominated by palm, soybean, rapeseed and sunflower oils. In recent years there has been development of underexploited promising plant species as a source of dietary or specialty oils. Many of them contain significant quantities of oils and/or a high proportion of nutritionally, medicinally or industrially desirable FAs. This book discusses the biological properties, health benefits and commercial applications on seed oils.

Trade Agreement Digests ...: Chemicals, oils, and paints. 3 v -

United States Tariff Commission 1946

Fats and Oils - Richard D. O'Brien 2003-12-17

Numerous nutritional findings and extensive evidence on the health benefits of diet and exercise have emerged since the publication of the successful first edition. Recent concerns about trans isomers acting like saturated fatty acids have encouraged formulation changes that require fats and oils processors to revise their preparation techniques. U

Phosphates in Food - Ricardo A. Molins 2018-05-04

Phosphates in Food provides the first comprehensive analysis of phosphates used in food processing in almost 20 years. The book describes the nomenclature, structure, chemistry, and analytical procedures for phosphates in foods. Interactions between added and some natural phosphates and food components (particularly proteins, carbohydrates, lipids, and metal ions) are examined in relation to using phosphates in food processing for such purposes as increasing the water-holding capacity of proteins, improving emulsification, preventing gelation, and delaying lipid oxidation. The book also discusses the use of phosphates in specific food groups, such as milk and dairy products; meats, poultry, and fish; fruits and vegetables; bakery products and cereals; and miscellaneous food products including beverages, fats and oils, sugar and confectionery products, eggs and derivatives, and specialty products. An extensive section discussing the importance of phosphates as microbial agents is presented and is followed by a final section that examines the nutritional and health implications of elevated phosphate intake. The book contains 1,135 references, 43 tables, and 34 figures, making it an ideal reference resource for researchers in food sciences, microbiology, and nutrition; food and chemical industries; and regulatory agencies within local, state, and federal governments.

The Chemistry of Oils and Fats - Frank Gunstone 2009-02-12

The three major macronutrients are proteins, carbohydrates, and lipids (oils and fats). This book is devoted to lipids, which are an important part of life for all of us. What are these materials in molecular terms? Where do they come from? What happens to them between the harvesting of

crops and the appearance of the oils and fats in different products in the supermarket? How does nature produce these molecules and can we act on nature to modify the materials to increase their beneficial properties? How important are the minor products present in the fats that we consume? Since oils and fats vary, how can we analyse them? What are their physical, chemical and nutritional properties? How do the fats that we consume affect our health and well-being in both quantitative and qualitative terms? What are their major food and non-food uses? This book provides a broad source of reference on oils and fats chemistry for graduates entering the food and oleochemical industries, postgraduate researchers and nutritionists. It offers a point of entry to the detailed literature.

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

Fruit Oils: Chemistry and Functionality presents a comprehensive overview of recent advances in the chemistry and functionality of lipid bioactive phytochemicals found in fruit oils. The chapters in this text examine the composition, physicochemical characteristics and organoleptic attributes of each of the major fruit oils. The nutritional quality, oxidative stability, and potential food and non-food applications of these oils are also extensively covered. The potential health benefits of the bioactive lipids found in these fruit oils are also a focus of this text. For each oil presented, the levels of omega-9, omega-6 and omega-3 fatty acids are specified, indicating the level of health-promoting traits exhibited in each. The oils and fats extracted from fruits generally differ from one another both in terms of their major and minor bioactive constituents. The methods used to extract oils and fats as well as the processing techniques such as refining, bleaching and deodorization affect their major and minor constituents. In addition, different post-processing treatments of fruit oils and fats may alter or degrade important bioactive constituents. Treatments such as heating, frying, cooking and storage and major constituents such as sterols and tocopherols are extensively covered in this text. Although there have been reference works published on the composition and biological properties of lipids

from oilseeds, there is currently no book focused on the composition and functionality of fruit oils. *Fruit Oils: Chemistry and Functionality* aims to fill this gap for researchers, presenting a detailed overview of the chemical makeup and functionality of all the important fruit oils.

