# **Sensory Evaluation Techniques 4th Edition**

The pillars of good consumer and sensory studies -Sensory profile of a product: mapping internal
sensory properties -- The foundations of consumer
evaluation -- Study plans and strategy: sustainable
short, mid and long-term vision -- Real-life
anticipation with market factors: concept, price,
brand, market channel -- Internal studies versus subcontracting

The ?eld of sensory science has grown exponentially since the publication of the p-vious version of this work. Fifteen years ago the journal Food Quality and Preference was fairly new. Now it holds an eminent position as a venue for research on sensory test methods (among many other topics). Hundreds of articles relevant to sensory testing have appeared in that and in other journals such as the Journal of Sensory Studies. Knowledge of the intricate cellular processes in chemoreception, as well as their genetic basis, has undergone nothing less than a revolution, culminating in the award of the Nobel Prize to Buck and Axel in 2004 for their discovery of the olfactory receptor gene super family. Advances in statistical methodology have accelerated as well. Sensometrics meetings are now vigorous and wellattended annual events. Ideas like Thurstonian

modeling were not widely embraced 15 years ago, but now seem to be part of the everyday thought process of many sensory scientists. And yet, some things stay the same. Sensory testing will always involve human participants. Humans are tough measuring instruments to work with. They come with varying degrees of acumen, training, experiences, differing genetic equipment, sensory capabilities, and of course, different preferences. Human foibles and their associated error variance will continue to place a limitation on sensory tests and actionable results. Reducing, controlling, partitioning, and explaining error variance are all at the heart of good test methods and practices.

Food safety is a major problem around the world, both with regard to human suffering and with respect to economic costs. Scientific advances have increased our knowledge surrounding the nutritional characteristics of foods and their effects on health. This means that a large proportion of consumers are much more conscious with respect to what they eat and their demands for quality food. Food quality is a complex term that includes, in addition to safety, other intrinsic characteristics, such as appearance, color, texture and flavor, and also extrinsic characteristics, such as perception or involvement. Sensory Evaluation Practices examines the principles and practices of sensory evaluation. It describes methods and procedures for the analysis

of results from sensory tests; explains the reasons for selecting a particular procedure or test method; and discusses the organization and operation of a testing program, the design of a test facility, and the interpretation of results. Comprised of three parts encompassing nine chapters, this volume begins with an overview of sensory evaluation: what it does; how, where, and for whom; and its origin in physiology and psychology. It then discusses measurement, psychological errors in testing. statistics, test strategy, and experimental design. The reader is also introduced to the discrimination. descriptive, and affective methods of testing, along with the criteria used to select a specific method. procedures for data analysis, and the communication of actionable results. The book concludes by looking at problems where sensory evaluation is applicable, including correlation of instrumental and sensory data, measurement of perceived efficacy, storage testing, and product optimization. This book is a valuable resource for sensory professionals, product development and production specialists, research directors, technical managers, and professionals involved in marketing, marketing research, and advertising.

"Due to the many problems that need to be solved to optimize food texture, the design and optimization of food texture is an ongoing challenge for the food industry. This unique 2-volume resource offers

practical solutions to the complex and varied problems encountered in designing, measuring and optimizing food texture. The first volume presents insightful case studies on formulating products from a broad variety of food segments, such as cheese, soups, chocolate, cookies, brownies, bread, glutenfree products, low-fat/non-fat dairy products and more. The second volume provides an overview of the latest advances in food texture design and optimization"--

