

# INTERNATIONAL SYSTEM OF FOOD QUALITY STANDARDS

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**Keywords:** Food quality, standard, ISO, FAO, ISO Technical Committee, Codex Alimentarius Commission, Codex Alimentarius, AOAC, ICC, IDF, IUFOoST, IPPC, OECD, OIE, WHO, WTO

## Contents

1. Introduction
2. International Organization for Standardization (ISO)
  - 2.1. The Purpose and Characteristics of ISO
  - 2.2. ISO Contact with other Organizations
  - 2.3. International Standardization of Food Products; Introduction to ISO Technical Committee 34
3. Joint FAO/WHO Food Standards Program
  - 3.1. Codex Alimentarius Commission and the Codex Alimentarius
  - 3.2. Procedures for the Elaboration of Codex Standards and Related Texts
  - 3.3. Perspectives of CAC
4. Brief Information About Other International Organizations
  - 4.1. AOAC International
  - 4.2. International Association for Cereal Science and Technology (ICC)
  - 4.3. International Dairy Federation (IDF)
  - 4.4. International Union of Food Science and Technology (IUFOST)
  - 4.5. International Plant Protection Convention
  - 4.6. Organization for Economic Cooperation and Development (OECD)
  - 4.7. World Organization for Animal Health (OIE)
  - 4.8. World Health Organization (WHO)
  - 4.9. World Trade Organization (WTO)
- Glossary
- Bibliography
- Biographical Sketches

## Summary

The growing international trade of foods and the problems concerning quality and safety of foods have made it evident that there is a need to harmonize food requirements globally, and there is a growing need for international guidelines and rules. This situation resulted in the establishment of international standardization organizations. The first established international standardizing organization was the International Organization for Standardization (ISO). This chapter introduces its aim, main characteristics, and contact with other organizations; and deals with ISO Technical

Committee 34, which is responsible for standardization of food products. The activity of this technical committee and its 13 subcommittees covers practically all agricultural products that are used for human consumption in raw or processed form, and also for animal feeding stuffs. In 1999 nearly 600 International Standards were under the responsibility of the technical committee, and more than 150 new projects were under development.

The Joint Food and Agricultural Organization of the UN/World Health Organization (FAO/WHO) Food Standard Program, which is under the responsibility of the Codex Alimentarius Commission (CAC), was established in 1961 with the aim to promote coordination of all food standards, to protect the health of consumers, and to ensure fair practices in the food trade. This chapter deals with procedures for the elaboration of Codex Standards, too. The CAC elaborates and publishes guidelines and other recommendations. In addition to ISO and CAC, some other international organizations (AOAC International, ICC, IDF, IUFOST, IPPC, OECD, WOA, and WTO) are introduced briefly.

## **1. Introduction**

Growing requirements regarding food quality, rapidly increasing trade with food products, and the safety problems connected with it (see *Food Safety*), have made evident that the independent establishment of laws and standards in different countries may result in difficulties in international trade. The arising difficulties have stimulated programs for the international harmonization of food legislation, including regulations and standards. Among the organizations active worldwide in this field, the International Organization for Standardization (ISO) and the Joint FAO/WHO Food Standard Program should be mentioned first. In addition, some other organizations and scientific associations take part in the development of international standards. Only the aims of the two main organizations will be traced in detail. A short summary will be given concerning the other organizations.

## **2. International Organization for Standardization (ISO)**

In 1946, after World War II, delegates from 25 countries met in London and decided to create a new international organization, the object of which would be “to facilitate the international coordination and unification of industrial standards.” The new organization, ISO, officially began operating in 1947.

Because the name of the International Organization for Standardization would have different abbreviations in different languages (IOS in English, OIN in French), it was decided to use a word derived from the Greek: *isos*, meaning equal. Therefore, the short form of the Organization's name is always ISO, in all languages.

### **2.4. The Purpose and Characteristics of ISO**

The purpose of ISO is to promote the development of standardization and related activities in the world, with a view to facilitating the international exchange of goods

and services, and developing cooperation in the spheres of intellectual, scientific, technological, and economic activity.

