NATIONAL STANDARDS

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Contents

1. Introduction
2. Preparation of National Standards
3. Relationship Between Standardization and Regulation
4. Basic Data About Some National Standards Bodies
4.1. British Standards Institution (BSI)
4.2. German Standardization Body (DIN)
4.3. French Standards Body
4.4. Hungarian Standards Institute
4.5. Japanese Industrial Standards Committee (JISC)
4.6. Standards Australia
4.7. American National Standard Institute (ANSI)
4.8. Other National Standardization Bodies
5. Advantages of Utilizing International Standards
Glossary
Bibliography
Biographical Sketches

Summary

Standardization started on the national level and, although its aim and structure has altered over time, its importance has remained unchanged. Depending on the internal regulation of countries, the status and role of standards can be different. Establishment of national standards bodies started at the beginning of the twentieth century and has not yet finished. Some randomly selected national standards bodies are introduced briefly. The chapter deals with the preparation of national standards, and gives the tasks and responsibilities of various organizations and persons that take part in this work. Finally, the relationship between standardization and regulation, and the advantages of the use of international standards are discussed.

1. Introduction

At present a substantial part of national standardization work consists of the adoption and implementation of regional and international standards. Predictions that national standardization will disappear after a certain period and will be replaced by regional or

international standardization are not justified. The two main reasons for its survival are as follows:

- Almost any demand for the development of regional or international standards arises at the national level. At first, a national standard is developed and used; demand for its extension to regional or international levels generally arises later. Both regional and international standardization are based on well-prepared national expert groups preparing standards which can also be acceptable at a higher level.
- Each country has some special products that are not of wider interest but have significant importance in the production and consumption within the given country. Standardization of such products is important, but remains always on the national level.

As mentioned in the previous chapter (see *Basic Concepts of Food Standards*), the legal status and role of standards in the framework of legislation and administrative network of food inspection and enforcement systems are different, depending on tradition, economic development, and other factors.

The two extremes regarding the role of standards are in the centralized economies and in the fully liberalized regulation of food control. In the first case, all food standards (including both commodity standards and methods of analysis and sampling) are prepared and issued by government bodies and are mandatory. In the second case, a Food Act sets out broad principles in relation to food control, the standards are developed by the parties concerned, based on consensus, and are voluntary.

The food laws of developed countries include a basic Food Act and many regulations (guidelines, codes of practice, recommendations, and so on) containing detailed provisions governing the different categories of products coming under the jurisdiction of each set of regulations. Regulations deal with hygienic practice, food additives, pesticides, and other chemical or biological contaminants, packaging, labeling, and so on.

Standards must not be in contradiction with any food regulation, which means that although standards are voluntary, they are regulated indirectly and may be partly mandatory.

Food standards often prescribe the method to be used, either by incorporating the exact analytical procedure in the standard, or by reference to stated methods in some reference work. Frequently, analytical methods are specified in food additive or pesticide regulations.

The developments in world economy, globalization, and the formation of “common markets” in many parts of the world (e.g., European Union, American Free Trade Association) resulted in changes in national standardization. Even after tariff barriers were removed, nations found that the free flow of foods between members was impeded by differing food laws and food standards. To achieve the benefits expected from their association in common markets, nations find that they need harmonized food standards.

The tendencies of development mentioned above influence the activities of national standardization bodies. It seems that their activity will be directed primarily to the harmonization of existing national standards in the framework of their common market. This means that, preferably, regional and international standards will be elaborated and used. National standards will be justified for some national specialty food products and in specific fields of national interest.

2. Preparation of National Standards

The preparation of a food standard involves the gathering of much information and the cooperative efforts of many people. The establishing of a standard at the national level should indeed be a national effort based upon contributions from government, the food industry, the food trade, the scientific community, and the consumers.

The national standardization body should assume responsibility for, among other tasks:

- Establishing due rules of procedure for the standardization activities to be followed in accordance with the national constitution and specific legal requirements
- Arranging for the drafting and publication of the proposed standard, with invitation for all interested parties to submit comments within a specified time limit
- Arranging for publication of final standard
- Collection of information on the practical use of the standards and systematic review of their content and updating when necessary
- Assuring harmonization of national standards with international and/or regional ones

In all countries, industry and trade associations usually have a tremendous store of technical and financial data, and are in position to conduct any surveys needed to obtain additional information. They can and should make valuable contributions to the establishment of standards. At the same time, the interests of the small entrepreneur and cottage industries should be protected through representation on standards-making bodies.