The preservation processes for foods have evolved over several centuries, but recent attention to nonthermal technologies suggests that a new dimension of change has been initiated. The new dimension to be emphasized is the emerging technologies for preservation of foods and the need for sound base of information to be developed as inputs for systematic process design. The focus of the work is on process design, and emphasizes the need for quantitative information as inputs to process design. The concepts presented build on the successful history of thermal processing of foods and use many examples from these types of preservation processes. Preservation of foods by refrigeration, freezing, concentration and dehydration are not addressed directly, but many of the concepts to be presented would apply. Significant attention is given to the fate of food quality attributes during the preservation process and the concept of optimizing process

parameters to maximize the retention of food quality. Focuses on Kinetic Models for Food Components Reviews Transport Models in Food Systems Asseses Process Design Models Laboratory exercises are a necessary part of science education. They enable students to better understand the principles discussed in lectures, and provide them with hands-on experience of the practical aspects of scientific research. The purpose of this book is to provide students and instructors with a time-tested set of lab exercises that illustrate the common sensory tests and/or sensory principles used in evaluation of foods, beverages and consumer products. The appendices will also include a set of simple problem sets that can be used to teach and reinforce basic statistical tests. Approximately twenty years ago the Sensory Evaluation Division of the Institute of Food Technologists sponsored the preparation of a set of exercises titled "Guidelines for Laboratory Exercises" for a Course in Sensory Evaluation of Foods," edited by one of the co-authors (Heymann). This book will provide additional materials from the second author (Lawless), as well as other instructors, in a uniform format that can be easily adopted for course use. Most importantly, the lab exercises will complement the flagship textbook in the field, Sensory Evaluation of Foods: Principles and Practices, 2E, also by Lawless and Heymann and published by Springer.

Page 5/22

Possible course adoption of the main text along with the lab manual should enhance the sales of these materials.

Evidence-based practice depends on well-designed, well-executed research. Now in its second edition, this highly respected guide to dietetics research has been written and edited by the foremost experts in the field. As a guide, this book is invaluable to new and experienced researchers alike. As a reference, Research: Successful Approaches provides practical observations that will make research accessible to all readers.

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Acoustics and Audio Technology, Third Edition, is an introductory text for students of sound and vibration as well as electrical and electronic engineering, civil and mechanical engineering, computer science, signals and systems, and engineering physics. A basic knowledge of basic engineering mathematics and physics is assumed. Problems are included at the end of the chapters and a solutions manual is available to instructors. This classroom-tested book covers the physical background to and mathematical treatment of sound propagation, the properties of human hearing, the generation and radiation of sound as well as noise control, and the technologies used for pickup, recording, and reproduction of sound in various environments, and much more. Key Features: -- Presents a basic short course on acoustics, fundamental equations, and sound propagation -- Discusses the principles of architectural acoustics, techniques for adjusting room acoustics, and various types of sound absorbers -- Offers an overview of the acoustical, mechanical, and electrical properties of loudspeakers and microphones,

which are important transducers --Provides an overview of the properties of hearing and voice --Includes end-of-chapter problems and solutions available to instructors as WAV material

Retitled to reflect expansion of coverage from the first edition, Handbook of Meat and Meat Processing, Second Edition, contains a complete update of materials and nearly twice the number of chapters. Divided into seven parts, the book covers the entire range of issues related to meat and meat processing, from nutrients to techniques for preservation and extending shelf life. Topics discussed include: An overview of the meat-processing industry The basic science of meat, with chapters on muscle biology, meat consumption, and chemistry Meat attributes and characteristics, including color, flavor, quality assessment, analysis, texture, and control of microbial contamination The primary processing of meat, including slaughter, carcass evaluation, and kosher laws Principles and applications in the secondary processing of meat, including breading, curing, fermenting, smoking, and marinating The manufacture of processed meat products such as sausage and ham The safety of meat products and meat workers, including sanitation issues and hazard analysis Drawn from the combined efforts of nearly 100 experts from 16 countries, the book has been carefully vetted to ensure technical accuracy for each topic. This definitive guide to meat and meat products it is a critical tool for all food industry professionals and regulatory personnel. In defining sensory properties of products, descriptive techniques that utilize trained panels are used. Arthur D. Little, Inc. pioneered a desriptive technique in the 1950's known as the "Flavor Profile" that laid the foundation for the development of current desriptive techniques used today in academia and industry. Several collections of published papers are reprinted in this book. The main areas covered  $\frac{Page}{P}$ 

include dairy products, meats, alcoholic beverages, textile materials and general applications. In addition, Dr. Gacula has prepared 40 pages of new text material on (1) Descriptive Sensory Analysis Methods, and (2) Computer Software. Methods for statistical systems (SAS) computer programs are provided

