



# COFFEE AND TEA PROCESSING

## Level-II

Based on May 2019, Version 2 Occupational standards

**Module Title:** - Implementing the food safety program and procedures

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LG #15

## LO #1- Implement the food safety program

### Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Identifying food handling requirement
- Carrying out food handling according to food safety program
- Controlling food safety hazards through food safety procedure
- Report the incident and taking corrective action
- Recording food safety information
- Maintaining the workplace to meet workplace standards
- Conducting work

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Identify food handling requirement
- Carry out food handling according to food safety program
- Control food safety hazards through food safety procedure
- Report the incident and taking corrective action
- Record food safety information
- Maintain the workplace to meet workplace standards
- Conduct work

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Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If your performance is satisfactory proceed to the next learning guide,

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## Information Sheet 1- Identifying food handling requirement

### 1.1 Introduction

**Food handling** is any activity that involves the handling of food (including preparing, sorting, food receipt and storage, food preparation, sorting, grading, roasting, cooling, grinding, Plucking, withering, rolling, fermentation, drying, grading, packaging, disposal)

**A food handler** is anyone who handles packaged or unpackaged food directly as well as the equipment and utensils used to prepare or serve food and/or surfaces that come into contact with food.

#### 1.1.2. Food handling should be:

- food receipt and storage
- food preparation
- sorting and cleaning, grading, roasting, cooling, grinding,
- plucking, withering, rolling, fermentation, drying, grading
- packaging, disposal

#### **Food receipt and storage**

- ✓ Always refrigerate perishable food within 2 hours—1 hour when the temperature is above 90 °F (32.2 °C).
- ✓ Check the temperature of your refrigerator and freezer with an appliance thermometer. The refrigerator should be at 40 °F (4.4 °C) or below and the freezer at 0 °F (-17.7 °C)
- ✓ Coffee should be stored in a dry location. Excessive moisture will accelerate the deterioration process. Coffee that has been exposed to too much moisture may develop a sour or “off” taste and aroma. For this reason, it's not a good idea to store coffee in the freezer or refrigerator.

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**Food preparation/processing:-** Coffee preparation is the process of turning coffee beans into a beverage. While the particular steps vary with the type of coffee and with the raw materials, the process. Always wash hands with warm water and soap for 20 seconds before and after handling food.

The most important tool you have to prevent food borne illness is good personal hygiene

Good personal hygiene includes

**Table1. Good personal clothing**

Proper handling	Hand washing
Cleaning hat/hair	Trim, nails, avoid nail polish
Clean clothes	Proper glove
Remove jewelry	Maintain good health
Avoid un sanitary habits/actions	Report wounds and illnesses

**Coffee and tea handling Equipment**

- Coffee contact surfaces must be appropriately cleaned and disinfected
- All equipment must be kept clean and in good condition.
- Prevent sacks, silos. Bags, jutes from moist area



**Fig 1. Coffee handling equipment**

**Roasting:-** it transforms the chemical and physical properties of green coffee beans into roasted coffee products. The roasting process is what produces the characteristic flavor of coffee by causing the green coffee beans to change in taste. The green coffee is roasted using special roasting machines in which the coffee, at a temperature of approximately 210°-220° degrees, completes the process in 15/18 minutes

**Cooling:-** once the beans are roasted, they need to be cooled immediately to avoid changes in quality and aroma. The roasted coffee is cooled by air and water. Cooling time should not take more than a maximum of five minutes.

types coffee cooling

- Air cooling
- Water cooling

### **Air cooling**

Ambient air is passed through roasted coffee beans either in the drum or in a separate cooling unit. Therefore, bean temperature is dropped to ambient temperature immediately.

Water quench cooling

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The roasted coffee is cooled by spraying a small amount of water, either in the drum or in a separate cooling operation. Bean temperature is dropped to ambient temperature immediately.

**Grinding:-** The objective of a proper grind is to get the most flavor in a cup of coffee. How coarse or fine the coffee is ground depends on the brewing method.- The coffee to be packaged ground is sent along to the grinding units. This phase is very delicate, and is monitored constantly using laser equipment.



**Fig2. Different coffee product**

**Plucking:-** is the first step in the manufacturing process of tea and refers to the harvesting by hand of the tea plant. The plucking process occurs when the tea bush “flushes” or pushes out new leaf shoots. Plucking is an extremely labour intensive process.

All of our ingredients are vetted for freshness, safety, and compliance with the highest standards of quality from farm to cup.

**Withering:-** Physical withering refers to the removal of moisture from the tea leaf. During this process, the turgid leaf becomes flaccid. This process also leads to the concentration of sap in the cells of the tea leaf. The desired level of moisture can be removed by passing air through the piled leaves.

**ROLLING :-** twists and breaks the leaves to release the natural juices. This action activates enzymes that help to initiate fermentation. Rolling also gives the leaves a curled appearance.

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**The fermentation/oxidation:-** is an oxidation and tanning process of the cell fluids, which have been released during the rolling. For the fermentation, the leaves are spread out on tables in layers of 10 cm.

**Drying:-** This operation is of great importance from the safety perspective, as well that of quality. Coffee drying is comparatively more difficult to complete when compared with other grains.

**Grading:-** The sifting is carried out by sorting the leaf particles into different sizes depending on the market demand as well as buyer requirements according to their popular blended brands.

