

## Advanced Dietary Fibre Technology

Food processing technologies are an essential link in the food chain. These technologies are many and varied, changing in popularity with changing consumption patterns and product popularity. Newer process technologies are also being evolved to provide the added advantages. Conventional and Advanced Food Processing Technologies fuses the practical (application, machinery), theoretical (model, equation) and cutting-edge (recent trends), making it ideal for industrial, academic and reference use. It consists of two sections, one covering conventional or well-established existing processes and the other covering emerging or novel process technologies that are expected to be employed in the near future for the processing of foods in the commercial sector. All are examined in great detail, considering their current and future applications with added examples and the very latest data. Conventional and Advanced Food Processing Technologies is a comprehensive treatment of the current state of knowledge on food processing technology. In its extensive coverage, and the selection of reputed research scientists who have contributed to each topic, this book will be a definitive text in this field for students, food professionals and researchers. 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

Probiotic and Prebiotics in Foods: Challenges, Innovations, and Advances reviews recent advances, innovations, and challenges in probiotics/prebiotics in food and beverages. The book presents up-to-date, novel and extensive information regarding recent research and applications in probiotics and prebiotics in food. Sections address probiotics, prebiotics, paraprobiotics and postbiotics, probiotics, prebiotics and bucal health, probiotics, prebiotics and obesity, probiotics, prebiotics and sleep quality, in vitro and in vivo assays for selection of probiotics, probiotics and mycotoxins, edible films added to probiotic and prebiotics, predictive microbiology applied to development of probiotic foods, non-bovine milk products as probiotic and prebiotic foods, emerging technologies, and much more. Written for food scientists, nutritionists, health professionals, food product developers, microbiologists, those working in food safety, and graduate students and researchers working in academia, this book is a welcomed resource on the topics discussed. Includes coverage of both dairy and non-dairy probiotics, prebiotics and symbiotic food products Discusses the efficacy of food substrate in probiotic and prebiotic delivery Presents predictive microbiology models

Dietary Fiber: Properties, Recovery and Applications explores the properties and health effects of dietary fiber, along with new trends in recovery procedures and applications. The book covers the most trending topics of dietary fiber applications, emphasizing polyphenol properties, bioavailability and metabolomics, target sources, recovery and emerging technologies, technological aspects, stability during processing, and applications in the food, beverage and nutraceutical sectors. Written by a team of experts in the field of dietary fiber, this book is ideal for chemists, food scientists, technologists, new product developers and academics. Thoroughly explores dietary fiber properties and health effects in light of new trends in recovery procedures and applications Covers issues in three critical dimensions: properties, recovery and applications Focuses on applications in food additives, as well as recovery from plant processing by-products

Carbohydrate Chemistry for Food Scientists, Third Edition, is a complete update of the critically acclaimed authoritative carbohydrate reference for food scientists. The new edition is fully revised, expanded and redesigned as an easy-to-read resource for students and professionals who need to understand this specialized area. The new edition provides practical information on the specific uses of carbohydrates, the functionalities delivered by specific carbohydrates, and the process for choosing carbohydrate ingredients for specific product applications. Readers will learn basic and specific applications of food carbohydrate organic and physical chemistry through clearly explained presentations of mono-, oligo-, and polysaccharides and their chemistry. This new edition includes expanded sections on Maillard browning reaction, dietary fiber, fat mimetics, and polyols, in addition to discussions of physical properties, imparted functionalities, and actual applications. It is an invaluable resource on the chemistry of food carbohydrates for advanced undergraduate and graduate students, and a concise, user-friendly, applied reference book for food science professionals. Identifies structures and chemistry of all food carbohydrates – monosaccharides, oligosaccharides and polysaccharides Covers the behavior and functionality of carbohydrates within foods Contains extensive coverage of the structures and properties of individual polysaccharides, including cellulose, inulin, gellans and pectins, amongst others

Presents the latest research on the analysis, metabolism, function, and physicochemical properties of fiber, fiber concentrates, and bioactive isolates--exploring the effect of fiber on chronic disease, cardiovascular health, cancer, and diabetes. Examines food applications and the efficacy and safety of psyllium, sugar beet fiber, pectin, alginate, gum arabic, and rice bran.

