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Modern Techniques for the Classic American Dessert: A Baking Book John Wiley & Sons
The Encyclopedia of Food Grains is an in-depth and authoritative reference covering all areas of grain science. Coverage includes everything from the genetics of grains to the commercial, economic and social aspects of this important food source. Also covered are the biology and chemistry of grains, the applied aspects of grain production and the processing of grains into various food and beverage products. With the paramount role of cereals as a global food source, this Encyclopedia is sure to become the standard reference work in the field of science. Also available online via ScienceDirect – featuring extensive browsing, searching, and internal cross-referencing between articles in the work, plus dynamic linking to journal articles and abstract databases, making navigation flexible and easy. For more information, pricing options and availability visit www.info.sciencedirect.com. Written from an international perspective the Encyclopedia concentrates on the food uses of grains, but details are also provided about the wider roles of grains Well organized and accessible, it is the ideal resource for students, researchers and professionals seeking an authoritative overview on any particular aspect of grain science This second edition has four print volumes which provides over 200 articles on food grains Includes extensive cross-referencing and "Further Reading" lists at the end of each article for deeper exploration into the topic This edition also includes useful items for students and teachers alike, with Topic Highlights, Learning objectives, Exercises for Revision and exercises to explore the topic further

Encyclopedia of Food Grains John Wiley & Sons
Advances in food science, technology, and engineering are occurring at such a rapid rate that obtaining current, detailed information is challenging at best. While almost everyone engaged in these disciplines has accumulated a vast variety of data over time, an organized, comprehensive resource containing this data would be invaluable to have. The

Ethnic Fermented Foods and Beverages of India: Science History and Culture CRC Press
Most baking books do not focus on the simultaneous heat and mass transfer that occurs in the baking process, thereby ignoring a fundamental facet of process and product development. Addressing the engineering and

science elements often ignored in current baking books, Food Engineering Aspects of Baking Sweet Goods explores important topics in understanding the baking process and reviews recent technological advances. With contributions from various international authorities on food science, engineering, and technology, the book covers the rheology of cake batter and cookie dough, cake emulsions, the physical and thermal properties of sweet goods, and heat and mass transfer during baking. It also presents the science of soft wheat products, including the quality of soft wheat, the functions of ingredients in the baking of sweet goods, and the chemical reactions during processing. In addition, the contributors discuss cake and cookie technologies as well as recent advances in baking soft wheat products. The final chapter examines the nutritional issues of consuming fats and sugars and presents general strategies for substituting fats and sugars in baked products. Taking an engineering approach to the field, this volume delineates the complex food process of baking, from ingredients to production to finished product.

Bakery Products Science and Technology Springer Science & Business Media

Not another book on breadmaking! A forgiveable reaction given the length of time over which bread has been made and the number of texts which have been written about the subject. To study breadmaking is to realize that, like many other food processes, it is constantly changing as processing methodologies become increasingly more sophisticated, yet at the same time we realize that we are dealing with a food stuff, the forms of which are very traditional. We can, for example, look at ancient illustrations of breads in manuscripts and paintings and recognize prod ucts which we still make today. This contrast of ancient and modern embodied in a single processed foodstuff is part of what makes bread such a unique subject for study. We cannot, for example, say the same for a can of baked beans! Another aspect of the uniqueness of breadmaking lies in the requirement for a thorough understanding of the link between raw materials and processing meth ods in order to make an edible product. This is mainly true because of the special properties of wheat proteins, aspects of which are explored in most of the chapters of this book. Wheat is a product of the natural environment, and while breeding and farming practices can modify aspects of wheat quality, we millers and bakers still have to respond to the strong influences of the environment.

