Manual Of Laboratory Procedures For Quality Evaluation Of Sorghum And Pearl Millet

#sorghum quality evaluation #pearl millet lab procedures #grain quality manual #cereal analysis techniques #agricultural product testing

This comprehensive manual outlines essential laboratory procedures for the quality evaluation of sorghum and pearl millet. Designed for researchers, technicians, and quality control professionals, it offers step-by-step guidance on various analytical methods to assess the nutritional and physical properties of these vital cereal grains, ensuring reliable and consistent quality assessment.

Manual of Laboratory Procedures for Quality Evaluation of Sorghum and Pearl Millet

This manual is for use by scientists and technicians who screen and evaluate varieties of sorghum and pearl millet for their grain quality. It is based on experience in agronomy and food technology acquired over several years in SADC/ICRISAT's Sorghum and Millet Improvement Program in Zimbabwe, hwre there is a focus on generalized screening methods for broad grain qualities rather than detailed component analysis of a molecular nature. Laboratory procedures, including qualitative and quantitative methods, were compiled from existing sources and modified in several ways for the Program's use. Quality parameters were focused on grain, on primary products such as flour, meal, and malt, and on such secondary products as baked flour, steamed flour, and porridge. The grain and these products were evaluated using physical and chemical methods, and a database was created to serve as an empirical reference document derived from field and laboratory results. The manual's first section, on grain-quality evaluation, describes rapid techniques for routine screening. The qualitative parameters used are: color, pericarp thickness, testa, endosperm texture, and hardness. Quantitative parameters comprise 100-kernel weight, Agtron readings, and moisture, floaters, dehulling loss, milling yield, size fractions, and water absorption expressed as percentages. Eight chemical methods of evaluation are described in the second section, among which only rapid tannin analysis forms part of routine screening tests. The last section (...).

Plant Breeding Reviews

Plant Breeding Reviews presents state-of-the-art reviews on plant genetics and the breeding of all types of crops by both traditional means and molecular methods. Many of the crops widely grown today stem from a very narrow genetic base; understanding and preserving crop genetic resources is vital to the security of food systems worldwide. The emphasis of the series is on methodology, a

fundamental understanding of crop genetics, and applications to major crops. The series is sponsored by the American Society for Horticultural Science and appears in the form of one or two volumes per year.

The ICC Handbook of Cereals, Flour, Dough & Product Testing

Presents an introduction to the techniques and information required for the testing and analysis of cereals throughout the entire grain chain, from breeding through harvesting and storage to processing and the manufacture of cereal-based food products.

Alternative Uses of Sorghum and Pearl Millet in Asia

Both sorghum and pearl millet are staple food crops for the poor people in the semi-arid tropics (SAT). However, during the last two decades both crops are becoming less important as staple food crops in SAT countries. Demand for course cereals (such as sorghum and pearl millet) as human food is decreasing in many countries, due to increased production and availability of preferred cereals (such as rice and wheat) at subsidized prices. The poor farmers in rainfed SAT cannot grow other crops, and are economically impacted negatively, as they do not get reasonable price for their produce. However, possibilties of alternative uses of sorghum and pearl millet are creating new opportunities that have potential to increase market demand and income to farmers.

International Sorghum and Millets Newsletter

Cereal Grains: Assessing and Managing Quality, Second Edition, provides a timely update to this key reference work. Thoroughly revised from the first edition, this volume examines the latest research and advances in the field. New chapters have been added on alternative grains, including ancient grains and pseudocereals, biosecurity, and industrial processing of grains, amongst others. Quality and food safety are important throughout the value-addition chain, from breeding, production, harvest, storage, transport, processing, and marketing. At all stages, analysis is needed so that quality management can proceed intelligently. These considerations are examined for each of the major cereal species, including wheat (common and durum), rye and triticale, barley and oats, rice, maize (corn), pseudocereal species, sorghum, and the millets. Divided into five sections, the book analyses these for the range of cereal species before a final section summarizes key findings. Documents the latest research in cereal grains, from their nutraceutical and antioxidant traits, to novel detection methods Provides a complete and thorough update to the first edition, analyzing the range of major cereal species Presents detailed advice on the management of cereal quality at each stage of production and processing

Cereal Grains

Millets are small-grained, annual, warm weather cereal. The millets offer both nutritional and livelihood security of human population and fodder security of diverse livestock population in dryland region of India. Millets are highly nutritious, they are known as health foods especially for control of diabetes and mineral deficiencies. One of the major factors for declining consumption of millets is the lack of awareness of their nutritive value and inconvenience of their preparation. This book covers both, chemistry and novel technology for millet processing and development. It summarizes the latest information on millets, their nutritional and health benefits, historical perspective, utilization, R&D efforts, present status and the importance being given by policy makers for promoting millets for sustainable agriculture and healthy society. The book is compiled by various experts keeping in view syllabi of different research institutions, researchers, students as well requirement of the industry. It will serve as instructional material for researchers in food science, microbiology, process engineering, biochemistry, biotechnology and reference material for those working in industry and R & D labs.