This text provides comprehensive coverage of fibers used in food formulations, starting with the understanding of their basic chemical structure and how they are present and organized in the cell wall structure, their physicochemical and functional properties, their impact on the digestive process and their role and preventive action against various chronic diseases including colon cancer. The book focuses on traditional and new fiber rich sources, incorporating an integrated approach in terms of the technological and engineering processes used to obtain and incorporate them in traditional foods, plus their characterization, extraction and modification. The study of processing conditions including the chemical, physical and enzymatic processes of fiber extraction and modification are also covered, including traditional and emerging processing technologies, plus the application of fibers in the development of new products and processes. Science and Technology of Fibers in Food Systems integrates knowledge of fibers from their basic structural and property aspects and the applications of these ingredients to extraction process analysis, modification and feasibility for use at the industry level. The chapters incorporate the physiological aspects related to the consumption of fiber for prevention of serious diseases.

Advanced Nutrition and Dietetics in Gastroenterology provides informative and broad-ranging coverage of the relation between nutrition and diet and the gastrointestinal tract. It explores dietary factors involved in causation of a variety of gastrointestinal disorders, as well as the effects on diet and the treatments available. It also provides an overview of anatomy and physiology, measurement and assessment of function, and dietary components relevant to gastrointestinal health. ABOUT THE SERIES Dietary recommendations need to be based on solid evidence, but where can you find this information? The British Dietetic Association and the publishers of the Manual of Dietetic Practice present an essential and authoritative reference series on the evidence base relating to advanced aspects of nutrition and diet in selected

clinical specialties. Each book provides a comprehensive and critical review of key literature in its subject. Each covers established areas of understanding, current controversies and areas of future development and investigation, and is oriented around six key themes: •Disease processes, including metabolism, physiology, and genetics •Disease consequences, including morbidity, mortality, nutritional epidemiology and patient perspectives •Nutritional consequences of diseases •Nutritional assessment, drawing on anthropometric, biochemical, clinical, dietary, economic and social approaches •Clinical investigation and management •Nutritional and dietary management •Trustworthy, international in scope, and accessible, *Advanced Nutrition and Dietetics* is a vital resource for a range of practitioners, researchers and educators in nutrition and dietetics, including dietitians, nutritionists, doctors and specialist nurses.

This book summarizes available fiber sources and how they can be incorporated into new food products to provide improved health benefits. It rigorously examines health claims, recent research, and contradictory data; covers fiber for weight and glycemic control, and intestinal regularity; and discusses how food producers can find fiber sources and include fiber in their products. Critically examining current research and future directions, this resource blends coverage of the latest scientific information on the health benefits of fiber with information on how to formulate foods with higher concentrations of this vital nutrient.

This book provides information on the techniques needed to analyze foods in laboratory experiments. All topics covered include information on the basic principles, procedures, advantages, limitations, and applications. This book is ideal for undergraduate courses in food analysis and is also an invaluable reference to professionals in the food industry. General information is provided on regulations, standards, labeling, sampling and data handling as background for chapters on specific methods to determine the chemical composition and characteristics of foods. Large, expanded sections on spectroscopy and chromatography are also included. Other methods and instrumentation such as thermal analysis, selective electrodes, enzymes, and immunoassays are covered from the perspective of their use in the chemical analysis of foods. A helpful Instructor's Manual is available to adopting professors.

Functional foods - products which have health-promoting properties over and beyond their nutritional value - have become a significant food industry sector. The global market for these products remains dynamic and is predicted to grow further. *Functional foods: Principles and technology* provides both students and professionals with an authoritative introduction to the key scientific aspects and major product categories in this area. The opening chapter introduces the principles of functional foods and explores industry and consumer roles in this evolving market. Subsequent chapters focus on the most significant product categories, reviewing ingredient sources, classification, chemical and physical properties, the wide range of therapeutic effects and possible mechanisms of action, among other topics. Antioxidants, dietary fiber, prebiotics and probiotics, lipids and soy are among the foods and food constituents covered. The Appendix contains laboratory exercises aimed at those using this book in a classroom situation. *Functional foods: principles and technology* is an essential guide for all those studying and working with functional foods. Provides both students and professionals with an authoritative introduction to the key scientific aspects and major product categories. Introduces the principles of functional foods and explores industry and consumer roles in this evolving market. Focuses on the most significant product categories, reviewing ingredient sources, classification, chemical and physical properties.

*The Latest News in Cereal Technology* Assembling the combined input from the Proceedings of the 12th International Cereal and Bread Congress, this volume provides a wide-ranging, comprehensive and up-to-date review of the latest advances in cereal science and technology. With contributions from leading cereal institutes and individuals from around the world, this book brings together all elements of the "grain chain" from the breeding of new wheat varieties, through the milling processes, and on to the conversion of flour into baked products ready for the consumer. New equipment and techniques are covered in depth, and the versatility of wheat flour and its conversion into food is reviewed across a whole spectrum of products.