ISO deals with the full spectrum of human activity that is not covered by IEC and ITU (see *Industrial Revolution in the Nineteenth Century*). Its work program ranges from standards for traditional activities—such as agriculture and construction—through mechanical engineering to the newest information technology developments, such as digital coding of audiovisual signals for multimedia applications. In cooperation with its partners in the UN’s specialized agencies (which is the Codex Alimentarius Commission in the food area), and via ITU and IEC, which deal with standardization for the electrical and electronic engineering and telecommunication sectors, ISO provides easy access to a coherent and consistent portfolio of standards covering all sectors. Since the mid-1980s, ISO has undertaken to help developing countries benefit from the use of International Standards, and also to help them in setting up and developing standardization infrastructures suited to the specific needs of their own economies.

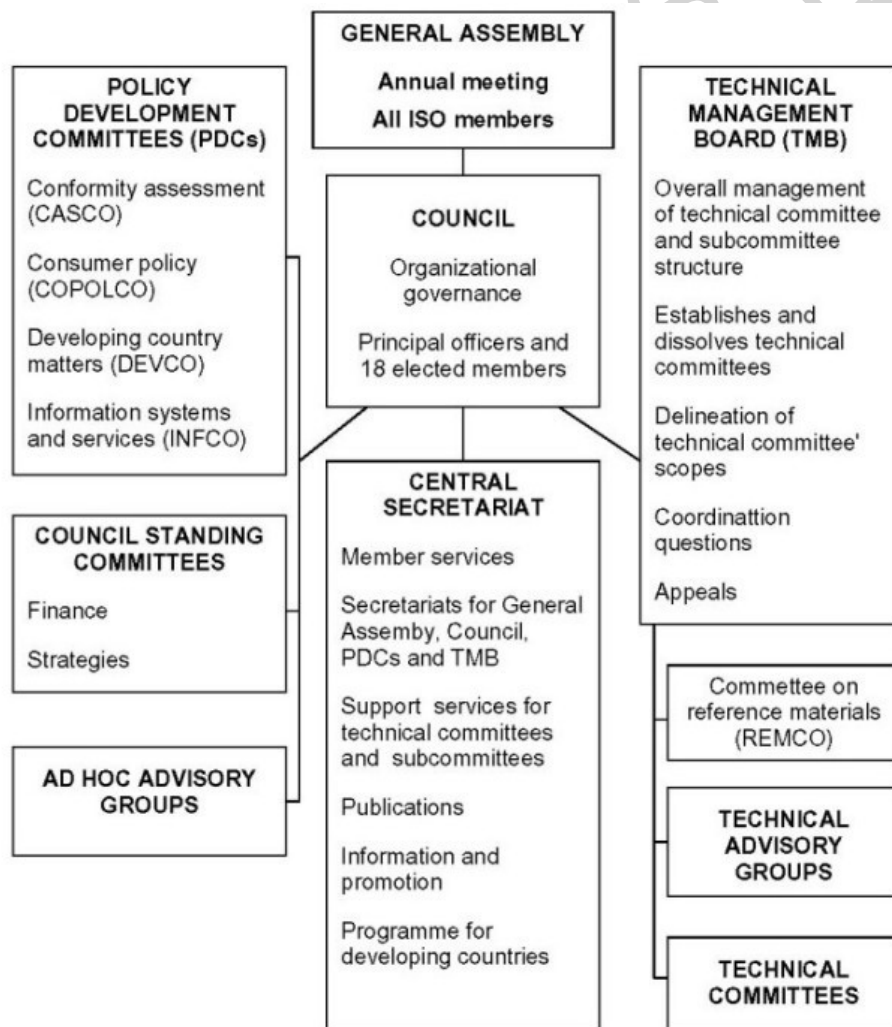


Figure 1. Organizational structure of ISO

A nongovernmental organization, ISO and its members are not, therefore, national governments, but the national bodies “most representative of standardization” in their respective countries. At the end of 1999, ISO had 132 member organizations from countries large and small, industrialized and developing, in all regions of the world, on the basis of one member per country. ISO occupies a bridging position between the public and private sectors. The structure of ISO is shown in Figure 1.

The technical work of ISO is regulated by a stringent procedure that was developed and continuously improved since ISO began more than 50 years ago. Overall coordination of this technical work is done by the ISO Technical Management Board with the assistance of the ISO Central Secretariat located in Geneva (Switzerland).