Millets and Millet Technology

Sorghum and Millets: Chemistry, Technology and Nutritional Attributes, Second Edition, is a new, fully revised edition of this widely read book published by AACC International. With an internationally recognized editorial team, this new edition covers, in detail, the history, breeding, production, grain chemistry, nutritional quality and handling of sorghum and millets. Chapters focus on biotechnology, grain structure and chemistry, nutritional properties, traditional and modern usage in foods and beverages, and industrial and non-food applications. The book will be of interest to academics researching all aspects of sorghum and millets, from breeding to usage. In addition, it is essential reading for those

in the food industry who are tasked with the development of new products using the grains. Updated version of the go-to title in sorghum and millets with coverage of developments from the last two decades of research Brings together leading experts from across the field via a world leading editorial team Published in partnership with the AACCI - advancing the science and technology of cereals and grains

Encyclopedia of Grain Science

A compilation of the history, breeding, production, grain chemistry, nutritional quality, handling, and uses of sorghum and millet. Thirteen chapters cover history, taxonomy, and distribution; production and importance; agronomic principles; structure and chemistry; nutritional properties; storage, including drying for storage, with particular reference to tropical areas and the mycotoxin problem; traditional uses; new milling techniques and products; lager beers from sorghum; opaque beers; forage and feed; sweet sorghum substrate for industrial alcohol; and quality evaluation and trading standards. Annotation copyright by Book News, Inc., Portland, OR

Proceedings of 2005 JKUAT Scientific, Technological, and Industrialisation Conference

Vols. for 1975- have "data provided by National Agricultural Library, U.S. Department of Agriculture."

Agriculture and Environment for Developing Regions

provides information on the status of cultivar improvement, seed quality control, seed production, marketing and promotion in 84 member countries

Sorghum and Millets

Shorghum and millet: production trends, utilization, stocks, international trade, international market prices, international marketing and domestic policies, technological change, enviromental issues and focus of research, medium-term outlook. Annex I: types of millet. Annex II: relative importance of millet species, 1992-94. Sorghum and millet statistics.

Journal of the Federated Institutes of Brewing

The techniques of high quality beer production are described in a concise account of malting and brewing processes and the science upon which they are based.

Sorghum and Millets

Cereal uses range from human food and beverages to animal feeds and industrial products. It is human food and beverages which are the predominant uses covered in this book, since the nutritional quality of cereals for animal feed is described in other publications on animal nutrition, and industrial products are a relatively minor use of cereals. Cereals are the main components of human diets and are crucial to human survival. Three species, wheat, rice and maize, account for the bulk of human food. Barley is the major raw material for beer production and ranks fourth in world production. Other species such as sorghum are regionally important. This book covers all the major cereal species: wheat, rice, maize, barley, sorghum, millet, oats, rye and triticale. Specific chapters have been devoted to a description of the major end-uses of each of the species and to definition of the qualities required for each of their end uses. The functional and nutritional quality of cereals determines their suitability for specific purposes and may limit the quality of the end product, influencing greatly the commercial value of grain. An under standing of the factors that determine grain quality is thus important in the maintenance of efficient and sustainable agricultural and food production. The biochemical constituents of the grain that determine quality have been described in chapters on proteins, carbohydrates and other components. An understanding of the relationships between grain composition and quality is important in selecting grain for specific uses.

South African Journal of Plant and Soil

This manual describes a new methodology to measure a decent but basic standard of living in different countries and how much workers need to earn to afford this, making it possible for researchers to estimate comparable living wages around the world and determine gaps between living wages and prevailing wages, even in countries with limited secondary data.

Bibliography of Agriculture with Subject Index

The FAO/WHO Manual on development and use of FAO and WHO specifications for pesticides contains general principles and methodologies of the work undertaken by JMPS, is the continuous evaluation of new scientific developments and guidance documents. The Manual gives the historical background of the operation of the JMPS and describes the purpose of the work. The Manual is also used by countries as a guidance document in setting pesticide specifications. This 3rd revision of the Manual contains n ew methodologies/principles developed in recent 5 years and incorporates the current working principles applied by the JMPS.