Botany, Production and Uses John Wiley & Sons

An up-to-date, comprehensive guide to understanding and applying food science to the bakeshop. The essence of baking is chemistry, and anyone who wants to be a master pastry chef must understand the principles and science that make baking work. This book explains the whys and hows of every chemical reaction, essential ingredient, and technique, revealing the complex mysteries of bread loaves, pastries, and everything in between. Among other additions, How Baking Works, Third

Edition includes an all-new chapter on baking for health and wellness, with detailed information on using whole grains, allergy-free baking, and reducing salt, sugar, and fat in a variety of baked goods. This detailed and informative guide features: An introduction to the major ingredient groups, including sweeteners, fats, milk, and leavening agents, and how each affects finished baked goods Practical exercises and experiments that vividly illustrate how different ingredients function Photographs and illustrations that show the science of baking at work End-of-chapter discussion and review questions that reinforce key concepts and test learning For both practicing and future bakers and pastry chefs, How Baking Works, Third Edition offers an unrivaled hands-on learning experience.

Baking Science & Technology: Fundamentals & ingredients CRC Press

Soy is prized by the food industry for both its versatility and the major role it plays in food functionality. However, only a limited amount of information is available explaining soy's full potential in food applicability. Soy Applications in Food provides insight into the different types of soy ingredients available for consumption and details t

How Baking Works CRC Press

The Handbook of Food Products Manufacturing is a definitive master reference, providing an overview of food manufacturing in general, and then covering the processing and manufacturing of more than 100 of the most common food products. With editors and contributors from 24 countries in North America, Europe, and Asia, this guide provides international expertise and a truly global perspective on food manufacturing.

Kirk-Othmer Food and Feed Technology, 2 Volume Set CRC Press

The author's aim in writing this book is to integrate currently available knowledge concerning the basic scientific and technological aspects of breadmaking processes with the diverse breadmaking methods used to manufacture bread in Europe and on the North American continent today. To date, the main technological advances have been in process mechanization, starting with oven development, then dough processing or make-up equipment, followed by continuous and batch mixing techniques from the 1950s to the present time. On the engineering side, universal emphasis is now being placed on the application of high technology, in the form of microprocessors, computer-controlled equipment and robotization, the long-term objective being computer integrated manufacture (CIM) with full automation within the large chain bakery groups in the capitalist countries and

the state-run collectives of Eastern Europe. The application of these key technologies with biotechnology, as yet only applied to a limited degree in food manufacture, coupled with advances in biochemical and rheological understanding of dough as a biomass for breadmaking, should provide us with more expertise and ability to control the processes with greater efficiency. The application of fermentable substrates and industrial enzymes under strict kinetic control should contribute to improving the flavour characteristics of bread. Current trends towards improving the nutritional contribution of bread to the daily diet are improving the competitive edge of bread as a basic food in the market-place.

Computational Fluid Dynamics in Food Processing Springer Science & Business Media

One of the most rapidly growing segments in the food industry is gluten-free baked products. These goods not only cater to those with medical needs, from celiac disease to gluten intolerance; they also cater to the millions of individuals who seek a gluten-free diet. Gluten-Free Baked Products is a practical guide on the development, manufacturing, and marketing of gluten-free baked products. The book gives readers an entry-level understanding of gluten-free product requirements, their production, and the breadth of ingredients available to baked product developers. This highly relevant book was written as an initial reference for food scientists, including those who need an introduction to gluten-free product development. It was also written as a general reference to those who are indirectly involved with gluten-free products, such as marketers, consultants, and quality assurance and regulatory professionals. Nutrition enthusiasts and consumers following a gluten-free diet for medical reasons will also find this book useful. Gluten-Free Baked Products can serve as a supplemental resource for students and faculty of general food science courses, as well as those covering product development, food allergies, and autoimmune conditions. Whether you are a student, professional in the food industry, or nutrition enthusiast, this book offers an easy way to understand the complex world of gluten-free baking Coverage includes: A detailed discussion on celiac disease, wheat allergies, and gluten intolerance, including symptoms, diagnosis, and nutritional deficiencies A marketing perspective on the consumer segments of gluten-free products, as well as the market size and growth trends Formulations and processing of gluten-free breads, snacks, and

pasta products, as well as cookies, cakes, and other batter-based products Manufacturing and supply chain best practices, certification procedures, regulations, and labeling requirements A comprehensive discussion of the ingredients used when formulating gluten-free products, including flours, starches, maltodextrins, corn/maize, millet, oats, rice, sorghum, teff, pseudocereals, inulin, tubers, legumes, noncereal proteins, enzymes, and gums/hydrocolloids