The second edition of a bestseller, *Handbook of Vegetable Preservation and Processing* compiles the latest developments and advances in the science and technology of processing and preservation of vegetables and vegetable products. It includes coverage of topics not found in similar books, such as nutritive and bioactive compounds of vegetables; veg

Does a longer life mean a healthier life? The number of adults over 65 in the United States is growing, but many may not be aware that they are at greater risk from foodborne diseases and their nutritional needs change as they age. The IOM's Food Forum held a workshop October 29-30, 2009, to discuss food safety and nutrition concerns for older adults.

Responding to the expansion of scientific knowledge about the roles of nutrients in human health, the Institute of Medicine has developed a new approach to establish Recommended Dietary Allowances (RDAs) and other nutrient reference values. The new title for these values Dietary Reference Intakes (DRIs), is the inclusive name being given to this new approach. These are quantitative estimates of nutrient intakes applicable to healthy individuals in the United States and Canada. This new book is part of a series of books presenting dietary reference values for the intakes of nutrients. It establishes recommendations for energy, carbohydrate, fiber, fat, fatty acids, cholesterol, protein, and amino acids. This book presents new approaches and findings which include the following: The establishment of Estimated Energy Requirements at four levels of energy expenditure Recommendations for levels of physical activity to decrease risk of chronic disease The establishment of RDAs for dietary carbohydrate and protein The development of the definitions of Dietary Fiber, Functional Fiber, and Total Fiber The establishment of Adequate Intakes (AI) for Total Fiber The establishment of AIs for linolenic and  $\alpha$ -linolenic acids Acceptable Macronutrient Distribution Ranges as a percent of energy intake for fat, carbohydrate, linolenic and  $\alpha$ -linolenic acids, and protein Research recommendations for information needed to advance understanding of macronutrient requirements and the adverse effects associated with intake of higher amounts Also detailed are recommendations for both physical activity and energy expenditure to maintain health and decrease the risk of disease.

Dietary fibre is of interest to both science and industry, and yet despite growing awareness of its benefits to health and nutrition, intakes remain below the recommended level. Industry has responded by developing new applications, products and processes to help consumers increase their fibre intake in a convenient way. While regulations on health claims are being developed for example in the EU, some countries have allowed the use of health claims to help promote consumer awareness of the benefits of a higher fibre intake, and to inform consumers of good sources of fibre. At the same time science is developing the concept of dietary fibre. The mechanisms and actual components behind the physiological effects are of particular interest, and so are the analytical tools to measure these. The fate of dietary fibre in the gut, where certain fibre components are fermented and converted by microbes gains a great deal of attention. The role of molecular weight and viscosity of dietary fibre components in determining the health benefits are also discussed. This book is essential reading for all researchers and those who concern themselves with bioprocesses and food technology. `Dietary fibre components and functions? covers the most up-to-date research available on dietary fibre and will be an indispensable tool for all scientists involved in research and development in this field. Since Arnold Bender's classic *Food processing and nutrition* in 1978, there has been no single volume survey of the impact of processing on the nutritional quality of food. With its distinguished editors and international team of contributors, *The nutrition handbook for food processors*, fills that gap. It summarises the wealth of research in an area as important to the food industry as it is to health-conscious consumers. Part one provides the foundation for the rest of the book, looking at consumers and nutrition. After a discussion of surveys on what consumers eat, there are two reviews of research on the contribution of vitamins and minerals to health. Three further chapters discuss how nutrient intake is measured and at how nutrition information is presented to and interpreted by consumers. Part two looks at processing and nutritional quality. Two introductory chapters look at raw



materials, discussing the nutritional enhancement of plant foods and meat respectively. The remaining chapters review the impact of processing, beginning with a general discussion of the stability of vitamins during processing. There are chapters on processes such as thermal processing, frying, freezing, packaging and irradiation. The book also covers newer processes such as microwave processing, ohmic heating and high pressure processing. Given the unprecedented attention on the impact of processing on the nutritional quality of food, The nutrition handbook for food processors is a standard work in its field. Summarises key findings on diet and nutrient intake, the impact of nutrients on health, and how food processing operations affect the nutritional quality of foods Examines consumers and nutrition, processing and nutritional quality, and nutritional enhancement of plant foods and meat, among other topics Reviews the wealth of recent research in an area as important to the food industry as it is to health-conscious consumers

