

manufacturing yogurt and fermented milks

Manufacturing Yogurt and Fermented Milks: A Deep Dive into Tradition and Technology

manufacturing yogurt and fermented milks is a fascinating blend of age-old tradition and modern food science. These dairy products have been enjoyed worldwide for centuries, prized not only for their unique flavors and textures but also for their health benefits. Whether it's the creamy tang of yogurt or the refreshing zest of kefir and other fermented milks, the process behind making these foods involves a careful balance of microbiology, dairy technology, and quality control.

If you've ever wondered what goes into turning simple milk into these probiotic-rich treats, this article will guide you through the essential steps, ingredients, and innovations in the manufacturing process. From selecting the right milk and starter cultures to fermentation techniques and packaging, understanding how yogurt and fermented milks are made reveals a lot about why these products remain staples in diets around the globe.

The Basics of Manufacturing Yogurt and Fermented Milks

At its core, the manufacturing process involves fermenting milk using specific bacteria that convert lactose—the sugar naturally found in milk—into lactic acid. This acidification process thickens the milk and develops the characteristic tangy flavor associated with yogurt and other fermented milk products.

Choosing the Right Milk

Milk quality is foundational. The most common milk used is cow's milk, but goat, sheep, and buffalo milk are also popular, especially in traditional or region-specific products. The fat content of the milk influences the final texture and mouthfeel. Skimmed milk produces a lighter yogurt, while whole milk results in a creamier product.

Milk is usually pasteurized before fermentation to eliminate pathogenic microorganisms and ensure safety. Pasteurization also helps inactivate enzymes that may spoil the product or interfere with the fermentation process.

Starter Cultures: The Heart of Fermentation

The magic of fermenting milk lies in the starter cultures—specific strains of bacteria that drive the transformation. The most common bacteria used in yogurt manufacturing are *Lactobacillus delbrueckii* subsp. *bulgaricus* and *Streptococcus thermophilus*. These two work synergistically to ferment lactose, producing lactic acid and other compounds that affect flavor and texture.

For other fermented milk products like kefir or buttermilk, different microbial communities are

involved, often including yeasts and additional bacteria like *Lactococcus* or *Leuconostoc* species. These variations contribute to the diverse range of flavors, aromas, and textures found in fermented milks worldwide.

Step-by-Step Manufacturing Process

The production of yogurt and fermented milks involves several critical stages, each impacting the quality and characteristics of the final product.

1. Milk Standardization and Preparation

Before fermentation, milk is standardized to achieve a consistent fat and solids-not-fat content. This is crucial for ensuring uniform texture and nutritional value. Sometimes milk powder is added to increase total solids, which enhances the thickness and creaminess.

2. Heat Treatment

Pasteurization is applied to kill harmful microorganisms and prepare the milk for fermentation. Typically, milk is heated to around 85°C (185°F) for 30 minutes or to 95°C (203°F) for a shorter time (5 minutes), depending on the desired texture. This heat treatment also denatures whey proteins, helping improve the yogurt's viscosity.

3. Cooling

After pasteurization, the milk is cooled rapidly to the optimal fermentation temperature, usually between 40°C and 45°C (104°F to 113°F). Precise temperature control is essential because too hot or too cold can inhibit bacterial activity and affect fermentation time.

4. Inoculation with Starter Cultures

Once cooled, the milk is inoculated with the starter cultures. The amount of culture added must be carefully controlled to ensure consistent fermentation. The starter bacteria begin metabolizing lactose, producing lactic acid that lowers the pH.

5. Fermentation

The milk is incubated at the fermentation temperature until the desired acidity and texture are achieved. This can take anywhere from 4 to 8 hours. During this period, the lactic acid thickens the milk by causing casein proteins to coagulate, forming the gel-like structure characteristic of yogurt.

6. Cooling and Packaging

When fermentation reaches the target acidity (usually pH 4.5 to 4.7), the product is rapidly cooled to stop bacterial activity and preserve freshness. Packaging is typically done under hygienic conditions to prevent contamination. Yogurt and fermented milks can be sold plain or with added flavors, fruits, and sweeteners.

