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FOOD SAFETY IMPLEMENTATION AND INSPECTION GUIDELINES



جمعية المطاعم السياحية الأردنية
JRA | Jordan Restaurant Association

الأكاديمية الملكية للفنون الطهي
**ROYAL ACADEMY
OF CULINARY ARTS**



المركز الوطني لتدريب الفنادق والمطاعم
National Hospitality & Tourism Training Center



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FOOD SAFETY

IMPLEMENTATION AND INSPECTION GUIDELINES

SECOND EDITION 2020

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FORWARD

The mission of the Jordan Food and Drug Administration is to ensure the safety and quality of foods in the Jordanian markets, and to achieve our national goal of maintaining a decent standard of health for all Jordanians. We constantly strive to raise the level of food hygiene control and raise public health awareness on best practices to keep pace with global scientific updates that guarantee the right of all to have safe and healthy food.

The Jordan Food and Drug Administration aims to strengthen cooperation with partners and achieve common interests through developing the capacities of workers in the food sector to promote the implementation of policies and regulations according to global standards and are cooperative and transparent.

The role of food safety regulators and legislators is to strengthen inspection procedures and auditing of food establishments. They also supervise the management of food safety systems and ensure the implementation of the self-monitoring programs.

This guideline manual provides comprehensive information on food safety and covers the needs of food establishments to ensure that food safety regulations are effectively implemented under the provision of the Food Law No. 30 of 2015. Also, the manual details all standard operating procedures intended to reduce food contamination and foodborne diseases.

In conclusion, I sincerely thank the US Agency for International Development (USAID) for supporting the implementation of this project, which resulted from signing a memorandum of understanding to enhance the capacity of food handlers working in food establishments to enable them to provide high-level services and ensure the safety of food for consumption.

Prof. Dr. Nizar Mahmoud Mhaidat
Director General, Jordan Food and Drug Administration



FORWARD

The Jordan Food and Drug Administration (JFDA) is the exclusive authority entrusted to ensure the safety and quality of food in the Hashemite Kingdom of Jordan. This leading institution is committed to maintaining the good reputation and trust that have been built with the Jordanian community.

The world is moving towards preventive food safety systems with integrated strategies to reduce the most important risks throughout the food supply chain. Demographic changes, shifts in food consumption patterns, intensive food production techniques, increased urbanization, and the need to adopt new technologies are presenting unprecedented challenges. The globalization of the international food trade, as well as food safety standardization, is another challenge for these systems.

The strategic approach includes the food chain approach to developing or improving overall food systems, from the primary product to the consumer, from the farm or the sea to the plate, as described in the food supply chain. All stakeholders in any food chain-based system share the responsibility for providing safe. This responsibility is unequivocally placed within the food and agriculture sector and is broadly defined to include the production of plant and foods of animal origin (including seafood), post-harvest processing, processing and handling food, at wholesale, retail and family levels.

The food supply chain, starting with food production and processing, is undoubtedly a complex process in legislative terms where numerous stakeholders converge in their work. The Control and Inspection of Economic Activities Law No. 33 of 2017 provides clear demarcation for each entity working in this regard. Jordan's food safety laws and regulations ensure the highest standards and specifications for food safety and quality. The world is moving towards a globally applied risk management philosophy, which complements the current traditional focus on regulating and controlling end products in food safety systems with a clearer focus on avoiding food contamination at origin. This includes developing and disseminating good practices/safety assurance systems (risk analysis and critical control points) and adopting a holistic approach to food safety that encompasses the entire food chain.

I hope this guideline manual will be an important tool for ensuring the safety of the food products. We express our gratitude to the Director General, Prof. Dr. Nizar Mhaidat, for his continued support, and to all colleagues involved for their acknowledged efforts.

Engineer Amjad Abdul Rahman Rashaideh
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Introduction

Food presents a crucial and indispensable element of life. In today's world, the food production and processing sector are of great importance enabling some countries to boost their national economies and provide sources of income to their citizens. Food products have become one of the most traded commodities in the world, and as a result, food safety has gained absolute importance and attention from governments for its pivotal role in supporting national economies, trade, tourism, food security, nutrition, and achieving sustainable development goals.

Urbanization and changes in consumption patterns have led to a rise in demand for food, thereby increasing the global food chain and making it more complex. This has created challenges for the food production and service sectors in terms of ensuring food safety and suitability for human consumption.

Jordan's Food Law No. 30 of 2015 defines food safety as the 'Absence of any dangerous sources in food while handling according to the technical rules or the international standard specifications'. Contaminated or low-quality food can become a source of disease and can result in health burdens and economic losses. Most foodborne diseases are classified as infectious and the most important causes are bacteria, viruses, parasites, and chemicals.

Factors that contribute to food contamination include:

1. Improper agricultural practices
2. Poor hygiene at different stages in the food supply chain
3. Lack of preventive controls in food processing and preparation
4. Misuse of chemicals
5. Contaminated raw materials, ingredients, and water
6. Improper storage of food

Foodborne diseases can be avoided by following the five keys principles of food hygiene and handling, as developed by the World Health Organization:

1. Maintain personal hygiene and cleanliness of surfaces and equipment used to prepare food
2. Separate raw and cooked foods to prevent cross-contamination
3. Cook food for the appropriate length of time at the appropriate temperature to kill pathogens
4. Store food at the proper temperature
5. Use safe water and raw materials

Food safety and quality have an important role in the travel decisions of tourists. Health concerns associated with international and domestic tourism are receiving great attention by the tourism industry.

Several studies have concluded that tourists are infected with foodborne diseases while traveling. The resulting illnesses ruin the travel experience and adversely affect their desire to travel to countries concerned. While tourism experts are not expected to be food safety specialists, they do need to recognize that food safety issues go beyond making sure that mayonnaise is kept in the fridge.

The purpose of the manual

The purpose of these guidelines is to provide information on the skills and knowledge requirement for managers and employees responsible for food safety in food establishments, and help them train and qualify food handlers, supervisors, and food services managers to ensure they have good knowledge of food safety, hygiene standards and regulations, and that these standards and regulations are followed and applied to protect consumers from foodborne diseases.

Appreciation

The Jordan Food and Drug Foundation (JFDA) appreciates all the partners who contributed to this manual. They include:

- Ministry of Tourism and Antiquities
- Aqaba Special Economic Zone Authority
- Petra Development and Tourism Region Authority
- Royal Academy of Culinary Arts
- Jordan Restaurant Association
- Jordan Hotels Association
- Hospitality Sector Skills Council
- USAID Building Economic Sustainability through Tourism Project

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DEFINITIONS

Control	To manage conditions of an operation to maintain compliance with established criteria and the state where correct procedures are being followed and criteria are being met.
Control measure	Any action or activity that can be used to prevent, eliminate or reduce a significant hazard
Control point	Any step at which biological, chemical, or physical factors can be controlled.
Contamination	The presence of an infectious, toxic substance in a human or animal body, the surface of that body, a product prepared for consumption, or on other objects, including transportation, which poses a threat to public health. (Public Health Law No. 47 of 2008).
Corrective action	Procedures followed when a deviation occurs.
Criterion	A requirement on which a judgment or decision can be based.
Critical Control Point	A step in which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.
Critical limit	A maximum and /or minimum value to which a biological, chemical or physical parameter must be controlled at a CCP prevents, eliminates, or reduces to an acceptable level the occurrence of a food safety hazard.
Deviation	Failure to meet a critical limit.
Food	Substances, products, whether manufactured, semi-manufactured or unmanufactured, or raw materials for, or expected to be for, human consumption by mouth, including beverages, gum, and any substance used in food production, preparation or processing, except for fodders, implants, crops under the applicable Agriculture Law, as well as tobacco, tobacco products, narcotics, and psychotropic substances, drugs, and cosmetics under the applicable Drug and Pharmacy Law, in addition to drinking water under the Public Health Law (Food law No.30 of 2015).

DEFINITIONS

Food control	A mandatory regulatory activity of enforcement by national or local authorities to provide consumer protection and ensure that all foods during production, handling, storage, processing, and distribution are safe, wholesome, and fit for human consumption; conform to the safety and quality requirements, and are honestly and accurately labeled as prescribed by law.
Foodborne diseases	Illnesses resulting from the ingestion of contaminated food with bacteria, viruses, parasites, fungi, natural toxins, biological, chemical, or radiological.
Food establishment	Any institution, factory, or facility in which the food is handled, including means of transport and vehicles except for farmers' fields, livestock farms, and apiaries. This means shopping malls, warehouses, food plants, food services, and food facilities approved by the JFDA Law (Food law No.30 of 2015).
Food handling	Stages of producing, Food Production, preparing, processing, packaging, wrapping, transporting, possessing, storing, distributing, offering to sell, selling, gifting, or donating food.) Food law No.30 of 2015).
HACCP	A systematic approach to the identification, evaluation, and control of food safety hazards. (Food law No.30 of 2015)
HACCP plan	The written document based upon HACCP's principles and delineates the procedures to be followed.
HACCP system	A systematic preventive approach defining basic risks affecting food safety and assessing and controlling such risks (Food law No.30 of 2015).
HACCP team	The group of people who are responsible for developing, implementing, and maintaining the HACCP system.

DEFINITIONS

Hazard	<p>A biological, chemical, and physical factor contained in the food, or one of its elements and ingredients, which may negatively affect human health. (Food law No.30 of 2015)</p> <p>A cause that has the potential to cause adverse health effects on vulnerable people (WHO, 2012).</p>
Hazard analysis	<p>The process of collecting and evaluating the information on hazards associated with the food under consideration to decide which are significant and must be addressed in the HACCP plan.</p>
Health measures	<p>Any procedures followed to protect human life and health from risks of food additives, pollutants, toxins, and disease-causing germs prevent humans from health damages transferred by plants or vegetable or animal products. Such measures include any legislation, requirements, policies, decisions, or procedures related to the end-product properties, including ways of production, examination, inspection, issuance of the relevant certificates, the attestation procedures, sampling, risk assessment ways, packaging, as well as requirements of food safety labeling) Food law No.30 of 2015).</p>
Monitor	<p>To conduct a planned sequence of observance or measurements to assess whether a CCP is under control and produce an accurate record for future use verification.</p>
Non – conformance	<p>A deviation from the requirements specified in the audit criteria. Non-conformances may be classified as minor, major, or critical. The type of non-conformance depends on the impact the deviation has on the integrity of the food safety system being audited, the safety of the product, and the severity of the deviation.</p>
Objective evidence	<p>Factual information was collected during the audit. It describes the audit findings and is used to determine if the audit criteria have been met. Objective evidence can be collected through personnel interviews, observation of activities, and review of documents, records, etc.</p>
Prerequisite programs	<p>Good Food Production Practices and procedures, which address operational conditions providing the foundation for the HACCP system.</p>

DEFINITIONS

Quality	Food distinctive level or its sufficient properties and advantages meeting the consumers' needs, desires, or satisfaction, in line with the requirements of the standard specifications or technical regulations of quality as set by the competent authority (Food law No.30 of 2015).
Step	Any point, procedure, operation, or stage in the food system from primary production to final consumption.
Validation	That element of verification focused on collecting and evaluating scientific and technical information to determine if the HACCP plan, when properly implemented, will effectively control the hazards.
Verification	Activities other than monitoring determine the HACCP plan's validity and that the system is operating according to the plan.



Food Safety Systems

Food Safety Systems

The food supply chain refers to processes that describe all stages of food handling from the farm to arrival at the consumer's table, including production, processing, distribution, and consumption. Food safety is a global concern, not only because of its importance for public health but also because of its impact on international trade. The globalization of food production and procurement makes food chains longer and more complex and increases food safety incidents.

Mechanisms for preventing foodborne diseases can span the spectrum from voluntary to regulatory and from outright bans to warning labels and education. Regulation is often intended to be a preventive and protective measure.

A prerequisite for any regulatory action should be the assurance of adequate, consistent, and effective enforcement. The ability to protect requires the authority and resources to take action. The food safety system must contain adequate provisions for enforcement of regulations and clearly link responsibilities with accountabilities.

An effective food safety system ensures the safety and quality of food at each stage of the food supply chain.

Examples of global food safety systems

1. Hazard Analysis and Critical Control Points (HACCP)

HACCP is a global food safety system used by food producers, manufacturers, and foodservice establishments to ensure safe foods.

This system is issued by the Codex Alimentarius and comprises the following seven principles:

1. Conduct a hazard analysis.
2. Determine the critical control points (CCP).
3. Establish critical limits.
4. Establish a system to monitor control of CCP.
5. Establish the corrective action to be taken when a particular CCP is not under control.
6. Establish procedures for verification to confirm that the HACCP system is working effectively.
7. Establish documentation concerning all procedures and records appropriate to these principles and their application.

2. ISO 22000

The International Standard Organization (ISO) developed the standard for food safety management system ISO 22000, which applies to all organizations in the food chain and ensures its integrity. The ISO 22000 Food Safety Management Systems was first published in 2005 as an international standard that specifies the requirements for HACCP food safety management systems in establishments involved in the production, processing, transport, or distribution of food products. This type of certification is suited to businesses that require international recognition of their food safety management system.

Parallel to this development, there is an increasing need for harmonized certification of food safety systems to create justified confidence that all necessary measures are taken to ensure food safety in previous links of the chain as well. In this context, ISO developed the technical specification (TS) ISO / TS 22003 that contains requirements for bodies providing certification of the food safety management systems.

These developments were triggered in response to the increasing need of food manufacturers for a generally accepted food safety certificate that meets the requirements of the subsequent customers in the chain and may incorporate the requirements of the different certification schemes of the retail establishments.

3. Safe Quality Food (SQF) 2000 Code

Another food safety system worth taking a closer look at is the Safe Quality Food SQF 2000 Code. The SQF 2000 Code applies to food manufacturing and food distribution. It requires food processors to develop good manufacturing practices and maintain food safety and quality plans to control those parts of the operation that are critical to the integrity of their products. The SQF 2000 Code is a quality management system based on the HACCP system, aiming to reduce the incidence of unsafe food reaching the marketplace.





Good Hygiene Practices (GHPs)

Good Hygiene Practices

GHPs are the practices and measures necessary along the food chain to ensure food safety and suitability for human consumption.

Following good hygiene practices during food preparation is critical to ensuring safe and healthy food. This contributes to:

- Preventing incidents of foodborne diseases
- A good reputation leading to consumer confidence and higher profits.
- Reduced costs from food wastage due to contamination.
- Developing a partnership and cooperation with the food safety inspection authority.

Researchers identified common factors that contribute to foodborne diseases, which usually involve one or more of the following:

1. Improper cooling of foods.
2. Early preparation of food (12 hours or more before serving).
3. Sick food handlers with poor personal hygiene practices.
4. Failure to reheat cooked food to safe internal temperatures to eliminate bacteria.
5. Inability to maintain proper heating temperatures.
6. Using contaminated raw food that doesn't undergo further cooking.
7. Purchasing food from unreliable sources.
8. Cross-contamination of ready-to-eat food with raw food, improperly cleaned or sanitized equipment, or improper handling of food by food handlers.
9. Inappropriate use of leftovers.
10. Failure to reheat or cook food to safe temperatures.

In this chapter, the guidelines address the process of producing and serving food using good hygiene practices that should be followed during each stage.

The three stages are:

First Stage : Purchasing and receiving food (Primary food)

Second Stage : Storing food

Third Stage : Preparing and serving food

First Stage: Purchasing and Receiving Food



- Purchase and receive safe raw materials from reliable sources that are licensed to practice this activity.
- Schedule delivery time out of rush hours whenever possible.
- Prepare food storage areas before receiving food shipments to enable immediate storage of food. Storage places should be clean and well-lit.
- Allocate clean carts to receive food and transport it directly to storage areas.
- Ensure the quality and safety of food items when received and purchased, as follows:

Table 1. Main procedures to follow while purchasing and receiving food

Check frozen food for signs of thawing or refreezing, such as blood on meat boxes, liquid leaks, frozen liquids under food packaging, and large ice crystals inside or on the product. Refuse shipments that show signs of being thawed and refrozen.

Purchase refrigerated or frozen food items after selecting non-perishable foods to maintain their safe temperature until storing.

Never purchase or receive high-risk foods in torn or leaking packages

Make sure that fresh meat received from a supplier or distributor is slaughtered in one of the legal slaughterhouse and data seals are clear: the name of the slaughterhouse, slaughter date, type of meat.

Make sure to read the food labels to confirm the expiry date and storage conditions. Refuse any food item that is not labeled.

Vacuum packaged food should be entirely void of air

Reject dented, swollen and rusty canned foods.

Food packages should be inspected to ensure that they are dry, tightly sealed, and intact.

Eggs should be clean and refrigerated. Discard any cracked eggs.

Second Stage: Food Storing

1. Dry Storage

- Designate a suitable room with good ventilation, temperature, and lighting to store food and do not use any other places for this purpose.
- Keep canned and dry foods in a dry place.
- Label and date all dry goods .
- Monitor and record the temperature of storage areas regularly to ensure the temperature does not exceed 25° C.
- Keep all goods in clean containers, using moisture-proof and air-insulating materials.
- Store products in glass or plastic containers made for food contact.
- Pre-plan food purchases to avoid stacking them inside the storage area.
- Food should be placed on shelves or mobile carts (plastic decks) at least 15cm from the floor and at least 10cm from the walls and leave spaces between food items to allow airflow between them.
- Monitor expiry dates, considering stock rotation, and use the principle of FIFO: First in First Out in storage; what is stored first is used first.



2. Cold Storage

- Store frozen food immediately after purchase and receipt.
- Separate frozen meat from frozen vegetables.
- Set the optimum freezing temperature (-18°C).
- Ensure that all food is kept in containers or bags (if unpacked from their original packaging) and label the food item with the name date it was stored.
- Maintain continuous circulation of air inside the freezer room.



3. Freezing Storage

- Store frozen food immediately after purchase and receipt.
- Separate frozen meat from frozen vegetables.
- Set the optimum freezing temperature (-18°C).
- Ensure that all food is kept in containers or bags (if unpacked from their original packaging) and label the food item with the name date it was stored.
- Maintain continuous circulation of air inside the freezer room.