Dietary fibre research is rapidly evolving and is stimulated by the growing attention for intestinal health which is needed for combating major disorders such as diabetes, cardio-vascular diseases and obesity. Current research also explores relationships between fibres, the immune system and stress. The recently agreed EU and CODEX definitions for dietary fibre - including all polymeric carbohydrates not digested in the small intestine - provide both clarity and new challenges regarding adequate analysis and concerning the requirements for added fibre. Added fibre should have 'a physical effect of benefit to health as demonstrated by generally accepted scientific evidence to competent authorities'. Novel research tools from genomics toolboxes and advanced systems simulating the gastro-intestinal tract, are enabling researchers to obtain insights in the wide range of structure function relationships of different types of dietary fibre. These include the impact of dietary fibre on the gut microbiota and relationships between prebiotics and peptides involved in regulation of satiety and other functions. New technologies steadily increase the range of fibres, with and without anti-oxidants and other beneficial co-passengers, which are available to food processors. Dietary fibre - new frontiers for food and health covers the most up-to-date research available on dietary fibre and will be an indispensable tool for all scientists and technologists involved in research and development in this field.

This book provides the analyst with the nutritional background information and analytical procedures associated with "roughage" in food.

Feeding our globally expanding population is one of the most critical challenges of our time and improving food and agricultural production efficiencies is a key factor in solving this problem. Currently, one-third of food produced for humans is wasted, and for every pound of food produced, roughly an equal amount of nonfood by-product is also generated, creating a significant environmental impact. In Integrated Processing Technologies for Food and Agricultural By-Products experts from around the world present latest developments, recognizing that while some by-products have found use as animal feed or are combusted for energy, new technologies which integrate conversion of production and processing by-products into higher-value food or nonfood products, nutraceuticals, chemicals, and energy resources will be a critical part of the transition to a more sustainable food system. Organized by agricultural crop, and focusing on those crops with maximum economic impact, each chapter describes technologies for value-added processing of by-products which can be integrated into current food production systems. Integrated Processing Technologies for Food and Agricultural By-Products is a valuable resource for industry professionals, academics, and policy-makers alike. Provides production-through-processing coverage of key agricultural crops for a thorough understanding and translational inspiration Describes and discusses major by-product sources, including physical and chemical biomass characterizations and associated variability in detail Highlights conversions accomplished through physical, biological, chemical, or thermal methods and demonstrates examples of those technologies

Dietary fibre technology is a sophisticated component of the food industry. This highly practical book presents the state-of-the-art and explains how the background science translates into commercial reality. An international team of experts has been assembled to offer both a global perspective and the nuts and bolts information relevant to those working in the commercial world. Coverage includes specific dietary fibre components (with overviews of chemistry, analysis and regulatory aspects of all key dietary fibres); measurement of dietary fibre and dietary fibre components (in-vitro and in-vivo); general aspects (eg chemical and physical nature; rheology and functionality; nutrition and health; and technological) and current hot topics. Ideal as an up-to-date overview of the field for food technologists; nutritionists and quality assurance and production managers.

This two-volume handbook supplies food chemists with essential information on the physical and chemical properties of nutrients, descriptions of analytical techniques, and an assessment of their procedural reliability. The new edition includes two new chapters that spotlight the characterization of water activity and the analysis of inorganic nutrients, and provides authoritative rundowns of analytical techniques for the sensory evaluation of food, amino acids and fatty acids, neutral lipids and phospholipids, and more. The leading reference work on the analysis of food, this edition covers new topics and techniques and reflects the very latest data and methodological advances in all chapters.

A new study of the challenges presented by manufacturing bakery products in a health-conscious world The impact of bakery products upon human nutrition is an increasingly pressing concern among consumers and manufacturers alike. With obesity and other diet-related conditions on the rise, the levels of salt, fat, and sugar found in many baked goods can no longer be overlooked. Those working in the baking industry are consequently turning more and more to science and technology to provide routes toward healthier alternatives to classic cake, bread, and pastry recipes. With Baking Technology and Nutrition, renowned food scientist Stanley P. Cauvain and co-author Rosie H. Clark present an innovative and much-needed study of the changes taking place in the world of baking. Their discussion focuses on the new avenues open to bakers looking to improve the nutritional value of their products and encompasses all related issues, from consumer preferences to the effects of nutritional enhancement upon shelf-life. Featuring an abundance of new research and insights into the possible future of modern baking, this unique text: Offers practical guidance on developing, delivering, and promoting high-nutrition bakery products Discusses reducing ingredients such as salt, fat, and sugar for improved nutrition while preserving quality and consumer acceptability Explores how wheat-based products can be ideal vehicles for improving the nutrition of major sectors of populations Suggests real-world solutions to problems rising from poorly defined quality guidelines and inadequate dialogue between bakers and nutritionists Baking Technology and Nutrition is an indispensable and timely resource for technologists, manufacturers, healthcare practitioners, or anyone else working in today's food and nutrition industries.