The recording and analysis of food data are becoming increasingly sophisticated. Consequently, the food scientist in industry or at study faces the task of using and understanding statistical methods. Statistics is often viewed as a difficult subject and is often avoided because of its complexity and a lack of specific application to the requirements of food science. This situation is changing – there is now much material on multivariate applications for the more advanced reader, but a case exists for a univariate approach aimed at the non-statistician. This book provides a source text on accessible statistical procedures for the food scientist, and is aimed at professionals and students in food laboratories where analytical, instrumental and sensory data are gathered and require some form of summary and analysis before interpretation. It is suitable for the food analyst, the sensory scientist and the product developer, and others who work in food-related disciplines involving consumer survey investigations will also find many sections of use. There is an emphasis on a 'hands on' approach, and worked examples using computer software packages and the minimum of mathematical formulae are included. The book is based on the experience and practice of a scientist engaged for many years in research and teaching of analytical and sensory food science at undergraduate and post-graduate level. Understanding what the consumer wants and will accept are two of the most significant hurdles faced by anyone in new product development. Whether the concern is the proper mouth-feel of a potato chip, the sense of "freshness" evoked  $\frac{Page}{Page}$  8/22

by a chewing gum, or the weight and texture of a cosmetic, if the consumer doesn't find the product acceptable, it won't sell. Sensory evaluation testing is the process that establishes the consumer acceptability of a product. It can help identify issues before general production is begun, and potentially bring to light issues that hadn't previously been considered a factor in the success of the project. Methods of sensory evaluation have progressed significantly since the first edition of this book, and with each edition since. Recent improved understanding of key components such as the importance of the difference between experts and consumers and the selection of subjects, the analysis of various measurement scales, hybrid methods, and proper preparation of an evaluation panel make this fourth edition timely and important for those working in product development including sensory professionals, technical managers, product specialists and research directors. \*Appeals to sensory experts both in academia and business \*Discovered new optimization is based on integration of sensory descriptive and consumer research data \*New sensory information with imagery

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Over the last decade or so, the field of science and technology studies (STS) has become an intellectually dynamic interdisciplinary arena. Concepts, methods, and theoretical perspectives are being drawn both from longestablished and relatively young disciplines. From its origins in philosophical and political debates about the creation and use of scientific knowledge, STS has become a wide and deep space for the consideration of the place of science and technology in the world, past and present. The Routledge Handbook of Science, Technology and Society seeks to capture the dynamism and breadth of the field by presenting work that pushes the reader to think about science and

technology and their intersections with social life in new ways. The interdisciplinary contributions by international experts in this handbook are organized around six topic areas: embodiment consuming technoscience digitization environments science as work rules and standards This volume highlights a range of theoretical and empirical approaches to some of the persistent – and new – questions in the field. It will be useful for students and scholars throughout the social sciences and humanities, including in science and technology studies, history, geography, critical race studies, sociology, communications, women's and gender studies, anthropology, and political science. From listing the steps involved in a sensory evaluation project to presenting advanced statistical methods, Sensory Evaluation Techniques, Fourth Edition covers all phases of sensory evaluation. Like its bestselling predecessors, this edition continues to detail all sensory tests currently in use, to promote the effective employment of these tests, and to describe major sensory evaluation practices. The expert authors have updated and added many areas in this informative guide. New to this edition are expanded chapters on qualitative and quantitative consumer research and the SpectrumTM method of descriptive sensory analysis that now contains full descriptive lexicons for numerous products, such as cheese, mayonnaise, spaghetti sauce, white bread, cookies, and toothpaste. Also new in this chapter is a set of revised flavor intensity scales for crispness, juiciness, and some common aromatics. The book now includes an overview of Thurstonian scaling that examines the decision processes employed by assessors during their evaluations of products. Another addition is a detailed discussion of datarelationship techniques, which link data from diverse sources that are collected on the same set of examples. With numerous examples and sample tests, Sensory Evaluation Page 10/22