Industries and trade associations should participate in the development of standards and assume the responsibility for the following:

- Supplying technical information about composition; goods manufacturing practice and processes; the availability of control methods, including chemical, physical, and microbiological testing
- Seasonal variations or other differences in raw materials which may affect the composition of the final product or the need for chemical additives. For example, an ice cream manufacturer may need to use different stabilizers according to the seasons, or may need to use dried instead of whole milk, or butter rather than cream as the source of fat, when fresh milk supplies are low. Such technical data should be made part of the record before a standard becomes final.
- Determining the effect that proposed standards will have on costs, and whether a proposed standard would give an unfair or monopolistic advantage to one segment of the industry. For example, difficulty in establishing standards for orange juice

drinks may arise from the great differences in the color, flavor, and types of oranges in different areas, and the desire of each area to have standards which would give its industry an advantage. The effect of specifications on price should be considered—if the standard increases costs unreasonably, many consumers may be priced out of the market.

- Providing information about current and attainable levels of hygiene. Standards should not require an industry to reach impossible levels of hygienic practice; neither should they permit the continuation of practices that place the health of consumers in serious jeopardy.
- Making projections concerning the impact of proposed specifications on trade, both internal and international. Improved standards can undoubtedly help increase consumer confidence and hence promote trade, unless the standards increase costs so greatly that the complying manufacturer can no longer compete with some other segment of the food industry.

To assure that standards follow the technical development of the given topic at a suitable rate, scientists and technologists should also take part in standardization work. Food scientists, technologists, medical and veterinary experts, sanitary engineers, nutritionists, marketing experts in food-related fields, when available, should be expected to supply:

- Information about current practices in food processing, quality control, and about advances in food technology and equipment.
- Information about the effects and safety of food additives and pesticide residues, about current levels of naturally occurring toxicants and the means available to reduce the levels of these, and about microbiological, chemical, or other contaminants, and how to remove, reduce, or control those factors that adversely affect health or quality.
- Information on dietary habits and probable effects of proposed standards on the nutrition and diets of people. A requirement that salt be iodized has practically wiped out endemic goiter in various areas. In other areas mandatory enrichment of flour, bread, and rice has decreased the incidence of pellagra.

Consumer contributions to the standardization work is also important, although the weakest link in the cooperative chain of standards developments is usually the consumer. Even when interested, the consumer may be unable to attend conferences or communicate with authorities. When he/she does attend, he/she often lacks the knowledge of food science and related matters to make an effective presentation. Organized consumer groups in many nations are now insisting on having better representation in public hearings that affect them.

Information and comments from consumers are needed to:

- Determine their understanding about and expectations concerning the food under consideration, and their opinions about the use of proposed additives, particularly colors, flavors, and other so-called “cosmetic” additives. Even views that seem irrational need to be considered if they are going to have a serious impact on consumers’ acceptance of the food.

- Most of all, there is a need for consumer understanding of knowledge of their attitude toward proposed label statements. Even in nations with high educational levels, there is some uncertainty about the consumer's understanding of some label statements.

To assure that national standards reflect the needs of all interested parties, it is desirable that representatives of the above-mentioned areas participate in the technical committees that are operated in the framework of the national standards bodies and have the task of developing national standards.

Generally, national standards are developed by a working group of experts on the given topic. After that, the draft standard is circulated among members of the national standards body for comments. The comments are discussed by the working group, and the document is redrafted in the light of accepted ones. The new document is submitted to the relevant national technical committee for acceptance.

The published standards are systematically reviewed every fifth year and updated if necessary.

3. Relationship Between Standardization and Regulation

As mentioned elsewhere (see *History of Food Standards, and Basic Concepts of Food Standards*), it is difficult to exactly separate regulatory (food law) and standardization activities. It is also impossible to give a uniform structure of the food control systems of individual countries because of differences and specialties in governments. Since the beginning of the twentieth century, several countries have edited a collection of food regulations—a Codex Alimentarius Austriacus in Austria, Schweizerisches Lebensmittelbuch in Switzerland, Deutsches Nahrungsmittelbuch in Germany, Code of Federal Regulations of the US, Hungarian Food Act, and so on.