Bibliography of Agriculture

A complete guide to the textural characteristics of an international array of traditional and special foods It is widely recognized that texture has an intrinsic relationship to food preference. A full understanding of its functions and qualities is, therefore, of crucial importance to food technologists and product developers, as well as those working towards the treatment of dysphagia. Textural Characteristics of World Foods is the first book to apply a detailed set of criteria and characteristics to the textures of traditional and popular foods from across the globe. Structuring chapters by region, its authors chart a journey through the textural landscapes of each continent’s cuisines, exploring the complex and symbiotic relationships that exist between texture, aroma, and taste. This innovative text: Provides an overview of the textural characteristics of a wide range of foods Includes descriptions of textures and key points of flavor release Examines the relationships between the texture, taste, and aroma of each food presented Is structured by geographic region Rich with essential insights and important research, Textural Characteristics of World Foods offers all those working in food science and development a better picture of texture and the multifaceted role it can play.

Manual of Genebank Operations and Procedures

amounts can produce a deleterious effect on animals. In an attempt to quantify this potential for toxicity and to give sufficient margin for safety, JECFA has introduced an acceptable daily intake (ADI) level for food additives. For example, the ADI values granted for saccharin, aspartame, cyclamate, acesulfame-K and sucralose are 2. 5, 40, 11,9 and 1 3. 5 mg kg- body weight per day, respectively. Chapter 2 on regulatory aspects of low-calorie food elaborates these points. The additives that are to be consumed in large amounts, such as a fat replacement product like 'Olestra' or a new bulking material like 'polydextrose', present a more complex problem as far as the evaluation of their toxicity is concerned. Normal safety testing of an additive, such as a high-intensity sweetener, requires that the test animals are fed with a sufficiently high dosage in order to produce an effect and then on that basis an ADI value is calculated. In cases like 'Olestra' and 'polydex trose', which are not normally present in diet or metabolised to dietary constituents, such an approach will obviously not be applicable, or of any use, in calculating an ADI value. Due to these factors the regulatory authorities have not yet been able to produce any guidelines for toxicity trials for additives that are to be taken in food in large quantities.

Bibliography of Agriculture

In recent years, the concern of society about how food influences the health status of people has increased. Consumers are increasingly aware that food can prevent the development of certain diseases, so in recent years, the food industry is developing new, healthier products taking into account aspects such as trans fats, lower caloric intake, less salt, etc. However, there are bioactive compounds that can improve the beneficial effect of these foods and go beyond the nutritional value. This book provides information on impact of bioactive ingredients (vitamins, antioxidants, compounds of the pulses, etc.) on nutrition through food, how functional foods can prevent disease, and tools to evaluate the effects of bioactive ingredients, functional foods, and diet.

FAO Seed Review 1979-80

Technological constraints and opportunities in relation to class of livestock and production objectives; Trhe influence of socioeconomic factors on the availability and utilization of crop residues as animal feeds; Crop residues in Tropical Africa: trends in supply, demand and use; Cowpea and its improvement: key to sustainable mixed crop/livestock farming systems in West Africa; Dynamics of feed resources in mixed farming systems in Southeast, South Asia; West/Central Asia-North Africaand Latin America; Crop residues as a strategic resource in mixed farming systems; Alternatives to crop residues as feed resource in mixed farming systems; Alternatives to crop residues for soil amendment; Crop residues for

feeding animals in Asia: technology development and adoption in crop/livestock systems; The national perspective: a synthesis of country reports presented at the Workshop.

IPGRI Thematic Report 2000-2001

Abstract: This reference work on food biochemistry focuses on the nutritive value of carbohydrates, proteins, lipids, vitamins and minerals, and the action of enzymes in foods. It includes current findings of research on the composition of meat, milk, gluten and legume proteins and describes the mode of action of hydrolytic and oxidative enzymes in foods. Other discussions are as follows: nutritional needs for vitamins, minerals, essential fatty acids and amino acids; data for the composition of food ingredients and the nutritive value of foods are given; and concepts of recommended daily amounts of nutrients. Key facts, references and further readings lists are provided at the end of each chapter. Illustrations, appendices, and an abbreviation and glossary section are also included.

The World Sorghum and Millet Economies

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

Abstracts on Tropical Agriculture

This comprehensive reference combines the technological know-how from five centuries of industrial-scale brewing to meet the needs of a global economy. The editor and authors draw on the expertise gained in the world's most competitive beer market (Germany), where many of the current technologies were first introduced. Following a look at the history of beer brewing, the book goes on to discuss raw materials, fermentation, maturation and storage, filtration and stabilization, special production methods and beermix beverages. Further chapters investigate the properties and quality of beer, flavor stability, analysis and quality control, microbiology and certification, as well as physiology and toxicology. Such modern aspects as automation, energy and environmental protection are also considered. Regional processes and specialties are addressed throughout the entire book, making this a truly global resource on brewing.

At ICRISAT.

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