Variations in Fermented Milk Products

Not all fermented milks are created equal. Their differences arise from the types of milk used, starter cultures, fermentation conditions, and post-fermentation processing.

Yogurt Types

- **Set Yogurt:** Fermented in the packaging container; it has a firm gel.
- **Stirred Yogurt:** Fermented in large tanks and then stirred before packaging, resulting in a creamy, spoonable texture.
- **Greek Yogurt:** Strained to remove whey, yielding a thicker, protein-rich product.
- **Drinkable Yogurt:** Thinned with milk or water, designed for easy consumption on the go.

Other Fermented Milks

- **Kefir:** A fermented milk drink with a slightly effervescent quality due to yeast fermentation alongside bacteria.
- **Buttermilk:** Traditionally the liquid left after churning butter, now often made by fermenting milk with *Lactococcus* and *Leuconostoc* cultures.
- **Lassi:** A traditional Indian yogurt-based drink, sometimes flavored with spices or fruit.

Modern Innovations in Manufacturing Yogurt and Fermented Milks

While traditional methods remain popular, modern dairy technology has introduced several advancements to improve product quality, shelf life, and nutritional value.

Use of Probiotic Cultures

Today, many manufacturers incorporate probiotic strains such as *Lactobacillus acidophilus*, *Bifidobacterium bifidum*, and others to enhance the health benefits of yogurt and fermented milks. These probiotics promote gut health and immunity, making fermented dairy products a functional

food beyond basic nutrition.

Automation and Quality Control

Automated fermentation tanks with precise temperature and pH monitoring ensure consistent results. Advanced filtration and homogenization techniques improve texture and mouthfeel. Microbiological testing guarantees safety and standardizes the probiotic content.

Flavor and Texture Enhancements

Natural thickeners like pectin or gelatin are sometimes added to improve viscosity without altering the fermentation process. Additionally, clean-label sweeteners and natural fruit purees enhance flavor profiles while catering to health-conscious consumers.

Tips for Small-Scale or Artisanal Production

For those interested in producing yogurt or fermented milks on a smaller scale, certain best practices can help ensure quality:

- **Start with fresh, high-quality milk** to avoid off-flavors.
- **Maintain strict hygiene** to prevent contamination during fermentation and packaging.
- **Use reliable starter cultures** from reputable suppliers to ensure consistent fermentation.
- **Control fermentation temperature accurately** to achieve the desired texture and acidity.
- **Experiment with flavors carefully**, introducing natural ingredients that complement the tangy base.

Embracing both the science and the art of yogurt and fermented milk manufacturing can lead to delicious, healthful products that satisfy consumers' growing interest in wholesome, probiotic-rich foods.

Exploring the manufacturing processes behind yogurt and fermented milks unveils a rich tapestry of tradition, science, and innovation. Whether enjoyed plain or enhanced with flavors, these products continue to evolve, marrying ancient wisdom with cutting-edge research to nourish and delight people worldwide.

Frequently Asked Questions

What are the primary steps involved in manufacturing yogurt?

The primary steps in manufacturing yogurt include milk selection and standardization, pasteurization, homogenization, cooling, inoculation with starter cultures, fermentation, cooling to stop fermentation, and packaging.

Which microorganisms are commonly used as starter cultures in yogurt production?

The most common starter cultures used in yogurt production are *Lactobacillus delbrueckii* subsp. *bulgaricus* and *Streptococcus thermophilus*.

How does fermentation affect the nutritional properties of yogurt?

Fermentation enhances the nutritional properties of yogurt by increasing digestibility, producing beneficial probiotics, synthesizing certain vitamins, and reducing lactose content, making it easier to digest for lactose-intolerant individuals.

What are the differences between yogurt and other fermented milks like kefir or buttermilk?

Yogurt is typically fermented with specific bacterial cultures (*Lactobacillus bulgaricus* and *Streptococcus thermophilus*), resulting in a creamy texture and tangy flavor. Kefir uses a combination of bacteria and yeast, giving it a slightly effervescent quality, while buttermilk is traditionally the liquid left after churning butter and fermented by lactic acid bacteria.

Why is pasteurization important in the production of fermented milks?

Pasteurization is important to eliminate harmful pathogens and spoilage microorganisms in raw milk, ensuring safety and extending shelf life while providing a controlled environment for beneficial starter cultures to ferment the milk.

