Microbiological Analysis Of Red Meat Poultry And Eggs Woodhead Publishing Series In Food Science Technology And Nutrition

The Encyclopedia of Meat Sciences is an impressive and important body of work. Prepared by an international team of experts, this reference work covers all important aspects of meat science from stable to table, including animal breeding, physiology and slaughter, meat preparation, packaging, welfare, and food safety, to name a few. This Encyclopedia further covers important topics such as food microbiology, meat in human nutrition, biotechnological advances in breeding and many more. The Encyclopedia of Meat Sciences is an invaluable resource to practitioners of meat science and students alike. 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. Foreword written by Rt. Hon. Helen Clark, Prime Minister of New Zealand Over 200 articles covering all aspects of meat science Reading lists at the end of each article provide further information into primary literature Various figures and tables illustrating the text and a color plate section in each volume Appeals to students, academics researchers and professionals working not only in meat science, but also food science, veterinary sciences, agricultural engineering and livestock management Extensive cross-referencing

The Hygiene Assessment System (HAS) is an audit checklist that is used to measure the hygiene status of the abattoir. The final HAS score for individual abattoirs is graded to a sum of 100, and is interpreted as a measurement of the potential risk to public health. Theoretically, the final HAS score reflects the likelihood of safe meat being produced in that specific abattoir on the day of audit. The aim of the study was to test the association between the HAS scores and the bacteriological contamination in six single species high throughput abattoirs in the Free State province. This was done to validate the efficiency of the HAS score as a measure for meat safety and to determine the extent to which HAS audit score and bacteriological tests mirror each other. Each abattoir was visited once and the audit was performed according to official HAS: four carcasses were sampled at four different carcass sites at three processing stations; and ten direct air samples were collected from the slaughter floors. All the abattoirs showed compliance with the meat safety legislation since the total HAS scores ranged from 68 to 94. However, it was found that the effectiveness of HAS audits as a measure of food safety was questionable, since it does not demonstrate the risk/impact of non-compliance. The microbiological analysis for both carcass and air samples included the test for aerobic plate count (APC), Escherichia coli, Salmonella species and Staphylococcus aureus. The APC for the abattoirs ranged from undetectable to 9.9 x 104 CFU.m-2 for carcass surfaces and 0 to 2.4 x 102 CFU.m-3 for bioaerosols. The total count for E. coli, S. aureus and Salmonella species exceeded the national maximum acceptable limits. These results highlight the possibility of the occurrence of foodborne diseases in the human population. In addition the relationship between E. coli, S. aureus, Salmonella spp, APC, and total HAS score, revealed no significant relationship. These findings further justify the fact that HAS audits should not be used as a measure of meat safety. The results also suggest the importance of the inclusion of bacterial tests in meat safety audits because a high HAS score does not signify that meat is entirely safe for human consumption.

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Understanding of the scientific basis of quality attributes in meat is becoming more advanced, providing more effective approaches to the control of meat eating and technological quality. This important collection reviews essential knowledge of the mechanisms underlying quality characteristics and methods to improve meat sensory and nutritional quality. Part one analyses the scientific basis of meat quality attributes, such as texture and tenderness, colour, water-holding capacity and flavour development. Chapters on the nutritional quality of meat and meat sensory evaluation complete the section. Part two discusses significant insights into the biology of meat quality obtained from genomic and proteomic perspectives, with chapters focussing on different types of meat. Parts three and four then review production and processing strategies to optimise meat quality, considering aspects such as production practices and meat nutritional quality, dietary antioxidants and antimicrobials, carcass interventions, chilling and freezing and packaging. Methods of meat grading and quality analysis are also included. With its distinguished editors and international team of contributors, Improving the sensory and nutritional quality of fresh meat is a standard reference for those industrialists and academics interested in optimising meat quality. Reviews methods to improve meat sensory and nutritional quality considering the effects of different production practices such as chilling, freezing and packaging Analyses the scientific basis of meat quality attributes covering texture, tenderness, colour and water-holding capacity Examines production and processing strategies to optimise meat quality, including the current state of development and future potential

The latest book in this excellent series describes the role of microbiological testing in modern food safety management systems. It explores how risk assessment and risk management can be used to establish goals for use in controlling food borne illness, and provides guidelines for establishing effective management systems to control specific hazards in foods. This groundbreaking book will interest food microbiologists, researchers, and others in the food industry, regulatory agencies and academia worldwide.

