

PECB

When Recognition Matters



DIFFERENCE BETWEEN
HACCP AND ISO 22000

As food safety continues to be a worldwide public health issue, the need for improved and more effective food safety systems has increased over the past three decades. A combination of national and international standards, industry needs, customer demands and many other factors has led to tremendous improvements of Food Safety Management Systems.

A brief history of HACCP

The concept of HACCP, being the acronym for Hazard Analysis and Critical Control Points, was developed in the 1960s by a team of scientists and engineers from the Pillsbury Company. Their aim was to produce “zero defects” food products for NASA astronauts. But the first HACCP standard was issued in late 80s by the U.S. National Advisory Committee on the Microbiological Criteria for Food (NACMCF)¹. After the first revision in 1992, it was adopted by the Codex Alimentarius Commission² and published as the first international HACCP standard.

Since then, it has been widely and successfully applied by the food industry and by regulatory authorities to prevent and control risks associated with potential hazards that can cause food to be unsafe.

Is there any difference between “HACCP” and “the HACCP system”?

For people that are not involved in the food industry, HACCP and the HACCP system may sound like the same thing, but in reality they differ.

HACCP is an industry-specific hazard assessment tool which focuses on preventing hazards rather than inspecting end-products. This tool can be applied throughout the food chain from primary production to final consumption.

This is different from the HACCP system which is a universally recognized Food Safety System. The system enables the identification and control of hazards that may occur in food production process. It focuses on the prevention of potential hazards by strictly monitoring and controlling each critical control point of the food production process. Even though the system initially consisted of three principles, over the years it has been revised and many changes have been made in order to simplify and make its implementation easier. The initial concept of HACCP has never changed.

The three original HACCP principles were:

1. Identification and assessment of hazards associated with the food product;
2. Determination of the critical control points to control the identified hazards; and
3. Establishment of a system to monitor the critical control points.

Currently, there are five preliminary steps and seven principles associated with application of the HACCP system (see A). Preliminary steps are additional steps outlined by the Codex, which need to be completed before the seven principles of HACCP are carried out. These steps ensure more effective establishment, implementation and management of the HACCP system.

A. Application of the HACCP system in 12 steps

Five preliminary steps:

1. Assemble HACCP team
2. Describe the product
3. Identify intended use
4. Construct flow diagram
5. On-site confirmation of flow diagram

Seven principles of the HACCP system:

1. Conduct a hazards analysis
2. Determine Critical Control Points
3. Establish critical limits for each CCP
4. Establish a monitoring system for each CCP
5. Establish corrective actions
6. Establish verification procedures
7. Establish documentation and record keeping

The HACCP system is applicable to any company regardless to its size, or if it is directly or indirectly involved in the food chain. The implementation of HACCP system should be supported by prerequisite programs (see B). In other words, a company preparing for HACCP system implementation should have in place prerequisite programs operating according to national regulations, codes of practice or other food safety requirements. Prerequisite programs listed below may be included to support the HACCP system, but not all businesses have the same prerequisite programs.

B. Common prerequisite programs may include but are not limited to:

- facilities and equipment
- personnel training
- cleaning and sanitation
- maintenance
- supplier review
- chemical control
- waste management
- pest management
- storage and transportation
- product recall procedures
- labeling
- purchasing procedures

The HACCP system has been accepted and implemented worldwide. Its implementation has become a legislative requirement for the food industry in many countries.



INTRODUCTION OF ISO 22000

By the early 2000s, a number of standards have been developed by different private and national organizations around the world. This led to complications when companies started using their own in-house developed codes to audit their suppliers. Different audit criteria made it nearly impossible for suppliers to fulfill all requirements in the global market.

In 2001, the International Organization for Standardization (ISO) started working on an auditable standard for Food Safety Management System (FSMS). This international FSMS standard, known as ISO 22000, was finally published on September 1, 2005. It is a framework that combines prerequisite programs, the HACCP principles and application steps as described by the Codex Alimentarius Commission and elements of the ISO 9001:2000 standard.

Within two years, the standard has been implemented by organizations in more than 50 countries as an alternative to more than 20 food safety schemes developed by individual companies in the sector for auditing their suppliers.

ISO 22000 intends to define the Food Safety Management System requirements that companies need to meet in order to comply with food safety regulations all over the world.

ISO 22000:2005 takes a food chain approach to food safety. It defines a set of general food safety management requirements that apply not only to food producers and manufacturers, but to all the organizations that participate in the food supply chain.