How can the texture of yogurt be modified during manufacturing?

Texture can be modified by adjusting milk fat content, using stabilizers or thickeners like pectin or gelatin, controlling fermentation time and temperature, homogenization, and selecting specific starter cultures.

What role does temperature play during the fermentation of

yogurt?

Temperature is critical during fermentation; typically, yogurt is fermented at around 40-45°C (104-113°F), which optimizes the growth of starter cultures and acid production, resulting in proper texture and flavor.

How do probiotic fermented milks differ from regular yogurt?

Probiotic fermented milks contain additional beneficial bacteria strains beyond the traditional yogurt cultures, such as *Lactobacillus acidophilus* or *Bifidobacterium* species, which provide enhanced health benefits like improved gut health.

What are emerging trends in the manufacturing of yogurt and fermented milks?

Emerging trends include the development of plant-based fermented milks, use of novel probiotic strains for targeted health benefits, clean-label ingredients, reduced sugar formulations, and incorporation of functional ingredients like prebiotics and vitamins.

Additional Resources

Manufacturing Yogurt and Fermented Milks: A Detailed Exploration of Processes and Industry Trends

manufacturing yogurt and fermented milks represents a critical segment within the dairy industry, combining traditional food preparation techniques with modern technological advancements. These products, celebrated for their probiotic qualities and nutritional benefits, have seen escalating demand worldwide. Understanding the intricate processes involved in producing yogurt and fermented milks, alongside the challenges and innovations shaping the sector, is essential for industry professionals, food scientists, and market analysts alike.

Understanding the Basics of Yogurt and Fermented Milk Production

Yogurt and fermented milks are dairy products derived from the controlled fermentation of milk by specific bacteria cultures. The process hinges on the metabolic activity of lactic acid bacteria, primarily *Lactobacillus bulgaricus* and *Streptococcus thermophilus*, which ferment lactose, the milk sugar, into lactic acid. This acidification leads to the characteristic tangy flavor, thickened texture, and extended shelf life of these products.

The manufacturing process broadly involves milk selection, heat treatment, inoculation with starter cultures, fermentation, cooling, and packaging. Each stage demands precise control to ensure product safety, consistency, and quality. Fermented milks, a category that includes products like kefir, buttermilk, and acidophilus milk, differ slightly in bacterial composition and processing conditions but share the fundamental principle of microbial fermentation.

Milk Selection and Pre-Treatment

The quality of raw milk significantly influences the final product. Manufacturers typically use pasteurized cow's milk, although goat and sheep milk are also utilized in certain markets. The milk is subjected to standardization to adjust fat and solids non-fat content, ensuring uniformity. Heat treatment, usually pasteurization at 85–95°C for 15–30 seconds, serves dual purposes: eliminating pathogenic microorganisms and denaturing whey proteins to improve yogurt texture.

Inoculation and Fermentation Control

Following heat treatment, the milk is cooled to an optimal fermentation temperature, generally between 40°C and 45°C. Starter cultures are then introduced. The ratio and viability of these bacterial strains are critical; an imbalance can lead to off-flavors, poor texture, or inconsistent acidity. The fermentation phase typically lasts 4 to 8 hours, during which pH drops to approximately 4.5, inducing milk protein coagulation.

Advanced manufacturing operations employ automated systems to monitor pH, temperature, and bacterial activity in real-time, optimizing fermentation kinetics and reducing batch variability. Some producers also incorporate adjunct cultures or probiotics like *Bifidobacterium* species to enhance health benefits and product differentiation.

Technological Innovations and Challenges in Fermented Milk Production

The manufacturing of yogurt and fermented milks has evolved immensely, driven by consumer demand for functional foods, convenience, and diverse flavors. However, this evolution brings forth technical and logistical challenges.

Texture and Consistency Enhancement

A primary concern in yogurt manufacturing is achieving desirable texture and mouthfeel without excessive additives. Traditional methods rely on fermentation-induced gelation, but modern products often incorporate stabilizers such as pectin, gelatin, or starch derivatives. Emerging technologies like ultrafiltration concentrate milk proteins before fermentation, enhancing viscosity naturally and reducing the need for additives. Additionally, high-pressure processing (HPP) offers a non-thermal alternative to pasteurization, preserving sensory qualities while ensuring safety.