Cold Storage Chart

Table 2. Necessary information about refrigerating and freezing storage time to prevent food spoilage and keep the quality of frozen food.

Product	Refrigerator (5°C)	Freezer (-18°C)
Beverages\ after opening		
Juices in cartons	3 days	3 months
Fresh, natural fruit juices	1 day	-----
Dairy products\ after opening		
Butter	1-2 months	3 months
Hard cheese (Cheddar, Swiss)	3-4 weeks	3 months
Soft cheese (Brie, Camembert)	1 week	3 months
Soft sweet cheese	4 days	3 months
Cottage cheese, Ricotta	1 week	Doesn't freeze well
Cream cheese, spreadable	2 weeks	Doesn't freeze well
Margarine	4-5 months	----
Pasteurized milk in plastic or glass bottles	2 days (check the label)	----
UHT milk in tetra pack	2 days	----
Sour cream	7-14 days	----
Yogurt	10 days	----
Salads		
Egg, tuna, chicken, pasta	2 days	----

Product	Refrigerator (5°C)	Freezer (-18°C)
Eggs		
Fresh eggs in the shell	3-5 weeks	----
Raw yolks and whites	2-4 days	----

Commercial mayonnaise		
Refrigerate after opening	2 months	---- Frozen main dishes and meals

Frozen main dishes and meals		
Keep frozen until ready to heat	----	3 months

Hot dogs and luncheon meats		
Hot dog (opened)	1 week	1 month
Luncheon meat (opened)	3 days	

Bacon and sausages		
Bacon	7 days	One month
Raw sausage from chicken, turkey, pork, beef	1-2 days	1-2 months
Hard sausages, pepperoni, jerky sticks	2-3 weeks	1-2 months

Hamburgers, ground and stew meat		
Hamburger and stew meat	2 days	3 months
Ground turkey, veal, pork, lamb, mixtures of them	2 days	3 months

Product	Refrigerator (5°C)	Freezer (-18°C)
Fresh beef, veal, lamb, pork meat		
Steaks	3 days	3 months
Chops	3 days	3 months
Roasts	3 days	3 months
Variety meats: tongues, liver, heart, kidneys, chitterlings	1-2 days	----
Stuffed, dressed uncooked chicken breasts or lamb meat chops	1 day	Doesn't freeze well
Vegetable and meat stews and soups	3-4 days	----
Fresh poultry		
Whole chicken or turkey	5 days	3 months
Pieces of chicken or turkey	1-2 days	3 months
Giblets	1-2 days	3 months
Cooked meat and meat casseroles	2 days	
Gravy and meat broth	3-4 days	
Plain poultry pieces	3-4 days	
Poultry pieces in broth or gravy	3-4 days	
Other cooked food		
Pastry	2 days	1 month
Cooked stuffing	2 days	1 month

1. This table presents the recommended storage times for foods prepared within the good Food Production Practices
2. Follow the expiry dates indicated on the food labels before opening
3. For shock freezing food in your establishment, you must obtain approval from the JFDA

Third Stage: Preparing and Serving Food

Consider following the WHO recommendations regarding food safety and hygiene practices at every step of food preparation to maintain food safety:

1. Keep food preparation areas clean and maintain personal hygiene and health of food handlers.
2. Separate raw from ready-to-eat foods: prevent cross-contamination.
3. Cook foods to the right temperatures.
4. Chill, freeze, and thaw foods correctly.
5. Use safe raw materials.

1. Keep Food Preparation Areas Clean, and Maintain Personal Hygiene and Health of Food Handlers

Bacteria can spread throughout the kitchen and be picked up by hands, cutting boards, kitchen utensils, worktops, and food. To prevent contamination of food, always adhere to the following good hygiene practices:



A. Cleaning food handling areas

Effective cleaning of hands, equipment, surfaces, and the surrounding environment of a food facility ensures the elimination of microbes. Following recommended best practices helps prevent these microbes from contaminating food as follows:

1. Ensure that all food handlers at the food establishment wash their hands with soap and water and thoroughly dry them before handling food.
2. Regularly clean food preparation areas and equipment, and before starting any task and during the work, especially after handling food raw.

Places where microbes are present in abundance in most food establishments are:

- Refrigerator and freezer handles.
- Tap and door handles if any.
- Phones - note that personal mobile phones are not allowed in food preparation areas.
- Work surfaces and cutting boards.
- Garbage bin lids.
- Can openers.

Setting up a cleaning schedule is an excellent means to ensure that surfaces and equipment are cleaned before using them. A cleaning schedule shows the following:

- Place and equipment to be cleaned.
- The person in charge of the cleaning process and responsible for checking that cleaning is done properly.
- How often cleaning should be done.
- Cleaning method, materials and water temperature used.

Cleaning instructions should be prepared and available for staff and should show:

- What cleaning chemicals should be used.
- How the chemical should be used, including dilution instruction and contact time with the surface intended to be cleaned based on the instructions of the manufacturer.
- Chemical storage instructions «in a special place away from food» and, under the supervision of the person in charge.
- Corrective actions in case a failure to clean is detected. Corrective actions should be written, documented and affirmed to all food handlers and supervisors.

B. Personal hygiene and food handlers' health

Good hygiene practices help to prevent the spread of contaminants to food, and food handlers should adhere to the following:

1. Food handlers must always wash their hands before preparing food, as it is one of the best ways to prevent the spread of foodborne pathogens.
2. Wear clean clothes when handling food. Ideally, the work outfit should be in a light color (to show the dirt on them) with no external pockets and buttons.



3. Tie hair and wear a hat or hair net during food preparation.
4. Refrain from smoking, drinking, or chewing gum during food preparation, and avoid touching the face or nose.
5. Cover mouth and nose when coughing or sneezing and follow recommended health practices
6. Avoid wearing jewelry, watches, artificial nails, or nail polish during food preparation. Watches and jewelry can pick up and spread dirt and foodborne disease-causing microbes and can potentially fall into food.
7. Change work outfit in a separate area from the food preparation area
8. Maintain a clean set of work outfits or single-use aprons for visitors, employees, or regulatory agency inspectors.

Hand washing

Foodborne disease microbes can spread easily from hands to food and food contact surfaces, equipment, etc. Hand washing is an effective way to prevent food contamination.

Food handlers must wash their hands properly at the right times:

1. Before entering the food preparation area
2. After eating and smoking.
3. Before touching ready-to-eat food.
4. After and before touching raw food such as meat, poultry, fish, eggs, and unprepared fruits and vegetables.
5. After emptying waste bins.
6. After cleaning.
7. After touching wounds.

Hand washing sinks should be convenient, and a sufficient amount of soap and disposable towels made available. The person in charge or the supervisor of food handlers must make sure that food handlers always wash their hands correctly.

Hand washing protocol

Step 1:

Rinse hands with running water to remove dirt, debris, and chemical substances from the hands and prepare hands for soap application.



Step 2:

Apply soap and lather hands for at least 20 seconds. Scrub with soap between fingers and under fingernails and wash the forearms to eliminate microbes.



Step 3:

Rinse hands thoroughly with water and ensure all soap residue is washed. This step is important as it prepares the hands for the application of sanitizer. If soap residue is left on the hands the sanitizer may not be effective.



Step 4:

Dry hands using single-use paper towels or using the hand air drying device. After drying hands, use another clean paper towel to turn off the tap and open the door if needed. It is not permissible under any circumstances to use a common towel to dry hands after washing.



Step 5:

Apply unscented hand sanitizer. Hands should be dried well before applying hand sanitizer and allow hands to air dry after application.



Disposable gloves

Single-use gloves can be useful in preventing the spread of foodborne disease pathogens into food if appropriately used. The following recommendations should be taken into account when using disposable gloves to prevent cross-contamination:

1. Hands must be washed thoroughly before and after use.
2. Gloves must be used only once. They must be a distinctive color, preferably blue, to more easily see if they are torn or fall in the food.
3. Gloves must be changed between tasks. For example, after touching raw meat, poultry, fish, eggs, and before touching ready-to-eat foods, after emptying bins, and after cleaning and handling money.
4. Discard used gloves after each task.

Food Handlers Health

Food handlers are considered potential sources of food contamination and disease transmission in the food establishment if they don't comply with the recommended hygiene practices during food handling. The following microbes are considered the most important foodborne pathogens:

- Hepatitis A
- Norovirus
- Shigella spp.
- Salmonella Typhi
- Escherichia coli O157:H7

Food handlers can be an important cause in spreading infectious diseases to others through coughing, sneezing, fecal contamination, infected wounds, and other skin lesions.

The Jordan Food Law No. 30 of 2015 provides in Article 17 that the food establishment shall assign a competent official to restrict the access of any worker in the establishment from food handling in case he/she suffers from any disease or injury that may affect the safety of food. The person in charge is also responsible for making sure all food handlers at the food establishment have obtained their medical certificates upon appointment and that these are renewed every six months. All medical reports and forms (see appendices), including employee sickness records and medical questionnaires must be kept in the records. Proper management of the food establishments involve ensuring that food handlers are not infected with communicable disease agents that can be transmitted to food.

1) Diarrhea and vomiting

- Food handlers must stop working in the food preparation areas immediately and report to the manager or person in charge of the food establishment if they have symptoms of diarrhea and vomiting.
- Food handlers should be excluded from the food preparation area for 48 hours from the start of the symptoms or provide a medical clearance report confirming the absence of infectious diseases. It is preferable to be given sick leave due to the likelihood of transmitting the disease to other food handlers through the establishment facilities, changing rooms, and others.
- Food handlers should be made well-aware of the importance of proper handwashing and adherence to health practices during food handling.

2) Viral Hepatitis A

A viral hepatitis A infection often results in jaundice (yellowish coloration of the skin, eyes, and mucous membranes), fatigue, diarrhea, and fever.

- Infected food handlers must report to the person in charge and immediately seek medical care.
- The food handler must not return to work until receiving medical clearance. Usually, jaundice persists for seven days, after which food handlers are allowed to return to work.

3) Cuts and wounds

Wounds and skin injuries are a source of bacteria called *Staphylococcus aureus* that can cause disease if transmitted to food. Therefore, it is important to report to the person in charge at the food establishment and cover wounds, burns, and skin injuries properly, especially the infected ones, using clean impermeable bandages and change them periodically.

4) Respiratory diseases and flu

In the case of respiratory diseases or flu, food handlers should report to their managers to consider their reassignment to a position that doesn't include handling of food or contact with tools and equipment. The sick food handler is allowed to return to work after receiving medical clearance.

2. Separate Raw from Ready-to-eat Foods: Prevent Cross-Contamination



Cross-contamination happens when raw food, equipment, surfaces, or dirty hands touch ready-to-eat food. It is considered one of the most common causes of ready-to-eat food contamination.

To prevent cross-contamination, adhere to the following:

- Clean work surfaces, cutting boards, and equipment thoroughly before food preparation and after use in preparing raw foods.
- Use different cutting boards and knives for raw and ready-to-eat foods with distinctive colors for each.
- Wash hands before preparing food.
- Separate raw from ready-to-eat foods.
- Use separate refrigerators for raw foods and ready-to-eat foods.

3. Cook Foods to the Right Temperatures



Adequate cooking of food kills harmful microbes in food. Hence, it is imperative to make sure that the food is cooked properly and ensure the following:

- Cook food safely to reach an internal temperature sufficient to kill harmful bacteria that cause foodborne diseases.
- Do not serve undercooked food.
- Serve cooked food immediately or keep it hot until served (considering the temperature and time shown in Table 3).
- Cool cooked food quickly when cooked in advance.
- Use a food thermometer to measure internal temperature to make sure food is cooked thoroughly.
- Ensure that poultry is cooked to the right temperature and time, as shown in Table 3, and check the internal temperature in the deepest part of the thigh and wing and the thicker part of the chest using the food thermometer.
- Cook meat pieces and steaks at recommended temperatures and durations, as shown in Table 3. Meat pieces and steaks can be served semi-raw as long as they are fully grilled from the outside.
- Products made from minced meat, such as burgers and sausages, should be fully cooked and should not be served semi-raw. The bacteria can spread during the chopping process. According to the Centers for Disease Control and Prevention (CDC), eating undercooked minced beef is linked to a higher risk of disease. Take into consideration that color is not a reliable indicator that food is cooked. Therefore, a food thermometer should be used to check the internal temperature of the burger meat.
- Cook eggs until the yolks and whites harden - they should not be liquid. Recipes in which eggs are only kept raw or partially cooked should not be used.

- Cook fish to 63°C or until the meat can be separated using a fork.
- When using a microwave, expose all food to the appropriate heat. For best results, food should be covered and stirred for even cooking. If there is no rotary tray in the microwave, the dish should be rotated by hand once or twice during cooking.
- Heat sauces, soups, and gravies to a temperature of 74°C and check by inserting the thermometer sensor at least 5 centimetres into the food.
- Calibrate the thermometers regularly by inserting the sensor into a mixture of ice and water and adjusting the reading to 0°C.
- Prevent partial and intermittent cooking of food.
- Use special tasting spoons, and a clean spoon to taste every time the food is checked; do not use the same stirring spoon.
- Do not place pre-prepared foods on top of freshly prepared foods (e.g., chicken grill in the restaurant).
- Do not deal with ready-to-eat foods directly by hand and use cooking spoons, tweezers, or clean plastic gloves to handle ready-to-eat food.
- Chill foods gradually from 65°C to 21°C within 2 hours and from 21°C to 5°C within 4 hours. An ice bath can be used to speed up the cooling process if necessary.

Table 3 The minimum internal temperature and time required during food cooking to ensure food is safe

Food	Internal temperature	Time
Stuffed meat and poultry	74°C	15 seconds
Poultry	74°C	15 seconds
Ground meat	68°C	15 seconds
Beef and lamb meat steak	63°C	15 seconds allow resting for 3 minutes
Eggs "serving"	63°C	15 seconds
Eggs "holding"	68°C	15 seconds
Cooked vegetables, processed and ready-to-eat foods	57°C	15 seconds

4. Chilling, freezing, and thawing food



a. Chilling food

Chilling food properly helps to stop harmful bacteria from multiplication. Some ready-to-eat and high-risk foods must be kept chilled and never left at room temperature to keep them safe. These include salads, desserts, and cold ready-to-eat food».

Therefore, the following should be done:

- Place meat, poultry, eggs, and other perishable food in the refrigerator or the freezer immediately after receiving it.
- Never leave raw meat, poultry, eggs, or cooked food or fresh cuts of fruits and vegetables at room temperature for more than two hours during warm weather or more than one hour during hot weather (higher than 32°C) before putting them into the fridge or freezer.
- Divide large portions of food into shallow containers for quicker cooling in the refrigerator.
- Discard refrigerated food on a regular basis following the instructions in Table 2 Cold Storage Chart.
- Keep raw meat, poultry, fish, and their juices, away from other food. Cutting boards and tabletops should be washed with hot water and soap after cutting raw meat (different cutting boards and knives for raw food).
- Keep marinated meat and vegetables in covered containers in the refrigerator, discard dressing immediately after finishing and never reuse.

- Store raw food separately from cooked food.
- Wash all fresh fruits and vegetables with running water or a clean and sanitized sink; use a clean brush if fruits and vegetables are soiled. Avoid using detergents as residues could remain on them.
- Never prepare food a long time ahead of serving.

b. Freezing food

Partial or prepared food can be frozen in its final form as intended to be served, including fresh food such as meat, fish, vegetables, fruits, and dairy products. Approval should be obtained for use of shock freezing in the food establishment from the Jordan Food and Drug Administration based on the 2014 shock freezing for prepared food before and after cooking regulation.

Shock freezing is the process of freezing food products rapidly to -18°C degrees or less to extend the storage life of foods. Foods are allowed to be frozen for a maximum of three months from the date of shock freezing.

General requirements for shock freezing:

1. Food items intended to undergo shock freezing must be safe and of high quality
2. Food should be prepared in safe conditions to ensure safety and quality and conform to the Jordanian standards and relevant legislation.
3. Food should be prepared and processed in the shortest possible time and without delay to avoid critical temperatures ($10-60^{\circ}\text{C}$) and reduce the likelihood of physical, chemical, and microbiological changes that may affect food safety and quality.
4. Proper maintenance and repair of the infrastructure and equipment used in shock freezing. Assure maintaining insulation and cooling efficiency.

For more information, please refer to the food shock freeze before and after cooking instructions of 2014 on the JFDA website in the Laws and Regulations/Domestic food section.

c. Thawing food

This is the process of exposing frozen food that has been preserved at temperatures below 0°C to temperatures above 0°C to convert ice crystals from a solid state to liquid for preparation and cooking.

As the process entails raising the temperature of the food, which may provide the right conditions for microbes to multiply if left too long, the following guidelines should be applied:

- Never defrost the ice from foods at room temperature. Food should be kept at a safe temperature during thawing.
- Ready-to-eat foods should be thawed on the top shelves of the refrigerator.
- Frozen food, such as vegetables and seafood, can be cooked directly to the recommended internal temperature.
- Large food items, such as whole turkeys, should not be cooked from the frozen state.

There are three safe ways to thaw food:

1. In the refrigerator.
2. Under running water.
3. In the microwave - thawed food must then be cooked immediately.

Food leftovers

All food leftovers that were served on the buffet should be discarded.

5. Use Safe Water and Raw Materials



- Ensure that drinking water is supplied from public drinking water systems or reliable sources and make sure water tanks are cleaned periodically and sealed.
- Obtain raw food items such as meat, vegetables, and milk from certified suppliers.

6. Serving food

Keep hot foods at 63°C or higher and cold foods at 5°C or less.

Self-service or buffet

- Provide appropriate food serving tools to prevent hand contact.
- Handle plates by their edges, glasses and cups by their bases or handles, and cutlery and utensils by their handles.
- Use specific scoops for ice.
- Discard potentially hazardous foods that have been kept at room temperature for more than two hours.
- Stack single-use plates and cups bottoms side up so that customers do not touch the eating surface of another customer's plate.





Good Food Production Practices (GFPP)

Good Food Production Practices

The Jordan food law No. 30 of 2015 defines Good Food Production Practices as the processes related to the food industry and required for producing safe food with high quality in line with the health measures and relevant legislations.

Good Food Production practices (GFPP) are designed to control hazards related to the food production environment and food handlers to create conditions favorable to safe food production.