Handbook of Food Science, Technology, and Engineering - 4 Volume Set John Wiley & Sons

Yeasts are the active agents responsible for three of our most important foods - bread, wine, and beer - and for the almost universally used mind/ personality-altering drug, ethanol. Anthropologists have suggested that it was the production of ethanol that motivated primitive people to settle down and become farmers. The Earth is thought to be about 4. 5 billion years old. Fossil microorganisms have been found in Earth rock 3. 3 to 3. 5 billion years old. Microbes have been on Earth for that length of time carrying out their principal task of recycling organic matter as they still do today. Yeasts have most likely been on Earth for at least 2 billion years before humans arrived, and they playa key role in the conversion of sugars to alcohol and carbon dioxide. Early humans had no concept of either microorganisms or fermentation, yet the earliest historical records indicate that by 6000 B. C. they knew how to make bread, beer, and wine. Earliest humans were foragers who col lected and ate leaves, tubers, fruits, berries, nuts, and cereal seeds most of the day much as apes do today in the wild. Crushed fruits readily undergo natural fermentation by indigenous yeasts, and moist seeds germinate and develop amylases that produce fermentable sugars. Honey, the first con centrated sweet known to humans, also spontaneously ferments to alcohol if it is by chance diluted with rainwater. Thus, yeasts and other microbes have had a long history of 2 to 3.

Baking Gold Sosland Publishing Company

Confectionery and chocolate manufacture has been dominated by large-scale industrial processing for several decades. It is often the case though, that a trial and error approach is applied to the development of new products and processes, rather than verified scientific principles. Confectionery and Chocolate Engineering: Principles and Applications, Second edition, adds to information presented in the first edition on essential topics such as food safety, quality assurance, sweets for special nutritional purposes, artizan chocolate, and confectioneries. In addition, information is provided on the fading memory of

viscoelastic fluids, which are briefly discussed in terms of fractional calculus, and gelation as a second order phase transition. Chemical operations such as inversion, caramelization, and the Maillard reaction, as well as the complex operations including conching, drying, frying, baking, and roasting used in confectionery manufacture are also described. This book provides food engineers, scientists, technologists and students in research, industry, and food and chemical engineering-related courses with a scientific, theoretical description and analysis of confectionery manufacturing, opening up new possibilities for process and product improvement, relating to increased efficiency of operations, the use of new materials, and new applications for traditional raw materials.

Baking Science & Technology: Fourmulation & production Clarkson Potter

Create 75 beautiful and unique pies using traditional techniques and modern tools from a couple who has baked their way to the top. IACP AWARD FINALIST • NAMED ONE OF THE BEST COOKBOOKS OF THE YEAR BY NPR AND FOOD52 Get ready for a new, fresh take on baking the ultimate feel-good dessert: pie! In The New Pie, Chris Taylor and Paul Arguin—winners of more than 500 awards for baking (including the Best of Show Award at the National Pie Championships)—re-examine the wholesome world of pie. Through traditional time-honored techniques, modern cooking methods (like sous vide), innovative flavors (birthday cake; Tahitian pineapple; and mocha "mystery"), and a love for kitchen gadgets (like immersion circulators and silicone texture mats), these legendary competition circuit pie experts reinvent the traditional pastime of pie-making. With step-by-step instructions and playful photography, you'll learn to make groundbreaking creations, including a magnificent Blueberry-Maple Pie with wood-grain lattice, the King Fluffernutter Pie, and a striped chocolate Pie of the Tiger. Whether you are a pie voyeur, new baker, or baking enthusiast you will find inspiration at every turn and pies to satisfy every craving.