Fatty Acids and Glycerides - A. Kuksis 1978-04-01

The advances in lipid biochemistry over the past 25 to 30 years have been dramatic and exciting. The elucidation of the pathways of fatty acid biosynthesis and oxidation, the delineation of the biogenesis of cholesterol from small-molecular weight precursors, the structure proof of simple and complex lipids from plants, animals, and microorganisms, are excellent examples of the spectacular advances made during the golden era of lipid biochemistry. The multifaceted discoveries in these diverse areas of study could be attributed to development of highly sophisticated column chromatographic techniques for separation and purification of simple and complex lipids. The advent of thin-layer chromatography as well as gas liquid chromatography provided an explosive impetus to research developments in this field. Concomitant advances in mass spectrometry allowed an interface with gas-liquid chromatography which spawned even greater insight into the structure of lipids. These eventful days of lipid chemistry nearly 25 years ago led to a relatively quiescent period wherein scientists applied these newly available techniques to investigation of the behavior of isolated (lipid) enzyme systems and to unraveling the intricacies of the metabolic behavior of lipids in the intact cell or whole organisms. Then, in the early 1960s, a decided change in research emphasis developed with the advent of a simple, reproducible procedure for the isolation of cell membranes.

Modern Technology Of Oils, Fats & Its Derivatives (2nd Revised Edition) - NIIR Board 2013-02-05

Until recently fats and oils have been in surplus, and considered a relatively low value byproduct. Only recently have energy uses of fats and oils begun to be economically viable. Food value of fats and oils is still far above the energy value of fats and oils. Industrial and technical value of fats and oils is still above the energy value of fats and oils. Animal feeds value of fats and oils tends to remain below the energy

value of fats and oils. With development of new technology oils and fats industry has undergone a number of changes and challenges that have prompted the development of new technologies, and processing techniques. Oils and fats constitute one of the major classes of food products. In fact oils and fats are almost omnipresent in food processing - whether naturally occurring in foods or added as ingredients for functional benefits and, despite the impression given by several sources to the contrary; they remain an essential part of the human diet. However, it is increasingly apparent that both the quantity and the quality of the fat consumed are vital to achieve a balanced diet. They are essential constituents of all forms of plant and animal life. Oils and fats occur naturally in many of our foods, such as dairy products, meats, poultry, and vegetable oil seeds. India is the biggest supplier of greater variety of vegetable oil and still the resources are abundant. The applications of oils are also seen in paints, varnishes and related products. Since the use of oils and fats in our daily life is very noticeable the market demands of these products are splendid. Special efforts has been made to include all the valuable information about the oils, fats and its derivatives which integrates all aspects of food oils and fats from chemistry to food processing to nutrition. The book includes sources, utilization and classification of oil and fats followed by the next chapter that contain details in physical properties of fat and fatty acids. Exquisite reactions of fat and fatty acids are also included in the later chapter. It also focuses majorly in fractionation of fat and fatty acids, solidification, homogenization and emulsification, extraction of fats and oils from the various sources, detail application in paints, varnishes, and related products is also included. It also provides accessible, concentrated information on the composition, properties, and uses of the oils derived as the major product followed by modifications of these oils that are commercially available by means of refining, bleaching and deodorization unit with detailed manufacturing process, flow diagram and other related information of important oils, fats and their derivatives. Special content on machinery equipment photographs along with supplier details has also been included. We hope that this book turns out to be considerate to