Probiotic Viability and Functional Properties

With the surge in probiotic-enriched fermented milks, maintaining bacterial viability through processing and shelf life is paramount. Manufacturers must balance fermentation conditions to maximize health-promoting microbes without compromising product stability. Microencapsulation

techniques and controlled atmosphere packaging are increasingly employed to protect probiotic cultures from oxygen and moisture.

Flavor Development and Consumer Preferences

Flavor complexity in fermented milks arises from organic acids, diacetyl, acetaldehyde, and other fermentation metabolites. Innovations in starter cultures and fermentation parameters allow producers to tailor flavor profiles, catering to regional preferences and emerging markets. Furthermore, the integration of fruit purees, natural sweeteners, and plant-based ingredients reflects evolving consumer tastes toward healthier and more diverse options.

Comparative Overview: Yogurt vs. Other Fermented Milks

While yogurt remains the most globally recognized fermented milk product, understanding its distinctions from other fermented milks is important for manufacturers and marketers.

- **Kefir:** Originating from the Caucasus region, kefir involves a symbiotic culture of bacteria and yeasts, resulting in a slightly alcoholic and effervescent beverage with a thinner consistency than yogurt.
- **Buttermilk:** Traditionally a byproduct of butter churning, modern buttermilk is often fermented using lactic acid bacteria and has a tangier taste with a thinner texture.
- **Acidophilus Milk:** Enriched with *Lactobacillus acidophilus*, this fermented milk variant emphasizes probiotic benefits but typically lacks the gelled texture of yogurt.

Each product requires specific manufacturing protocols, fermentation times, and starter cultures, underscoring the need for specialized expertise in production.

Market Trends Impacting the Manufacturing Landscape

The global fermented dairy market is projected to grow significantly, fueled by rising awareness of gut health and increasing consumer interest in natural and artisanal foods. Plant-based fermented alternatives are also gaining traction, prompting traditional manufacturers to innovate and diversify.

Sustainability concerns have sparked advancements in energy-efficient processing equipment and waste reduction strategies. Moreover, regulatory frameworks surrounding labeling, probiotic claims, and food safety continue to shape manufacturing practices.

Quality Assurance and Regulatory Considerations

Ensuring product safety and compliance is a complex task in the manufacturing of yogurt and fermented milks. Microbial contamination, adulteration, and inconsistent fermentation can undermine consumer trust and lead to recalls.

Producers adhere to Hazard Analysis and Critical Control Points (HACCP) principles, implementing rigorous monitoring of raw materials, processing parameters, and finished products. International standards like Codex Alimentarius provide guidelines on permissible microbial counts and compositional requirements.

Labeling accuracy, particularly regarding probiotic strains and nutritional content, is increasingly scrutinized by food safety authorities and consumer advocacy groups, emphasizing the need for transparent manufacturing documentation.

As the demand for yogurt and fermented milks continues to ascend globally, manufacturers are compelled to balance tradition with innovation. The interplay of microbiology, technology, and consumer preferences defines the industry's trajectory, highlighting the complexity and dynamism inherent in producing these beloved dairy staples. Whether through refining fermentation processes, enhancing probiotic efficacy, or embracing sustainability, the manufacturing of yogurt and fermented milks remains a vibrant field of food science and industrial expertise.

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Manufacturing Yogurt and Fermented Milks is designed for professionals in the dairy and food industry as well as for upper level undergraduate and graduate students majoring in Food Science, Dairy Technology and related fields. Industry professionals, professors, and students engaged in research in dairy/ food science will find the book's contemporary information and experience-based applications invaluable.