It is part of quality assurance that ensures that food products are manufactured safely. The food production process has been adjusted to food safety standards and appropriate quality as required by regulators and customers.

Categories of Good Food Production Practices:

1. Location and environment
2. Layout and design of food establishment premises
3. Equipment
4. Facilities
5. Food operations and controls
6. Sanitation and maintenance of establishment premises
7. Personal hygiene
8. Product information (food label) and consumer awareness
9. Training of food handlers at the food establishment

1. Location and environment

- 1.1. The food facility should be located in an area approved by the competent authorities.
- 1.2. The site should be in an environmentally friendly location without sources of pollution, odors, smoke, dust, or any other pollutants.
- 1.3. Appropriate means of draining water and disposing of solid and liquid waste should be available.

2. Layout and design of food establishment premises

- 2.1 Public safety requirements must be met in the construction.
- 2.2 The building design should enable easy and efficient cleaning and it should be maintained in consistently good condition.
- 2.3 Maintain protection against rodent and insect entry.

- 2.4 The building should be provided with artificial lighting that shows the natural color of the food and is distributed in a way that prevents the reflection of light.
- 2.5 Provide the building with natural or artificial ventilation using safe and adequate means.
- 2.6 The food establishment layout ensures an easy flow for food processes and preparation and avoids cross-contamination between steps.
- 2.7 The floors of the preparation and serving areas should be flat, with no water, and they should be made of materials not affected by acids and alkalis and be light in color. The floors should not have cracks or holes, not cause slippage, be water-resistant and non-absorbent to moisture, be easy to clean, and they should stand up to frequent work and continuous cleaning. The slope of the floors must also facilitate adequate drainage.
- 2.8 The walls of the preparation and serving areas should be smooth with ceramic tiles or any other substance approved by the JFDA and free of bumps and corners. They should be easy to clean, water-resistant, non-absorbent to moisture, and non-toxic.
- 2.9 The ceilings should be light-coloured, and easy to clean and maintain to prevent the accumulation of dirt and the growth of unwanted mould.
- 2.10 The design of windows and exhaust openings should prevent dust and dirt accumulation and be easy-to-clean. Rodent-proof screens should be placed on the windows that are opened to the external environment.
- 2.11 The food preparation and the serving areas should have smooth, stainless, non-corrosive, non-cracked surfaces that are easy to clean. It is preferable that doors open to the outside and they should close automatically.
- 2.12 Allocate a specific place to store raw materials.
- 2.13 Allocate a storage area for sanitizer products and devices and cleaning tools.
- 2.14 Place food preparation equipment in places that can be easily maintained and cleaned.
- 2.15 Separate raw food preservation and storage areas from ready-to-eat food preparation.
- 2.16 Minimize product flow distances and preferably use straight food preparation lines.
- 2.17 Minimize the movement of food handlers working inside the food facility.
- 2.18 Divide the production line to prevent the contamination of food products.

3. Equipment

- 3.1 Equipment and containers used for food handling, storage, preparation, processing, package, and serving food should be made from safe food contact materials that can withstand frequent cleaning and disinfection. In addition, its surfaces should be smooth and free of scratches and cracks.
- 3.2 Equipment and containers used for waste, by-products, and non-edible or hazardous materials should be distinguished from the equipment and containers used for food handling.
- 3.3 A suitable place should be allocated for storing cleaning chemicals and other hazardous substances and should be kept sealed to prevent food contamination.
- 3.4 Equipment and utensils should be designed to be easily cleaned and maintained

4. Facilities

- 4.1. Water supply
 - Only use potable water that conforms to the Jordanian standard for drinking water, whether it is intended for use as a component in food or dealing with food; washing, preparing, and cooking. Water tanks should be cleaned periodically (at least twice a year).
 - Drinking water should be tested periodically (for more details, please refer to the Jordanian Drinking Water Standard JS 286 /2008)
- 4.2. Ice and steam
 - Ice and steam used in direct contact with food should be made from potable water. Ice and steam production, handling, and storage should be in safe food contact containers or in ice or steam-makers to prevent contamination.
- 4.3. Water drainage
 - Adequate systems and facilities should be provided and built for water drainage to prevent food or water supply contamination. These facilities should be covered and cleaned periodically.
- 4.4. Waste disposal
 - Adequate waste disposal systems and facilities should be provided and built to prevent contamination of food or drinking water sources.
 - Ensure that waste is kept in covered containers of an appropriate size with self-closing covers that are distributed in sufficient numbers around the food establishment.
 - Solid waste should be discharged using garbage bags placed in containers. It should be collected, tied, and disposed of daily in officially approved landfills to ensure that the environment is not contaminated.

4.5 Food handlers, restroom or changing facilities

- Facilities should include adequate equipment for hand washing and drying (sinks, antibacterial soap, single-use towels, and anti-bacterial gel) and adequate changing facilities should be provided.
- Facilities should be separate from and not open directly to food handling areas.

4.6 Ventilation

- Use natural or mechanical ventilation systems in the food establishment, including air filters, that prevent airflow from contaminated to clean areas; minimize airborne contamination of food; control odors; control ambient temperatures and humidity.

4.7 Lighting

- Provide adequate natural and artificial lighting. Lighting units should be protected to prevent food contamination in the event of breakage or damage.

5. Food Operations and Controls

5.1 Purchasing raw food

- Raw food may only be purchased and accepted from a certified and reliable food establishment source licensed for food trading activity. Documents or records must be available showing the sources and quantities of those materials.
- Raw foods purchased must conform to the relevant technical regulations.

5.2. Storing raw food

- Food storage facilities shall be designed and constructed to protect food from contamination, allows proper maintenance and cleaning, and avoid pest access.
- Storage facilities shall include an area for the storing rejected, recalled, or returned food products. This area must be marked and secured.
- Store raw food separately from processed, cooked, and packaged foods. Temperature and humidity requisites must be maintained to enhance product shelf life.
- Follow FIFO (first in first out) stock rotation system for raw foods, ingredients, food in progress, and processed, cooked packaged food products.
- Store raw, under preparation, and ready-to-eat food in containers made from nontoxic materials.
- Store food on racks / pallets at a reasonable height above the floor and distance from the walls to allow effective cleaning and prevent pest infestation.

5.3. Preparing, cooking, packaging, and serving food

- Time and temperature
 - Time and temperature should be controlled effectively, as these are critical factors for food safety.
 - Acceptable limits for time and temperature variation during receipt, cooking, storing, packaging, distributing, and serving to the consumer shall be specified, and monitoring records shall be maintained.

- Preventing cross-contamination
 - Develop standard operating procedures to prevent contamination of food with physical, chemical, and bacterial contaminants.
 - Raw, unprocessed food shall be effectively separated from processed, cooked, ready-to-eat foods.
 - Surfaces, utensils, equipment, fixtures, and fittings shall be thoroughly cleaned using food-grade detergents and sanitizers approved by the Jordan Food and Drug Administration.
 - Control the movement of food handlers in food production areas.

- Packaging foods
 - Food-grade packaging materials shall be provided to prevent food contamination and damage. Packaging materials are defined as substances or materials, in their final state, that are prepared for contact with food during the stages of packaging, preparation, transportation, handling, and food production, without causing any adverse changes to the food and have no negative impact on human health.
 - Examples of packaging materials: glass products, metal products, paper products, plastic products. When using packaging materials, adhere to the following hygiene conditions:
 - 1) Ensure that the words "food item" or its symbol (🍴) are found on products intended for food contact.
 - 2) Ensure packaging materials are approved by the Jordan Food and Drug Administration for local or imported products.
 - 3) Check suitability for use in the microwave, dishwasher, or freezer.
 - 4) Store and keep packaging products in clean, dry places, away from sunlight and chemicals.
 - 5) Do not use cling film or tinfoil to cover food when heated with the microwave.

- Serving and transporting food
 - Following good hygiene practices to serve ready-to-eat food in the food establishment prevents contamination (temperatures, humidity, and time).

- When using food vehicles to transport food outside the food establishment, make sure vehicles are designated for food use only, effectively comply with proper storing conditions, and are authorized by the Jordan Food and Drug administration.
- Drinking water transport tanks should comply with the hygiene requirements for 'drinking water tanks' issued by the Ministry of Health
 - Environmental Health Directorate.
- Management and supervision
 - Food establishment managers and supervisors shall be trained in food safety principles and good hygiene principles and practice.
- Documentation and record-keeping

Appropriate records shall be kept for a period that exceeds one year or the shelf life of the product, whichever is more, for the following:

 1. Equipment cleaning and sanitation
 2. Raw materials and food ingredients
 3. Food packaging
 4. Food processing, preparation, and production
 5. Food storage
 6. Food quality assurance
 7. Food lab results
 8. Food handler continuous training
 9. Food handler health certificates
 10. Recording the name of the person in charge
- Traceability and recall
 - In the event of a food product recall, the food manufacturer should inform the Jordan Food and Drug Administration and notify any destination where food products have been distributed.
 - If a food product is withdrawn due to a health risk, other foods produced under similar conditions shall be assessed and withdrawn if necessary
 - Recalled food products shall be stored under supervision until they are destroyed, under the Jordan Food and Drug Administration's supervision.

6. Sanitation and Maintenance of Establishment Premises

6.1. Cleaning and maintenance

- Food premises shall be kept clean and in good condition.
- Cleaning and sanitizing agents, and cold and hot water shall be supplied in sufficient quantities.

- Cleaning and disinfection materials must be approved by the Jordan Food and Drug Administration and conform to the instructions of Detergents, Disinfectants, and Sterilizers of 2011. They must not leave color, odor, or residue on the equipment used.
- Work surfaces and equipment surfaces in contact with food shall be maintained, cleaned, and frequently disinfected.
- Identify areas to be cleaned, cleaning frequency, and cleaning procedures to be followed by developing a special cleaning and sanitizing program.
- Chemical cleaning materials must be handled with care and used with extreme caution in accordance with the manufacturer's instructions.
- Chemical cleaning materials should be stored in a clearly labelled place.
- Ensure regular preventive maintenance of the building, equipment, and facilities.
- Provide hand sanitation means in suitable places that don't affect food safety.

6.2. Insect and rodent control systems

- Maintain the food establishment in good condition and keep drains, holes, and other places where pests are likely to gain access sealed or fitted with nets to prevent insects from entering.
- Follow good hygiene practices to avoid providing a suitable environment for pests to breed.
- Animals and pets shall not be allowed into the food establishment.
- Deal with pest infestation directly without adversely affecting food safety.
- Maintain records of pesticides/insecticides used.

7. Personal Hygiene

7.1. Food handler's health status

- Food handlers infected with a communicable disease must be restricted from entering food handling areas (see GHP chapter\ Food handler's health status).

7.2. Personal cleanliness

- Food handlers should maintain a high degree of personal hygiene. Adequate and suitable, clean protective clothing, head covers, and shoes shall be provided to food handlers.
- Food handlers should have a valid health certificate, renewed every six months, issued by official authorities.

- Ensure that wounds, burns, or skin injuries are covered using impermeable bandages, which should be changed continuously to prevent food contamination.
- Wash hands with warm water and soap, sterilize hands and dry them with a hand dryer or single-use paper towels before starting work.

7.3. Personal behavior

- Food handlers should refrain from smoking, spitting, chewing gum, eating, sneezing, coughing over exposed foods, and eating in the preparation and serving areas.
- It is forbidden to wear any personal items such as rings, bracelets, jewelry, watches, pins, and other items that threaten food safety.

7.4. Visitors

- Visitors entering food preparation, cooking, storage, or handling areas should wear protective clothing, and adhere to the personal hygiene provisions.

8. Product Information (food label) and Consumer Awareness

- Ensure that food packages are labeled, providing sufficient and clear information to the next person in the food supply chain to facilitate tracking and recall when necessary.
- Provide clear, sufficient information about each product on the menu to the consumer, including allergens.


9. Training of Food Handlers at the Food Establishment

Food handlers should have knowledge and skills to deal with food at all stages of service.

- Train food handlers on good hygiene practices.
- Periodic assessment and verification of the effectiveness of training programs.

For more details, please refer to the Good Food Production Practices Guidance document issued by the Jordan Food and Drug Administration Board at its 39th session on 29/12/2015, which is available on the JFDA website in the Laws and Regulations - Food Documentation.





Hazard Analysis and Critical Control Points (HACCP)

Hazard analysis and critical control points (HACCP)

Applying a food safety management system based on the principles of hazard analysis and critical control points (HACCP) enables identification and control of potential food hazards before they threaten food safety and, therefore, consumer health. HACCP is a system that ensures effective food safety management through assessment of the food chain from primary production to the final product.

Definition of HACCP

A systematic preventive approach to the identification of basic risks affecting food safety and assessing and controlling such risks (Food law No. 20 of 2015).

HACCP can be applied by any food establishment directly or indirectly related to the food supply chain, such as food plants, primary food suppliers, and foodservice establishments (restaurants, hotels, cafes, hospital catering services, caterers, bakeries, and confectionery stores).

Benefits of HACCP

1. Prevent possible food hazards (physical, chemical, microbiological, and allergens), and supply safe, high-quality products.
2. Increase business awareness of food risks.
3. Increase consumer confidence in the products served and reduce customer and consumer complaints.
4. Consistency of inspection criteria, reduced inspection visits by the regulatory authority.
5. Promotes the concept of self-censorship at the food establishment
6. Compliance with the Jordanian food law No. 30 of 2015.
7. Reduced financial losses resulting from the confiscation and destroying of contaminated food and saves time and effort.

The Seven Principles of HACCP

1. Conducting Hazard analysis

The person in charge of food safety at the food establishment should evaluate the food handling process and identify where hazards can be introduced during food preparation and handling. Hazards can be physical (metal contamination), chemical (cleaning products), biological (bacteria and viruses), and allergens (peanuts).

2. Identifying Critical Control Points (CCP)

The person in charge of the food establishment determines the critical control points during food handling. Controls can be applied to prevent or eliminate the hazard identified. A specific preventive measure must be set for each critical control point.

3. Establishing Critical Control Limits

The next step is to establish critical control limits for each critical control point using technical regulations and local, regional, and international standard specifications, risk analysis studies, and legislation in force. Critical control limits must be met to control the hazard at a critical point.

4. Establishing Monitoring Procedures

Monitor the production process at the critical control point and keep records to indicate compliance with critical control limits. Determine what to measure, how to measure it, how frequently measure it, and who is responsible for control limit measurement.

5. Establishing Corrective Actions

Identify corrective actions for each critical point that should be taken in the event of deviation from critical control limits and evaluate the actions to determine the cause of the deviation, adjust it, and never repeat it.

6. Establishing Verification Procedures

After developing the HACCP plan, it should be verified for its effectiveness in preventing the hazards identified in the plan. Example: testing of the end product.

7. Establishing Record-Keeping Procedures

The importance of records lies in documenting and proving the food establishment's commitment to applying and controlling the HACCP system. Records should include information on the HACCP team, product standards, operation process, and critical control points.

Principles of Hazard Analysis and Critical Control Points

Principle 1: Conduct a Hazard Analysis

The HACCP team conducts a hazard analysis and identifies appropriate control measures. The purpose of the hazard analysis is to develop a list of the most significant hazards that are likely to cause injuries or illness if not effectively controlled. Comprehensive hazard analysis is an essential element in the development of an effective plan. If the analysis is performed incorrectly and hazards that need to be controlled are not identified in the hazard analysis and critical control points system, the plan is considered ineffective regardless of compliance.

The hazard analysis and identification of related control measures should accomplish the following three objectives:

- a. Identify hazards and control measures.
- b. Identify the modifications to the production process or on a specific product needed to improve or assure product safety.
- c. Determine critical control points in the second principle.

The following should be included when conducting a hazard analysis:

- a. The likelihood of occurrence of hazards and the severity of adverse health effects.
- b. The qualitative and quantitative evaluation of the presence of hazards.
- c. The survival or multiplication of microbes of concern.
- d. Production or persistence of toxins, chemicals substances, physical agents in food.
- e. Conditions leading to the above.

Severity is defined as the extent to which people's lives or health are affected by exposure to a hazard and the consequences of that exposure. Considerations of severity (e.g., impact, size, and duration of the disease) may help understand the impact of public health risks.

The probability of occurrence is usually based on a set of elements, including expertise, epidemiological data, and information available in the relevant technical references.

However, opinions might differ, even among experts, regarding the likelihood of occurrence and severity of the hazard. The HACCP team might need to rely on the expert's opinion, who assists in developing the HACCP plan. **See appendix B-B.**

Upon completing the hazard analysis, the hazards associated with each step in the food production should be listed, along with any measure(s) taken to control the hazard(s). The term control measure is used because not all hazards can be prevented, but generally, all can be controlled. **See appendix B-B.**

More than one control measure may be required for a specific hazard. Otherwise, more than one hazard may be addressed by a specific control measure. For example, cooking food at the appropriate time and temperature.

Principle 2: Determine Critical Control Points (CCPs)

A critical control point is a step at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level. Complete and accurate identification of CCPs is fundamental to controlling food safety hazards. The information developed during the hazard analysis is essential for the HACCP team to identify which steps in the food production and serving process are CCPs. Critical control points are located at any step where hazards can be prevented, eliminated, or reduced to an acceptable level. **See appendix B-B**

The critical control point decision tree is a sequence of questions that help determine whether a particular control point is a critical control point. The critical point of the decision tree helps the HACCP team identify these points in the preparation and serving processes.