Food Safety Engineering is the first reference work to provide up-to-date coverage of the advanced technologies and strategies for the engineering of safe foods. Researchers, laboratory staff and food industry professionals with an interest in food engineering safety will find a singular source containing all of the needed information required to understand this rapidly advancing topic. The text lays a solid foundation for solving microbial food safety problems, developing advanced thermal and non-thermal technologies,

designing food safety preventive control processes and sustainable operation of the food safety preventive control processes. The first section of chapters presents a comprehensive overview of food microbiology from foodborne pathogens to detection methods. The next section focuses on preventative practices, detailing all of the major manufacturing processes assuring the safety of foods including Good Manufacturing Practices (GMP), Hazard Analysis and Critical Control Points (HACCP), Hazard Analysis and Risk-Based Preventive Controls (HARPC), food traceability, and recalls. Further sections provide insights into plant layout and equipment design, and maintenance. Modeling and process design are covered in depth. Conventional and novel preventive controls for food safety include the current and emerging food processing technologies. Further sections focus on such important aspects as aseptic packaging and post-packaging technologies. With its comprehensive scope of up-to-date technologies and manufacturing processes, this is a useful and first-of-its kind text for the next generation food safety engineering professionals.

Game meat is consumed world-wide. In most regions, it contributes only a small part to the overall meat and food supply, but for reasons of animal welfare and sustainability it is sometimes considered an alternative to meat from farmed animals. Despite differences in game species, ante mortem conditions (free-range or fenced; wild or semi-domesticated), hunting or harvesting procedures and further handling of the carcass, there are common requirements as regards meat safety and quality. Whereas meat hygiene and safety have been an issue in game meat for export/import for a long time, primary production, domestic supply and direct supply to the consumer have recently been addressed by legislation and these sectors still present unresolved questions and challenges. This book combines 24 contributions presenting the view of experts in game meat hygiene and quality. They address four main topics: i.e. 'hygiene and microbiology', 'epidemiology', 'risk assessment and management' and 'muscle biology and meat quality'. In addition to contributions on this topic by authors from eight European countries, a South African perspective is provided, thus representing the standpoint of a major game meat exporter. This volume is the first in a series on safety and quality assurance along the game meat chain, following a 'from forest to fork' approach and is targeted at scientists in academia and industry, graduate students as well as at governmental officials in veterinary public health and food safety.

This unique book is a well-respected, and highly successful, distillation of key information for the food industry. With authors from industry and academic world ensuring both commercial relevance and technological rigor, this book is bought by food scientists and technologists, processors, manufacturers, packagers and suppliers to the food industry. It has always been found as particularly useful for those relatively new to the industry who require quick access to well-written summaries of unfamiliar areas, and also to those longer serving individuals who require a convenient reference source to subjects that they perhaps have not needed to be up to date with in the recent past.

Seafood and seafood products represent some of the most important foods in almost all types of societies around the world. More intensive production of fish and shellfish to meet high demand has raised some concerns related to the nutritional and sensory qualities of these cultured fish in comparison to their wild-catch counterparts. In addition, t

For many biologists, statistics are an anathema; but statistical analysis of quantitative and qualitative data is of considerable importance. Although spreadsheet software provides a diverse range of statistical tools, users are usually unsure which technique should be used. This book provides the basic statistical theory and practice to understand the types of tests frequently needed for the assessment of microbiological data. No prior knowledge of statistical techniques is required. Even when data can be given to a professional statistician for analysis, the microbiologist needs to have at least a general understanding of the underlying basis of statistical procedures in order to communicate effectively with the statistician. The book contains many worked examples to illustrate the use of the techniques and provides a plethora of references both to standard statistical works and to relevant original scientific papers on food microbiology. Basil Jarvis has had many years of experience in academic, research and industrial food microbiology and is a Past President of the Society for Applied Microbiology. He has published several edited books and more than 200 scientific articles concerned with food microbiology NEW to this edition - chapters on Measurement Uncertainty in Microbiology, Statistical Process Control, Food Safety Objectives, Risk Assessment and Microbiological Criteria and a chapter on Validation of Microbiological Methods by Dr Sharon Brunelle, AOAC consultant Includes additional figures and tables together with many worked examples to illustrate the use of specific procedures in the analysis of data obtained in the microbiological examination of foods