Techniques, Fourth Edition remains an essential resource that illustrates the development of sensory perception testing. A comprehensive review of the techniques and applications of descriptive analysis Sensory evaluation is a scientific discipline used to evoke, measure, analyse and interpret responses to products perceived through the senses of sight, smell, touch, taste and hearing. It is used to reveal insights into the ways in which sensory properties drive consumer acceptance and behaviour, and to design products that best deliver what the consumer wants. Descriptive analysis is one of the most sophisticated, flexible and widely used tools in the field of sensory analysis. It enables objective description of the nature and magnitude of sensory characteristics for use in consumer-driven product design, manufacture and communication. Descriptive Analysis in Sensory Evaluation provides a comprehensive overview of a wide range of traditional and recently-developed descriptive techniques. including history, theory, practical considerations, statistical analysis, applications, case studies and future directions. This important reference, written by academic and industrial sensory scientist, traces the evolution of descriptive analysis. and addresses general considerations, including panel setup, training, monitoring and performance; psychological factors relevant to assessment; and statistical analysis. Descriptive Analysis in Sensory Evaluation is a valuable resource for sensory professionals working in academia and industry, including sensory scientists, practitioners, trainers and students, and industry-based researchers in quality assurance, research and development, and marketing. The dairy industry has faced several challenges that have impacted dairy food quality and consumer acceptability. This book presents a different approach to address current issues and challenges facing the dairy industry. The book consists of seven chapters dealing with dairy processing, current issues

related to consumers, and probiotic characteristics. We hope that this first edition can build interest among other scientists to join our future effort to write a more comprehensive book on this topic.

UNDERSTANDING FOOD: PRINCIPLES AND PREPARATION is a best-selling food fundamentals text ideal for an undergraduate course that covers the basic elements of food preparation, food service, and food science. Contemporary and comprehensive in coverage, it introduces students to the variety of aspects associated with food preparation. The Fifth Edition thoroughly explores the science of food through core material on food selection and evaluation, food safety, and food chemistry. Food preparation, classification, composition, selection, purchasing, and storage for a range of traditional food items are discussed, and the various aspects of food service are covered: meal planning, basic food preparation, equipment, food preservation, and government regulations. A rich illustration and photo program and unique pedagogical features make the information easily understandable and interesting to students. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version. Food Science: An Ecological Approach presents the field of

Food Science: An Ecological Approach presents the field of food science—the study of the physical, biological, and chemical makeup of food, and the concepts underlying food processing—in a fresh, approachable manner that places it in the context of the world in which we live today.

Wine Tasting: A Professional Handbook is an essential guide for any professional or serious connoisseur seeking to understand both the theory and practice of wine tasting. From techniques for assessing wine properties and quality, including physiological, psychological, and physicochemical sensory evaluation, to the latest information on types of wine,

the author guides the reader to a clear and applicable understanding of the wine tasting process. Including illustrative data and testing technique descriptions. Wine Tasting is for professional tasters, those who train tasters and those involved in designing wine tastings as well as the connoisseur seeking to maximize their perception and appreciation of wine. Revised and updated coverage, notably the physiology and neurology taste and odor perception Expanded coverage of the statistical aspect of wine tasting (specific examples to show the process), qualitative wine tasting (examples for winery staff tasting their own wines; more examples for consumer groups and restaurants), tripling of the material on wine styles and types, wine language, the origins of wine quality, and food and wine combination Flow chart of wine tasting steps Flow chart of wine production procedures Practical details on wine storage and problems during and following bottle opening Examples of tasting sheets Details of errors to be avoided Procedures for training and testing sensory skill