Dietary Fiber for the Prevention of Cardiovascular Disease: Fiber's Interaction between Gut Microflora, Sugar Metabolism, Weight Control and Cardiovascular Health compiles the most up-to-date research discoveries to provide a timely and scientific rationale for the significant impact of a fiber rich diet for the prevention of heart disease. By focusing on the science behind how fiber, both

soluble and insoluble can lead to lower rates of heart disease, this important reference will educate researchers, cardiologists, medical providers and students on how to improve patients' hearts via a fiber rich diet. Coverage includes the known mechanisms of how fiber works to reduce insulin resistance, control weight, reduce cholesterol by binding with bile, maintain stable glucose levels and influence gut microflora. Explains how fiber affects cardiovascular disease through the influence on insulin resistance, reduction of cholesterol, change in gut microflora and in weight control Provides thorough coverage of the effect of fiber on arrhythmias and valvular abnormalities Includes information on the indirect relationship between constipation and heart disease Pulses are nutritionally diverse crops that can be successfully utilized as a food ingredient or a base for new product development. They provide a natural food grade ingredient that is rich in lysine, dietary fiber, complex carbohydrates, protein and B-vitamins suggesting that pulses can provide a variety of health benefits such as reducing heart disease and diabetes. Interest in the use of pulses and their ingredients in food formulations is growing and several factors are contributing to this drive. Pulse Foods: Processing, Quality and Nutraceutical Applications is the first book to provide up-to-date information on novel and emerging technologies for the processing of whole pulses, techniques for fractionating pulses into ingredients, their functional and nutritional properties, as well as their potential applications, so that the food industry can use this knowledge to incorporate pulses into new food products. First reference bringing together essential information on the processing technology of pulses Addresses processing challenges relevant to legume and pulse grain processors Delivers insights into the current state-of-art and emerging processing technologies In depth coverage of developments in nutraceutical applications of pulse protein and carbohydrate based foods

Dietary fiber is widely recognized as an essential element of good nutrition. In fact, research on the use of fiber in food science and medicine is being conducted at an incredible pace. CRC Handbook of Dietary Fiber in Human Nutrition, Third Edition explores the chemistry, analytical methodologies, physiological and biochemical aspects, clinical and epidemiological studies, and consumption patterns of dietary fiber. Featuring new chapters and tables, in addition to updated sections, the third edition of this popular book includes important information that has become available since the publication of the second edition. What's new in the Third Edition? o Definitions and consumption of dietary fiber from 1992-2000 o A new chapter on the physical chemistry of dietary fiber o Updated dietary fiber values for common foods o New table: Tartaric Acid Content of Foods o Coverage of non-plant food fibers, such as chitin and chitosan o An entire section devoted to the effect of whole grains, cereal fiber, and phytic acid on health o Discussion of the interaction of fiber and phytochemicals Quickly retrieve and understand current data with the book's concise, easy-to-read tables and definitions. Covering all aspects of dietary fiber, including chemistry and definitions, analytical procedures, and basic physiological functions, the CRC Handbook of Dietary Fiber in Human Nutrition provides you with a unique collection of dietary fiber information unlike that found in any other book.

Advanced Dietary Fibre Technology John Wiley & Sons

Unique in its broad range of coverage, Food Carbohydrates: Chemistry, Physical Properties and Applications is a comprehensive, single-source reference on the science of food carbohydrates. This text goes beyond explaining the basics of food carbohydrates by emphasizing principles and techniques and their practical application in quality control, product development, and research. The editor incorporates information on analytical methods, the structural analysis of polysaccharides, physical properties, molecular conformation and characterization, and industrial applications of polysaccharide gums. The analytical methods and structural analysis of polysaccharides are rarely presented in books on food carbohydrates - topics this text fully illustrates. It also presents particulars on starch and starch modification, with a focus on reaction principles, improved functional properties, and practical applications. Food Carbohydrates: Chemistry, Physical Properties and Applications is the only known current reference to include basic chemistry, analytical methodologies, structural analysis, conformation and functional properties, and rheological and thermal properties of food carbohydrates all in one text. This book is ideal as a professional reference for researchers, engineers, and those interested in food carbohydrates, as well as a textbook for graduate students.