Written by the world's leading scientists and spanning over 400 articles in three volumes, the Encyclopedia of Food Microbiology, Second Edition is a complete, highly structured guide to current knowledge in the field. Fully revised and updated, this encyclopedia reflects the key advances in the field since the first edition was published in 1999 The articles in this key work, heavily illustrated and fully revised since the first edition in 1999, highlight advances in areas such as genomics and food safety to bring users up-to-date on microorganisms in foods. Topics such as DNA sequencing and E. coli are particularly well covered. With lists of further reading to help users explore topics in depth, this resource will enrich scientists at every level in academia and industry, providing fundamental information as well as explaining state-of-the-art scientific discoveries. This book is designed to allow disparate approaches (from farmers to processors to food handlers and consumers) and interests to access accurate and objective information about the microbiology of foods Microbiology impacts the safe presentation of food. From harvest and storage to determination of shelf-life, to presentation and consumption. This work highlights the risks of microbial contamination and is an invaluable go-to guide for anyone working in Food Health and Safety Has a two-fold industry appeal (1) those developing new functional food products and (2) to all corporations concerned about the potential hazards of microbes in their food products

Microbiological Examination Methods of Food and Water is an illustrated laboratory manual that provides an overview of current standard microbiological culture methods for the examination of food and water, adhered to by renowned international organizations, such as ISO, AOAC, APHA, FDA and FSIS/USDA. It includes methods for the enumeration of indicator microorganisms of general contamination, indicators of hygiene and sanitary conditions, sporeforming, spoilage fungi and pathogenic bacteria. Every chapter begins with a comprehensive, in-depth and updated bibliographic reference on the microorganism(s) dealt with in that particular section of the book. The latest facts on the taxonomic position of each group, genus or species are given, as well as clear guidelines on how to deal with changes in nomenclature on the internet. All chapters provide schematic comparisons between the methods presented, highlighting the main differences and similarities. This allows the user to choose the method that best meets his/her needs. Moreover, each chapter lists validated alternative quick methods, which, though not described in the book, may and can be used for the analysis of the microorganism(s) dealt with in that particular chapter. The didactic setup and the visualization of procedures in step-by-step schemes allow the user to quickly perceive and execute the procedure intended. This compendium will serve as an up-to-date practical companion for laboratory professionals, technicians and research scientists, instructors, teachers and food and water analysts. Alimentary engineering, chemistry, biotechnology and

biology (under)graduate students specializing in food sciences will also find the book beneficial. It is furthermore suited for use as a practical/laboratory manual for graduate courses in Food Engineering and Food Microbiology.

Until now, books addressing Halal issues have focused on helping Muslim consumers decide what to eat and what to avoid among products currently on the marketplace. There was no resource that the food industry could refer to that provided the guidelines necessary to meet the Halal requirements of Muslim consumers in the U.S. and abroad. Halal

HACCP is a systematic approach to the identification, evaluation, and control of food safety hazards. It is being applied across the world, with countries such as the US, Australia, New Zealand, and the UK leading the way. However, effective implementation in the meat industry remains difficult and controversial. HACCP in the meat industry provides a survey of principles and practices, providing a guide to making HACCP systems work in the meat industry.