Principles of Sensory Evaluation of Food covers the concepts of sensory physiology and the psychology of perception. This book is composed of 11 chapters that specifically consider the significance of these concepts in food sensory analysis. After providing a brief introduction to problems related to sensory evaluation in food industry, this book goes on examining the physiology and psychology of the senses. The succeeding chapters survey the status of methodology and appropriate statistical analyses of the results. These topics are followed by discussions on the problems of measuring consumer acceptance. Food acceptance and preference depend on human sensory responses. The remaining chapters describe the relationship between sensory characteristics and various physical and chemical properties of foods. This book will prove useful to food scientists and

#### researchers.

"This new edition of a bestseller covers all phases of performing sensory evaluation studies, from listing the steps involved in a sensory evaluation project to presenting advanced statistical methods. Like its predecessors, Sensory Evaluation Techniques, Fifth Edition gives a clear and concise presentation of practical solutions, accepted methods, standard practices, and some advanced techniques. The fifth edition is comprehensively reorganized, revised, and updated. Key highlights of this book include:A more intuitive organizationStatistical methods adapted to suit a more basic consumer methodologyRearranged material to reflect advances in Internet testingNew time-intensity testing methodsNew chapters on advanced sensory processes, quality control testing, advertising claims, and business challengesNew material on mapping and sorting, graph theory, multidimensional scaling, and flash profiling techniques Explanations of theories of integrity, amplitude, and balance and blendUpdated appendices for spectrum method scalesUpdated referencesSensory Evaluation Techniques remains a relevant and flexible resource. providing how-to information for a wide variety of users in industry, government, and academia who need the most current information to conduct effective sensory evaluation and interpretations of results. It also supplies students with the necessary theoretical background in sensory evaluation methods, applications, and implementations."--Provided by publisher.

The sensory properties of foods are the most important reason people eat the foods they eat. What those properties are and how we best measure those properties are critical to understanding food and eating behavior. Appearance, flavor, texture, and even the sounds of food can impart a desire to eat or cause us to dismiss the food as unappetizing, stale, or Page 14/22

even inappropriate from a cultural standpoint. This Special Issue focuses on how sensory properties are measured, the specific sensory properties of various foods, and consumer behavior related to which properties might be most important in certain situations and how consumers use sensory attributes to make decisions about what they will eat. This Special Issue contains both research papers and review articles.

As the population of the world continues to surge upwards, it is apparent that the global economy is unable to meet the nutritional needs of such a large populace. In an effort to circumvent a deepening food crisis, it is pertinent to develop new sustainability strategies and practices. Food Science, Production, and Engineering in Contemporary Economies features timely and relevant information on food system sustainability and production on a global scale. Highlighting best practices, theoretical concepts, and emergent research in the field, this book is a critical resource for professionals. researchers, practitioners, and academics interested in food science, food economics, and sustainability practices. The Sensory Evaluation of Dairy Products, Second Edition is for all who seek a book entirely devoted to sensory evaluation of dairy products and modern applications of the science. It is an excellent scientific reference for training in dairy product evaluation and is a practical guide to the preparation of samples for sensory evaluation. The book contains updates of the original text of the well-received first edition, as well as brand new material. This unique book is designed for professionals involved in many aspects of dairy production, including academic teaching and research, processing, quality assurance, product development and marketing. It is an invaluable tool for those who compete in the annual Collegiate Dairy Product Evaluation Contest. Food quality and safety issues continue to dominate the  $\frac{Page}{Page}$  15/22

press, with most food companies spending large amounts of money to ensure that the food quality and assessment procedures in place are adequate and produce good and safe food. This holds true for companies and laboratories responsible for the processing of fish into various products, those responsible for researching safe new products, and departments within other companies supporting these functions. Fishery Products brings together details of all the major methodologies used to assess the quality of fishery products in the widest sense. Subject coverage of this important book includes chapters on assessment of authenticity, and several chapters on quality assessment using various methods, such as: Texture measurement Electronic nose and tongue NMR Colour measurement This timely volume will serve as a vital tool for all those working in the processing of fishery and aquaculture products: including laboratory personnel working in regulatory bodies, food quality control personnel, food scientists, food technologists, nutritionists, seafood trade bodies, seafood labelling regulatory bodies, government food protection agencies and environmental health personnel. Libraries in research establishments and universities where food science, food technology, nutrition, aquaculture, fisheries and biological sciences are studied and taught should have copies of this important publication on their shelves.