Technology, Evaluation, and Inhibition of Staling CRC Press

This textbook presents the scientific basis for understanding the nature of food and the principles of experimental methodology as applied to food. It reviews recent research findings and specific technological advances related to food. Taking an experimental approach, exercises are included at the end of each chapter to provide the needed experience in planning experiments. Emphasizing the relationships between chemical and physical properties, basic formulas and procedures are included in the

appendix. Demonstrates the relationships among composition, structure, physical properties, and functional performance in foods Suggested exercises at the end of each chapter provide students with needed experience in designing experiments Extensive bibliographies of food science literature Appendix of basic formulas and procedures

Advances in Heat Transfer Unit Operations Academic Press

This book on frozen food, as its title suggests, is written for the food technologist and food scientist in the frozen food industry, which includes both food and equipmentmanufacturers. The information will also be useful for otherdisciplines within the food industry as awhole, and for studentsoffood technology. The book, the aimofwhich is to provide an up-to-date reviewofthe technologyofthe frozen food industry, has been divided into two parts, dealing with generic industry issues and specific product areas, respectively. The first section opens with a chapter on the physics and chemistryoffreezing, including a review ofglassy states. The practical realisationoffreezing is covered in the next chapter, which also covers frozen distribution and storage. Chapter 3 deals with packaging and packaging machinery, a sector where there has recently of product safety is been considerable technological progress. The key area discussed in detail in chapter 4, and includes microbiology and hygienic factory design, as well as consumer reheating, particularly microwave reheating. Health and dietary considerations have become much more important to consumers, and chapter 5 reviews the current nutritional status of frozen foods and their role in a modem diet. The driving force for scientific and technological change in frozen foods is the massive market for its products and the consequent competitive pressures, and the first part ofthe book concludes with a chapter on development ofnew frozen products, and how to apply the technical knowledge, both generic and product specific, to innovate in a consumer-driven market.

The New Pie Springer

This practical, comprehensive guide illuminates all aspects of breadmaking to give bakers, scientists, technologists and students a thorough understanding of the many new developments shaping the industry. This book bridges the gap between scientific and practical accounts by providing technical coverage of the complex processes that link together to make bread and fermented products. Chapters cover the nature of bread products, the role of the ingredients in determining their quality, processing methods and their control, and equipment functions. Emphasis is on exploring the

contributions of individual components and processing stages to final bread quality, reviewing the current state of technical knowledge on breadmaking. This third edition reviews the new knowledge which has become available in the last 10 years and considers how the global trends of increased availability and wider range of fermented products around the world impact on current and future technological challenges for bakers. Stanley P. Cauvain is the Director and Vice President of Research and Development activities at BakeTran and Professor at the International Institute of Agri-Food Security, Curtin University, Perth, Western Australia.

Breadmaking CRC Press

This work offers comprehensive coverage of the staling process that occurs upon ageing in baked goods. It covers in detail the technologies for maintaining freshness, including the use of crumb softeners, enzymes, packaging and preservatives, and models the theory of staling on the basis of molecular configuration. The work presents current methods for determining the degree of staling by instrumental and organoleptic testing, addresses regulatory and labelling requirements for antistaling ingredients, and more.

Confectionery and Chocolate Engineering Springer Science & Business Media

Advances in Heat Transfer Unit Operations: Baking and Freezing in Bread Making explains the latest understanding of heat transfer phenomena involved in the baking and freezing of bread and describes the most recent advanced techniques used to produce higher quality bread with a longer shelf life. Heat transfer phenomena occur during key bread-making stages (cold storage, resting, and fermentation) in which temperature and amount of heat transfer must be carefully controlled. This book combines the engineering and technological aspects of heat transfer operations and discusses how these operations interact with the bread making process; the book also discusses how baking and freezing influence the product quality. Divided into fourteen chapters, the book covers the basics of heat and mass transfer, fluid dynamics, and surface phenomena in bread-making industrial operations, mathematical modelling in porous systems, the estimation of thermo-physical properties related to bread making, design of equipment, and industrial applications.