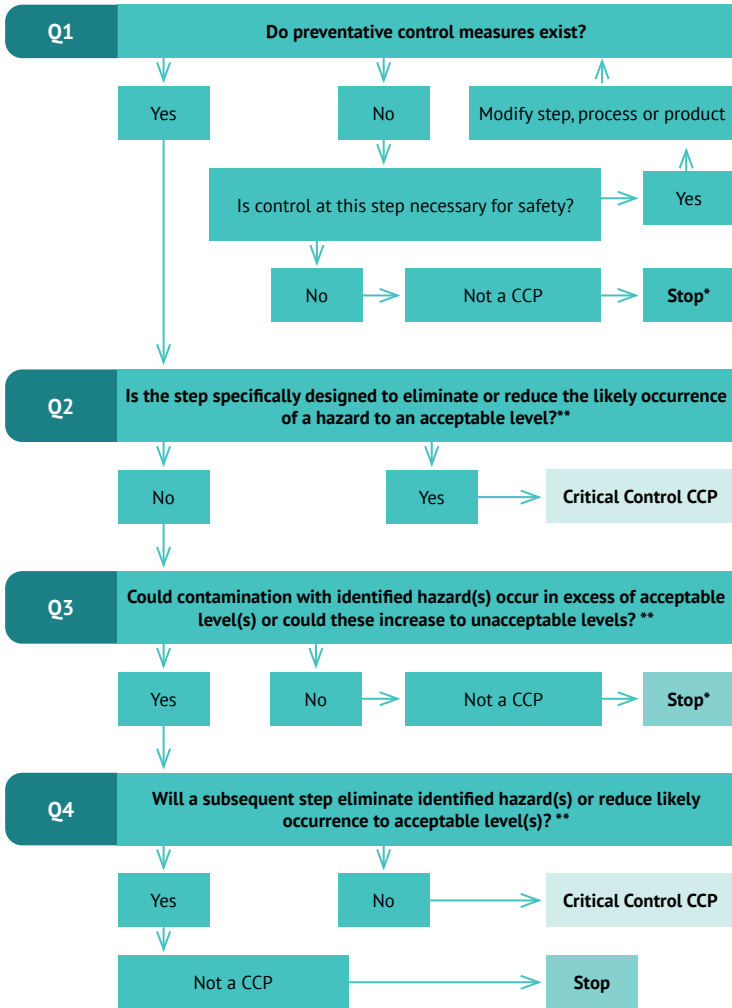
Critical Control Points (answer questions accordingly)

When using the decision tree, each of the questions must be answered in order. **Important considerations when using the decision tree are:**

- Use the decision tree after the hazard analysis has been completed.
- The decision tree is used in the steps where an identified hazard in the HACCP plan must be addressed.
- Controlling a particular risk may be more effective at a later step in the process, and this step may be the most appropriate critical control point.
- A subsequent step in the process may be more effective for controlling a hazard and may be the applicable CCP.
- More than one step in the process may be involved in controlling a hazard.
- A specific control measure may control more than one hazard.

Although the decision tree is used to determine whether a particular step is a critical control point for a predetermined hazard, it is merely a tool, not a mandatory element in HACCP, nor is it a substitute for expert knowledge.

Critical Control Point Decision Tree



- * Proceed to the next identified hazard in the described process
- ** Acceptable and unacceptable levels need to be determined within the overall objectives in identifying the CCPs of the HACCP plan.

Principle 3: Establish Critical Control Limit

A critical limit is defined as the maximum and /or minimum value to which a biological, chemical or physical contaminant must be controlled at a CCP to prevent, eliminate or reduce the occurrence of a food safety hazard to an acceptable level. A critical limit is used to distinguish between safe and unsafe operating conditions at a CCP. Critical limits shouldn't be confused with operational limits, which are for reasons other than food safety. Each CCPs must have one or more control measures to ensure the identified hazards are prevented, eliminated, or reduced to acceptable levels. Each control measure should have one or more associated critical limits. Critical limits may be based for factors such as temperature, time, moisture level, water activity, salt concentration, preservatives, or sensory information such as aroma and visual appearance. See appendix C. Critical limits must be scientifically based. For each CCP, there is at least one criterion that must be met to ensure food safety.

Principle 4: Establish Monitoring Procedures

Monitoring is a planned sequence of observations or measurements to assess whether a CCP is under control and issue accurate records for future use in verification. **Establishing monitoring serves three main purposes:**

- a. Facilitate tracking of operations if monitoring detects a deviation from critical limits, appropriate corrective action can be taken so that the process is correctly routed before the critical limit is exceeded.
- b. The monitoring process identifies situations where control is lost. The critical limits of critical control points are exceeded in cases where the critical limit is exceeded or not adhered to.
- c. Provide written documents for use in the verification process.

Unsafe food may result if a process is not adequately controlled and a deviation from the critical control limit occurs. Due to the potentially severe consequences of a critical limit deviation, monitoring procedures must be effective and documented. Ideally, monitoring should be continuous and organized. Monitoring equipment must be carefully calibrated for accuracy. Assignment of responsibility for monitoring each critical control point is an important consideration. Employees responsible for monitoring critical control points are usually also involved in the production process (e.g., direct supervisors, selected direct food handlers, maintenance personnel). They also act as quality control officers when needed.

These employees must meet the following criteria:

- a. Well trained on applying the monitoring approach that falls under his/her responsibility.
- b. Fully understands the purpose and importance of monitoring.
- c. Impartial in monitoring and reporting.

- d. Well trained in the procedures to follow when there is a trend towards loss of control and can promptly make the adjustments needed to assure that the process remains under control.
- e. Set the date of issuance and signature of records and documents or place the initials of the person carrying out the monitoring. **See Appendix C.**

When it is not possible to monitor a critical control point on a continuous basis, it will be necessary to schedule a repeat of the observation process and the reliable procedure to indicate that the CCP is under control. Data collection systems and statistical sampling are used for this purpose. Examples of observation activities, including visual observation and measurement of temperature, time, pH, and humidity level.

Microbiological tests are rarely effective for monitoring due to their time-consuming nature and problems with assuring detection of contaminants. Physical and chemical measurements are usually preferred because they are fast and more effective in assuring control of microbiological hazards.

Principle 5: Establish Corrective Actions

The Food Safety Hazard Analysis and Critical Control Points System used for food safety management are designed to identify health risks and develop strategies to prevent, eliminate, or reduce risks. However, ideal conditions do not always prevail, and deviations from established operations may occur. An important purpose of corrective action is to prevent foods that may be hazardous from reaching consumers.

Corrective actions are necessary when there is a deviation from the critical limits. Therefore, these actions must include the following elements:

- a. Identify and correct the cause of non-compliance.
- b. Determine how to dispose of the non-compliant product.
- c. Record the corrective actions taken.

Specific corrective actions should be developed in advance for each critical control point mentioned in the hazard analysis and critical control points plan.

See Annex C.

Principle 6: Establish Verification Procedures

Verification is defined as those activities, other than monitoring, that determine the validity of the risk analysis plan and critical control points and that the system operates as planned. Verification processes should take place during the development and implementation of the system plans.

The verification process assesses whether the risk analysis system and critical control points work according to plan. An effective HACCP system requires little end-product testing, as proven and adequate preventive measures are integrated into the process early. Therefore, rather than relying on the end-product testing, the food producer/caterer relies on regular reviews of the HACCP plan, verifies that the HACCP plan is followed correctly, and reviews critical control point control monitoring and corrective action records.

Information needed to validate the effectiveness of the HACCP plan usually includes:

- a. Expert advice and scientific studies.
- b. In-site observations, measurements, and evaluations.

The HACCP team or independent expert perform and document subsequent validations of the HACCP plan as needed in the following cases:

- a. When there is an unexplained failure in the system.
- b. A significant change in product, process, packaging or equipment.
- c. New hazards are recognized.
- d. Change in storage conditions of the product.
- e. Change in number and skills of employees.
- f. Change in raw materials that enter production.
- g. Change in product recipe.

An audit team should conduct a periodic comprehensive verification of the HACCP system, and this team may be either from within or outside the food establishment. This verification process should also include a technical assessment of hazard analysis and each element of the HACCP plan, as well as an on-site review of all relevant workflow diagrams and records. If a thorough verification reveals deficiencies, the HACCP team adjusts the plan as necessary.

See Appendix D.

Principle 7: Establish Record-Keeping and Documentation Procedures

In general, the records that are kept for the hazard analysis and critical control points system must contain the following information:

1. A summary of hazard analysis, including the rationale for hazard identification and control measures.
2. Hazard analysis and critical control points plan:
 - a. A list of the HACCP team, critical control points, and assigned responsibilities
 - b. Description of food items, methods of serving, intended use, and target consumers
 - c. Approved operation workflow
 - d. Summary table of a HACCP plan (See Appendix E).
3. Supporting documents such as validation records.
4. Records prepared during the implementation phase of the plan.

Records of HACCP

Records generated during preparation and implementation of the Hazard Analysis and Critical Control Points plan are very important. Records associated with hazard analysis and critical control points procedures are considered the basis of the system's work. The requirements for regularly documenting events at critical control points ensure preventive oversight in an orderly manner. Unusual occurrences detected during pre-defined and controlled critical control points should be corrected and documented immediately with reference to the corrective action taken. The level of detail of records depends on the complexity of the food production and delivery process. Following are examples of records prepared during the preparation and implementation phases of the hazard analysis and critical control points plan:

1. Authorized suppliers.
2. Laboratory testing of raw materials.
3. Description of food preparation processes according to the HACCP system plan.
4. Final product description.
5. Pest control records.
6. Staff training.
7. Maintenance records.

Auditing of HACCP

1. Internal Auditing

An internal audit is a self-evaluation of the pre-requisite programs and HACCP system, subject to a holistic critical review. It is common for the HACCP team leader to conduct an internal audit. The best time to conduct the first internal audit is a few months after the HACCP system is implemented and prior to certification. Internal auditing of pre-requisite programs and the HACCP system should be conducted at least once a year. It is not necessary to complete all internal audit activities at the same time; these can be distributed throughout the year. Therefore, a schedule should be developed to outline when to perform different auditing tasks. Internal and external audits may highlight deviations from the limits that require corrective action.

2. External Auditing

External auditing is conducted by a specialized and accredited external entity to assure that the food producer/caterer's pre-requisite programs and HACCP system are applied and conform to the prescribed standards. The external auditor should ensure the programs and system are complete and effectively designed and maintained to determine if certification should be granted.

During an audit, the HACCP system and all related procedures are examined and evaluated. Objective evidence is gathered to demonstrate that the HACCP system is properly implemented and working effectively. Audits also highlight deviations and accordingly promote continual improvement of food safety systems.

Inspectors may develop their own inspection checklists. It is recommended that a team from the inspected food establishment accompanies the inspector or auditor to avoid misunderstandings at reporting times. In addition to examining the process of producing and delivering safe food, external inspection is needed to help producers and caterers optimize the operation, thereby reducing production costs.

Each inspection checklist contains several questions to be asked and answered during the audit process. Answers should be recorded on the inspection checklist. Nonconformities found by the inspectors are opportunities for system improvement. Nonconformities should be corrected as soon as possible and before the next inspection, as food establishments should avoid the same nonconformities at the following inspection.

An example of a HACCP Inspection Checklist is presented in appendix G.

Application of HACCP Principles

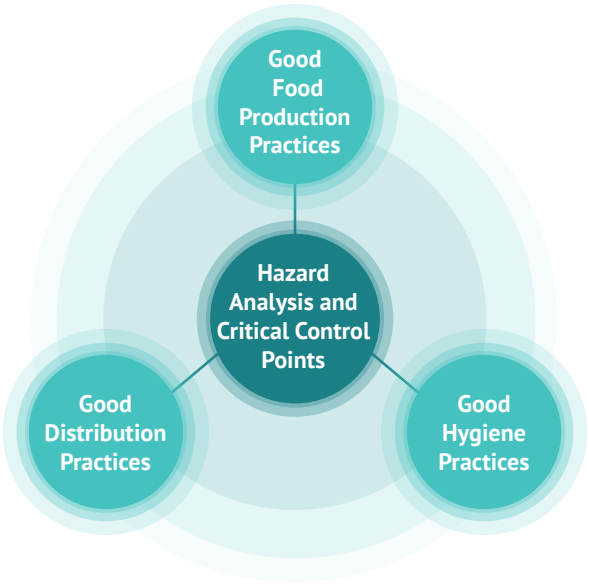
For the successful implementation of a HACCP system, management must be fully committed to the HACCP system. This commitment by the managers provides employees with a sense of the importance of producing safe food.

HACCP is designed for use in any food handling place, starting from the farm, harvest, food preparation and production, distribution, purchase, and finally serving for consumption. Pre-requisite programs such as Good Food Production practices (GFPP) are essential for developing and implementing a successful HACCP system.

Pre-requisite Programs

The structure and application of the hazard analysis and critical control points system are based on several indispensable pre-requisite programs to provide an essential environment and operational conditions necessary to produce and deliver safe foods. Examples include Good Food Production Practices (GMP), Good Hygiene Practices (GHP), and Good Food Distribution Practices (GDP).

Figure No. 1. Pre-requisite programs for the application of hazard analysis plan and critical control points (HACCP)



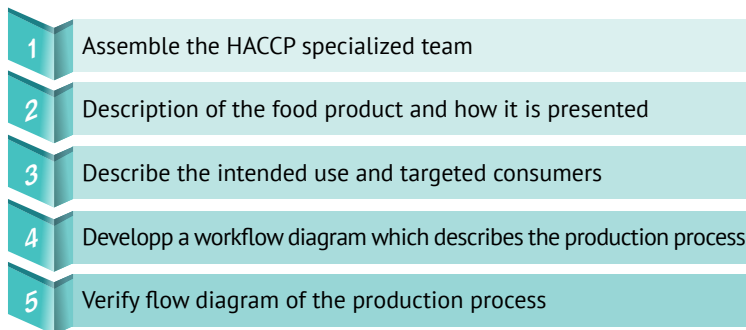
Education and training

The success of the hazard analysis and critical control points system depends on education and training of managers and food handlers on the importance of their role in producing safe food. Food handlers should first understand the hazard analysis system and critical control points system and then learn the skills needed to operate it properly. Specialized training activities should include work instructions and procedures that define the roles of the personnel responsible for monitoring each critical control point. The managers must provide sufficient time to educate and train food handlers in-depth and comprehensively. They must also be provided with the necessary tools and equipment to perform these tasks.

Developing a HACCP plan

The hazard analysis and critical control points plan is based on five primary tasks.

Figure No. 2 Initial tasks in preparing hazard analysis plan and critical control points HACCP



1. Assemble the HACCP specialized team

The first task in developing a HACCP plan is to assemble a HACCP team. Members of the team should be knowledgeable and experienced in the product and its handling process. Members should be multidisciplinary and include individuals who will be involved in implementing the HACCP plan, such as maintenance, production, quality assurance, purchasing, and food handlers and supervisors.

The HACCP team may need assistance from outside experts specialized in the potential biological, chemical, and/or physical hazards associated with food products and related processes. However, a plan that is fully developed by outside sources may be flawed, incomplete, and lacking in support at the local level.

The HACCP team, in cooperation with or without outside experts should correctly:

1. Conduct a hazard analysis.
2. Identify potential hazards.
3. Identify hazards that must be controlled.
4. Recommend controls, critical limits, and procedures for monitoring and verification.
5. Recommend appropriate corrective actions when a deviation occurs.
6. Recommend conducting research related to HACCP plan when required.
7. Validate the plan.

2. Description of the food product and how it is served

The HACCP team selects the food varieties by providing a general description of each food item, its ingredients, and preparation methods. It is also important to describe methods and conditions of serving and provide information on whether the food is to be distributed frozen, refrigerated, or at ambient temperature.

3. Describe the intended use and targeted consumers

This includes identifying target consumer categories for specific food items and may include consumers in general or specific groups such as children, vulnerable people, the elderly, etc.

4. Develop a workflow diagram which describes the production process

The purpose of the workflow diagram is to provide a clear, simple outline of the steps involved in the food production and serving process. It should cover all the steps that the food establishment directly controls, and the steps associated with the food supply chain that take place before and after food preparation. The workflow chart constitutes an adequate descriptive diagram (see Annex B-A)

5. Verify the flow diagram of the production process

The HACCP team should review and verify the accuracy and completeness of the workflow diagram, make adjustments as necessary, and document it. After the preliminary tasks of the HACCP are completed, the system is to be applied.





**Food Safety
Management System
ISO 22000**

Food Safety Management System ISO 22000

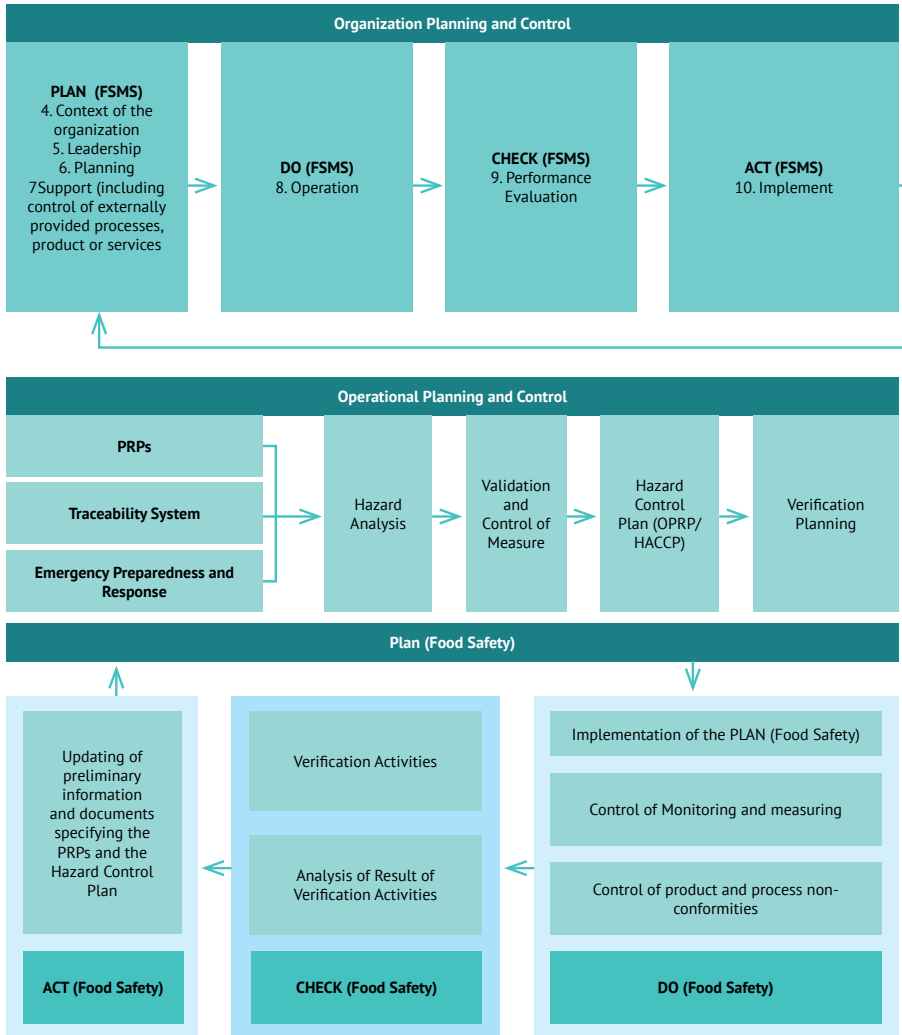
ISO 22000 is a food safety management system that adopts a food safety management approach and applies HACCP requirements. It was first released in 2005 with a new version released in 2018. It aims to provide internationally accredited food safety measures that can be applied by any establishment in the food supply chain to produce safe and suitable food products.

