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Dairy Microbiology National Dairy Reseach Institute *2021-10-28*

JAIDYN FERGUSON

Issues in Biotechnology and Medical Technology Research and Application: 2013 Edition Academic Press An authoritative guide to microbiological solutions to common challenges encountered in the

industrial processing of milk and the production of milk products Microbiology in Dairy Processing offers a comprehensive introduction to the most current knowledge and research in dairy technologies and lactic acid bacteria (LAB) and dairy associated species in the fermentation of dairy products. The text deals with the industrial processing of milk, the problems solved in the industry, and those still affecting the processes. The authors explore culture methods and species selective growth media, to grow, separate, and characterize LAB and dairy associated species, molecular methods for species identification and strains characterization, Next Generation Sequencing for genome characterization, comparative genomics, phenotyping, and current applications in dairy and non-dairy productions. In addition, Microbiology in Dairy Processing covers the Lactic Acid Bacteria and dairy associated species (the beneficial microorganisms used in food fermentation processes): culture methods, phenotyping, and proven applications in dairy and non-dairy productions. The text also reviews the potential future

exploitation of the culture of novel strains with useful traits such as probiotics, fermentation of sugars, metabolites produced, bacteriocins. This important resource: Offers solutions both established and novel to the numerous challenges commonly encountered in the industrial processing of milk and the production of milk products Takes a highly practical approach, tackling the problems faced in the workplace by dairy technologists Covers the whole chain of dairy processing from milk collection and storage though processing and the production of various cheese types Written for laboratory technicians and researchers, students learning the protocols for LAB isolation and characterisation, Microbiology in Dairy Processing is the authoritative reference for professionals and students.

Summer Institute on Recent Analytical Techniques in Dairy Microbiology

Springer Nature

Microbial Cell Factories is a conceptual, reference-based source including chapters covering microbial cell factories for industrial developments, microbial biotechnology, sustainable environmental solutions, agriculture

practices, microorganisms in food processing, metabolites as next generation food additives/food processing, and microbial cell factories in alternative energy fuel generation. The book highlights trends and developments in the field of microbial products, written by an international team of leading academic and research scholars. Key Selling Features: Highlights trends and developments in microbial biotechnology Systematically reviews microbial cell factories Explores the potential of microbial cell derived industrial production Synthesizes information on environmental and agricultural uses of microbial biotechnology Contributions from an international team of leading scholars

Engineering Practices for Milk Products

National Academies Press

Food safety regulators face a daunting task: crafting food safety performance standards and systems that continue in the tradition of using the best available science to protect the health of the American public, while working within an increasingly antiquated and fragmented regulatory framework. Current food safety standards have been set

over a period of years and under diverse circumstances , based on a host of scientific, legal, and practical constraints. Scientific Criteria to Ensure Safe Food lays the groundwork for creating new regulations that are consistent, reliable, and ensure the best protection for the health of American consumers. This book addresses the biggest concerns in food safetyâ€"including microbial disease surveillance plans, tools for establishing food safety criteria, and issues specific to meat, dairy, poultry, seafood, and produce. It provides a candid analysis of the problems with the current system, and outlines the major components of the task at hand: creating workable, streamlined food safety standards and practices. **Microbial Surfactants** Woodhead Publishing This volume covers a selection of important novel technological interventions in dairy science, from the physical properties of milk and other milk products to nonthermal processing of milk. It also discusses safety methods in dairy science, which includes cleaning-in-place and techniques to determine adulteration in milk. Milk is a perishable commodity, and being rich in nutrients, it

acts as the perfect substrate for the growth of microflora (sometimes dangerous for consumption). To reduce this, different thermal and nonthermal techniques are used. Thermal treatments are common techniques used for extending the shelf life of milk, such as, for example, pasteurization , sterilization, and UHT, but loss of nutrients is a concern associated with these treatments. Nonthermal treatments like high-pressure processing, pulse electric field, ultra-sonication, and irradiation are also explored in the processing of milk to minimize the loss of nutrients as compared to thermal treatment. Post-process contamination is also a major factor that can affect the shelf life of milk, and safe packaging plays an important role when the milk and milk products are stored at refrigeration or ambient temperature. Many advances in these dairy technologies are presented in this informative volume. Technological Interventions in Dairy Science: Innovative Approaches in Processing, Preservation, and Analysis of Milk Products will prove valuable for industrial professionals, scientists, regulatory personnel, consultants, academics, students and

field-related personnel. The book also attempts to bridge the gap between research and industrial application of recent techniques.