Frozen Food Technology Springer Nature

Bread Making: Improving Quality quickly established itself as an essential purchase for baking professionals and researchers in this area. Fully revised and updated and with new chapters on Flour Lipids, and the dietary and nutritional quality of bread, this new edition provides readers with the information they need on the latest developments in bread making science and practice The book opens with two introductory chapters providing an overview of the breadmaking process. Part one focuses on the impacts of wheat and flour quality on bread, covering topics such as wheat

chemistry, wheat starch structure, grain quality assessment, milling and wheat breeding. Part two covers dough development and bread ingredients, with chapters on dough aeration and rheology, the use of redox agents and enzymes in breadmaking and water control, among other topics. In part three, the focus shifts to bread sensory quality, shelf life and safety. Topics covered include bread aroma, staling and contamination. Finally, part four looks at particular bread products such as high fiber breads, those made from partially baked and frozen dough and those made from non-wheat flours With its distinguished editor and international team of contributors, Bread Making: Improving Quality, Third Edition, continues to serve as the standard reference for researchers and professionals in the bread industry and all those involved in academic research on breadmaking science and practice. Discusses dough development and bread ingredients, with new chapters on flour lipids and improving the nutrition and dietary quality of breads Comprehensively updated and revised coverage, outlines the latest developments in breadmaking science and practice Covers topics such as wheat chemistry, wheat starch structure, grain quality assessment, milling, and wheat breeding

Sweet and Savoury Recipes from Margot Bakery John Wiley & Sons Not another book on breadmaking! A forgiveable reaction given the length of time over which bread has been made and the number of texts which have been written about the subject. To study breadmaking is to realize that, like many other food processes, it is constantly changing as processing methodologies become increasingly more sophisticated, yet at the same time we realize that we are dealing with a food stuff, the forms of which are very traditional. We can, for example, look at ancient illustrations of breads in manuscripts and paintings and recognize prod ucts which we still make today. This contrast of ancient and modern embodied in a single processed foodstuff is part of what makes bread such a unique subject for study. We cannot, for example, say the same for a can of baked beans! Another aspect of the uniqueness of breadmaking lies in the requirement for a thorough understanding of the link between raw materials and processing meth ods in order to make an edible product. This is mainly true because of the special properties of wheat proteins, aspects of which are explored in most of the chapters of this book. Wheat is a product of the natural environment, and while breeding and farming practices can modify aspects of wheat quality, we millers and bakers still have to respond to the strong influences of the environment.

The Yeasts John Wiley and Sons This book provides detailed information on the various ethnic fermented foods and beverages of

India. India is home to a diverse food culture comprising fermented and non-fermented ethnic foods and alcoholic beverages. More than 350 different types of familiar, less-familiar and rare ethnic fermented foods and alcoholic beverages are traditionally prepared by the country’s diverse ethnic groups, and include alcoholic, milk, vegetable, bamboo, legume, meat, fish, and cereal based beverages. Most of the Indian ethnic fermented foods are naturally fermented, whereas the majority of the alcoholic beverages have been prepared using dry starter culture and the ‘back-sloping’ method for the past 6,000 years. A broad range of culturable and unculturable microbiomes and mycobiomes are associated with the fermentation and production of ethnic foods and alcoholic drinks in India. The book begins with detailed chapters on various aspects including food habits, dietary culture, and the history, microbiology and health benefits of fermented Indian food and beverages. Subsequent chapters describe unique and region-specific ethnic fermented foods and beverages from all 28 states and 9 union territories. In turn the classification of various ethnic fermented foods and beverages, their traditional methods of preparation, culinary practices and mode of consumption, socio-economy, ethnic values, microbiology, food safety, nutritional value, and process optimization in some foods are discussed in details with original pictures. In closing, the book addresses the medicinal properties of the fermented food products and their health benefits, together with corresponding safety regulations.