The management of any facility that decides to implement the ISO 22000 system, must be fully convinced of the system's importance and be committed to its application. Senior management must design and implement the food safety management system, and specific responsibilities must be assigned to senior management to ensure their input and participation. They must also follow up on the implementation of the system and ensure its effectiveness.

The planning and implementation of ISO 22000 of 2018 are based on the principle of **Plan, Execute, Verify, and Correct**, (PDCA: Plan, Do, Check, Act), which is done as follows:

- Plan:** Identify the system's objectives and operations, provide the necessary resources to achieve the desired results, and then identify risks and opportunities.
- Implement:** Implement what has been planned.
- Verify:** Monitor the processes, products, and services provided, then analyze and evaluate the results of the monitoring and make appropriate reports for these results.
- Correct:** Take appropriate steps to improve performance as necessary.

Identifying and training relevant food handlers should be considered when designing the system and determining the system's infrastructure and work environment. Before starting the system's plan, the food establishment must decide the extent to which the system is applied. This means what products, processes, services, and production locations the system applies. The scope of application must include all products, processes, services, and production sites that directly impact food safety, especially the final product that is offered to the consumer.



Planning to achieve the objectives of implementing the food safety management system:

The food establishment should consider the following when setting goals:

1. Be in line with the establishment's food safety policy.
2. Be in line with legislative and customer requirements.
3. Be explained to employees clearly.
4. Be updated as necessary.

After setting the goals, the establishment must specify the following:

1. What are the steps to follow?
2. What resources are required?
3. Who is responsible?
4. When will the plan be finalized?
5. How will the results be evaluated

The main factors responsible for ensuring food safety in this system are:

1. Effective internal and external communications.
2. Administrative system.
3. Preparatory programs.
4. HACCP system principles.

ISO 22000 Food Safety Management System Requirements

1. General Requirements

The food establishment must establish, document, implement, and maintain an effective management system that ensures the safety of the food it produces. The food establishment must determine the area covered by the food safety management system.

2. Documentation Requirements

- General requirements: Documents must include a statement of food safety policy and related objectives, procedures, and documented records required in this international standard. The food establishment needs documents to ensure active development, application, and modernization of the Food Safety Management System.
- Control of documents: A documented procedure should be established to identify the necessary controls adopted, reviewed, modified, and issued and re-approved to ensure that the documents are clear, readable, and recognizable.
- Record control: Quality records must remain straightforward and easy to distinguish and retrieve. A documented procedure must be established to determine the necessary controls for distinguishing, storage, protection, retrieval, preserving period, and records disposal.

3. Management Responsibility

Management must show commitment by developing a food safety policy, implementing and reviewing its management, and ensure the availability of resources. It also defines responsibilities and authorities of the food safety team leader, including the mechanism of effective internal and external communication, and preparedness and emergency response.

4. Resource Management

The facility must provide adequate resources for the development, application, maintenance, and modernization of the food safety management system. The food safety team and other individuals involved in food safety must be competent, qualified, trained, well-skilled, and experienced.

5. Planning to Access Safe Products

The facility must plan and develop the processes necessary to recognize safe food products. This includes:

- a. Preparatory programs
- b. Preparatory programs for operation
- c. The part of the operations within the facility includes:
 - Planning and controlling operations
 - Setting up a traceability system for food products
 - Emergency response and preparedness
 - Hazard control by preparing a hazard analysis and critical points control plan (HACCP)
 - Update the pre-requisite program and a hazard analysis plan whenever needed
 - Control measures
 - Verification of related to pre-requisite programs and a hazard analysis plan
 - Control of nonconformities in products and/or processes, including handling of unsafe products and corrective actions
 - Performance evaluation through internal self-censorship program carried out by the food safety team at the establishment
 - Permanent review by the food establishment management of the food safety management system, at specific intervals, to ensure its continuity and effectiveness
 - Improving the system as necessary.



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Standard Operating Procedures (SOPS)

Standard Operating Procedures

Standard Operating Procedures (SOPs) are procedures specific to certain operations that describe the activities necessary to be carried out by all employees working in the food establishment and their managers in accordance with food quality and safety systems. The SOPs should be prepared in the language, style, and format best for the food establishment and used to train the staff responsible for the tasks.

The purpose of establishing Standard Operating Procedures are to:

- Protect food products from contamination with microbiological, chemical, and physical hazards
- Control microbial growth that can result from temperature abuse.
- Ensure required procedures are in place for maintaining equipment.
To ensure the effectiveness of these procedures and achieve the above objectives, the procedures are reviewed and developed periodically.

A SOP should answer the following questions:

STANDARD OPERATING PROCEDURE

Establishment Name:

SOP Title:

What will be done and who will do it:

Who will make sure it's properly done, and how?

How should non-compliances be fixed?

What records will be kept?

Release date : / / Issued by :

Last review date : / / Reviewed by:

SOP title:

Hand Washing

What will be done, and who will do it?

New employees must:

- Review the procedure
- Be trained by the team leader
- Agree to commit to the new staff training checklist

All employees should wash their hands in the hand-washing sinks. Hands may not be washed in dishes, food, or mop washing sinks.

The following steps should be followed for handwashing:

- Use water as hot as you can stand
- Apply soap on hands and forearms
- Scrub hands for 20 seconds
- Rinse hands with water
- Dry hands with a paper towel
- Avoid recontamination by using a paper towel or other isolation material to close the tap handle, and preferably use foot operated taps.

When must all employees wash their hands?

- At the beginning of the shift
- After using the toilet
- After coughing, sneezing, using tissues, handkerchiefs, eating, drinking, or smoking.
- After handling raw food and before handling ready-to-eat foods.
- Between glove changing
- After handling dirty dishes
- After touching hair or any body part except clean hands and arms
- After doing any other task that results in contamination of the hands, such as dealing with waste or chemicals.

Who will make sure tasks are properly done, and how?

- Supervisors are expected to continually model appropriate hand washing practices for employees.
- Supervisors should monitor employee hand washing.
- Dishwashing staff should ensure that hand washing facilities, including restrooms, are supplied with soap and paper towels.

- Supervisors should monitor hand sinks at least once per shift to ensure that sinks have the necessary supplies.
- Day shift supervisors should ensure there is sufficient stock of necessary supplies.

How should non-compliances be fixed?

- Supervisors must immediately train and counsel staff on proper handwashing and continuously provide the sinks with the necessary supplies.
- Supervisors must notify employees who don't commit to handwashing and do not adhere to the correct methods.

What records will be kept?

- Complete the new employee training checklist.

Release date : / / Issued by :

Last review date : / / Reviewed by:

Personal Hygiene

Standard: A procedure must be in place to ensure that personal hygiene standards exist and are maintained in areas where food or clean equipment is handled.

Purpose: To prevent microbial and physical contamination of food and equipment.

Range: All employees and visitors.

Procedure

Protective clothing:

1. Wear work clothes and make sure they are clean.
2. The establishment should ensure the clothing worn by employees handling open foods has been cleaned to commercial laundry standards (e.g., automatic washing and rinsing).
3. Storage space should be allocated for clean protective clothing to prevent contamination.
4. Suitable work clothing should be provided, and provision should be made for complete separation between clean and dirty clothes.
5. An area should be designated for returned soiled clothes.

Employee change facilities:

1. Staff should be provided with lockers to keep their personal belongings away from food preparation areas.
2. Dirty or clean work clothing should not be placed inside these lockers.
3. Management should conduct periodic checks to ensure compliance with the procedures.

Protective hair covering:

1. Disposable single-use hair covers should be used by every person working in open food handling areas or areas with clean equipment.
2. Suitable head coverings should be provided and worn correctly, ensuring hair is fully covered.
3. Beards and mustaches should be covered with a mesh cover.

Hand hygiene:

1. Employees and visitors should be asked to wash their hands before entering food preparation and clean equipment areas.
2. Fingernails should be kept short, clean, and unpolished.
3. Artificial fingernails are not permitted.
4. Visitors should be asked to wear gloves if they wear artificial fingernails or nail polish.
5. Gloves, if worn, should be single-use and of a distinctive color (preferably blue) and should be changed frequently. Disposal of gloves should be controlled to avoid contamination.
6. Cuts and scratches on exposed parts of the skin should be covered with a blue or suitable bandage and a single-use glove.

Jewelry:

1. All employees should abide by the establishment's jewelry rules when working in or entering the food handling and preparation areas.
2. Rules of the food establishment should be based on risk assessment of physical and microbiological contamination.
3. Jewelry such as necklaces, dangling earrings, bracelets, and watches should be removed when working in or entering food handling and preparation areas.

Eating, drinking, or smoking:

Employees and visitors should be notified that eating, drinking, and smoking are restricted to designated areas, e.g., the Staff canteen.

Release date : / / Issued by :

Last review date : / / Reviewed by:

Controlling Time and Temperature During Food Preparation

Purpose: To prevent foodborne illness by limiting the amount of time that potentially hazardous foods are held in the temperature danger zone during preparation.

Scope: This procedure applies to food handlers who prepare food.

Keywords: Cross-contamination, time and temperature control, food preparation, temperature danger zone.

Instructions

1. Train food handlers on using the procedures in this SOP. Refer to the Using and Calibrating Thermometers SOP.
2. Wash hands before preparing food. Please refer to the hand washing SOP.
3. Use clean and sanitized kitchen equipment and tools while preparing food.
4. Separate raw food from ready-to-eat foods by keeping them in separate containers until used and by using separate tools. Please refer to the Preventing Cross-Contamination during Food Storage and Preparation SOP.
5. Pre-chill ingredients for cold food, such as sandwiches, salads, and watermelon cuts, to a temperature of 5°C or below before combining with other ingredients.
6. Prepare food as close as possible to serving times as the menu will allow.
7. Prepare food in small batches.
8. Limit the time for preparation of any batches of food to prevent holding ingredients at room temperature for more than 30 minutes before cooking, serving, or being returned to the refrigerator.
9. If potentially hazardous foods are not cooked or served immediately after preparation, quickly chill. Please refer to the Cooling High-Risk Foods Dangerous Foods SOP.

Monitoring

1. Use a clean, sanitized, and calibrated food thermometer with a probe.
2. Take at least two internal temperature measurements from each cooking pot at different stages of preparation.
3. Monitor the amount of time in which food is kept in the temperature danger zone. It should not exceed two hours.

Corrective actions:

1. Retrain any food handler found not following the procedures set out in this SOP.
2. Begin the cooking process immediately after preparation is complete for any food served hot.
3. Rapidly cool ready-to-eat food or foods that will be cooked at a later time.
4. Immediately return ingredients to the refrigerator if the anticipated preparation time is expected to exceed 30 minutes.
5. Discard food held within the temperature danger zone for more than two hours.

Verification and record-keeping:

1. Food handlers will record the date, product name, start and end times of preparation, the two temperature measurements taken, any corrective actions taken, and the amount of food prepared on the Production Log.
2. The food service manager should verify that the food handlers are taking the required temperatures and following proper preparation procedures by personally monitoring them during the shift and reviewing and initialing the Production Log daily.
3. Maintain the Production Log. The food service manager should complete the Food Safety Checklist daily.
4. The Food Safety Checklist should be kept on file for at least one year.

Release date : / / Issued by :

Last review date : / / Reviewed by:

Washing Fruit and Vegetables

Purpose: To prevent or reduce the incidence of foodborne illness or injury by contaminated fruit and vegetables.

Scope: This procedure applies to food handlers who prepare or serve food.

Keywords: Fruit, vegetables, cross-contamination, washing

Instructions:

1. Train food handlers to use the procedures in this SOP.
2. Wash hands using the proper procedure.
3. Wash, rinse, sanitize, and dry all food-contact surfaces, equipment, and utensils that will be in contact with food items, such as cutting boards, knives, and sinks.
4. Follow the manufacturer's instructions for proper use of chemicals.
5. Wash all raw fruit and vegetables thoroughly before combining them with other ingredients, including:
 - Unpeeled fruit and vegetables served complete or cut into pieces.
 - Fruits and vegetables peeled or cut for use in cooking or served ready-to-eat.
6. Wash fresh fruit and vegetables thoroughly under cold running water or using materials authorized by the JFDA.
7. Scrub the surface of firm fruit or vegetables such as apples or potatoes using a clean, sanitized brush designated for this purpose.
8. Remove any damaged or bruised areas.
9. Label, date, and refrigerate fresh-cut fruit and vegetables.
10. Do not serve raw seed sprouts to high-risk groups (children under five years of age, pregnant women, the elderly, people with chronic diseases).

Monitoring:

1. The food service manager should personally make sure that fruit and vegetables are being properly washed, labeled, and dated during working hours.
2. Food handlers should check the quality of fruits and vegetables stored in the cold storage daily.

Corrective Actions:

1. Retrain any food handler found not following the procedures in this SOP.
2. Remove unwashed fruit and vegetables and wash them immediately before serving.
3. Label and date fresh fruits and vegetable cuts.

Verification and Pest Control:

1. The food service manager shall complete the Food Safety Checklist daily to ensure that the monitoring procedures are carried out as specified in this SOP.
2. The Food Safety Check List should be kept on file for at least one year.

Release date : / / Issued by :

Last review date : / / Reviewed by:

Pest Control

Purpose: Efforts should be made to ensure that pests are controlled in the food establishment, including the use of a licensed pest control operator (PCO).

Procedure: Food handlers should use integrated Pest Management (IPM) services by using the following steps:

Prevent access of pests:

1. Use reputable suppliers for all food deliveries.
2. Check all delivered items before entering the food establishment.
3. Reject shipments showing signs of pest infestation, such as bite marks on cardboard boxes.
4. Remove all food shipments from the cardboard boxes before storing them in a designated storage area.
5. Keep all external openings closed tightly. Ensure that the doors are intact as part of the regular cleaning schedule.
6. Report any signs of pest infestation to the restaurant manager.
7. Report any openings, cracks, broken locks, or any opportunities for pest infestation outbreaks to the manager.

Prevent insects from accessing food, water, hiding, or nesting places:

1. Dispose of waste quickly and correctly. Waste bins should be kept clean, in good condition, and covered in all areas of the food establishment (indoor and outdoor).
2. Clean up spills around waste bins immediately. Regularly wash, rinse and sanitize waste bins.
3. Store recyclable materials in clean pest-proof containers away from the building.

4. Store food and supplies as quickly as possible after receiving them.
 - a. Keep all food and supplies at least six inches off the floor and at least six inches away from the walls.
 - b. Refrigerate foods such as powdered milk, cocoa, and nuts after opening. These foods might attract insects, as most insects are inactive at temperatures below 5°C.
 - c. Store other opened packages of cereals in tightly closed containers.
 - d. Use the First In, First Out (FIFO) concept for food rotation to prevent insect infestation and harborage in food products.
5. Clean the facility thoroughly and regularly. Careful cleaning reduces the food supply, eliminates insect eggs, and reduces the number of places where the pest can take shelter.

Use and storage of pesticides:

The pest control operator (PCO) should decide if and when insecticides should be used in the establishment. Pest Control Operators are well trained in determining each insect's best insecticide, how and where to apply it. The PCO is responsible for storing and disposing of insecticides from the food establishment. If any commercial insecticides are stored in the food establishment, follow these instructions:

1. Keep insecticides in their original containers.
2. Store pesticides in locked cabinets away from food preparation and storage areas.
3. Store aerosol or pressurized sprays in a cool place to prevent exploding.
4. Check local regulations before disposing of insecticides. Many are considered hazardous waste.
5. Dispose of empty containers according to manufacturers' instructions and local regulations.
6. Keep a copy of corresponding Material Safety Data Sheets (MSDS) on the premises.

The food establishment manager must:

1. Supervise daily cleaning routines.
2. Monitor completion of all cleaning tasks daily according to the master cleaning schedule.
3. Review and change the master cleaning schedule every time there is a change in the food menu, procedures, or equipment.
4. Request food handlers' input in the proposed cleaning program during staff meetings.
5. Conduct routine inspections.
6. Review infestation and control events with the PCO and take necessary actions to control and eliminate insects.
7. Follow-up food handlers' reporting with PCO as necessary
8. File PCO reports and food handler observations with the HACCP system records.

Release date : / /

Issued by :

Last review date : / /

Reviewed by:

Cross-Contamination Prevention

Introduction

Food contamination with microbiological hazards might occur in multiple ways. The three most common ways of cross-contamination are contact of ready-to-eat food with raw foods, dirty equipment, surfaces, and hands.

Procedure

1. Periodically monitor equipment such as metal grain silos, valves, mixer arms, protective tools, and access openings for cracks and gaps. Equipment and tools that are not adequately welded and have irregular surfaces are challenging to clean and sanitize thoroughly.
2. Handling food products:
 - a. Minimize handling, environmental exposure, and time/temperature abuse following pasteurization of food products. Discard any foods that were improperly handled.
 - b. When reusing food products, re-pasteurization is required using higher temperatures and/or longer periods of time. All equipment used in the reuse process should be cleaned and sanitized daily.
 - c. Returned or expired food products should be separated from all other food establishment operations.
3. Cleaning supplies:
 - a. Limit the use of absorbent materials such as mops and sponges in food preparation areas, as well porous materials such as tools and brushes with wooden handles. Instead, use impermeable materials such as metal or plastic.
 - b. Segregate brushes used for different purposes: raw foods, pasteurized foods, internal surfaces, and external surfaces.
 - c. Maintain brushes in good condition, sanitize after each use, and store them when not used.
4. Cover foods and surfaces with protective material to reduce contamination by condensate, aerosols, dust, and other airborne hazards.
5. Monitor the cleanliness of overhead shielding, conveyors, conveyor belts, chain rollers and supports. Maintain a cleaning and sanitizing schedule for all conveyors.
6. Monitor air blow and agitation equipment for cleanliness; they should be cleaned manually and sanitized daily.
7. Don't break or slash containers over the tanks.
8. Exercise caution when handling packaging materials, especially when open containers are conveyed through non-food preparation areas.