The key requirements for chilled food products are good quality and microbiological safety at the point of consumption. The first edition of Chilled foods quickly established itself as the standard work on these issues. This major new edition strengthens that reputation, with extensively revised and expanded coverage (including more than ten new chapters) and significant participation from those in the chilled food industry to increase the publication's relevance to practitioners. The introduction discusses key trends and

influences in the chilled foods market. Part one explores the critical importance of raw material selection and packaging materials in final product quality, with expanded coverage of particular ingredients such as fish, cheese and poultry and a new contribution on chilled food packaging materials and technologies. Part two focuses on technologies and processes in the supply chain, with entirely new chapters on refrigeration, storage and transport and non-microbial hazards such as allergens, among others. Alongside are updated chapters on the important topics of hygienic design, cleaning and disinfection and temperature monitoring and measurement. Part three covers microbiological hazards, with new chapters on predictive microbiology and conventional and rapid analytical microbiology. The final part contains three new chapters devoted to essential issues in safety and quality management, such as shelf-life, quality and consumer acceptability. A wholly updated chapter on legislation and criteria completes the volume. Extensively revised and expanded, the third edition of Chilled foods is an essential reference for professionals involved in the manufacture of chilled food products. Reviews key trends and influences in the chilled food market Explores the importance of raw material selection and packaging materials in final product quality Discusses technologies and processes in the supply chain, focusing on refrigeration, storage and transport The fifth edition of a bestseller, this book covers all phases of performing sensory evaluation studies, from listing the steps involved in a sensory evaluation project to presenting advanced statistical methods. The new edition has undergone a comprehensive reorganization, revision, and updating. The organization is more intuitive, statistical methods are adapted to a more basic consumer methodology, the material is rearranged to reflect the advances of internet testing, and new time intensity testing

methods (TDS, TOS, progressive profiling, Time Intensity Multi-Evaluation) have been added to the descriptive analysis chapters.

"Bitterness is one of the most interesting and least studied/understood of all the human tastes. It produces aversive reactions because it was originally associated with the plant source being poisonous. In fact, it was considered a defence mechanism for avoiding the ingestion of such harmful substances so that early human survival was based on the knowledge and ability to discriminate between edible plants particularly those with potentially harmful effects. With the advent of modern technology our understanding of bitterness is far more sophisticated and that we now know that not all bitter compounds are poisonous. In fact there are many foods in which bitterness is quite acceptable such as in some cheeses and beverages. In this book we have attempted to provide a comprehensive review of bitterness. from the novel genes in humans responsible for the expression of bitterness to methods used to remove or reduce bitterness in functional foods and nutraceuticals. The book is organized into five sections. The first section covers the biology of bitterness perception with Chapter 1 discussing the biochemistry of the 25 human bitter taste receptors of the TAS2R gene family. Chapter 2 examines the physiological aspects of bitterness while Chapter 3 discusses human bitterness from an evolutionary perspective"--Sensory Evaluation Techniques, Fourth EditionCRC Press ?????????Java I/O??????????????????????? Sensory Evaluation Practices, Fifth Edition, presents the

Sensory Evaluation Practices, Fifth Edition, presents the latest developments and methods of sensory evaluation, including those on the front end of innovation, consumer acceptance/preference, multivariate statistical analysis, discrimination testing, descriptive analysis, sensory claims

substantiation for advertising, and information management. Additionally, related social psychological methods, such as laddering, design thinking, emotional profiling, and applications of qualitative and consumer co-creation and immersive techniques are explored. This book will be an ideal reference for sensory professionals, technical managers, product specialists and research directors in the food, beverage, cosmetics, and other consumer products industries of all sizes. Emphasizes the importance of scientific sensory methodology used to measure and understand consumer perception Illustrates the importance of planning, managing and communicating product sensory information in a way that is actionable to developers, marketers and legal counsel Presents how sensory science is becoming more influential at the front end of innovation Discusses measurement, the design of experiments, and how to understand key sensory drivers that most influence consumers Explores the global nature of products and how companies can benefit by having fundamental training programs in sensory and consumer science Contains demonstrated methods for test selection. application and measurement, and testing with the right consumer, including more typical usage environments Includes worked examples for interpreting and displaying results Features a new chapter on how to get your research published