all the entrepreneurs, technocrats, food technologists and others linked with this industry. TAGS Best small and cottage scale industries, Business consultancy, Business consultant, Business guidance for oils and fats production, Business guidance to clients, Business Plan for a Startup Business, Business start-up, Chemistry and Technology of Oils & Fats, Chemistry of Oils and Fats, Classification of oils and fats, Complete Fats and Oils Book, Extraction of fats and oils, Extraction of Olive Oil, Extraction of Palm Oil, Fat and oil processing, Fats and oils Based Profitable Projects, Fats and oils Based Small Scale Industries Projects, Fats and oils food production, Fats and Oils Handbook, Fats and Oils Industry Overview, Fats and oils making machine factory, Fats and oils Making Small Business Manufacturing, Fats and oils Processing Industry in India, Fats and oils Processing Projects, Fats and oils production Business, Fatty acid derivatives and their use, Fatty acid production, Fatty Acids and their Derivatives, Fractionation of fats and fatty acids, Great Opportunity for Startup, How cooking oil is made, How to Manufacture Oils, Fats and Its Derivatives, How to Start a Fats and oils Production Business, How to Start a Fats and oils?, How to start a successful Fats and oils business, How to start fats and oils Processing Industry in India, Manufacture of oils and fats, Manufacture of Soluble Cutting Oil, Manufacturing Specialty Fats, Modern small and cottage scale industries, Most Profitable fats and oils Processing Business Ideas, New small scale ideas in Fats and oils processing industry, Oil & Fat Production in the India, Oil and Fats Derivatives, Paints and varnishes manufacturing, Paints, varnishes, and related products, Preparation of Project Profiles, Process technology books, Process to produce fatty acid, Processing of fats and oils, Production of fatty acid, Profitable small and cottage scale industries, Profitable Small Scale Fats and oils manufacturing, Project for startups, Project identification and selection, Properties of fats and fatty acids, Reactions of fats and fatty acids, Rice bran oil manufacturing process, Setting up and opening your Fats and oils Business, Small scale Commercial Fats and oils making, Small Scale Fats and oils Processing Projects, Small scale Fats and oils production line, Small Start-up Business Project, Start Up India, Stand Up India,

Starting a Fats and oils Processing Business, Startup, Start-up Business Plan for Fats and oils processing, Startup ideas, Startup Project, Startup Project for Fats and oils processing, Startup project plan, Tall Oil Formulation in Alkyd Resins, Tall oil in liquid soaps, Tall oil in rubber, Tall oil in the plasticizer field, Tall oil products in surface coatings, Utilization of nonconventional oils, Utilization of oils and fats

Oils and Fats in the Food Industry - Frank Gunstone 2009-01-21

Oils and fats are almost ubiquitous in food processing –whether naturally occurring in foods or added as ingredients for functional benefits and, despite the impression given by several sources to the contrary, they remain an essential part of the human diet. However, it is increasingly apparent that both the quantity and the quality of the fat consumed are vital to achieving a balanced diet. Health concerns regarding high-fat diets continue to have a high profile, and still represent a pressing issue for food manufacturers. This volume provides a concise and easy-to-use reference on the nature of oils and fats for those working in the food industry and for those in the media seeking to advise the public on consumption. Written in a style that makes the concepts and information contained easily accessible, and using a minimum of chemical structures, the nature and composition of the constituents of oils and fats are explained. The major sources of food lipids (vegetable and animal fats) are outlined, along with their physical characteristics. The book also focuses on the current main concerns of the food industry regarding oils and fats use, including: the nutritional properties of fats and oils and their various components; links between chemical structure and physiological properties; and the role of lipids in some of the more important disease conditions such as obesity, diabetes, coronary heart disease and cancer. The final chapter is devoted to a description of the most common food uses of oils and fats. The book will be of interest to food industry professionals, students or others who require a working knowledge of oils and fats in the food industry.

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Fat Detection - Jean-Pierre Montmayeur 2009-09-14

Presents the State-of-the-Art in Fat Taste Transduction A bite of cheese, a few potato chips, a delectable piece of bacon - a small taste of high-fat foods often draws you back for more. But why are fatty foods so appealing? Why do we crave them? *Fat Detection: Taste, Texture, and Post Ingestive Effects* covers the many factors responsible for the sensory appeal of foods rich in fat. This well-researched text uses a multidisciplinary approach to shed new light on critical concerns related to dietary fat and obesity. Outlines Compelling Evidence for an Oral Fat Detection System Reflecting 15 years of psychophysical, behavioral, electrophysiological, and molecular studies, this book makes a well-supported case for an oral fat detection system. It explains how

gustatory, textural, and olfactory information contribute to fat detection using carefully designed behavioral paradigms. The book also provides a detailed account of the brain regions that process the signals elicited by a fat stimulus, including flavor, aroma, and texture. This readily accessible work also discusses: The importance of dietary fats for living organisms Factors contributing to fat preference, including palatability Brain mechanisms associated with appetitive and hedonic experiences connected with food consumption Potential therapeutic targets for fat intake control Genetic components of human fat preference Neurological disorders and essential fatty acids Providing a comprehensive review of the literature from the leading scientists in the field, this volume delivers a holistic view of how the palatability and orosensory properties of dietary fat impact food intake and ultimately health. *Fat Detection* represents a new frontier in the study of food perception, food intake, and related health consequences.