The growing attention for healthy eating, intestinal health, combating major disorders such as obesity and diabetes and prevention of cardio-vascular diseases and cancer, has resulted in an increased output of R&D on dietary fibre and related carbohydrates. In recent years, hundreds of new products have been launched annually with claims regarding their fibre content. Existing and new fibres are also increasingly incorporated in products for specific target groups, such as babies, farm animals, pets and for clinical nutrition. New research tools and insights are enabling researchers to obtain a much better insight in the mechanisms of action of bio-active carbohydrates. These include new analytical methods, model systems to measure the impact of fibre on processes in the gastro-intestinal tract and the identification and measurement of new biomarkers, for example markers related to satiety. These insights and tools, will significantly contribute to R&D on ingredients and products aiming at imparting significant health benefits. In this book invited expert scientists of leading research groups all over the world will address the following issues: Definitions, health claims and new challenges, Analytical tools, technological aspects and applications, Health Benefits of dietary fibre, including both authoritative generic reviews and papers describing the impact on health of specific types of fibre and Health aspects for target groups, with broad overviews on issues related to dietary fibre in clinical nutrition and in food for pets. Dietary fibre: bio-active carbohydrates for food and feed will therefore cover the most up-to-date research available on dietary fibre and will be an indispensable tool for all scientists involved in research and development in this field.

Edited by one of the world's leading authorities in the field, Bread Making: Improving Quality reviews key recent research on the ingredients determining bread characteristics. The text discusses what this information means for improved process control and a better, more consistent product. After an introductory review, Part 1 discusses such concepts as the structure and quality of wheat and flour, and methods for measuring quality. Part 2 covers dough formation and its impact on bread's structure and properties. This includes such concepts as foam formation and bread aeration, key



ingredients, improving taste and nutritional properties, and the prevention of moulds and mycotoxin contamination. Industrialists developing new food and pharmaceutical products face the challenge of innovation in an increasingly competitive market that must consider ingredient cost, product added-value, expectations of a healthy life-style, improved sensory impact, controlled delivery of active compounds and last, but not least, product stability. While much work has been done to explore, understand, and address these issues, a gap has emerged between recent advances in fundamental knowledge and its direct application to product situations with a growing need for scientific input. Modern Biopolymer Science matches science to application by first acknowledging the differing viewpoints between those working with low-solids and those working with high-solids, and then sharing the expertise of those two camps under a unified framework of materials science. \* Real-world utilisation of fundamental science to achieve breakthroughs in product development \* Includes a wide range of related aspects of low and high-solids systems for foods and pharmaceuticals \* Covers more than bio-olymer science in foods by including biopolymer interactions with bioactive compounds, issues of importance in drug delivery and medicinal chemistry

Interest in cereals and other healthy grains has increased considerably in recent years, driving the cereal processing industry to develop new processing technologies that meet consumer demands for sustainable and nutritious cereal products. Innovative Processing Technologies for Healthy Grains is the first dedicated reference to focus on advances in cereal processing and bio-refinery of cereals and pseudocereals, presenting a broad overview of all aspects of both conventional and novel processing techniques and methods. Featuring contributions from leading researchers and academics, this unique volume examines the selection and characteristics of raw ingredients, new and emerging processing technologies, novel cereal-based products, and global trends in cereal and pseudocereal use, processing and consumption. The text offers balanced coverage of advances in both the development and processing of cereal and pseudocereal products, exploring topics including gluten-free products, cereal-based animal feed, health and wellness trends in healthy grain consumption, bioaccessibility and bioavailability of nutritional compounds, gluten-free products, and the environmental impact of processed healthy grains. This timely and comprehensive volume: Focuses on innovative cereal processing and bio-refinery of cereals and pseudocereals Provides informed perspectives on the current global trends in cereal and pseudocereal use, processing and consumption Describes the characteristics of healthy grains and their production, nutritional value, and utilization Explains the origin, production, processing, and functional ingredients of pseudocereals Reviews healthy grain products such as cereal-based beverages, fortified grain-based products, and cereal-based products with bioactive benefits Part of Wiley's IFST Advances in Food Science series Innovative Processing Technologies for Healthy Grains is an essential resource for food scientists, technologists, researchers, and other professionals working in the grain industry, and academics and advanced students of food technology and food science.

