

Your Guide to Food Safety

What does food safety have to do with quality?

An effective food safety policy encompasses not only the processing itself but also the receiving and storage of raw materials. The concept of these food regulations is based on the farm-to-fork idea to ensure safety. During these inspections, three main types of contaminations are observed: physical, chemical, and biological contaminations. Varying food safety laws are implemented as a basis for the tolerance limits of these contaminations.

1. Physical

This type of contamination includes tangible objects such as dust, hair, fingernails, pieces of jewelry, paper, or pieces of metal and plastic. They can be classified based on the severity of damage they can cause when consumed by the customers. Some can cause physical injuries such as metals and glass, whereas some can be carriers of other types of contamination such as hair from rodents.

2. Chemical

Contaminants under this type can include health-threatening chemicals such as cleaning agents, pesticides, heavy metals, and the likes. Chemical contaminants also include adulterants that are food-grade but are unwanted in the production of specific food products such as oils and colorants.

3. Biological

Microorganisms including bacteria, molds, and yeasts that cause unwanted spoilage are considered detrimental to the health of consumers. Food safety regulations also include toxins produced by these microorganisms as health-threatening contaminants.

Food safety regulations are well-planned systems

For policymakers to establish an inclusive food safety management system, science-based research is rolled out to collect information. Risk assessments are

conducted to gather the information they need for efficient and effective food regulations and food safety rules. Proper, reliable, and timely information are keys to the formation of sound regulatory policies.

Perhaps the most extensive collection of food safety standards, regulations, and policies is the Codex Alimentarius which is the central part of the Food Standards Programme of the FAO/WHO. Governing bodies from different countries use this compendium as a basis and a global reference for food manufacturers in establishing their production lines and food standards, as well as food safety laws and regulations. It also contributes greatly to the establishment of food safety management systems such as good manufacturing practices, ISO, and HACCP.

4 Safety Rules of Food Preparation

The [Centers for Disease Control and Prevention](#) is actively promoting 4 safety rules in preparing food and are considered as the main principles of most food safety regulations. These basic steps are the fundamentals of most food handling guidelines to achieve a safe production space and process to prevent food-borne illnesses. They are commonly mandatory to be posted along a very visible area to remind employees of their importance.

- **Clean**

No single space is free from pathogenic bacteria as they are everywhere, even on your skin! Cleaning your working area as well as your utensils and your hands are keys to achieving a very low microbial count to start with. Wash your hands and arms with soap before starting, when holding fresh produce and after preparation. Sanitize your working area as well.

- **Separate**

Cross contamination is one of the leading delivery routes of pathogenic microorganisms. This occurs when handling raw produce, utensils, and finished products and keeping them close to each other. Raw produce contains a large microbial load and needs to be separated from ingredients that will be minimally processed.

- **Cook**

Different ingredients have different suggested cooking times. It is important to acquaint yourselves with the danger zones when cooking. This is especially true for meats that require a certain level of processing to be rendered safe for consumption.

- **Chill**

Temperature is a key factor in food safety guidelines. Perishable goods must be refrigerated within 2 hours at 40 °F or below to inhibit the growth of spoilage microorganisms.

Current developments in food safety management systems

To create a sustainable, wholesome, and safe food system, countries, particularly the USA, have shifted their focus on ensuring a safe supply through proactive measures such as preventing contamination even before it happens. This approach is the main concept behind the [Food Safety Modernization Act](#) (FSMA) signed in 2011. The food safety laws and regulations under this act were tailored as a response to the recent understanding of food-borne illnesses and how to address them to promote the well-being of consumers.

Under the FSMA, seven major rules were established to ensure food safety and emphasize the roles of parties involved in the process. Here is the updated FSMA compliance checklist:

1. Preventive controls for human and animal food

This rule requires affected businesses to come up with a food safety plan which determines potential hazards within the whole system related to the production, facility, and raw material receiving. The identified hazard must then be accompanied by a set of preventive control measures aimed at reducing or avoiding such hazards to occur.

2. Produce safety

In the Produce Safety Rule, suppliers are provided with science-based minimum specifications of growing, harvesting, packing, and delivery of raw materials to manufacturers. This rule is directed at producers and their general practices such as manure application, employee health, and training.

3. Accredited Third-Party Certification

Under this rule, the FDA recognizes accreditation bodies that aim to accredit third-party certification industries.

4. Foreign Supplier Verification Program (FSVP)

This rule acts as an aid for the FDA to confirm that foreign manufacturers uphold the specified level of food safety standards in accordance with the U.S. Safety Standards.