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Ramesh C. Chandan, 2008-02-28 Melding the hands-on experience of producing yogurt and fermented milks over four decades with the latest in scientific research in the dairy industry, editor Chandan and his associate editors have assembled experts worldwide to write Manufacturing Yogurt and Fermented Milks. This one-of-a-kind resource gives a complete description of the manufacturing stages of yogurt and fermented milks from the receipt of raw materials to the packaging of the products. Information is conveniently grouped under four categories: · Basic background—History and consumption trends, milk composition characteristics, dairy processing principles, regulatory requirements, laboratory analysis, starter cultures, packaging, and more · Yogurt manufacture—Fruit preparations and flavoring materials, ingredients, processing principles, manufacture of various yogurt types, plant cleaning and sanitizing, quality assurance, and sensory analysis · Manufacture of fermented milks—Procedure, packaging and other details for more than ten different types of products · Health benefits—Functional foods, probiotics, disease prevention, and the health attributes of yogurt and fermented milks All manufacturing processes are supported by sound scientific, technological, and engineering principles. Manufacturing Yogurt and Fermented Milks is designed for professionals in the dairy and food industry as well as for upper level undergraduate and graduate students majoring in Food Science, Dairy Technology and related fields. Industry professionals, professors, and students engaged in research in dairy/ food science will find the book's contemporary information and experience-based applications invaluable.

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Highly profitable and an important range of products within the dairy industry worldwide, the economic importance of fermented milks continues to grow. Technological developments have led to a wider range of products and increased popularity with consumers. In the second book to feature in the SDT series Fermented Milks reviews the properties and manufacturing methods associated with products such as yoghurt, buttermilk, kefir, koumiss milk-based fermented beverages and many other examples from around the globe, offering the reader: A practically-oriented and user-friendly guide Key commercially important information Coverage of all the major stages of manufacture Background to each product Edited by Adnan Tamime, with contributions from international authors and full of core commercially useful information for the dairy industry, this book is an essential title for dairy scientists, dairy technologists and nutritionists worldwide.

manufacturing yogurt and fermented milks: Dairy Ingredients for Food Processing
Ramesh C. Chandan, Arun Kilara, 2011-03-15 The objective of this book is to provide a single reference source for those working with dairy-based ingredients, offering a comprehensive and practical account of the various dairy ingredients commonly used in food processing operations. The Editors have assembled a team of 25 authors from the United States, Australia, New Zealand, and the United Kingdom, representing a full range of international expertise from academic, industrial, and government research backgrounds. After introductory chapters which present the chemical, physical, functional and microbiological characteristics of dairy ingredients, the book addresses the technology associated with the manufacture of the major dairy ingredients, focusing on those parameters that affect their performance and functionality in food systems. The popular applications of dairy ingredients in the manufacture of food products such as dairy foods, bakery products, processed cheeses, processed meats, chocolate as well as confectionery products, functional foods, and infant and adult nutritional products, are covered in some detail in subsequent chapters. Topics are presented in a logical and accessible style in order to enhance the usefulness of the book as a

reference volume. It is hoped that Dairy Ingredients for Food Processing will be a valuable resource for members of academia engaged in teaching and research in food science; regulatory personnel; food equipment manufacturers; and technical specialists engaged in the manufacture and use of dairy ingredients. Special features: Contemporary description of dairy ingredients commonly used in food processing operations Focus on applications of dairy ingredients in various food products Aimed at food professionals in R&D, QA/QC, manufacturing and management World-wide expertise from over 20 noted experts in academe and industry

manufacturing yogurt and fermented milks: Development and Manufacture of Yogurt and Other Functional Dairy Products Fatih Yildiz, 2016-04-19 While the science of yogurt is nearly as old as the origin of mankind, there have been rapid changes in yogurt development since the turn of the 19th century, fueled by continuing developments in biological sciences. Development and Manufacture of Yogurt and Other Functional Dairy Products presents a comprehensive review of all aspects of yogurt and