Identifying pathogens in food quickly and accurately is one of the most important requirements in food processing. The ideal detection method needs to combine such qualities as sensitivity, specificity, speed and suitability for on-line applications. Detecting pathogens in food brings together a distinguished international team of contributors to review the latest techniques in microbiological analysis and how they can best be used to ensure food safety. Part one looks at general issues, beginning with a review of the role of microbiological analysis in food safety management. There are also chapters on the critical issues of what to sample and how samples should be prepared to make analysis effective, as well as how to validate individual detection techniques and assure the quality of analytical laboratories. Part two discusses the range of detection techniques now available, beginning with traditional culture methods. There are chapters on electrical methods, ATP bioluminescence, microscopy techniques and the wide range of immunological methods such as ELISAs. Two chapters look at the exciting developments in genetic techniques, the use of biosensors and applied systematics. Detecting pathogens in food is a standard reference for all those concerned in ensuring the safety of food. Reviews the latest techniques in microbiological analysis and how they can best be used to ensure food safety Examines the role of microbiological analysis in food safety management and discusses the range of detection techniques available Includes chapters on electrical methods, ATP bioluminescence, microscopy techniques and immunological methods such as ELISAs

While introducing the principles and processes of industrial-level food canning, the volume clarifies the effects of microorganisms, their ecology, fate, and prevention in canning operations, as well as in other thermal processing techniques, such as aseptic packaging. It covers microbial spoilage and detection for vegetables, fruits, milk, meat and seafood from the raw food materials through individual unit operations, facility sanitation, and packaging. It thus offers a practical introduction to understanding, preventing and destroying microbe-based hazards in food plants that use thermal processes to preserve and package foods. The text surveys major spoilage and pathogenic microbes of interest, explaining their toxicity, product and safety effects, and the conditions of their destruction by heat treatment. From the Foreword "Not only does this volume contain up-to-date information regarding the types of microbes of interest in heat-treated foods, but it also provides, as a complete resource, details of many aspects of the food chain and processing environment that influences the microflora of thermally-processed foods. This is what I find separates this book from … (other) treatises on heat-processed foods."

Microbiological Analysis of Red Meat, Poultry and EggsCRC Press

The food industry, with its diverse range of products (e.g. short shelf-life foods, modified atmosphere packaged products and minimally processed products) is governed by strict food legislation, and microbiological safety has become a key issue. Legally required to demonstrate 'due diligence', food manufacturers are demanding analytical techniques that are simple to use, cost effective, robust, reliable and can provide results in 'real time'. The majority of current microbiological techniques (classical or rapid), particularly for the analysis of foodborne pathogens, give results that are only of retrospective value and do not allow proactive or reactive measures to be imple mented during modem food production. Rapid methods for microbial analysis need to be considered in the context of modem Quality Assurance (QA) systems. This book addresses microbiologists, biochemists and immunologists in the food industry, the public health sector, academic and research institutes, and manufacturers of kits and instruments. This volume is an up-to-date account of recent developments in rapid food microbiological analysis, current approaches and problems, rapid methods in relation to QA systems, and future perspectives in an intensely active field. P.D.P. Contributors Public Health Laboratory, Royal Preston Hospital, PO Box F.J. Bolton 202, Sharoe Green Lane North, Preston PR2 4HG, UK. D. M. Gibson Ministry of Agriculture, Fisheries and Food, Torry Research Station, 135 Abbey Road, Aberdeen AB9 8DG, Scotland. P.A. Hall Microbiology and Food Safety, Kraft General Foods, 801 Waukegan Road, Glenview, Illinois 60025, USA.

Meat is both a major food in its own right and a staple ingredient in many food products. With its distinguished editors and an international team of contributors, Meat processing reviews research on what defines and determines meat quality, and how it can be maintained or improved during processing. Part one considers the various aspects of meat quality. There are chapters on what determines the quality of raw meat, changing views of the nutritional quality of meat and the factors determining such quality attributes as colour and flavour. Part two discusses how these aspects of quality are measured, beginning with the identification of appropriate quality indicators. It also includes chapters on both sensory analysis and instrumental methods including on-line monitoring and microbiological analysis. Part three reviews the range of processing techniques that have been deployed at various stages in the supply chain. Chapters include the use of modelling techniques to improve quality and productivity in beef cattle production, new decontamination techniques after slaughter, automation of carcass processing, high pressure processing of meat, developments in modified atmosphere packaging and chilling and freezing. There are also chapters on particular products such as restructured meat and fermented meat products. With its detailed and comprehensive coverage of what defines and determines meat quality, Meat processing is a standard reference for all those involved in the meat industry and meat research. Reviews research on what defines

and determines meat quality, and how it can be measured, maintained and improved during processing Examines the range of processing techniques that have been deployed at various stages in the supply chain Comprehensively outlines the new decontamination techniques after slaughter and automation of carcass processing www.wageningenacademic.com/meatscience