Principles of Microbiology

CRC Press

This new volume, Nanotechnology Applications in Dairy Science, is designed to provide new insight into the utilization of nanotechnology in dairy science and food science. It focuses on applications of nanotechnology in packaging and drying of dairy and meat products, nanofiltration use in the dairy industry, and whey processing and dairy encapsulation. In addition, this book will facilitate the necessary understanding of the different aspects and concerns with regard to the new technological advances that nanotechnologies are contributing to the dairy industry. It also addresses several of the challenges that are overcome by the continuing development of nanotechnology applications in the food and dairy industries. Nanotechnology has the potential to provide healthier, safer, and better tasting foods as well as improved food packaging. It will also play a major role in food safety and agricultural sustainability. Nanotechnology application in the food

industry has also contributed to the exponential progress in research and new material formulations due to its unique physicochemical properties useful to a number of other fields.
Microbiology of Ethnic Fermented Foods and Alcoholic Beverages of the World
Academic Press
While also addressing the need for more effective processing technologies for increased safety and quantity, the dairy industry needs to address the growing customer demand for new and innovative dairy foods with enhanced nutritional value. This volume looks at new research, technology, and applications in the engineering of milk products, specifically covering functional bioactivities to add value while increasing the quality and safety of milk and fermented milk products. Chapters in the book look at the functional properties of milk proteins and cheese, functional fermented milk-based beverages, biofunctional yoghurt, antibiotic resistant pathogens, and other probiotics in dairy food products.
Development of Phage Resistant Starter Strains
Frontiers Media SA
The number of potential microbes exploited

commercially is scanty irrespective of their high number present in the diverse habitats. In recent years, they have shown successfulnes s in multifarious areas such as production of industrially viable products, organic chemicals, pharmaceutic als, recovery of metals, improvement and maintenance of environmental quality, and insect and pest control.

The Twenty-three articles included here fall under three broad categories, namely, agricultural microbiology, industrial microbiology and bioremediatio n. The psychrophiles hold many biological secrets such as biochemical limits to macromolecul ar stability and the blueprints for constructing the stable macromolecul es. Lactic acid bacteria are known for their role in

the preparation of fermented dairy products. Potential strains for production of lactic acid with emphasis on its fermentation, economics and systematics have been dealt with in greater detail. Biotechnologic al applications of pectinases in general and alkaline pectinases in particular play an important role in industry. Production, characteristics and applications of

microbial alkaline pectinolytic enzymes have been elaborated. Production of ergot alkaloids thrives a novel knowledge. Now-a-days, semi-synthetic ergot alkaloids are widely used as a potential therapeutic agent. Microbial production of glucans, functional organization and their industrial significance have been systematically reviewed. Bioactive exopolysaccharides from mushrooms have gained importance in recent years. Production and characterization of exopolysaccharides and conversion of unsaturated fatty acids into value-added hydroxyl fatty acids by using microorganisms are used in a wide range of industrial products. Enhancing the microbial production of 1,3-propanidial and its application highlights the commercial exploitation of potential microorganisms. Aldehyde and organic acid production by using oxydases and their derivatives advantageous role in industry. Some chapters are devoted to the potential entomopathogenic fungi for management of insect pests, biotechnological applications of fusaria, microbial metabolite-mediated biocontrol of soil-borne plant pathogens,

bioremediation of heavy metals, organochlorine and organophosphate pesticides. Bioinoculants apart from being eco-friendly are being used, but reviewers have emphasized the constraints in commercial bioinoculant production and their quality assurance. All the articles of this volume depict the role of microorganisms in agricultural industries. The exploitation of such beneficial microorganisms may improve agricultural systems with economically sound production of human food and animal feed. This volume will certainly help the PG and research students of agricultural microbiology and biotechnology. Advances in Microbiology, Chemistry and Technology of Dairy Functional Foods and Nutraceuticals CRC Press Probiotics in The Prevention and Management of Human Diseases: A Scientific Perspective addresses the use of probiotics and their mechanistic aspects in diverse human diseases. In particular, the mechanistic aspects of how these probiotics are involved in mitigating disease symptoms (novel approaches and immune-mechanisms induced by Probiotics),

clinical trials of certain probiotics, and animal model studies will be presented through this book. In addition, the book covers the role of probiotics in prevention and management aspects of crucial human diseases, including multidrug resistant infections, hospital acquired infections, allergic conditions, autoimmune diseases, metabolic disorders, gastrointestinal diseases, neurological disorders, and cancers. Finally, the book addresses the use of probiotics as vaccine adjuvants and as a solution for nutritional health problems and describes the challenges of using probiotics in management of human disease conditions as well as their biosafety concerns. Intended for nutrition researchers, microbiologists, physiologists, and researchers in related disciplines as well as students studying these topics require a resource that addresses the specific role of probiotics in the prevention and management of human disease. Contains information on the use of probiotics in significant human diseases, including antibiotic resistant microbial infections Presents novel applications of