5. Sanitary Transport of Food and Feed

Concerned with logistics, this rule specifies standards for design and maintenance of modes and routes of transportation including the conditions of transport such as the temperature of food containers, protection from contamination, and soundness of vehicles.

6. Intentional Adulteration rule

This rule aims to prevent any potential intentional harm which can be delivered by the food product through an established defense plan.

7. Voluntary Qualified Importer Program (VQIP)

This rule requires companies to secure a certification of eligibility to participate. It aims to expedite the review of importation entry of products for importers and consumers.

5 levels of Food safety management systems (FSMS)

Food safety regulations form effective management systems which are varying in degree of stringency. In the food industry, companies are mandated to abide by these systems to ensure a sound operation. Each level is a prerequisite to achieving the highest certification of FSMS, that is ISO 22000.

- **GHP + 5S + SSOP**

These systems are voluntary and are set as guiding principles in the manufacturing setup and are considered prerequisite programs. The main objective of Good Handling Practices, Sanitation Standard Operating Procedure, and the 5S concept is the implementation of a clean and organized working environment.

- **Good Manufacturing Practices (GMP)**

The GMP is a food safety policy consisting of various steps that ensure a consistently controlled production system including, but not limited to, training of personnel, calibrating equipment, orderly of facilities, consistency and quality of products, and good sanitation. GMP is often the backbone of every higher food safety regulation and safety rule.

- **HACCP**

Hazard Analysis Critical Control Point is a system designed to prevent hazards during manufacturing. It is based on a scientific approach to control food processing, prevent failures, and assign appropriate steps upon the occurrence of critical situations. As such, HACCP is a set of food safety regulations that combines technical information updated with detailed procedures to evaluate and monitor the flow of food into an industry. Learn all the things you need to know about [HACCP here at FoodDocs](#).

- **ISO 9000**

This program is a set of food safety guidelines and policies set out to establish and implement quality management systems. A company is granted a certification of ISO 9000 when it has successfully developed and implemented effective documentation of quality system elements to maintain safe and quality productions.

- **ISO 22000**

Considered as the highest degree of an efficient FSMS, ISO 22000 requires a company to apply the most stringent food regulations and food safety policies to control safety hazards regardless of their significance in the process. The ISO 22000 certification integrates the principles of HACCP, ISO 9001, and all other food safety policies to simultaneously maintain, and record quality accompanied by continuous developments.

Other important food safety management systems

HARPC

The Hazard Analysis and Risk-Based Preventive Controls (HARPC) is a food safety law born from the establishment of the FSMA in 2011. This food safety guideline is otherwise known as the "Preventive Controls Rule". Under the HARPC, all food manufacturers affected by the FSMA are required to adhere to four main guidelines:

- 1) Identify and declare food safety hazards associated with their products and process,
- 2) Implementation of formulated controls to minimize the occurrence of hazards,
- 3) Verification of control efficiency and effectiveness, and
- 4) Conceptualize and apply effective corrective actions to deviations in a food safety plant.

Confusion may arise when it comes to the key differences in HARPC and HACCP. To put it simply, HACC is a food safety standard, whereas HARPC is a law under the Food Safety Modernization Act. That is, HARPC is a mandatory regulation that covers beyond the critical control points.

BRC

The British Retail Consortium (BRC) is a recognized Global Food Safety Initiative that aims to provide food safety guidelines to food retailers and protect the interest and health of consumers. Although initially only implemented in the UK, the BRC is now a recognized certification body paramount to food safety. Under the BRC, food retailers are required to adhere to HACCP, senior management commitment, quality management system, and other prerequisite programs such as Good Manufacturing

Practices (GMP). All requirements address the significant food safety concerns a retailer must monitor in order to provide consumers with safe products.

IFS

Another recognized Global Food Safety Initiative, the International Featured Standard (IFS) is a certification that aims to enhance brand recognition, establish or improve consumer safety and confidence, and reiterate quality and safety processing throughout the organization. The IFS certification is a food safety standard that is used to evaluate suppliers to ensure the safety and quality of products. The requirements to satisfy IFS certification include HACCP and prerequisite programs including GMP and GHP.

FSSC

One of the well-recognized certification schemes, the Food Safety System Certification is a complete certification for an organization's Food Safety Management System. The evaluation is based on independent standards such as ISO 22000, ISO 9001, and specifications from prerequisite programs. At a glance, ISO 22000 and FSSC 22000 are almost similar. FSSC uses ISO 22000 as a basis but implements additional requirements for the control of operating conditions in processing. In addition, FSSC is recognized by the GFSI qualifying as one of the highest global standards.



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