Red meat, poultry and eggs are, or have been, major global causes of foodborne disease in humans and are also prone to microbiological growth and spoilage. Consequently, monitoring the safety and quality of these products remains a primary concern. Microbiological analysis is an established tool in controlling the safety and quality of foods. Recent advances in preventative and risk-based approached to food safety control have reinforced the role of microbiological testing of foods in food safety management. In a series of chapters written by international experts, the key aspects of microbiological analysis, such as sampling methods, use of fecal indicators, current approached to testing of foods, detection and enumeration of pathogens, and microbial identification techniques, are described and discussed. Attention is also given to the validation of analytical methods and Quality Assurance in the laboratory. Because of their present importance to the food industry, additional chapters on current and developing legislation in the European Union and the significance of Escherichia coli 0157 and other VTEC are included. Written be a team of international experts, Microbiological Analysis of Red Meat, Poultry and Eggs is certain to become a standard reference in the important area of food microbiology. Professor Geoff Mead is internationally renowned for his research on microbiological aspects of poultry production and processing.

Provides integrated and up-to-date coverage of this important food group

This brief reports about safety protocols in the food producing industry. Hygiene, i.e., the prevention of contamination and microbial infections, is of greatest importance in the industry, as are disinfection techniques, to prevent or to fight microbial contaminations and infections, and practical emerging concerns are centered around these fundamental concerns. The first part focuses on the attempts and possibilities to prevent microbial spreading. Part II discusses disinfection techniques and their risks, advantages and disadvantages. Current industry trends, such as the attempts to substitute chlorine in disinfection, are critically reviewed. In all, this brief volume discusses decision procedures and strategies that are being applied to prevent, reduce and fight microbial spreading. In particular, material that comes into contact with the foods, has to fulfill strict requirements. This aspect is explained in detail, and how little details can have great effects. The brief deals with the important question: is disinfection more an ally or an enemy?

The safety and quality of the U.S. food supply depend on a total program of careful microbiological control. Microbiological criteria, which establish acceptable levels of microorganisms in foods and food ingredients, are an essential part of such a program. Says ASM News, "This book provides not only an informed and objective evaluation of microbiological criteria for a wide variety of foods and specific pathogens and the committee's recommendations regarding those criteria, but it also provides an excellent reference book on the applied microbiological aspects of food quality assurance."

This book comprehensively describes the biological underpinnings of red meat production, discussing the current state of the science in the context of the provision of red meat products perceived by consumers to offer a quality eating experience. Covering advances in the science of red meat production, it focuses on production system elements that affect product quality. The chapters explore the latest developments in the determination of consumer preferences, and interpret of these preferences in terms of quality characteristics of red meat, investigating the science-based orchestration of red meat production to achieve product consistency. The book highlights topics such as consumer preferences, the biological and production system elements affecting red meat safety, and the intrinsic (appearance, aroma, and sensory quality) and extrinsic (humane animal and environmentally friendly production) characteristics of red meat. For each characteristic, it discusses the underlying biological and biochemical processes and examines means of altering production systems to impact consumer eating experiences. The book also features a perspective on creating holistic integrated systems for producing red meats to meet consumers' expectations around the globe. Written by leading authorities in the area of global red meat production systems, it is a comprehensive resource for consumer-oriented red meat producers.

This reference describes the management, control, and prevention of microbial foodborne disease. It analyzes transformations in the epidemiology of foodborne disease from increased transnational food exchange to examinations of new and emerging zoonoses. It also discusses the prevalence and risk of foodborne disease in developing and industrialized