probiotics, including their use in vaccine adjuvants and concept of pharmabiotics Includes case studies and human clinical trials for probiotics in diverse disease conditions and explores the role of probiotics in mitigation of the symptoms of disease Advances in Applied Dairy and Food Microbiology CRC Press The aim of food processing is to produce food that is palatable and tastes good, extend its shelf-life, increase the variety, and maintain the nutritional and healthcare quality of food. To achieve favorable processing conditions and for the safety of the food to be consumed, use of food grade microbial enzymes or microbes (being the natural biocatalysts) is imperative. This book discusses the uses of enzymes in conventional and non-conventional food and beverage processing as well as in dairy processing, brewing, bakery and wine making. Apart from conventional uses, the development of bioprocessing tools and techniques have significantly expanded the potential for extensive application of enzymes such as in production of bioactive peptides, oligosaccharides and lipids, flavor and colorants.

Some of these developments include extended use of the biocatalysts (as immobilized/encapsulated enzymes), microbes (both natural and genetically modified) as sources for bulk enzymes, solid state fermentation technology for enzyme production. Extremophiles and marine microorganisms are another source of food grade enzymes. The book throws light on potential applications of microbial enzymes to expand the base of food processing industries.

Innovative Approaches in Processing, Preservation, and Analysis of Milk Products

Academic Press

Dairy science includes the study of milk and milk-derived food products, examining the biological, chemical, physical, and microbiological aspects of milk itself, as well as the technological (processing) aspects of the transformation of milk into its various consumer products, including beverages, fermented products, concentrated and dried products, butter and ice cream. This encyclopedia includes information on the possible impact of genetic modification of dairy animals, safety concerns of raw milk and raw milk products, peptides in milk, dairy-

based allergies, packaging and shelf-life and other topics of importance and interest to those in dairy research and industry. The Encyclopedia of Dairy Sciences is the only work available that covers in detail the entirety of dairy science, from husbandry of dairy animals, milk production, through the processing of milk into a myriad of dairy products and ingredients, to the effect of dairy foods on human health. The third edition of Encyclopedia of Dairy Sciences will retain the split that characterized the earlier editions - one-third primary production, two-thirds dairy food. Unlike earlier editions, in which articles were arranged in alphabetical order by topic, this edition will be optimally organized into 9 coherent sections. This new edition contains 500 articles, the vast majority of which has been significantly revised or is completely new. Only 40 chapters have been retained from the earlier edition as they cover basic science areas still relevant and important today. All articles have been reviewed by specialists in their area. Comprehensive and authoritative introductory articles on all aspects of dairy science from on-farm aspects, to processing, to consumers Content is

written and edited by leading authorities from across the globe making this the go-to foundational reference in the dairy science community Articles are intuitively and meticulously organized into 9 coherent sections on key topics, making it easier for the reader to access relevant information quickly **Advances In The Understanding of The Commensal Eukaryota And Viruses Of The Herbivore Gut** Frontiers Media SA Nanotechnology is a fast-evolving discipline that already produces outstanding basic knowledge and industrial applications for the benefit of society. It is a new emerging and fascinating field of science, that permits advanced research in many areas. The first applications of nanotechnology mainly concerned material sciences; applications in the agriculture and food sectors are still emerging. Food science nanotechnology is an area of rising attention that unties new possibilities for the food industry. Due to the rapid population growth there is a need to produce food and beverages in a more efficient, safe and sustainable way. The application of nanotechnology in food has also gained

great importance in recent years in view of its potential application to improve production of food crops, enhance nutrition, packaging and food safety overall. The new materials, products and applications are anticipated to bring lots of improvements to the food and related sectors, impacting agriculture and food production, food processing, distribution, storage, sanitation as well as the development of innovative products and sensors for effective detection of contaminants. Therefore, nanotechnology present with a large potential to provide an opportunity for the researchers of food science, food microbiology and other fields, to develop new tools for incorporation of nanoparticles into food system that could augment existing functions and add new ones. However, the number of relative publications currently available is rather small. The present Research Topic aims to provide with basic information and practical applications regarding all aspects related to the applications of nanotechnology in food science and food microbiology, namely, nanoparticle synthesis, especially through the

eco-friendly perspective, potential applications in food processing, biosensor development, alternative strategies for effective pathogenic bacteria monitoring as well as the possible effects on human health and the environment.