manufacturing yogurt and fermented milks: Dairy Processing and Quality Assurance Ramesh C. Chandan, Arun Kilara, Nagendra P. Shah, 2015-12-21 Dairy Processing and Quality Assurance, Second Edition describes the processing and manufacturing stages of market milk and major dairy products, from the receipt of raw materials to the packaging of the products, including the quality assurance aspects. The book begins with an overview of the dairy industry, dairy production and consumption trends. Next are discussions related to chemical, physical and functional properties of milk; microbiological considerations involved in milk processing; regulatory compliance; transportation to processing plants; and the ingredients used in manufacture of dairy products. The main section of the book is dedicated to processing and production of fluid milk products; cultured milk including yogurt; butter and spreads; cheese; evaporated and condensed milk; dry milks; whey and whey products; ice cream and frozen desserts; chilled dairy desserts; nutrition and health; sensory evaluation; new product development strategies; packaging systems; non-thermal preservation technologies; safety and quality management systems; and dairy laboratory analytical techniques. This fully revised and updated edition highlights the developments which have taken place in the dairy industry since 2008. The book notably includes: New regulatory developments The latest market trends New processing developments, particularly with regard to yogurt and cheese products Functional aspects of probiotics, prebiotics and synbiotics A new chapter on the sensory evaluation of dairy products Intended for professionals in the dairy industry, Dairy Processing and Quality Assurance, Second Edition, will also appeal to researchers, educators and students of dairy science for its contemporary information and experience-based applications.

manufacturing yogurt and fermented milks: Handbook of Fermented Food and Beverage Technology Two Volume Set Y. H. Hui, E. Özgül Evranuz, 2012-05-21 Fermented food can be produced with inexpensive ingredients and simple techniques and makes a significant contribution to the human diet, especially in rural households and village communities worldwide. Progress in the biological and microbiological sciences involved in the manufacture of these foods has led to commercialization and heightened interest

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manufacturing yogurt and fermented milks: Advances in Probiotic Technology Petra ger, Chalat Santivarangkna, 2015-08-10 The future prospects of probiotics lie in the successful application of individual strains with specific beneficial effects on the host. This development implies that not only the most robust strains are selected but also strains with a promising probiotic function with moderate or high sensitivity to processing stresses. This also means an increase

manufacturing yogurt and fermented milks: The Oxford Handbook of Food

Fermentations Charles W. Bamforth, Robert Edwin Ward, 2014 Fermentation, as a chemical and biological process, is everywhere. Countless societies throughout history have used it to form a vast array of foods and drinks, many of which were integral and essential to those cultures; it could be argued that the production of beer and bread formed the basis of many agriculture-based civilizations. Today, nearly every person on the planet consumes fermented products, from beer and wine, to bread and dairy products, to certain types of meat and fish. Fermentation is a nearly ubiquitous process in today's food science, and an aspect of chemistry truly worth understanding more fully. In *The Oxford Handbook of Food Fermentations*, Charles W. Bamforth and Robert E. Ward have collected and edited contributions from many of the world's experts on food fermentation, each focused on a different fermentation product. The volume contains authoritative accounts on fermented beverages, distilled beverages, and a diverse set of foods, as well as chapters on relevant biotechnology. Each chapter embraces the nature of the product, its production, and its final composition. The text also touches on the raw materials and processes involved in producing packaged foodstuff, and the likely future trends in each area. In the conclusion, Bamforth and Ward present a comparison between the various products and the diverse technologies employed to produce them. Fermentation is a multifaceted process that affects a wide variety of products we consume, and *The Oxford Handbook of Food Fermentations* is the definitive resource that captures the science behind fermentation, as well as its diverse applications.

manufacturing yogurt and fermented milks: Sweetened Concentrated Milk Products

Juan Sebastián Ramírez-Navas, 2024-03-20 *Sweetened Concentrated Milk Products: Science, Technology, and Engineering* provides the most updated and comprehensive knowledge on different SCM products, delving into the production processes for each. Written by international experts, this book discusses existing information on concentrated milk and its more commercial forms, including evaporated and condensed milks. Other products detailed in this text include dulce de leches, such as sweetened caramelized goat's milk, panelitas de leche (milk panels), and various milk-based delicacies. The book presents the definition, main characteristics, common defects, and elaboration process for each commercial form. In addition, the book includes lifetime calculation data and results of the addition of whey into milk candies. Lastly, it provides information on the quality parameters which all SCMs must meet, including experimental design and application examples in SCM research and development. This is a vital resource for researchers and practitioners in dairy science with interests and work in SCM product formulation, technology, and seeking solutions for their defects. - Offers the most current data and information on sweetened, concentrated milk products - Discusses formulations, technology, product defects and solutions for each SCM product - Includes examples of experimental design and applications of innovative processes for those working in SCM research and development