9. Heating, ventilation, and air conditioning systems:
 - a. Maintain positive pressure in areas where food products are exposed.
 - b. Minimize air flow from potentially contaminated areas to food preparation and packaging areas.
 - c. Outside air should be filtered and free of condensate.
 - d. Control air flow so it does not blow directly onto food, food-contact surfaces, or food packaging and packaging areas.
 - e. Air filters must be effective in preventing the passage of microbes. They should be kept clean and replaced when needed.
 - f. All heating, ventilation, and air conditioning systems should be cleaned periodically, including air systems in refrigerated areas. Condensate drip trays and drain lines should be monitored regularly to ensure that they are not providing a suitable environment for microbial growth.
10. Air systems used in food preparation:
 - a. Systems that incorporate air directly into food products should be easily cleaned and designed to minimize contamination.
 - b. Air systems used in food preparation should contain air filters capable of removing extraneous matter.
 - c. When needed, sanitary one-way valves should be provided to prevent food products backing up into the air ducts.

The following individuals are responsible for the application of this SOP and have absolute authority on site:

Name:..... Title: Date: / /

Name:..... Title: Date: / /

Release date : / / Issued by :.....

Last review date : / / Reviewed by:.....

Using and Calibrating Thermometers

Purpose: To prevent foodborne diseases by ensuring that the appropriate type of thermometer is used to measure internal food temperatures and that the thermometers are correctly calibrated for accuracy.

Scope: This procedure applies to food handlers who prepare, cook, and cool food.

Keywords: Thermometers, calibration

Instruction:

1. Train food handlers on using the procedures in this SOP.
2. Follow the thermometer manufacturer's instructions for use. Use a food thermometer that measures temperatures from -18°C to 104°C and is appropriate for the temperature measured. For example:
 - Measure temperatures of thin food products, such as burger meat, chicken breasts, pizza, fillet steaks, fried chicken pieces (nugget), and sausages, sausage pies using a thermistor or thermocouple with a thin probe.
 - Bimetallic, dial-faced stem thermometers are only accurate when measuring the temperatures of thick foods. There is a dimple mark on the stem of the thermometer indicating the maximum food thickness that can be accurately measured.
 - Use only oven safe bimetallic thermometers when measuring the temperature of food while cooking in an oven.
3. Food thermometers should be accessible to food handlers during working hours.
4. Clean and sanitize food thermometers before each use. Please refer to the Cleaning and Sanitizing Food-Contact Surfaces SOP for the proper procedure to follow.
5. Store food thermometers in a clean place and where they are not exposed to contamination.

Monitoring:

1. Food handlers should use either the ice-point or boiling point methods to verify the accuracy of the food thermometer. This is known as thermometer calibration.
2. To use the ice-point method, the following should be done:
 - Insert the thermometer probe into a glass of crushed ice.
 - Add cold water to remove any air pockets that might remain.
 - Allow temperature reading to stabilize before reading it.
 - The temperature measurement should be 0°C (+1°C). If not, adjust according to the manufacturer's instructions.
3. To use the boiling point method, the following should be done:
 - Submerge at least the first two inches of the thermometer probe into boiling water.
 - Allow temperature reading to stabilize before reading it.
 - The temperature should be measured at 100°C (+1°C). This reading can vary for higher altitudes. If adjustment is required, follow the manufacturer's instructions.
4. Food handlers should check the accuracy of food thermometers:
 - At regular intervals (once a week).
 - If dropped.
 - If used to measure extreme temperatures, such as in the oven.
 - Each time there are doubts about the accuracy of the readings.

Corrective action:

1. Retrain any food handler found not complying with the procedures in this SOP.
2. For an inaccurate, bimetallic, dial-faced thermometer, adjust the temperature by turning the dial while securing the calibration nut (which lies just below the dial) using a button or screwdriver.
3. For an inaccurate digital thermometer with a reset button, adjust the thermometer according to the manufacturer's instructions.
4. If an inaccurate thermometer cannot be adjusted on-site, stop using it, and follow the manufacturer's instructions to calibrate the thermometer.
5. Retrain employees who use or calibrate food thermometers incorrectly.

Verification and record-keeping:

1. Food handlers should record the calibration temperature and any corrective action performed, if applicable, on the Thermometer Calibration Record each time the thermometer is calibrated.
2. The food manager should ensure that food handlers use and calibrate thermometers properly by personally monitoring the employees during the calibration process and working hours.
3. The food manager should review the calibration record and initial daily. The calibration record should be kept on file for at least one year.
4. The food manager should complete the daily Food Safety Checklist. The Food Safety Checklist should be kept on file for at least one year.

Release date : / / Issued by :

Last review date : / / Reviewed by:

New Employee Orientation

Purpose: All food handlers will receive training in food safety procedures prior to or during the first day of employment.

Procedure:

All food handlers must:

1. Meet with the food establishment manager to receive training on basic food safety procedures.
2. Review each point in the Food Safety Checklist and confirm their understanding and approval of the procedures stated.
3. Ask the manager questions if the policy or procedure is not clear.
4. Read, sign, date the statement at the end of the checklist to confirm their understanding and approval of the procedure stated.
5. Receive a signed copy of the form.

The Food Establishment Manager must:

1. Allocate at least 30 minutes for the orientation session.
2. Inform new employees of the purpose and duration of the session.
3. Explain the purpose of the checklist to employees.
4. Discuss each policy and procedure on the checklist. Refer to the Standard Operating Procedures Manual as necessary. Check off each procedure as it is discussed. If employees have questions, note and follow up later if appropriate.
5. After reviewing all procedures, the manager should ask employees to read, sign, and date the statement at the end of the form to confirm their understanding and approval of the procedures. The manager should also sign the form and date it.
6. Provide each employee with a copy of this form and inform them that a copy will be kept in their files.
7. Remind employees of the availability and location of the department's Standard Operating Procedure Manual. This manual can be used as a reference if any questions or queries arise later.
8. Thank the employees for their participation in the orientation program session. The priority of food safety and the participation of each staff should be reaffirmed.

Release date : / /

Issued by :

Last review date : / /

Reviewed by:





Auditing Excellence

Auditing Excellence

Definitions of inspection and audit

An inspection is a thorough review of the food establishment to assess what is actually happening at a given time. This comprehensive review gives a realistic assessment of the circumstances that can be positive or negative for the food preparation process.

An audit is a systematic evaluation of the food establishment's documentation process to determine whether food quality systems and related activities achieve planned expectations. The auditor examines data over time to see if positive or negative trends appear. The auditor also focuses on documentation review.

Benefits of inspection and audit

The choice of inspection or audit depends on the objective, and many service providers/suppliers, choose to conduct inspections and audits because they support each other.

Choose an inspection to:

- Reveal actual practices or issues that may not be known from documents and paperwork.
- Focus on root causes and not just on symptoms and signs.
- Educate employees through interaction with an inspector.
- Identify, reduce, or eliminate food hazards in the food establishment to prevent them.
- Prevent expensive recalls of products that harm the food establishment.
- Comply with quality regulations for safe food.
- Improve and maintain a healthy and clean environment for food handling.
- Produce safe food products.

Choose an audit to:

- Comply with benchmarked standards
- Realize efficiencies through better documentation management
- Achieve certification
- Evaluate trends over time

Reasons for having an inspection or audit

1. Regulations

There are many reasons for having an inspection or audit, but the most important is to ensure that regulatory requirements are being met.

2. Customer Demand

Food producers and service providers can achieve excellence by meeting their customer's needs and requirements.

3. Process Improvements

Having established a Prerequisite and Food Safety System provides an environment for safe, legal, and quality food production. Periodic verification of system implementation can assist in identifying opportunities for improvement in productivity and potential profitability.

Auditor training

Proper training of food safety auditors is a prerequisite for an effective audit of food safety regulations. The auditor should be fully aware of food laws and regulations, his/her powers under those laws, and the obligations such laws impose on the food sector. They should also be familiar with the procedures for collecting evidence, write inspection reports, and collect and send samples for laboratory analysis. The auditor should also have good interpersonal skills (verbal and listening skills), be objective, detail-oriented, observant, organized, analytical, and patient.

Auditing team

Audits can be performed by a single auditor or a whole team. If more than one auditor conducts an audit, a person should be designated as the lead auditor.

Auditing process

During the audit process, auditors write down their findings and document any observation and instances of non-conformity. In general, audits follow these steps:

1. Documentation Review
2. Opening Meeting
3. Orientation and Introductory Tour
4. On- Site Verification Audit
5. Closing Meeting
6. Corrective Action Request and Plans
7. Final Auditing Report

1. Documentation Review

Documentation can be reviewed on or off-site. Auditors must assess:

- Written programs that meet the necessary requirements.
- HACCP plan and critical control points are science-based and capable of controlling hazards.
- Records are appropriate.

2. Opening Meeting

The lead auditor holds a meeting in which at least quality control and top management officials should participate. The lead auditor reviews:

- The purpose of the audit.
- Scope of the audit to determine areas covered by the audit and clarify areas excluded from the audit process.
- Set a schedule for the audit process to reduce conflicts with production schedules and break times and ensure that interviewees are present.

3. Orientation and Introductory Tour

Auditors will take a brief tour in the food establishment to get familiarised with the audited operations. During the tour, auditors must be introduced to key employees who may participate in the audit process.

4. On-Site Verification Audit

Auditors observe working conditions and employees as they perform their duties and how records are kept. A person from the food establishment should accompany the auditors at all times.

“On-site verification” enables auditors to assess if the food safety system is:

- Implemented in accordance with written procedures
- Effective in controlling food safety hazards

The auditors will look for evidence that the food safety system works effectively.

They will gather objective evidence by checking:

- Design, construction, and maintenance of the food establishment
- Accuracy of the process flow diagram and charts
- Employees received appropriate training and follow policies and procedures
- Monitoring records are up to date
- Appropriate corrective actions are taken

5. Closing Meeting

The Lead Auditor will conduct a closing meeting, attended by quality control officers and top management, to discuss the results of the audit, observations, and recommendations.

6. Corrective Action request and Plans

An audit without corrective action requests is uncommon. A request for corrective action is a request made by the auditor to address the non-conformities found during the audit process.

The food establishment must develop a written corrective action plan to address each request and respond within a specified time to be agreed upon. Corrective actions may need to be verified on-site, which is determined by the auditor.

7. Final Auditing Report

Once an agreement has been reached between the audit team and the auditee, the lead auditor prepares the audit report. After completing the field inspection and evaluating the collected data, documents, observations, etc., deficiencies found by the auditor should be documented. Deficiencies should appear in the form of a statement describing whether the process conforms to quality standards or not and describes the supporting evidence. The style and format of such reports can vary considerably and may range from the completion of formal documents to comprehensive documents describing all aspects of the performance and deficiencies of the audit process. However, regardless of style and format, the report should be understood by the auditees.

The audit process is successful when the auditee feels that it has received useful and constructive feedback that allows them to improve the system. A system audit generally includes a review of written policies and procedures to ensure inclusiveness and accuracy. It also includes interviews and observations.

- For any food safety and quality standards, ensure that the following information on monitoring procedure is provided:
 - What and how it is performed
 - Who is responsible for its performance
 - Corrective actions
 - What records are kept
- Ensure that written programs and procedures are complete and effective in controlling food safety hazards (based on scientific evidence, regulatory requirements, internationally approved standards, or expert decisions).
- Ensure that the results of the monitoring and corrective actions are fully documented and are performed by the designated, trained person.
- Ensure that all records are accessible for review purposes.

The following are some examples of food safety and quality systems audit activities:

1. Water safety
2. Personal practices
3. Food transportation, receiving, handling, and storage
4. Sanitation
5. Pest control
6. Equipment and utensils (design, construction, installation, maintenance)
7. Establishment (location, building, design)
8. Product code, labeling monitoring

For more details, refer to appendix G: Food Safety Inspection Checklist

Instructions for the auditor\inspector:

1. Review documentation regarding the process being audited. This includes careful reading of evidence showing applied food safety system.
2. Prepare a comprehensive audit plan to be approved by those being audited before the process begins. It should include a timeline and location of the audit process and provide a list of documents necessary for the operation.
3. Define the scope of the audit and the specific groups subject to audit. The audit objectives should be clear and consistent with the audit plan.
4. Prepare a list of quality requirements to be used in the evaluation.
5. Introduce auditors to the auditee. The auditee will take responsibility for assisting the auditor in searching for information regarding food safety requirements to be audited.
6. Begin with an opening meeting. This meeting should be attended by the audit team members to clarify the scope, goals, schedule; reviewing how the auditing process will be conducted; and confirming the auditee's readiness.
7. Interview designated groups, study records, and try to verify the data after analyzing them using more objective means.
8. Draw conclusions, discuss the results with management, and then prepare the audit report.

Appendices

Appendix A

Jordan Food Law No. 30 of 2015

The Food Health Directorate was established in 1993 within the General Directorate of Primary Health Care in the Ministry of Health. With the emergence of the trend toward giving more attention to food safety, the Food Control Law No.79 of 2001 came into force.

Followed by the Jordan Food and Drug Administration Temporary Law No. 31 of 2003, under which the Jordan Food and Drug Administration (JFDA) was established as an administrative and financial independent government institution, dealing with food and drug safety affairs in Jordan through food and drugs directorates.

The Jordan Food and Drug Administration Law No. 81 was passed in 2008. In 2015, the Food Law No. 30 came into force, which produced new food control concepts such as traceback and responsibility. Jordan Food and Drug Administration became the reference authority for food control.

Article 3 of the Food Law No. 30 of 2015:

The JFDA is the exclusive authority entrusted to control the imported and local foods in all handling stages so ensuring the fulfillment of food safety and quality requirements in Jordan under the provisions of the above Law.

According to Control and Inspection of Economic Activities Law No. 33 of 2017 article 6/G, the Jordan Food and Drug Administration (JFDA) is the only competent regulatory authority specialized in food and drugs, including the manufacture, production, or handling of food of raw and manufactured foods.

There are official bodies that cooperate with the JFDA, such as the Greater Amman Municipality and other municipalities in the Kingdom, which carry out food control activities under the supervision of the JFDA. These authorities have signed memorandums of understanding with JFDA. JFDA authorizes these entities to control and inspect food establishments. One of the fundamental amendments guaranteed by the Food Law No.30 of 2015 is the application of penalties in the case of serious and critical violations.

Serious and critical violations are entrusted to a specialized committee comprising members from all regulatory bodies, so ensuring justice in such cases. Owners of food establishments will be allowed to correct violations through representation of the private sector in the Committee of Critical Violations. The Food Law also allows the declaration of the name of the violating establishment.

Many food establishments in Jordan are engaging in food handling activities at different stages; production, Food Production, distribution, and selling. Controlling food and food establishments requires specialized planning and management,

JFDA also provide specialized training on food inspection and control to the JFDA staff. Raising the level of knowledge among consumers and food handlers about food hygiene and safety is also a key function.

Food legislation in Jordan has been updated to comply with current developments and requirements. Food regulations in Jordan are classified as follows:

- Local regulations
- Codex Alimentarius
- Regulations relating to countries to which food is exported.

There are several legislations and instructions related to food; the most important are:

- Instructions for transporting, storing, and displaying food products
- Sampling instructions for imported foods
- Instructions for licensing food establishments

It should be noted that there are more than 300 food standards and technical regulations; most of these are based on the Codex and ISO standard issued by Jordan Standards and Metrology

Purpose of the Jordan Food law No. 30 of 2015

Article 4

For purposes of this law, the JFDA shall assume the following tasks and powers:

- a. Applying health measures and technical regulations approved by the Board, regardless of whether the food in question is locally produced or imported.
- b. Assessing conformity of food with the standard specifications and technical regulations.
- c. Prohibiting importation or handling of any food before being tested and proven suitable and fit for human consumption and is in conformity with the approved terms of food safety.
- d. Prohibiting importation or handling of any food that it is not in conformity with the health measures and technical regulations.
- e. Granting health certificates for purposes of exporting the locally produced food, in accordance with the technical regulations and health measures applicable in Jordan in accordance with instructions issued by the Board.
- f. Inspecting any place in which the food is handled, as well as inspecting workers in such place.

- g. Supervising implementation of good food production practices and hazard analysis and critical control points system in food handling processes in accordance with instructions issued by the Board.
- h. Approving food advertisement in accordance with instructions issued by the Board.
- i. Assigning specialists to conduct studies and research on food, its ingredients and its nutritional value, publishing these studies, encouraging and approving scientific researches and initiatives outside JFDA, and granting them awards from the funds allocated for this purpose upon a decision issued by the Board based on a recommendation from the Director-General.
- j. Cooperating with the official and non-official Jordanian bodies, universities and scientific centers as well as regional and international organizations and institutions in the fields of food, environment and disease control, technical regulations, and health measures.
- k. Issuing, distributing, and selling publications related to the technical regulations and health measures.
- l. Cooperating with the relevant bodies in reviewing the national food standards.
- m. Preparing memorandums of understanding in collaboration with municipalities and any other body concerned with food control within the scope of their responsibilities.

The scope of the Jordanian Food Law No. 30 of 2015 (this can be replaced by returning to the Food Law 30 of 2015 in the Official Gazette)

- Jordan's Food Law No. 30 of 2015 contains 35 articles.
- This law applies to all stages of food handling in the food supply chain.
- This law applies to the initial production process, products for private domestic use, local preparation, handling, or food storage for private consumption.

Articles 5-9 outlines the functions of the High Committee for Food Control, the formation of technical committees, their role, members, responsibilities, meetings, and agendas.