Written for graduate students or college seniors, Food Safety: Theory and Practice emphasizes a comprehensive and multidisciplinary approach to food safety. It covers important topics related to the prevention of foodborne illnesses and diseases with a “farm-to-fork” perspective. Each chapter starts with a set of learning objectives for the student and ends with a list of important references and websites for further study and research. Scientific principles that underpin food safety are introduced, and terminology is explained to facilitate comprehension by the student. In keeping with current trends, risk analysis and food safety management are stressed throughout the textbook. The writing style is concise and to the point, and the book contains hundreds of references, figures, and tables. Extremely well organized, this book can serve as the primary text for a food safety course, or it can serve as a background text for more specialized courses in food safety. Key topics include: Risk and hazard analysis of goods - covers risk assessment and hazard analysis and critical control point (HACCP) evaluations of food safety. Safety management of the food supply - provides a farm-to-fork overview of food safety, emphasizing the risks associated with each step in the food supply. Food safety laws, regulations, enforcement, and responsibilities - describes the major provisions, relationship, and hierarchy of laws and guidelines designed to ensure a safe food supply. The pivotal role of food sanitation/safety inspectors - including the interpretation of standards, problem solving and decision making, education of the food handling staff, and participation in foodborne illness outbreak investigations.

The world population is expected to increase exponentially within the next decade, which means that the food demand will increase and so will waste production. The increasing demand for food as well as changes in consumption habits have led to the greater availability and variety of food with a longer shelf life. However, there is a need for effective food waste management and food preservation as wasted food leads to overutilization of water and fossil fuels and increasing greenhouse gas emissions from the degradation of food. The Research Anthology on Food Waste Reduction and Alternative Diets for Food and Nutrition Security explores methods for reducing waste and cutting food loss in order to help the environment and support local communities as well as solve issues including that of land space. It also provides vital research on the development of plant-based foods, meat-alternative diets, and nutritional outcomes. Highlighting a range of topics such as agricultural production, food supply chains, and sustainable diets, this publication is an ideal reference source for policymakers, sustainable developers, politicians, ecologists, environmentalists, corporate executives, farmers, and academicians seeking current research on food and nutrition security.

The safety of fresh meat continues to be a major concern for consumers. As a result, there has been a wealth of research on identifying and controlling hazards at all stages in the supply chain. Improving the safety of fresh meat reviews this research and its implications for the meat industry. Part one discusses identifying and managing hazards on the farm. There are chapters on the prevalence and detection of pathogens, chemical and other contaminants. A number of chapters discuss ways of controlling such hazards in the farm environment. The second part of the book reviews the identification and control of hazards during and after slaughter. There are chapters both on contamination risks and how they can best be managed. The range of decontamination techniques available to meat processors as well as such areas as packaging and storage are examined. With its distinguished editor and international team of contributors, Improving the safety of fresh meat is a standard reference for the meat industry. Learn how to identify and control hazards at all stages in the supply chain An authoritative reference on reducing microbial and other hazards in raw and fresh red meat Understand the necessity for effective intervention at each production process

This authoritative two-volume reference provides valuable, necessary information on the principles underlying the production of microbiologically safe and stable foods. The work begins with an overview and then addresses four major areas: 'Principles and application of food preservation techniques' covers the specific techniques that defeat growth of harmful microorganisms, how those techniques work, how they are used, and how their effectiveness is measured. 'Microbial ecology of different types of food' provides a food-by-food accounting of food composition, naturally occurring microflora, effects of processing, how spoiling can occur, and preservation. 'Foodborne pathogens' profiles the most important and the most dangerous microorganisms that can be found in foods, including bacteria, viruses, parasites, mycotoxins, and 'mad cow disease.' The section also looks at the economic aspects and long-term consequences of foodborne disease. 'Assurance of the microbiological safety and quality of foods' scrutinizes all aspects of quality assurance, including HACCP, hygienic factory design, methods of detecting organisms, risk assessment, legislation, and the design and accreditation of food microbiology laboratories. Tables, photographs, illustrations, chapter-by-chapter references, and a thorough index complete each volume. This reference is of value to all academic, research, industrial and laboratory libraries supporting food programs; and all institutions involved in food safety, microbiology and food microbiology, quality assurance and assessment, food legislation, and generally food science and technology.

In this book, some of the most qualified scientists review different food safety topics, ranging from emerging and reemerging foodborne pathogens, food regulations in the USA, food risk analysis and the most important foodborne pathogens based on food commodities. This book provides the reader with the necessary knowledge to understand some of the complexities of food safety. However, anybody with basic knowledge in microbiology will find in this book additional information related to a variety of food safety topics.

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