Bailey's Industrial Oil and Fat Products, Edible Oil and Fat Products - Fereidoon Shahidi 2005-04-08

First published in 1945, Bailey's has become the standard reference on the food chemistry and processing technology related to edible oils and the nonedible byproducts derived from oils. This Sixth Edition features new coverage of edible fats and oils and is enhanced by a second volume on oils and oilseeds. This Sixth Edition consists of six volumes: five volumes on edible oils and fats, with still one volume (as in the fifth edition) devoted to nonedible products from oils and fats. Some brand new topics in the sixth edition include: fungal and algal oils, conjugated linoleic acid, coco butter, phytosterols, and plant biotechnology as related to oil production. Now with 75 accessible chapters, each volume contains a self-contained index for that particular volume.

Encyclopedia of Food Chemistry - 2018-11-22

Encyclopedia of Food Chemistry is the ideal primer for food scientists, researchers, students and young professionals who want to acquaint themselves with food chemistry. Well-organized, clearly written, and abundantly referenced, the book provides a foundation for readers to understand the principles, concepts, and techniques used in food

chemistry applications. Articles are written by international experts and cover a wide range of topics, including food chemistry, food components and their interactions, properties (flavor, aroma, texture) the structure of food, functional foods, processing, storage, nanoparticles for food use, antioxidants, the Maillard and Strecker reactions, process derived contaminants, and the detection of economically-motivated food adulteration. The encyclopedia will provide readers with an introduction to specific topics within the wider context of food chemistry, as well as helping them identify the links between the various sub-topics. Offers readers a comprehensive understanding of food chemistry and the various connections between the sub-topics Provides an authoritative introduction for non-specialists and readers from undergraduate levels and upwards Meticulously organized, with articles structured logically based on the various elements of food chemistry

Oils and Fats Authentication - Michael Jee 2009-02-12

Quality assessment and the need for authentication are important features of the food and personal care products industries. This volume provides an overview of the methods relevant to analysis and authentication of oils and fats. All the major oils and fats are included. Chapter authors are drawn from the academic and industrial sectors. The volume is directed at chemists and technologists working in the food industry, the pharmaceutical industry and in oils and fats processing. It will also be of interest to analytical chemists and quality assurance personnel.

High Oleic Oils - Frank J. Flider 2021-11-25

High Oleic Oils: Development, Properties and Uses is the first complete reference to address practical applications for this new and dynamic category of fats and oils that are essentially replacing partially hydrogenated oils in various food and nonfood uses. As a category, high oleic oils are highly stable, but like other fats and oils, there are differences in the composition and applications of the various types of high oleic oils. Their compositions allow for the production of a range of frying oils, increased shelf-life foods, functional shortenings and hard fats, and even industrial products not easily produced with nonhigh oleic

oils. Information and know-how on these applications and advantages has been in high demand and short supply until now. Based on extensive commercial experience, seminars and presentations, Editor Frank Flider has identified common customer questions, needs and concerns about high oleic oils, and addresses them in this single comprehensive volume outlining development, composition, and utilization of high oleic oils. Through the individual expertise of a highly qualified team of contributing authors, this book outlines the development, composition, and utilization of these oils, making it of value to a wide range of readers, including the research and development industry and academic researchers. Details the development and technology behind today's high oleic crops and oils as well as the history and background of many naturally occurring oleic oils Describes high oleic oils' nutritional and compositional advantages over PHOs and lower oleic oils Presents unbiased, noncommercial, science-based, and objective insights, deliberately balanced to represent high oleic oil varieties equally Addresses transgenic insights as well as new state-of-the-art and future development technologies