Cattle Wealth of India

ScholarlyEditions

This volume focuses on food preservation prior to distribution and sale, which is a major challenge in the tropical climates of most developing nations. In order to assure that food products are safe for human consumption, due importance must be given to the quality and safety aspects of production, processing, and distribution. This volume provides an informative overview of recent research on the therapeutic potential of various new and natural compounds along with novel technologies for enhanced shelf-life longevity and food safety. It also looks at the antimicrobial constituents of different sources and the history of their use as biopreservatives. It includes scientific evaluations of their use as alternative or potential biopreservatives. Focusing on real-life applications in consumer and food products, the book is

divided into three parts, covering health and quality aspects of food preservation, applications of novel biomolecules for quality and safety of foods, and novel research techniques in food biopreservation.

Dairy Processing: Advanced Research to Applications

CRC Press

This book illustrates the importance and significance of the biosurfactants obtained from microorganisms, preferably from bacteria and yeast. It explains the superiority of biosurfactants (green molecule) over chemically synthesized surfactants for the sustainable future. The content of the present book addresses the quest for novel biosurfactants producing strains, high throughput screening methods, and production strategies. It finely describes the aptness of biosurfactants for industrial and environmental applications. It elaborately describes the technical background and cutting-edge advancement of the commercial aspect of biosurfactants. In the later part of the book, the role of green biosurfactants in food processing, control of food spoilage, incorporation in personal health care products, environmental and

agricultural remediation are discussed. Finally, the book elucidates a comprehensive and representative description of toxicity assessment of the biosurfactants, which highlights the risk assessment of the incorporation of the microbial biosurfactants in food, healthcare, and pharmaceutical formulations. A Scientific Perspective CRC Press

Microorganisms are an integral part of the fermentation process in food products and help to improve sensory and textural properties of the products. As such, it is vital to explore the current uses of microorganisms in the dairy industry. Microbial Cultures and Enzymes in Dairy Technology is a critical scholarly resource that explores multidisciplinary uses of

cultures and enzymes in the production of dairy products. Featuring coverage on a wide range of topics such as dairy probiotics, biopreservatives, and fermentation, this book is geared toward academicians, researchers, and professionals in the dairy industry seeking current research on the major role of microorganisms in the production of many dairy products.

Microbial Cultures and Enzymes in Dairy Technology CRC Press Issues in Applied Agriculture / 2011 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Applied Agriculture. The editors have built Issues in Applied Agriculture: 2011 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Applied Agriculture in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Applied Agriculture: 2011 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/. *Proceedings of the II International Conference on Environmental*

, *Industrial and Applied Microbiology (BioMicroWorld2007)* Tata McGraw-Hill Education An authoritative guide to microbiological solutions to common challenges encountered in the industrial processing of milk and the production of milk products Microbiology in Dairy Processing offers a comprehensive introduction to the most current knowledge and research in dairy technologies and lactic acid bacteria (LAB) and dairy associated species in the fermentation of dairy products. The text deals with the industrial processing of milk, the problems solved in the industry, and those still affecting the processes. The authors explore culture methods and species selective growth media, to grow, separate, and characterize LAB and dairy associated species, molecular methods for species identification and strains characterization, Next Generation Sequencing for genome characterization, comparative genomics, phenotyping, and current applications in dairy and non-dairy productions. In addition, Microbiology in Dairy Processing covers the Lactic Acid Bacteria and dairy associated species (the beneficial microorganis

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Lecture Compendium ScholarlyEditions Lactobacillus: Advances in Research and Application: 2011 Edition is a ScholarlyEditio

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Scientific Criteria to Ensure Safe Food

ScholarlyEditions

Bacterial Polysaccharides—Advances in Research and Application: 2013 Edition is a ScholarlyBrief

™ that delivers timely, authoritative, comprehensive, and specialized information about Lipopolysaccharides in a concise format. The editors have built Bacterial Polysaccharides—Advances in Research and Application: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Lipopolysaccharides in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Bacterial Polysaccharides—Advances in Research and Application: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Nanotechnology Applications in Dairy Science

I. K. International Pvt Ltd

This book focuses on advanced research and technologies in dairy processing, one of the most important branches of the food industry. It addresses various topics, ranging from the basics of dairy technology to the opportunities and challenges in the industry. Following an introduction to dairy processing, the book takes readers through various aspects of dairy engineering, such as dairy-based peptides, novel milk products and bio-fortification. It also describes the essential role of microorganisms in the industry and ways to detect them, as well as the use of prebiotics, and food safety. Lastly, the book examines the challenges faced, especially in terms of maintaining quality across the supply chain. Covering all significant areas of dairy science and processing, this interesting and informative book is a valuable resource for post-graduate students, research scholars and industry experts.

Lecture Compendium

CRC Press

Written for and by dairy and food engineers with experience in the field, this new volume provides a wealth of valuable information on

dairy technology and its applications. The book covers devices, standardizatio n, packaging, ingredients, laws and regulatory guidelines, food processing methods, and more. The coverage of each topic is comprehensiv e enough to serve as an overview of the most recent and relevant research and technology.