ISO 22000 specifies the requirements for an FSMS that combines the following key elements to ensure food safety along the food chain:

- **Interactive communication.** Communication along the food chain is essential to ensure that all relevant food safety hazards are identified and adequately controlled at each step within the food chain. This implies communication between organizations both, upstream and downstream in the food chain.
- **Management system.** ISO 22000 can be applied independently of other management system standards. Its implementation can be aligned or integrated with existing related management system requirements, while organizations may utilize existing management system(s) to establish a food safety management system that complies with the requirements of ISO 22000.
- **HACCP principles and prerequisite programs.** ISO 22000 integrates the principles of the Hazard Analysis and Critical Control Point (HACCP) system and by means of auditable requirements, it combines the HACCP plan with prerequisite programs (PRPs). Prerequisite programmes comprise all basic conditions and activities necessary to maintain a hygienic environment throughout the food chain suitable for the production, handling and provision of safe end products.

Difference between HACCP and ISO 22000

Besides the fact that HACCP is a food safety system, and ISO 22000 is a food safety management system standard, differences between these two include the following:

- ISO 22000 allows the development of a food safety management system by external experts for any company, and this includes implementation and verification of all or part of activities involved in the system.
- ISO 22000 also refers to good practices in sectors and general hygiene rules published by Codex Alimentarius.
- Besides the internal communication, external communication is also a condition for establishing, implementing and updating the FSMS according to ISO 22000.
- ISO 22000 demands risk analysis to evaluate each food safety hazards identified.

- ISO 22000 demands documentation of PRPs.
- HACCP uses the traditional concept of dividing control measures into two groups: prerequisites and measures applied at critical control points (CCPs). In the case of ISO 22000, these concepts are reorganized in a logical order by adding a group of control measures named operational prerequisite programs (oPRPs).
- ISO 22000 demands monitoring system and planning of corrective actions for operational PRPs, as for CCPs.
- ISO 22000 demands analysis and improvement according to the outcome of monitoring of oPRPs and HACCP plan.
- ISO 22000 also requires the review and identification of specifications, formulation and origin for input and end-products.
- ISO 22000 separates and clarifies verification activities and validation activities.
- Allergen control is a required prerequisite program in ISO 22000; however it is not mentioned in HACCP.
- ISO 22000, new terms have been developed, such as “potentially unsafe product” and the term “withdrawal” for product recall and product recollection activities.
- ISO 22000 requires continual improvement and updating of the management system.

Conclusion

The food industry all around the world is facing plenty of challenges regarding the food safety. Many studies and researches have been carried out to determine the main barriers to HACCP and ISO 22000 implementation. As a result, the majority of studies have concluded that the lack of understanding of HACCP and other food safety management systems processes is one of the key barriers to the implementation of an effective and sustainable FSMS.

PECB (Professional Evaluation and Certification Board) is a personnel certification body for a wide range of professional standards. It offers ISO 22000 training and certification services for professionals wanting to gain a comprehensive knowledge of the main processes of an FSMS, project managers or consultants wanting to prepare and to support an organization in the implementation of an FSMS, auditors wanting to perform and lead FSMS certification audits, and staff involved in the implementation of the ISO 22000 standard.

ISO 22000 and Food Safety Trainings offered by PECB:

- Certified ISO 22000 Lead Implementer (5 days)
- Certified ISO 22000 Lead Auditor (5 days)
- Certified ISO 22000 Foundation (2 days)
- ISO 22000 Introduction (1 day)

ISO 22000 Lead Auditor, ISO 22000 Lead Implementer and ISO 22000 Master are three certification schemes accredited by ANSI ISO/IEC 17024.

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For further information please visit: <http://pecb.com/site/renderPage?param=139>.

1 U.S. National Advisory Committee on the Microbiological Criteria for Food (NACMCF) is an advisory committee, established in 1988, with the purpose to provide impartial, scientific advice to federal agencies regarding to microbiological safety of food. NACMCF was instrumental in formulating and standardizing the principles of hazard analysis and critical control point (HACCP) systems.

2 The Codex Alimentarius Commission (CAC) is an intergovernmental body established by FAO and WHO, in 1963. Its principle objective is to protect the health of consumers and to facilitate the trade of food by setting international standards on foods (i.e. Codex Standards), guidelines and codes of practice, which can be recommended to governments for acceptance.