For example, concerning the interactions between national food regulations and standardization, the present situation in Hungary, as a country trying to become a member of the common European market, will be shown. According to the Food Act of 1995 under the Ministry of Agriculture, a committee was established to prepare for the Code Alimentarius Hungaricus a collection of regulations and guidelines concerning food production and control. The Codex Alimentarius Hungaricus is divided into three parts. The first one includes regulations relating to all food produced or distributed in Hungary. These were harmonized with EU regulations, are mandatory, and should be kept in mind when preparing commodity standards.

The second part deals with recommendations and guidelines concerning the description, composition, quality, and manufacturing of foods produced by Hungarian manufacturers and consumed by the Hungarian population. The content of these materials is not regulated in the EU, and is in accordance with Hungarian conditions and specificities. The third is a list of official methods of analysis and sampling. The principle of the selection of methods for this book is as follows: if an ISO or European standard is available for the given purpose, it is included in the book. If there is no international or regional standard, the relevant Hungarian national standard is included.

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Biographical Sketches

Radomir Lásztity D.Sc., Professor of the Department of Biochemistry and Food Technology at Budapest University of Technology and Economics, was born in 1929 in Deszk, Hungary, completed his studies in 1951 at the Faculty of Chemical Engineering of the Technical University of Budapest. Dr. Lásztity received his M.Sc. degree in Chemical Engineering in 1951 and his D.Sc. degree in Chemical Science in 1968.

Dr. Lásztity is honorary president of ICC (International Association for Cereal Science and Technology). He was acting chairman of the Codex Committee on Methods of Analysis and Sampling of the FAO/WHO Food Standard Program in the period 1975–1988. Dr. Lásztity is a member of the Food Division of the Federation of European Chemical Societies and a member of the editorial boards of several international scientific journals. He was acting Vice Rector of the Technical University from 1970 to 1976.

Among other awards he has received the Bailey and Schweitzer Medal of the ICC, the State Prize of the Hungarian Republic, and the Golden Medal of the Czech Academy of Sciences.
Dr. Lásztity's main research activities are chemistry and biochemistry of food proteins, food analysis, and food control. The results of his research work were published in more than 700 papers in foreign and Hungarian journals. He is the author of more than 20 books and textbooks (among them: *Chemistry of Cereal Proteins*, First and Second Editions in 1984 and 1996, respectively; *Amino Acid Composition and Biological Value of Cereal Proteins*, 1985; *Use of Yeast Biomass in Food Production*, 1991; *Gluten Proteins*, 1987; *Cereal Chemistry*, 1999).

Dr. Martha Petró-Turza, chemical engineer, graduated in 1996 and received her doctor's degree in 1975 at Budapest Technical University. Between 1966 and 1990 she worked as a researcher for the Central Food Research Institute, Budapest. In the last 13 years of this period she was the head of the Analytical Chemistry Division of the Institute. Her main research areas were flavor research and the detection of adulteration of fruit juices. Between 1990 and 1995 she was the director of quality assurance of the Canning Research Institute in Budapest.

Since 1996 she has worked for the Hungarian Standards Institution as secretary of the ISO Technical Committee TC 34 "Food Products," and its Subcommittee, SC 4, "Cereals and Pulses."

Thomas Földesi was born in 1920 in Budapest, Hungary. An electrical engineer, he graduated in 1942 at the Technical University in Budapest. He worked at a design office, then in foreign trade, and since 1957 in the Hungarian Office for Standardization (transformed in 1995 into the Hungarian Standards Institution, MSZT). He retired in 1983 but continued to work at the same office as a senior advisor. In the meantime, from 1974 to 1980, he worked in the ISO Central Secretariat in Geneva, dealing with standardization and certification issues. Back in Budapest, from 1983 to 1991, he was responsible for the secretariat of the Hungarian National Committee for EOQ.

His activities have been focused on training in the field of standardization, quality, certification, and accreditation. He is a certified quality system manager, author of numerous articles and some textbooks on standardization, quality, and certification. He was the prizewinner of the IIASA-Shiba award in 1998. IIASA is the International Institute for Applied Systems Analysis.