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Bücher – Livres

Handbook of Indices of Food Quality and Authenticity

R.S. Singhal, P.R. Kulkarni and D.V. Rege

Woodhead Publishing Ltd, Cambridge CB1 6AH, England 1997. 561 pp., 234 x 156 mm, hardback, £ 125.– / US $ 225.– (ISBN 1 85573 299 8)

Food quality has traditionally been considered and assessed in terms of wholesomeness, safety, acceptability and adulteration. Most books on this topic relate to application of instrumental techniques for chemical-analytical methods, sensory analysis or nutritional and toxicological evaluation for detection of food adulteration. Several of these methods have even been critically evaluated in collaborative tests, selected and approved as official methods. During the last 10 years, however, several new challenges have been posed to the food scientist and food analysts. This traditional methodology for food analysis has so begun to reveal more and more inadequacy in tackling new problems such as grades, chemotaxonomy, geographical origin, variety, exposure to handling, storage, transport, pretreatments and processing. Research scientists as well as analysts responsible for quality assurance are now looking for different approaches to assessing food quality and authenticity using new parameters, criteria and markers.

This book compares and evaluates indices currently being used to distinguish characteristics of species and cultivars, as well as those of the contaminants and adulterants of native food commodities. It also highlights numerous physicochemical differences of the «finger prints» left in these commodities by handling and processing techniques and how these can be used as criteria for assessing the quality and authenticity of food products. Moreover, new molecules in the plant kingdom have been discovered as antinutritional or toxic phytoalexins, substances imparting resistance to pests. Many of these may be species specific or variety specific. Most notable, however, is knowledge of molecular biology and genetics which has enabled the development of new analytical applications based on the unique properties of proteins and nucleic acids.

This excellent volume provides new and useful information presented as state-of-the-art works on this area. It surveys the trends and presents several novel approaches that are opening up to the analysts who have to face such daily problems in the future. The introductory chapter highlights the last developments in the concept of food quality, safety and authenticity. Modern techniques using biosensors, immunochemical techniques, DNA probes, polymerase chain reactions (PCR) for microbial or biological investigations as well as isotope ratio mass spectrometry (IRMS) or site specific natural isotope fractionation measured by NMR (SNIF-NMR) for authentication of foods using isotopic methods are mentioned. The eight next chapters cover a great variety of everyday foodstuffs and drinks such as: 1. food grains; 2. fruit and vegetables products; 3. milk and dairy products; 4. meat, fish and poultry; 5. edible oils and fats; 6. honey; 7. spices, flavourants and condiments; 8. tea, coffee and cocoa. The last chapter generally

deals with some processing indices of foods like thermal processing, irradiation and storage. It also lists some important indicators for quality evaluation of beans, and compares fresh versus frozen – thawed foods. Each chapter has its own introduction as well as numerous recent and well documented references. This volume includes a large subject index.

As a detailed review of current methodologies and indices of food quality, this book will be an essential reference work for industry and an indispensable guide for the research worker, food scientist and food analyst. It is therefore intended for a broad readership of technologists, analysts, microbiologists, and food chemists active in the field of quality assurance and food authentication.

J.O. Bosset