Although good devices exist for presenting visual and auditory sensations, there has yet to be a device for presenting olfactory stimulus. Nevertheless, the area for smell presentation continues to evolve and smell presentation in multimedia is not unlikely in the future. Human Olfactory Displays and Interfaces: Odor Sensing and Presentation provides the opportunity to learn about olfactory displays and its odor reproduction. Covering the fundamental and latest research of sensors and sensing systems as well as

presentation technique, this book is vital for researchers, students, and practitioners gaining knowledge in the fields of consumer electronics, communications, virtual realities, electronic instruments, and more.

Salt, Fat and Sugar Reduction: Sensory Approaches for Nutritional Reformulation of Foods and Beverages explores salt, sugar, fat and the current scientific findings that link them to diseases. The sensory techniques that can be used for developing consumer appealing nutritional optimized products are also discussed, as are other aspects of shelf life and physicochemical analysis, consumer awareness of the negative nutritional impact of these ingredients, and taxes and other factors that are drivers for nutritional optimization. This book is ideal for undergraduate and postgraduate students and academics, food scientists, food and nutrition researchers, and those in the food and beverage industries. Provides a clear outline of current legislation on global ingredient taxes Demonstrates effective protocols, sensory, multivariate and physico-chemical for salt, fat and sugar reduction Outlines reduction protocols, with and without the use of replacer ingredients for salt, fat and sugar reduction Illustrates the full process chain, consumer to packaging, and the effects of reformulation by reduction of ingredients The field of sensory evaluation has matured in the last half century to be come a recognized discipline in the food and consumer sciences and an important part of the foods and consumer products industries. Sensory pro fessionals enjoy widespread recognition for the important services they provide in new product development, basic research, ingredient and process modification, cost reduction, quality maintenance, and product op timization. These services enhance the informational support for manage ment decisions, lowering the risk that accompanies the decisionmaking process. From the consumers' perspective, a sensory

testing program in a food or consumer products company helps ensure that products reach the market with not only good concepts but also with desirable sensory attrib utes that meet their expectations. Sensory professionals have advanced well beyond the stage when they were simply called on to execute "taste" tests and to provide statistical summaries of results. They are now frequently asked to participate in the decision process itself, to draw reasoned conclusions based on data, and to make recommendations. They are also expected to be well versed in an in creasingly sophisticated battery of test methods and statistical procedures, including multivariate analyses. As always, sensory professionals also need to understand people, for people are the measuring instruments that provide the basic sensory data. People are notoriously variable and diffi cult to calibrate, presenting the sensory specialist with many additional XV xvi PREFACE measurement problems that are not present in instrumental methods.

Global Cheesemaking Technology: Cheese Quality and Characteristics reviews cheesemaking practices, and describes cheeses and the processes from which they are manufactured. In addition, the book examines new areas to stimulate further research in addition to the already established knowledge on the scientific principles on cheesemaking. Part I provides an account on the history of cheese, factors influencing the physicochemical properties. flavour development and sensory characteristics, microbial ecology and cheese safety, traceability and authentication of cheeses with protected labels, and traditional wooden equipment used for cheesemaking, while an overview of the cheesemaking process is also presented. Part II describes 100 global cheeses from 17 countries, divided into 13 categories. The cheeses described are well-known types produced in large quantities worldwide, together with some Page 21/22

important locally produced, in order to stimulate scientific interest in these cheese varieties. Each category is presented in a separate chapter with relevant research on each cheese and extensive referencing to facilitate further reading.

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