Oil and Oilseed Processing - Tomás Lafarga 2021-04-08

Oil and Oilseed Processing The latest information available on oil and oilseed processing Oil and Oilseed Processing offers a comprehensive text that explores both the conventional and novel "green" extraction methods used to extract oils from seeds. The authors—noted experts on the topic—examine the positive aspects of operations in processing oil and oilseeds and present the processing concepts, principles, effects on quality, as well as the stability characteristics, limitations, and challenges. Due to the economic implications associated with the overproduction of seed oils, the book includes pertinent information on vegetable and animal-derived oils for industrial applications. The authors also explore recent applications and future perspectives for vegetable and animal oils use in the food and non-food industry. Safety concerns regarding oil and oilseed processing and waste valorisation are also covered in-depth. This important guide: Explores the traditional and new extraction methods used to extract oils from seeds Contains the most up-

to-date insight into oil and oilseed processing Focuses on the areas of oil processing, safety, quality, and nutritional evaluation Written for food scientists and professional food technologists, Oil and Oilseed Processing is the only book on the market that contains the most recent information on all aspects of oil and oilseed processing.

Developing Food Products for Consumers with Specific Dietary Needs - Steve Osborn 2016-05-17

Developing Food Products for Customers with Specific Dietary Needs explains the process for developing foods for customers who have specific dietary needs, further shining a light on the number of increasing medical conditions related to food intake that have emerged in the past few decades. From increased fat and sugar intake leading to higher levels of obesity, to greater levels of coeliac disease, the ingredients and nutritional content of food is becoming more and more important. Additionally, consumers are following particular diets for many different reasons, be it health related, or for religious or moral reasons. The first part of the book looks, in detail, at the organizational structure required within a company to allow for the development of food products which meet the needs of these customers, while the second part presents a number of case studies highlighting the development of food products for various dietary requirements. Precise coverage includes section on the development of low-sodium, low-sugar, low-fat, and low-carbohydrate products with the aim of producing healthier foods, as well as the development of organic and vegetarian products for consumers who are following diets for personal reasons. The potential solutions for developing foods for customers who have specific dietary needs are likely to include both ingredients and technology developments. The ingredients area includes simple reductions as well as replacement strategies, whilst technology will be applied to both the ingredient itself and the host food product. All are aimed at maintaining the product quality as perceived by the customer. Provides an overview of the organizational structure required within a company to develop foods for specific customer needs Includes section on the development of low-sodium, low-sugar, low-fat, and low-carbohydrate products with the aim

of producing healthier foods Presents case studies that deliver a best practice view on developing foods for customers with specific dietary needs Written by industry professionals, this book offers in-depth coverage of this topic of ever increasing importance to the food industry Functional Dietary Lipids - Thomas Sanders 2015-11-18

Functional Dietary Lipids: Food Formulation, Consumer Issues and Innovation for Health discusses this important component of the human diet and the ways it plays an essential functional role in many foods. The book covers the functionality and nutritional benefits of dietary fat in food in terms of formulation, manufacturing, and innovation for health. After an introduction by the editor reviewing the role of fats in the human diet, the book discusses the chemistry of edible fats, manufacturing issues, including the replacement of trans-fatty acids in food, fat reformulation for calorie reduction, thermal stability of fats, and the flavor and functional texture and melting characteristics of fats in food. Subsequent chapters address the effect of dietary lipid intake on various health issues and the potential health benefits of bioactive compounds in dietary lipids, with final sections discussing issues that affect the consumer relationship with fat, such as regulation, marketing, and health claims. Comprehensively examines the functionality and nutritional benefits of dietary fat in food Discusses the chemistry of edible fats, manufacturing issues, including the replacement of trans fatty acids in food, fat reformulation for calorie reduction, thermal stability of fats, and more Considers manufacturing issues of dietary fat in foods Addresses issues affecting the consumer relationship with fat, such as regulation, marketing, and health claims