ISO standards are technical agreements that provide a framework for compatible technologies worldwide. Developing technical consensus on an international scale is a major operation. The standards and development work is actually carried out in technical bodies comprising technical committees (TC), subcommittees (SC), working groups (WG), and ad hoc study groups. At the end of 1999, ISO had 186 active technical committees, 555 subcommittees, 1993 working groups, and 45 ad hoc study groups. It is estimated that somewhere in the world, on each working day of the year, 15 ISO technical meetings are in progress. Some 30 000 experts participate in these meetings annually.

The ISO has a decentralized management; ISO member bodies located in 35 countries provide secretariats of the technical committees and subcommittees.

Members of ISO can freely choose whether or not they would like to participate in a given ISO technical committee or subcommittee, and if so, in what kind of membership status, as a P- or O-member. P-members participate actively in the work, with an obligation to vote, and, whenever possible, participate in meetings. O-members follow the work as observers, receive committee documents, and have the right to submit comments and to attend meetings.

Every participating member has the right to take part in the development of any standard that it judges important for its country's economy. No matter what the size or strength of that economy, each participating member in ISO has one vote. The ISO activities are thus carried out in a democratic framework, where each country is on an equal footing to influence the direction of ISO's work at the strategic level, and the technical content of its individual standards.

ISO standards are voluntary; ISO does not enforce their implementation. A certain percentage of ISO standards—mainly those concerned with health, safety, and the environment—has been adopted in some countries as part of their regulatory framework, or is referred to in legislation for which the standard serves as the technical basis. However, such adoptions are sovereign decisions by the regulatory authorities or governments of the countries concerned. ISO itself does not regulate or legislate.

The ISO standards are market driven. They are developed by international consensus among experts drawn from the industrial, technical, and business sectors that have

expressed the need for a particular standard. Other experts may join them, from government, regulatory authorities, testing bodies, academia, consumer groups, or other relevant bodies. Increasing ISO's market relevance was among its major strategies for the years 1999–2001. Although ISO standards are voluntary, because they are developed in response to market demand, and are based on consensus among the interested parties, their widespread use is ensured. At the end of 1999, ISO's total portfolio was 12 524 International Standards, 961 of which were published in 1999. Present indications suggest that annual standards production will remain at approximately the same level. ISO standards are issued in the English and French languages.

## **2.5. ISO Contact with other Organizations**

The ISO system could not function without the strong national infrastructures provided by ISO members. They produce thousands of national consensus positions on ISO proposals each year, and select and instruct tens of thousands of individuals who serve in delegations to represent the national views in the relevant committees of ISO. Many ISO members also belong to regional organizations having cooperative programs in standardization and standards-related fields. These members ensure cooperative relationships with ISO as a whole, and, with respect to developing standards, commit themselves to the concept of thinking nationally and regionally and acting internationally. ISO has recognized regional standards organizations representing Africa, the Arab countries, the area covered by the Commonwealth of Independent States, Europe, Latin America, the Pacific area, and Southeast Asia (see *Regional Standards*).

These recognitions are based on a commitment by the regional bodies to adopt ISO standards—whenever possible without change—as national standards of their members, and not to initiate the development of divergent standards if appropriate ISO standards are available for direct adoption. The Vienna Agreement on technical cooperation between ISO and the European Committee for Standardization (CEN), which was approved by both organizations in 1991, is a useful working model, the principles of which are worthy of emulation in other regions. The ISO is well respected throughout the world. It has a reputation for integrity and neutrality, and also enjoys a high status among international organizations. Together with IEC and ITU, ISO is building a strategic partnership with the World Trade Organization (WTO), holding the common goal of promoting a free and fair global trading system. The WTO, the World Bank, the International Chamber of Commerce, and other international organizations, agree on the importance of International Standards to facilitate trade. This can be seen in their policies and programs in many contexts. The ISO's work is of interest to many other international organizations. Some of these make a direct technical contribution to the preparation of ISO standards, others—particularly intergovernmental organizations—contribute to the implementation of ISO standards, for example, by utilizing them in the framework of intergovernmental agreements. ISO has adopted arrangements for associating these organizations closely with all stages of the work. At present ISO is in liaison with some 550 international and regional organizations interested in some aspects of ISO's standardization work.

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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 1929 in Deszk, Hungary, and 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 Medals 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. Márta Petró-Turza**, chemical engineer, graduated in 1996 and received her doctor's degree in 1975 at Budapest Technical University, Hungary. 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."

**Tamás 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.

During the past five years his activities were 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.