Articles 10-12 detail the basic principles for the preparation, adoption, revision, application, promotion, and dissemination of health regulations, and determine how they are applied, as well as identifying the active contribution of the Jordan Food and Drug Administration in cooperation with the national and scientific stakeholders involved in the preparation of these regulations.

Article 13 states that the JFDA shall provide any relevant person, upon his request, with information and documents related to health measures and technical regulations applied to food, or any relevant information or documents available in the JFDA, in return for an allowance specified as per instructions issued by the Board for this purpose.

Article 14 states that, without prejudice to the applicable legislation related to importation and exportation, no food for personal use or any food additive or supplement shall be entered or handled in Jordan without the approval of the JFDA, as per conditions and instructions issued by the Board on this regard.

Article 15 states that food shall not be handled in any place without obtaining a permit to practice such work as per conditions and instructions issued by the Board for this purpose.

Article 16 states that it is prohibited to import or trade in any food in Jordan if it is adulterated, falsely described or unfit for human consumption.

Article 17.A. states that food establishment shall assign a competent official to:

1. Verify compatibility of food handled in the establishment with the technical regulations throughout all handling phases and ensure commitment to health measures and food phytosanitary.
2. Ensure that the establishment applies the HACCP based self-censorship program as per instructions issued by the Board for this purpose.
3. Ensure that the establishment applies the food monitoring mechanism throughout handling phases of food, additives, and any substance that may come in contact with the food.
4. Notify the JFDA immediately of any food that may threaten the health of consumers and procedures taken to prevent the risk sources.
5. Enable the inspector to perform his duty during inspection and have access to the required information and documents.
6. Notify the JFDA of any changes in the establishment such as changes or closing of production lines.
7. Qualify workers in the establishment in the field of food safety and relevant fields and supervise them so as to ensure commitment to proper practices of food handling.
8. Keep away any worker in the establishment from food handling, in case he/she suffers from any disease or injury that may affect the food safety.
9. Inform the JFDA in writing of any offers on food in order to promote it for selling.

Article 17. B. states that Without prejudice to provisions of Clause (C) of Article (22) hereof, the person responsible for food establishment shall bear any liability resulting from the regulatory procedures as per the provisions hereof

Article 17. C. states that for purposes of this article, the food establishment means any shopping centers, warehouses, food factories, catering services, and establishments approved by the JFDA.

Article 17. C. states that the Board shall issue instructions and regulations for the food establishments subject to the provisions hereof.

Article 18 states that:

A. food shall be deemed falsely described in any of the following cases:

1. It is a harmless imitation of another food unless its label contains clearly the word "imitation" and the competent authority approves such a label before handling.
2. It is non-compliant with the technical regulations of the label or packaged or prepared in a misleading manner.
3. It contains any permissible synthetic substance such as flavors, colors, or additives that are necessary for the food without indicating this clearly on the label.
4. If the label is incorrect or contains information misleading the consumer.
5. If the label does not contain the following information:
 - a. Name of food
 - b. Name and title of the product or pack
 - c. Weight and measurements of the contents
 - d. Order of food ingredients by majority
 - e. Storage conditions if the food need special conditions for keeping or storing.
 - f. Production and expiry dates if the food has specified expiration period.
6. If the label contains unclear words, phrases or information in a way making them illegible or not understandable for the ordinary person as per trading conditions.

B. Food shall be deemed adulterated in the following cases

1. It contains a permissible additive but unfit for this product as per the technical regulations.
2. It contains an additive permitted to use in this product but exceeded the stated or allowed limit as per the technical regulations.
3. If any ingredient is removed, changed or reprocessed, unless stated in the relevant label and if such procedures are allowed as per conditions and instructions issued by the Board.
4. It contains a substance that may reduce the nutritional value for the purpose of gaining profits or concealing any defect, decrease or increase in size or weight.

5. It is traded after expiration, except for items to be trashed upon expiration, provided they are isolated or previously permitted.
6. It is traded in circumstances that make such a food unfit for human consumption or non-compliant with health measures and phytosanitary.
7. It is not compliant with quality conditions stated in the approved technical regulation.
8. It is traded before being approved as per the provisions hereof.
9. If the expiration period of any food is changed in a way contradicting the original label of such a food, without obtaining the official approval for this change.
10. It is traded in violation of the provisions of Article (15) hereof.
11. It is traded in circumstances making such a food unsafe or deleterious.

C. Food shall be deemed unfit for human consumption in the following cases:

1. If it contains any added poisonous or deleterious substance other than pesticides or pollutants for which the technical regulations or the international standards specify the maximum allowable residuals in food.
2. If it contains a prohibitive and deleterious additive.
3. If its essential qualities indicate that it may be, wholly or in part, contaminated, filthy, putrid or decomposed, with consideration of the technical regulations or standard specifications of the food.
4. If it is the product of a diseased animal that makes such a food unfit for human consumption, or an animal which has died before being slaughtered.
5. If its pack is made of substances that shall not come into contact with the food.
6. 6. If it is contaminated by radiation and the radioactivity therein is higher than the internationally permitted rate.
7. If it contains hormones, chemicals, veterinary medicines or their residuals at a rate higher than the allowable limit as per the technical regulations or the international or local standard specifications or if there are no technical regulations or international standards allowing such substances or their residuals in the food.

Article 19 states that the Board may issue instructions obliging any food manufacturer or importer during the period specified to commit to:

- a. Food content statement.
- b. Notes regarding the food consumption and utilization methods.

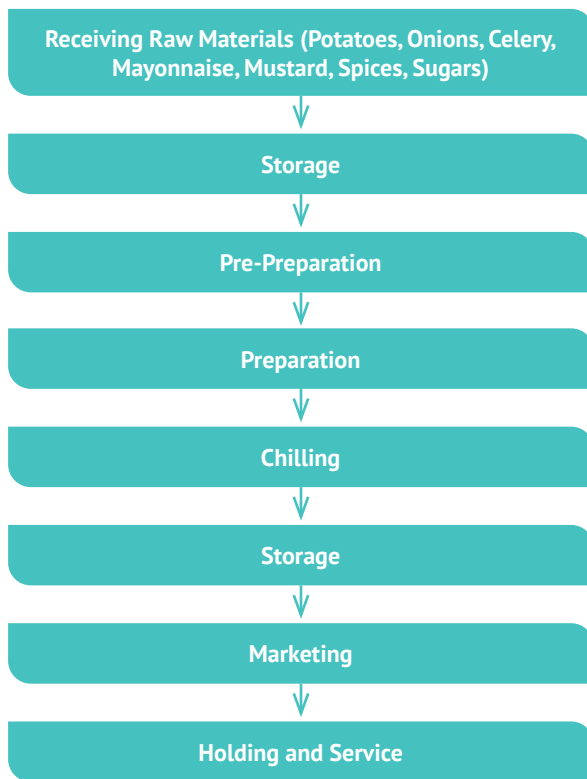
To view the Food Law remaining articles from Article 20 to Article 35, you can refer to the Jordan Food Law No. 30 of 2015, which is in the Jordan Food and Drug Administration website, laws and legislation section, food classification/ domestic food.

Jordan Food and Drug Administration Website: <http://www.jfda.jo>

Appendix B Appendix B-A

Example of a Flow Diagram

Cold Deli: Potato Salad



Appendix B-B

EXAMPLE OF HAZARD ANALYSIS:

Cold Deli: Potato Salad

Ingredients / Process Step	Potential hazard introduced, controlled, or enhanced at this step ¹		Is this hazard likely to occur? ²	Measures to be applied to prevent, eliminate, or reduce the hazards being addressed in the HACCP plan? ³	Is this step a critical control point(CCP)?
	B	No			
Receiving Potato, Onions	B	No			
	C	No			
	P	No			
Receiving Celery	B	No			
	C	No			
	P	No			
Receiving Mayonnaise, Mustard	B	No			
	C	No			
	P	No			
Receiving Sugar, Spices	B	No			
	C	No			
	P	No			
Storage Pans, Pots, Utensils, etc.	B	No			
	C	No			
	P	No			
Dry Storage Potato, Onions	B	No			
	C	No			
	P	No			
Refrigerated Storage Celery	B	No			
	C	No			
	P	No			
Dry Storage Mayonnaise, Mustard	B	No			
	C	No			
	P	No			

Ingredients / Process Step	Potential hazard introduced, controlled, or enhanced at this step ¹		Is this hazard likely to occur? ²	Measures to be applied to prevent, eliminate, or reduce the hazards being addressed in the HACCP plan? ³	Is this step a critical control point(CCP)?
	B	C			
Dry Storage Spices, Sugar	B	No			
	C	No			
	P	No			
Pre-preparation Potatoes	B	Yes	Stored in the designated refrigerated area and kept refrigerated	Maintain Critical control records and personnel practices	No
	C	No			
	P	No			
Preparation	B	Yes	final cooking temperature of potatoes must be met	Maintain critical control record and personnel practices	Yes CCP 1
	C	No			
	P	No			
Cooling	B	Yes	final cooling temperature of the potatoes must be met		Yes CCP 2
	C	No			
	P	No			
Holding and Service	B	Yes	Potato Salad refrigerated temperatures must be maintained in refrigerated holding or service areas.	Maintain critical control record and personnel practices	Yes CCP 3
	C	No			
	P	No			
Product Storage	B	Yes	Stored in designated refrigerated storage and kept refrigerated	Maintain designated storage refrigerated and cleaning procedures	Yes CCP
	C	No			
	P	No			

1. Hazards are classified as B -Biological, C - Chemical, and P - Physical
2. List justifications for the decision based upon severity and likely occurrence of the hazard
3. List control measures within your operation which occur at this or a later step
4. Note CCP number and hazards controlled (e.g., CCP1)

The following example is for illustrative purposes only. The potential hazards identified may not be the only hazard associated with these types of products. Your response may be different for each specific product and establishment.

Appendix B-C

MOST COMMON HAZARDS

1. Biological Hazards

Food Category	Pathogen	Spoilage
Fresh Produce	Yersinia enterocolitica Bacillus cereus Salmonella Shigella Listeria Enteropathogenic Escherichia coli	Erwinia carotovora bacillus Pseudomonas Molds (Alternaria, Botrytis) Penicillium, Phytophthora)
Hot / Cold Delicateness	Shigella Spp Staphylococcus aureus Listeria monocytogenes	Enterococci Pseudomonas Lactic acid bacteria Coliforms Yeast
Bakery	Norwalk virus Norwalk -like viruses, rarely linked to foodborne diseases	Molds Bacillus subtilis
Butcher shop	Salmonella Campylobacter jejuni Clostridium perfringens Enteropathogenic Escherichia coli Listeria monocytogenes Staphylococcus aureus	Pseudomonas Acinetobacter Moraxella Lactobacillus
Sea Food	Vibrio cholera Vibrio parahaemolyticus Clostridium botulinum type E Norwalk virus	Pseudomonas
Dairy Products and Eggs	Salmonella Campylobacter jejuni Bacillus cereus Yersinia enterocolitica Listeria monocytogenes	Pseudomonas Flavobacterium Alcaligenes

2. Chemical Hazards

Pesticides, Insecticides, improperly prepared or improperly applied sanitizers and cleaners

3. Physical Hazards

Staples, sand, wire twist ties, stones, glass, bones, plastic, wires, tooth-picks, or wood.

Appendix C

EXAMPLE OF HAZARD CRITICAL CONTROL LIMITS

Cold Deli: Potato Salad

Process Step / CCP	Critical Limits	Monitoring Procedure				Corrective Actions
		What	How	Frequency	Who	
Preparation Cooking Potatoes CCP1	°60C for 15 seconds	Final Cooked potato center temperature	A Clean and calibrated thermometer to measure potato temperature	Every potato batch	Potato Salad preparer	<ol style="list-style-type: none"> 1. CCP under control 2. Discard products identified as non-conforming to standards 3. Corrective action to prevent a recurrence 4. Maintain relevant records
Chilling Potato Salad CCP2	Product temperature must reach 5 °C or below within 4 hours	The temperature of the potato salad at the center	A Clean and calibrated thermometer to measure potato temperature	Every potato batch	Potato Salad preparer	<ol style="list-style-type: none"> 1. CCP under control 2. Discard products identified as non-conforming to standards 3. Corrective action to prevent a recurrence 4. Maintain relevant records
Holding and Serving Potato Salad CCP3	5 °C or below	Product temperature	Calibrated thermometer in the product storage cooler with chart recorder	Every two hours	The person in charge of the area	<ol style="list-style-type: none"> 1. CCP under control. 2. Discard products identified as non-conforming to standards. 3. Corrective action to prevent a recurrence 4. Maintain relevant records
Refrigerated Product Storage CCP4	5 °C or below	Storage cold unit temperature	Calibrated thermometer	Every two hours	The person in charge of the area	<ol style="list-style-type: none"> 1. CCP under control 2. Discard products identified as non-conforming to standards. 3. Corrective action to prevent a recurrence 4. Maintain relevant records

Appendix D

EXAMPLE OF HACCP PLAN VERIFICATION

Cold Deli: Potato Salad

Process Step / CCP	Verification Activities	Record-Keeping Procedures
Preparation	<ol style="list-style-type: none"> 1. Check the cleanliness of the product preparation area and maintaining it. 2. Check staff training. 3. Check the accuracy of important records and keeping them (such as calibrating thermometers and cooked potato temperature). 	<p>All verification records All critical factors record</p>
Cooking potatoes		
CCP1		
Chilling	<ol style="list-style-type: none"> 1. Check the cleanliness of the product chilling area and maintaining it. 2. Check staff training. 3. Check the accuracy of important records and keep them (such as calibrating thermometers and potato salad temperature). 	<p>All verification records All critical factors record</p>
Potato Salad		
CCP2		
Product Storage and Serving	<ol style="list-style-type: none"> 1. Check the cleanliness of the food holding and serving area and maintaining it. 2. Check staff training. 3. Check the accuracy of important records and keep them (such as calibrating the thermometer and potato salad temperature). 	<p>All verification records All critical factors record</p>
Potato Salad		
CCP3		
Product Storage	<ol style="list-style-type: none"> 1. Check the cleanliness of the food holding area and maintaining it. 2. Check staff training. 3. Check the accuracy of important records and keep them (such as calibrating the thermometer and potato salad temperature). 	<p>All verification records All critical factors record</p>
Potato Salad		
CCP4		

Appendix E

EXAMPLE OF HACCP PLAN

Cold Deli: Potato Salad

Record Keeping	Verification	Corrective Action	Monitoring	Critical Limits	Hazard	Process step\CCP
Preparation	Yes CCP1	60°C for 15 seconds	Final cooked potato central temperature	<ol style="list-style-type: none"> CCP is under control. Discard products identified as non-conforming to standards Corrective action to prevent a recurrence Maintain relevant record 	<ol style="list-style-type: none"> Check the cleanliness of the product preparation area and maintaining it. Check staff training. Check the accuracy of important records and keep them (such as calibrating thermometers and cooked potato temperature). 	<p>All verification records</p> <p>All critical factors record</p>
Cooked Potato						
Chilling	Yes CCP2	Product temperature must reach 5°C or below in less than 4 hours	Potato Salad central temperature	<ol style="list-style-type: none"> CCP is under control. Discard products identified as non-conforming to standards Corrective action to prevent a recurrence Maintain relevant records 	<ol style="list-style-type: none"> Check the cleanliness of the product chilling area and maintaining it. Check staff training. Check the accuracy of important records and keeping them (such as calibrating thermometers and potato salad temperature). 	<p>All verification records</p> <p>All critical factors record</p>
Potato Salad						
Holding and serving	Yes CCP3	5 ° C or below	Potato Salad temperature	<ol style="list-style-type: none"> CCP is under control. Discard products identified as non-conforming to standards Corrective action to prevent a recurrence Maintain relevant records 	<ol style="list-style-type: none"> Check the cleanliness of the food holding and serving area and maintaining it. Check staff training. Check the accuracy of important records and keeping them (such as calibrating the thermometer and potato salad temperature). 	<p>All verification records</p> <p>All critical factors record</p>
Potato Salad						
Refrigerated product storage	Yes CCP4	5 ° C or below	Ingredients \ Potato Salad cold storage unit temperature	<ol style="list-style-type: none"> CCP is under control. Discard products identified as non-conforming to standards Corrective action to prevent a recurrence Maintain relevant records 	<ol style="list-style-type: none"> Check the cleanliness of the food holding area and maintaining it. Check staff training. Check the accuracy of important records and keeping them (such as calibrating the thermometer and potato salad temperature). 	<p>All verification records</p> <p>All critical factors record</p>
Potato Salad						

EMPLOYEE MEDICAL QUESTIONNAIRE

Employee Name:

Employee Address

City:

Street:

Mobile Number:

Employee Job Title:

NO.	Question	Yes	No	
1.	Have you ever had or been a carrier of			
	A Food Borne disease			
	Typhoid or Paratyphoid			
	Tuberculosis			
2.	Has any close family contact suffered from any of the above?			
	At present, are you suffering from any of the following?			
	Diarrhea or vomiting			
	Skin diseases			
3.	Boils or blisters			
	Discharge from the ears, eyes, gums, or mouth			
	4.	Have you been traveling abroad within the past two years?		
		If yes, where?		
5.	Do you agree to provide a specimen that might be re-quired to ensure that you are not a carrier of any organ-ism which might affect food?			
6.	Please give details of any other medical problems which may affect your employment as a food handler. For ex-ample, Recurrent digestive disorders			

I declare that all the preceding statements are accurate and complete to the best of my knowledge and belief.

Date: / /

Employee Signature:

STAFF SICKNESS RECORD

Food handler/supervisor must report to the manager as soon as possible:

1. If they are suffering from:
 - Vomiting
 - Diarrhea
 - Septic skin lesions(boils, infected cuts, no matter how small)
 - Discharge from the ears, nose, or other sites
2. If any work colleague is suffering from diarrhea and/or vomiting.
3. After returning from a holiday during which they suffered from diarrhea and \ or vomiting.