Specialty Oils and Fats in Food and Nutrition - Geoff Talbot 2015-07-07
Specialty Oils and Fats in Food and Nutrition: Properties, Processing and Applications examines the main specialty oils and fats currently in use in food processing, as well as those with significant potential. Specialty oils and fats have an increasing number of applications in the food industry, due to growing consumer interest in "clean label" functional foods and the emerging markets in "free-from" and specialist foods. Part One of this book covers the properties and processing of specialty oils and fats,

with a focus on the chemistry, extraction, and quality of different fats and oils, including chapters on shea butter, tropical exotic oils, and structured triglycerides. Part Two looks at the applications of specialty oils and fats in different food and nutraceutical products, such as confectionary, ice cream, and margarine. Specialty Oils and Fats in Food and Nutrition is a key text for R&D managers and product development personnel working in the dairy, baking, and dairy analogue sectors, or any sector using fats and oils. It is a particularly useful reference point for companies reformulating their products or developing new products to alter fat content, as well as academics with a research interest in the area, such as lipid scientists or food scientists. Authored by an industry expert with 35 years of experience working for Unilever and Loders Croklaan Broad coverage encompasses tropical exotic oils, tree nut oils, algal oils, GM vegetable oils, and more Addresses growing application areas including nutraceuticals, infant formula, and ice cream and confectionery

Snack Foods - Suwendu Bhattacharya 2022-09-06

Snack Foods: Processing and Technology presents the use of different raw materials, processing technologies, quality attributes of snacks, machinery requirements, and innovative thoughts for future product development. These items are discussed in 15 chapters, including recent technologies leading to the industrial production of popular snacks and healthy products. The discussion on artistic snacks and troubleshooting are the new additions. This book will be of use to entrepreneurs, academic and research institutes, professionals in the field, and personnel from industries. Covers recent technologies like pressure/vacuum frying process, par frying, agglomeration, use of infrared, radiofrequency Explores the use of innovative methods for the development of healthy snacks Includes indications for the wide commercialization of traditional foods in the near future

Cold Pressed Oils - Mohamed Fawzy Ramadan 2020-07-23

Cold Pressed Oils: Green Technology, Bioactive Compounds, Functionality, and Applications creates a multidisciplinary forum of discussion on recent advances in chemistry and the functionality of

bioactive phytochemicals in lipids found in cold pressed oils. Chapters explore different cold pressed oil, focusing on cold press extraction and processing, composition, physicochemical characteristics, organoleptic attributes, nutritional quality, oxidative stability, food applications, and functional and health-promoting traits. Edited by a team of experts, the book brings a diversity of developments in food science to scientists, chemists, nutritionists, and students in nutrition, lipids chemistry and technology, agricultural science, pharmaceuticals, cosmetics, nutraceuticals and many other fields. Thoroughly explores novel and functional applications of cold pressed oils Shows the difference between bioactive compounds in cold pressed oils and oils extracted with other traditional methods Elucidates the stability of cold pressed oils in comparison with oils extracted using other traditional methods

Advances in Food Biochemistry - Fatih Yildiz 2009-12-16

Understanding the biochemistry of food is basic to all other research and development in the fields of food science, technology, and nutrition, and the past decade has seen accelerated progress in these areas. *Advances in Food Biochemistry* provides a unified exploration of foods from a biochemical perspective. Featuring illustrations to elucidate m

Enzymatic Synthesis of Structured Triglycerides - María Luján Ferreira 2017-02-28

This brief presents the state of the art on enzymatic synthesis of structured triglycerides and diglycerides, focusing on glycerol as the substrate and covering interesterification of vegetable oils in one and two steps. It critically reviews the available literature on enzymatic and chemo-enzymatic synthesis of di- and triglycerides in one or more steps. The effects of the structure, length and unsaturation of the fatty acids are carefully considered, as well as the inhibitory potential of highly unsaturated complex fatty acid structures. The brief also addresses acyl migration and the use of adsorbents, taking into account the most recent literature and presenting the problem in an industrial context. It discusses experimental and analytical problems concerning, e.g. the lab scale and the scaling up to bench and pilot plants. Several examples are presented, and their successes and failures are assessed. Biocatalysts

based on lipases are analyzed with regard to problems of immobilization, stability on storage time and activity after multiple uses. The need for specific Sn-2 lipases is presented and strategies for optimizing Sn-2

esterification are discussed. Lastly, practical aspects are examined, e.g. lipase “leaching” with loss of activity, taking into account the latest findings on continuous and batch reactor configurations and presenting the advantages and disadvantages of each.