Dietary fibre is of interest to both science and industry, and yet despite growing awareness of its benefits to health and nutrition, intakes remain below the recommended level. Industry has responded by developing new applications, products and processes to help consumers increase their fibre intake in a convenient way. While regulations on health claims are being developed for example in the EU, some countries have allowed the use of health claims to help promote consumer awareness of the benefits of a higher fibre intake, and to inform consumers of good sources of fibre. At the same time science is developing the concept of dietary fibre. The mechanisms and actual components behind the physiological effects are of particular interest, and so are the analytical tools to measure these. The fate of dietary fibre in the gut, where certain fibre components are fermented and converted by microbes gains a great deal of attention. The role of molecular weight and viscosity of dietary fibre components in determining the health benefits are also discussed. This book is essential reading for all researchers and those who concern themselves with bioprocesses and food technology. 'Dietary fibre components and functions' covers the most up-to-date research available on dietary fibre and will be an indispensable tool for all scientists involved in research and development in this field.

The first edition of Functional foods: Concept to product quickly established itself as an authoritative and wide-ranging guide to the functional foods area. There has been a remarkable amount of research into health-promoting foods in recent years and the market for these types of products has also developed. Thoroughly revised and updated, this major new edition contains over ten additional chapters on significant topics including omega-3 polyunsaturated fatty acids, consumers and health claims and functional foods for obesity prevention. Part one provides an overview of key general issues including definitions of functional foods and legislation in the EU, the US and Asia. Part two focuses on functional foods and health investigating conditions such as cardiovascular disease, diabetes, cancer, obesity and infectious diseases as well as and the impact of functional foods on cognition and bone health. Part three looks at the development of functional food products. Topics covered include maximising the functional benefits of plant foods, dietary fibre, functional dairy and soy products, probiotics and omega-3 polyunsaturated fatty acids (PUFAs). With its distinguished editors and international team of expert contributors, Functional foods: Concept to product is a valuable reference tool for health professionals and scientists in the functional foods industry and to students and researchers interested in functional foods. Provides an overview of key general issues including definitions of functional foods and legislation in the EU, the US and Asia Focuses on functional foods and health investigating conditions such as cardiovascular disease, diabetes, cancer, obesity and infectious diseases Examines the development of functional food products featuring maximising the functional benefits of plant foods, dietary fibre, functional dairy and soy products

This newest addition to the Nutrition and Health series is a comprehensive, yet portable, guide to the use of dietary fiber for the management of health and disease. Dietary Fiber in Health and Disease covers all sources of dietary fiber with a focus on preventing and managing chronic diseases. Each chapter contains a careful analysis with many figures and tables of the most recent human dietary fiber studies and includes specific recommendations on the fiber types and

intake levels required to prevent and manage chronic disease and improve health. Additionally, physicians, dietitians, nurses, nutritionists, pharmacists, food industry scientists, academic researchers and educators, naturopathic doctors, and other health professionals will be drawn to the practical, ready-to-use information and coverage of subjects such as fiber in gastrointestinal health and disease, fiber in cancer prevention, fiber in Type 2 Diabetes, and fiber in body weight and composition. *Dietary Fiber in Health and Disease* will be of interest to physicians and other healthcare professionals in many different specialties, including general practitioners, oncologists, endocrinologists, and other practitioners looking to implement dietary advice as part of the patient treatment plan.

The aim of this book is to update knowledge and summarise recent research on pseudocereals, particularly regarding their botanical characteristics, composition, structure, use, production, technology and impact on human health. In the last few years, pseudocereals – in particular amaranth and quinoa – have acquired increased importance (which is also due to the increased demand for gluten-free food). Worldwide, the demand for amaranth and quinoa has risen immensely, as seen in rising prices for amaranth and quinoa. At the same time, research in all relevant fields has intensified. At present there is some confusion surrounding the term ‘pseudocereals’ and what it does and does not include, for example kiwicha which is *Amaranthus caudatus* or kaniwa which is *Chenopodium pallidicaule*. Sometimes other grains are included in the pseudocereal group like chia (*Salvia hispanica* L), an oleaginous seed. One of the aims of the book is to clear up some of the confusion over what is included in the group of pseudocereals. The book will include: the origin, production and utilization of pseudocereals; structure and composition of kernels; carbohydrates/fibre/bioactive compounds of kernels; proteins and amino acids of kernels; lipids of kernels; pseudocereal dry and wet milling: processes, products and applications; food uses of whole pseudocereals; pseudocereals in gluten free products; and the nutritional and health implications of pseudocereal intake.