Employee Name	Date of Illness Reporting	Illness	Date Illness Started	Date Returned To Work

CLEANING RECORD SHEET

Equipment/Area	Saturday		Sunday		Monday		Tuesday		Wednesday		Thursday		Friday	
	Time	Initial	Time	Initial	Time	Initial	Time	Initial	Time	Initial	Time	Initial	Time	Initial
Supervisor Review/ Sign/ Date														

COOKING / CHILLING CHECK SHEET

Date: / /

Food Item	Cooking Temperature			Quick Chilling of Potentially Hazardous Foods						Corrective Action
	Time	Temp	Initial	Check No. 1			Final Check			
				Time	Temp	Initial	Time	Temp	Initial	

- Quick chilling of potentially hazardous food (e.g., Meat, seafood, poultry, egg, pasta, rice, soup, stew).
- Chill from 60 °C to 10 °C in 4 hours or less or 60 °C to 21°C in 2 hours and from 21 °C to 5°C in the next 4 hours.
- Insert the probe into the thickest part of the food.
- Use only shallow products (5 cm / 2 inch or less) and place a quick chill immediately after cooking.

Supervisor review/signature:

Appendix G:

Example of Food Safety Inspection Checklist

No.	Inspection /Auditing team	YES	No	NA	NI	Comments
A	Raw materials (food/nonfood) - dry store, re-frigerators, freezers					
1.	Are storage shelves at least 15 cm above the floor?					
2.	Are stacked materials a minimum of 5 cm away from the wall to provide eye inspection, cleaning, and pest control access?					
3.	Are suitable containers used to store raw food materials?					
4.	Are raw food material boxes and containers clean?					
5.	Are warehouses free from rodents and insects?					
6.	Are raw food materials stored in a way to prevent cross-contamination?					
7.	Are storage pallets in good and clean condition?					
8.	Are stores clean and free of foul odors?					
9.	Are stores in a state of good repair?					
10.	Are raw materials (food and packaging) covered/closed to prevent contamination by insects, dust, or foreign matters?					
11.	Are pest control baits readily identifiable and not likely to contaminate food?					
12.	Are chemicals clearly labeled and stored away from raw food materials to prevent contamination or be mistaken with food?					

No.	Inspection /Auditing team	YES	No	NA	NI	Comments
B	End product (food) storage areas - dry store, refrigerators, and freezers					
1.	Are finished products stored at least 15 cm above the floor?					
2.	Are finished products at least 5 cm far from the walls to facilitate eye inspection, cleaning, and pest control?					
3.	Are finished products stored in appropriate con-tainers?					
4.	Are finished products covered to prevent contam-ination by insects or dust of foreign matters?					
5.	Are finished products stored in a way to prevent cross-contamination?					
6.	Are storage areas clean and free of foul odors?					
7.	Are storage areas in good condition?					
8.	Are storage areas free from rodents and insects?					
9.	Are clear labels placed on prepared food mention-ing the name of food, date of preparation (hour, day, month)					
C	Document Review					
1.	Are food products description available mention-ing (intended use, storage condition, holding con-ditions, distribution, shelf life, labeling require-ments, handling, and storage conditions) by end-user?					
2.	Does the HACCP plan include a list of raw mate-rials and ingredients, including names and availa-ble standards?					
3.	Does the ingredient list include information re-garding any use of applicable preservatives,?					
4.	Does the HACCP plan contain an appropriate workflow diagram?					
5.	Does the HACCP plan include hazard analysis of potential hazards associated with raw material, ingredient, & process steps?					
6.	Is each hazard identified by its classification (mi-crobiological, chemical, physical)?					
7.	Are process CCPs appropriately identified?					
8.	Are critical control limits for each hazard identi-fied and documented?					
9.	Do CCPs monitoring instructions include 'WHO, WHERE, WHEN & HOW'?					
10.	Are monitoring frequencies sufficient to assure process control and production of safe food?					
11.	Are monitoring procedures for CCPs available and documented correctly?					

No.	Inspection /Auditing team	YES	No	NA	NI	Comments
12.	Does the HACCP plan include corrective and preventive actions for all CCPs deviations from the Critical Control Limits and clearly identify each person's person in charge?					
13.	Does the HACCP plan identify the company, location, and food production site?					
14.	Do verification procedures include: HACCP plan review? Validation of critical limits? Convenience of CCP monitoring? Review of monitoring & corrective action methods? Sampling or testing procedures?					
15.	Does the HACCP plan include statements of dates of plan preparation, approval, review, and amendment?					
16.	Does the HACCP plan include a statement on the scope and purpose of the plan?					
17.	Does the HACCP plan include the HACCP team's names and positions and their skills and experiences related to HACCP, including the name and position of the team leader and?					
18.	Are archived records of microbiological tests (if any) available for inspection?					
19.	Are initials of the person in charge, date available on the raw material testing records, and their process?					
20.	Is the number of calibrations of measuring devices determined in a table in order to monitor specific CCPs?					
21.	Are calibration records available for all measuring devices used to monitor CCPs?					
22.	Is pest control policy documented and records available?					
23.	Are employees training records available?					
24.	Is internal auditing scheduled time table available?					
25.	Is internal auditing conducted with records completed and available?					
26.	Are all records identified on the HACCP plan available for inspection?					
D	Food processing, packaging, and storing					
1.	Are food ingredient containers clean?					
2.	Is the water used for washing, rinsing, preparing and cooking food etc., clean and tested before use?					
3.	Is the water used for washing, rinsing, preparing and cooking food, etc., not being reused in other food preparation processes? (e.g. water used for washing vegetables should not be reused again in cooking food or washing dishes).					
4.	Are electric pest traps located in proper places preventing dead insects from falling into food?					

No.	Inspection /Auditing team	YES	No	NA	NI	Comments
5.	Are disposable gloves readily available for food handlers?					
6.	Are storage areas specified?					
7.	Is the food processing area clean and free from foul odors?					
8.	Is the food preparation area in good condition?					
9.	Is the food processing area free from rodents and insects?					
10.	Are working surfaces clean and sanitized before starting food preparation?					
11.	Is the cleanliness level of the food preparation areas acceptable when work starts?					
12.	Are there any raw materials or packaging materials, or in-process products placed on the floor?					
13.	Is cooking equipment or wooden utensils (equipment parts) used in food preparation?					
14.	Is the food equipment cleanliness checked prior to use?					
15.	Is unused food equipment clean and dry?					
16.	Are all equipments cleaned and covered/stored to prevent contamination before the next use at the end of the food preparation?					
17.	Are equipment cleaning instructions appropriately followed?					
18.	Is food equipment in good condition?					
19.	Is 'out of service' equipment labeled for being out of service, and not being used by food handlers, cleaned periodically to prevent dirt contamination?					
20.	Are there any glass parts, pins, metal clamps, rubber bands present in food preparation areas?					
21.	Are prepared food products kept separated from raw food?					
22.	Are food products dropped on non-sanitized or contaminated surfaces, discarded?					
23.	Is the food cooked to an internal safe temperature required and for sufficient time? Is Food temperature checked using a calibrated food thermometer?					
24.	Is the internal temperature of cooked foods monitored and documented?					
25.	Is food preparation planned, so ingredients are kept out of the danger zone temperatures as re-quired?					

No.	Inspection /Auditing team	YES	No	NA	NI	Comments
26.	Are thawed food refrozen improperly?					
27.	Are food serving containers clean?					
28.	Are food serving containers covered to prevent contamination?					
29.	Is the hot food holding unit clean and dry?					
30.	Is the hot holding unit temperature set at 63°C or above?					
31.	Is cold holding unit temperature set at 5°C or be-low?					
32.	Is waste regularly disposed, at least daily?					
33.	Are waste bins covered?					
34.	Are cleaning materials and tools placed in a des-ignated area and away from the food preparation area?					
35.	Are cleaning tools in good condition and cleaned properly?					
36.	Are foot-washing sinks present at the entrances of the food preparation area (moving from the lab to the food preparation area, from maintenance to food preparation area, etc.)?					
37.	Are foot-washing sinks filled with robust sanitiz-ing solution and cleaned regularly?					
38.	Is there a sufficient number of washing sinks lo-cated in convenient places?					
39.	Are washing sinks supplied with soap and drying towels?					
40.	Are washing sinks in good condition and cleaned properly?					
41.	Are washing sinks used only for hand washing (not equipment)?					
42.	Are there any foreign objects (screws, bolts etc.) on food equipment and food preparation area?					
43.	Are food handlers aware of procedures to follow when an equipment malfunction occurs or finding a potential source of contamination during food preparation?					
44.	Is the calibration of measuring devices used to monitor CCPs scheduled and maintained in ap-propriate storage conditions?					
45.	Are there material safety data sheets for all chemi-cals used on-site?					

No.	Inspection /Auditing team	YES	No	NA	NI	Comments
1	Personal Hygiene					
1.	Does working uniforms contain buttons? (uni-forms should be with zippers or press studs on-ly)?					
2.	Do working uniforms contain pockets above the waist?					
3.	Are uniforms clean at the start of preparation and in good condition?					
4.	Do food handlers only wear the official work uni-forms provided by the company?					
5.	Are appropriate safe shoes provided to be used in working areas?					
6.	Are disposable hair coverings available and used to cover the hair? (Hairpins, clips etc., should not be used to fix the hair covers).					
7.	Are disposable beard coverings available and used?					
8.	Do food handlers wear jewelry or watches?					
9.	Are disposable gloves available and used?					
10.	Do food handlers wearing gloves wash their hands regularly?					
11.	Do food handlers change their gloves when torn, soiled, and between different tasks?					
12.	Do food handlers discard their gloves and wash their hands after finishing work?					
13.	Do food handlers wash their hands with soap and water before starting work, after eating meals, after sneezing and coughing, after touching hair,nose mouth or eyes, after touching waste bins , after smoking ,and when entering food prepara-tion areas?					
14.	Are cuts and wounds covered with a water-proof blue band-aid? (Blue band-aids are easily distin-guished in case of falling on food).					
15.	Are personnel handling food, food materials, and equipment receiving proper and continued train-ing in hygienic food handling and personal hy-giene?					
16.	Did food handlers receive medical examination before employment to determine their fitness to work in a hygienic food handling area, and is this medical examination carried out periodically?					
17.	Is there a designated smoking area?					
18.	Is there a designated area for eating and drinking?					
19.	Are the food handler's hands and fingernails clean? (False fingernails, nail polish, false eye-lashes are not allowed)					

No.	Inspection /Auditing team	YES	No	NA	NI	Comments
20.	Do food handlers appear clean?					
21.	Do visitors wear lab coats? (If visitor's lab coats are unpractical/not safe, visitors should be provided with company-issued uniforms.)					
22.	Are there any personal items (bags, newspapers, clothes, etc.) in the food preparation area?					
23.	Is eating food (including chewing gum) and drinking prohibited in the food preparation area? (The only exception is drinking water from an available water source).					
24.	Are utensils used for eating or drinking carried in official uniform pockets?					
25.	Do food handlers deal with foods during sick-ness? (Sick food handlers with a communicable disease (e.g., gastroenteritis, severe cold, sore throat, cough, or influenza) should not work in food handling areas)					
26.	Are posters about personal hygiene available in convenient places?					
F	General Food Establishment Area					
	General areas					
1.	Are pallets stored in areas free of waste, rodents and insects?					
2.	Is water used in the food establishment tested for micro-organisms which may cause food poisoning or other diseases?					
	Washroom facilities					
3.	Are washrooms clean and in good condition?					
4.	Do washrooms contain hand washing soap and sanitizers?					
	Pest control (Apply to internal pest control)					
5.	Are there warning signs on insecticides indicating its level of toxicity?					
6.	Are insecticides stored in rooms, cabinets locked and stated for that purpose only?					
7.	Are there insect traps installed in food preparation areas (unless their use leads to dust accumulation) with a suitable size tray under it to collect dead insects?					
8.	Are insect traps cleaned regularly? (Once a month at least).					
9.	Is pest control implemented or supervised directly by employees who are fully aware about potential risks might arise from using insecticides?					

No.	Inspection /Auditing team	YES	No	NA	NI	Comments
10.	Is there an effective, continuous and documented pest control program?					
11.	Are insecticides used approved by the Ministry of Agriculture to be used in food establishment?					
12.	<p>Grounds</p> <p>Are ground areas maintained to protect food contamination by a rodent, soil, and other dirt? (Such as grass trimming, bushes, and trees)?</p>					
13.	<p>Are ground areas free of settings that might result in food contamination? Examples:</p> <ul style="list-style-type: none"> • Equipment properly stored • Waste or structures that might attract or harbor rodents, insects and other pests. • Dusty yards or car parking areas 					
14.	Is animal manure used in gardens?					
G	Premises					
1.	Are food establishment premises separated from the waste deposit, storage areas, and offices?					
2.	Is the ventilation system appropriate?					
3.	Are walls well maintained and free from cracks and holes?					
4.	Are walls smooth and easy to clean?					
5.	Are there any holes or cracks around doors and windows?					
6.	Are walls painted in light colors?					
7.	Are there holes or other defects in the floors?					
8.	Are floors drained easily?					
9.	Are floor drains connected with a drainage system?					
10.	Are floor surfaces hard, durable, anti-slip, and, water-resistant?					
11.	Are floors easy to clean?					
12.	Are wall and ceiling junctions tightly closed?					
13.	Are ceilings smooth, durable, and water-resistant?					
14.	Are there cracks, holes, any other defects in the ceiling?					
15.	Are ceilings easy to clean?					

No.	Inspection /Auditing team	YES	No	NA	NI	Comments
16.	Are ceilings painted in light colors?					
17.	Are windows protected with hole-free mesh, to ensure insect control?					
18.	Are doors protected to prevent flying insects and birds? (Such as applying plastic strips, automatically closing doors and air fans).					
19.	Are there sufficient handwashing facilities in convenient locations?					
20.	Are there hand washing facilities in washrooms and at the entrance of food handling areas?					
21.	Are the handwashing facilities provided with hot and cold water, foot-operated taps or automatic, soap or detergent, and paper towels?					
22.	Is there a waste bin available next to each hand washing facility?					
23.	Are lighting units designed to prevent contamination from dust, dirt, and dead insects?					
24.	Are lighting units covered to protect food from contamination with broken glass pieces?					
25.	Is lighting adequate?					
26.	Is there hot and cold water in the working area?					
27.	Are the employees aware of procedures to follow if any condition identified might cause health risks in the food production areas?					
28.	Are employees provided with lockers to keep their uniforms and personal belongings? (Lockers should be separated from working area).					
29.	Are there any open drainage pipes or openings for cleaning the drainage pipes? (All drainage pipes should be closed).					
30.	Are food containers easily accessible for inspection and cleaning purposes?					
31.	Are pipes, ducts, and wires hanging over the working areas?					
32.	Are working surfaces which comes into frequent contact with liquids made from stainless steel					
33.	Are shelves installed at least 4 cm from adjacent vertical surfaces?					
34.	Are the shelves that are part of a complete shelving unit placed 15 cm from the ground?					

No.	Inspection /Auditing team	YES	No	NA	NI	Comments
35.	Are the corridors and workspaces between the equipment and walls are wide enough to enable employees to carry out their daily tasks, inspections and clean easily?					
36.	Is heavy equipment placed on wheels to facilitate cleaning?					
37.	Are pipes, ducts, and wires hidden inside the walls and floors where possible					
38.	If pipes and wires are not hidden, are there at least 16 mm between them and adjacent surfaces to facilitate cleaning and inspection?					
H	Waste Storage					
1.	Are there enough bins to store waste in them?					
2.	Are these bins cleaned and well maintained?					
3.	Are these bins free of rodents and insects?					
4.	Are these bins covered?					
9.	Water Safety					
1.	Are water sources used from safe sources (water authority or source authorized to transport drink-ing water)?					
2.	Is water stored in safe water tanks?					
3.	Are water storage tanks well cleaned?					
4.	Are water storage tanks sealed?					
5.	Have staff received appropriate training in water treatment and safety?					
6.	Are results of water tests monitored to ensure its safety, and conformity to the standard specifica-tion for drinking water.					

Inspection \ Auditing Item

Raw materials Food /Nonfood Storage (dry store, refrigeration, freezers)			
No.	S	NS	NI
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
Total Satisfactory :			
Total Non – Satisfactory:			
Total Needs Improvements:			

End Product Food Storage Areas (dry store, refrigeration, freezers)			
No.	S	NS	NI
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
Total Satisfactory :			
Total Non – Satisfactory:			
Total Needs Improvements:			

Document Review			
No.	S	NS	NI
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			
26.			
Total Satisfactory :			
Total Non – Satisfactory:			
Total Needs Improvements:			

Food Processing, Packaging and Serving							
No.	S	NS	NI	No.	S	NS	NI
1.				24.			
2.				25.			
3.				26.			
4.				27.			
5.				28.			
6.				29.			
7.				30.			
8.				31.			
9.				32.			
10.				33.			
11.				34.			
12.				35.			
13.				36.			
14.				37.			
15.				38.			
16.				39.			
17.				40.			
18.				41.			
19.				42.			
20.				43.			
21.				44.			
22.				45.			
23.				46.			
Total Satisfactory :							
Total Non – Satisfactory:							
Total Needs Improvements:							

Inspection \ Auditing Item

Personal Hygiene				
No.	S	NS	NI	
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
Total Satisfactory :				
Total Non – Satisfactory:				
Total Needs Improvements:				

General Food Establishment Area				
No.	S	NS	NI	
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
Total Satisfactory :				
Total Non – Satisfactory:				
Total Needs Improvements:				

Food Establishment Premises									
No.	S	NS	NI	No.	S	NS	NI	No.	NI
1.				20.					
2.				21.					
3.				22.					
4.				23.					
5.				24.					
6.				25.					
7.				26.					
8.				27.					
9.				28.					
10.				29.					
11.				30.					
12.				31.					
13.				32.					
14.				33.					
15.				34.					
16.				35.					
17.				36.					
18.				37.					
19.				38.					
Total Satisfactory :									
Total Non – Satisfactory:									
Total Needs Improvements:									

Storage of Waste				
No.	S	NS	NI	
1.				
2.				
3.				
4.				
Total Satisfactory :				
Total Non – Satisfactory:				
Total Needs Improvements:				

Water Safety				
No.	S	NS	NI	
1.				
2.				
3.				
4.				
5.				
6.				
7.				
Total Satisfactory :				
Total Non – Satisfactory:				
Total Needs Improvements:				

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FOOD SAFETY IMPLEMENTATION AND INSPECTION GUIDELINES