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Robertson, 2009-12-21 The importance of food packaging hardly needs emphasizing since only a handful of foods are sold in an unpackaged state. With an increasing focus on sustainability and cost-effectiveness, responsible companies no longer want to over-package their food products, yet many remain unsure just where reductions can effectively be made. *Food Packaging and Shelf Life: A Practical Guide* provides package developers with the information they need to specify just the right amount of protective packaging to maintain food quality and maximize shelf life. Current food packaging must take into consideration the biochemical, chemical, physical, and biological changes that occur during processing, distribution, and storage. Organized according to chapters devoted to specific food products, this practical handbook defines the indices of failure for foods as diverse as milk, fruits, bottled water, juices, vegetables, fish, and beef. It discusses the deteriorative reactions for each food and reviews how different packaging materials may influence time to failure and thus shelf life. Other topics included biobased packaging, packaging and the microbial shelf life of foods, and shelf life testing methodology.

manufacturing yogurt and fermented milks: Starter Cultures in Food Production

Barbara Speranza, Antonio Bevilacqua, Maria Rosaria Corbo, Milena Sinigaglia, 2017-02-06 *Starter*

cultures have great significance in the food industry due to their vital role in the manufacture, flavour, and texture development of fermented foods. Once mainly used in the dairy industry, nowadays starter cultures are applied across a variety of food products, including meat, sourdough, vegetables, wine and fish. New data on the potential health benefits of these organisms has led to additional interest in starter bacteria. Starter Cultures in Food Production details the most recent insights into starter cultures. Opening with a brief description of the current selection protocols and industrial production of starter cultures, the book then focuses on the innovative research aspects of starter cultures in food production. Case studies for the selection of new starter cultures for different food products (sourdough and cereal based foods, table olives and vegetables, dairy and meat products, fish and wine) are presented before chapters devoted to the role of lactic acid bacteria in alkaline fermentations and ethnic fermented foods. This book will provide food producers, researchers and students with a tentative answer to the emerging issues of how to use starter cultures and how microorganisms could play a significant role in the complex process of food innovation.

manufacturing yogurt and fermented milks: Food Processing Stephanie Clark, Stephanie Jung, Buddhi Lamsal, 2014-04-03 FOOD PROCESSING 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.

manufacturing yogurt and fermented milks: Milk-Based Beverages Alexandru Grumezescu, Alina Maria Holban, 2019-05-11 Milk-Based Beverages, Volume 9 in The Science of Beverages series, presents current status, developments, and technologies for researchers and developers to meet consumer demand and understand consumer trends toward healthy drinks. This resource takes a multidisciplinary approach to address issues in safety and quality control, while also discussing the nutritional and functional information that professionals in the beverage industry need. The book presents a framework for researchers, product developers, engineers, and regulators in the beverages industry for understanding new research developments in milk-based products to meet industry needs in producing competitive products. - Covers the most recent advances in various milk-based products - Includes a solid review of safety and hygiene for the development of new products - Presents engineering techniques and applications using novel technologies

manufacturing yogurt and fermented milks: Cultured Katherine Harmon Courage, 2019-02-12 A revealing look at the 300 trillion microorganisms that keep us healthy—and the foods they need to thrive These days, probiotic yogurt and other gut-friendly foods line supermarket shelves. But what's the best way to feed our all-important microbiome—and what is a microbiome, anyway? In this engaging and eye-opening book, science journalist Katherine Harmon Courage investigates these questions, presenting a deep dive into the ancient food traditions and the latest research for maintaining a healthy gut. Courage's insights include: • Meet your microbiome: What it is, how it works, and why it's essential for our immune system--and overall health • Gut-friendly food traditions: A guided tour of artisanal makers of yogurt, kimchi, kefir, kombucha, olives, cocoa, and other vibrant, ancient foods from around the world that feed our microbiome (along with simple recipes for curious at-home cooks) • Cutting-edge science: A first-hand look at some of the top lab

facilities where microbiologists are working to better understand the human gut and how to feed it for good health. Equal parts science explainer, culinary investigation, and global roadmap for healthy eating, *Cultured* offers a wealth of information for anyone interested in making smart food choices in our not-so-gut-friendly modern world.

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