Adequate fiber in the diet is essential for maintaining gastrointestinal and cardiovascular health and for weight management and glycemic control. But a majority of people in developed countries fall short of their recommended daily intake. Designed for product developers, nutritionists, dietitians, and regulatory agencies, *Dietary Fiber and Health* discusses critical findings from the Ninth Vahouny Fiber Symposium about the significance of dietary fiber and ways to get more fiber in our diet. Steeped in research and the latest data from international experts, the book explores a range of topics related to this essential nutrient, including: The relationship between fiber and weight management, gastrointestinal health, heart disease, cancer, and glucose metabolism Prebiotic effects of fiber and the characteristics and modulation of healthy flora The health benefits of novel fibers such as inulin The characteristics of maltodextrin, Fibersol-2, and low viscous fiber on satiety, glycemia, microbiota, and other properties The impact of the new definition of dietary fiber published by the Codex Alimentarius Commission The properties and immunological impact of Galactooligosaccharide and research on its effect on colitis Resistant starch and associated compounds Oat, rye, barley, and other fibers Regulatory issues, including GRAS notice procedure It is imperative that food product developers formulate foods with fiber and that health professionals recommend foods high in fiber to improve public health. The contributors to this volume provide a survey of not only the impact of fiber on human health, but also the myriad opportunities for fiber ingredients to be incorporated into foods for the benefit of consumers.

This book provides a comprehensive and accessible source of information on all types of sweeteners and functional ingredients, enabling manufacturers to produce low sugar versions of all types of foods that not only taste and perform as well as sugar-based products, but also offer consumer benefits such as calorie reduction, dental health benefits, digestive health benefits and improvements in long term disease risk through strategies such as dietary glycaemic control. Now in a revised and updated new edition which contains seven new chapters, part I of this volume addresses relevant digestive and dental health issues as well as nutritional considerations. Part II covers non-nutritive, high-potency sweeteners and, in addition to established sweeteners, includes information to meet the growing interest in naturally occurring sweeteners. Part III deals with the bulk sweeteners which have now been used in foods for over 20 years and are well established both in food products and in the minds of consumers. In addition to the "traditional" polyol bulk sweeteners, newer products such as isomaltulose are discussed. These are seen to offer many of the advantages of polyols (for example regarding dental health and low glycaemic response) without the laxative side effects if consumed in large quantity. Part IV provides information on the sweeteners which do not fit into the above groups but which nevertheless may offer interesting sweetening opportunities to the product developer. Finally, Part V examines bulking agents and multifunctional ingredients which can be beneficially used in combination with all types of sweeteners and sugars.

This volume is a comprehensive introduction to the techniques and information required for the testing and analysis of cereals throughout the entire grain chain, from breeding through harvesting and storage to processing and the manufacture of cereal-based food products. The book describes testing protocols in detail, offering many practical pointers for testing in fields, food plants, and in stores. It shows how data from the tests are acquired, interpreted, and linked to a range of global testing standards. The book covers wheat, barley, sorghum and other non-wheat cereals and a wide range of baked products, including breads, extruded products, and animal feeds. A final section introduces the entire spectrum of analytical devices for grain analysis from all major international equipment manufacturers. This is a practical and comprehensive reference designed for specialists responsible for ensuring the safety of, and adding value to, cereals, including cereal scientists, technologists, and producers.

Consumers are increasingly seeking foods that are rich in dietary fibre and wholegrains, but are often unwilling to compromise on sensory quality. Fibre-rich and wholegrain food reviews key research and best industry practice in the development of fibre-enriched and wholegrain products that efficiently meet customer requirements. Part one introduces the key issues surrounding the analysis, definition, regulation and health claims associated with dietary fibre and

wholegrain foods. The links between wholegrain foods and health, the range of fibre dietary ingredients and a comparison of their technical functionality are discussed, as are consumption and consumer challenges of wholegrain foods. Part two goes on to explore dietary fibre sources, including wheat and non-wheat cereal dietary fibre ingredients, vegetable, fruit and potato fibres. Improving the quality of fibre-rich and wholegrain foods, including such cereal products as wholegrain bread, muffins, pasta and noodles, is the focus of part three. Fibre in extruded products is also investigated before part four reviews quality improvement of fibre-enriched dairy products, meat products, seafood, beverages and snack foods. Companion animal nutrition as affected by dietary fibre inclusion is discussed, before the book concludes with a consideration of soluble and insoluble fibre in infant nutrition. With its distinguished editors and international team of expert contributors, Fibre-rich and wholegrain foods provides a comprehensive guide to the field for researchers working in both the food industry and academia, as well as all those involved in the development, production and use of fibre-enriched and wholegrain foods. Reviews key research and best industry practice in the development of fibre-enriched and wholegrain products Considers analysis, definition, regulation and health claims associated with dietary fibre and wholegrain foods Explores sources of dietary fibre including: wheat and non-wheat cereal, vegetable, fruit and potato fibres

[Copyright: 12b6c8430d2623921b5f1ff68d8c58fd](#)