**Packaging:-** Tea is packed in paper sacks in current manufacturing facilities. Tea may be consumed after many months of preparation where it needs preservation techniques to



(a)

(b)

**Figure 3a tea packaging and figure 3b coffee packaging**

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<b>Self check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Choose the best answer**

**1. Which one of the following are food handling requirements? (1 points)**

- a. a. food receipt and storage    b. food preparation    c. packaging    d. all

**2. Which one of the following is the first step in the manufacturing process of tea? (1 points)**

- a. Rolling    b. Withering    c. sorting    d. oxidation

**Test II: Short Answer Questions**

1. List food handling requirements (4 point)
2. What is food handling .(4 point)

Note: Satisfactory rating - 8 points      Unsatisfactory - below 4 points

You can ask you teacher for the copy of the correct answers.

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**Information Sheet 2- Carrying out food handling according to food safety program**

**2.1. Definition**

Safe food handling is based on two key principles. These principles are the basis of safe food handling practices that you are required to follow in your workplace. As a food handler you should understand these two basic principles:

- Preventing food being contaminated; and
- Controlling bacteria from growing in food.

**coffee Handler:** Any person who directly handles packaged or unpackaged coffee, coffee equipment and utensils, or coffee contact surfaces.

These principles are the key to maintaining the hygiene of food and to preventing an outbreak of food poisoning.

**2.1.2. A coffee safety program** systematically identifies the coffee safety hazards that may reasonably be expected to occur in your workplace. It outlines the food safety procedures that must be followed to prevent, control and eliminate food safety hazards. It also documents how these procedures comply with food regulations and legislation.

How? Means

- By making personal hygiene practices
- By making food preparation/ processing practices
- Temperature control
- The prevention of cross contamination
  - By storing foods properly and following cleaning procedures
  - Clean and Sanitize Surfaces Correctly:
    - Clean and sanitize anything that touches food
    - Keep everything clean

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**Fig 4. Coffee equipment cleaning**

Prevent Cross-Contact: Cross-contamination is the transportation of harmful substances to food by:

Poor personal hygiene: Transferring pathogens from your body to food



**Fig 5. Cross contamination of coffee**

Preventing Food Allergen Contamination( coffee allergens)

Store food with allergens separately from allergen-free products.

- DO NOT store food containing allergens above allergen-free food.
- Use dedicated pallets and bins for products containing allergens

**Allergic reactions to drinking coffee are very rare.**

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According to a study posted to International Archives of Allergy and Immunology, the dust from green coffee beans causes an allergic reaction in some of those who work with the beans. No recent medical literature mentions allergic reactions to drinking coffee, though rare cases have occurred in the past. An allergic reaction caused by food, such as coffee beans, is actually due to an immune system response. The immune system recognizes compounds in the cells of coffee as invaders.

The immune system then responds to coffee in a similar way to how it would respond to pathogens, such as bacteria and viruses. It releases protective compounds, such as histamine, to isolate and destroy the intruding coffee. The symptoms of a coffee allergy are the result of this process.

#### **Symptoms of an allergic reaction to coffee :**

- skin rashes, such as hives or blotches of red skin
- nausea and vomiting
- trouble swallowing
- shortness of breath or difficulty catching a breath
- a wheezing cough
- stomach or abdominal cramps
- diarrhea
- reduced color in the skin
- weak pulse or a sudden drop in blood pressure

#### **Coffee and tea storage area must be**

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Minimize the risk of contamination from any source, including dust, flies, birds or other animals. Open parlors can be accepted in situations where hygiene risks are minimized and very high standards of management are maintained. They are not permitted if birds gain access or where there is excessive dust contamination from adjacent areas.

The coffee and tea storage room must be sited in a clean area, away from obvious sources of contamination. The structure of the coffee storage room must protect the coffee product from contamination and be kept clean and free from microbes.



**Fig 6 coffee storage area room**

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**Fig 7. Tea storage area**



**Fig 8. Handling Practices in coffee in farm**

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### Benefits of coffee safety

- It focuses on those critical points in coffee processing and handling required for safe food production
- Requires the implementation of measures to control hazards where significant
- Employs the principle of risk assessment allowing prevention to be based on the control program rather than inspection and testing
- Standardization of hazard management allowing for easier auditing and inspection by second and third parties
- Simplify inspections primarily because of record keeping and documentation
- Provide consistent quality product
- Demonstrates conformance to the product requirements and regulations

### Food Handling Practices



**Fig10. Safety food**

Preventing coffee Allergen Contamination

Prevent Cross-Contact:

- Clean and sanitize surfaces that have come in contact with an allergen.
- Inspect food packaging for leaks or spills that can cause cross-contact.

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- Wash hands and change gloves after handling allergens and before handling allergen-free food.



Fig11. Tea and coffee storage area cleaning materials

## Specification

Ethiopian standards on coffee products

### A. Specification

- Bean size >14%(should be above 90)
  - Moisture content <11.5%
- Shape & make =Bold/thick & uniform
- Adour =clean
  - Color =bluish/ green/greenish

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<b>Self-check 2</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Choose the best answer**

1. During Preventing Food Allergen Contamination which of the f/f is true (2 points)
  - A. Use dedicated pallets and bins for products containing allergens
  - B. DO NOT store food containing allergens above allergen-free food
  - C. Store food with allergens separately from allergen-free products)
  - D. all of the above
2. **Which one of the following are Benefits of food safety (2 points)**
  - A. Provide consistent quality product
  - B. Demonstrates conformance to the product requirements and regulations
  - C. Use dedicated pallets and bins for products containing allergens
  - D) "A" and "B" are answers

**Test II: Short Answer Questions**

1. List down the food handling principles (3 points)
2. List down principles of food safety? (3 points)

Note: Satisfactory rating - 7 points

Unsatisfactory – below 4points

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You can ask your teacher for the copy of the correct answer

### Information Sheet 3- Controlling food safety hazards through food safety procedure

#### 3.1. Food safety hazard

A food safety hazard is a biological, chemical or physical agent in, or condition of, food that has the potential to cause an adverse health effect.

Control of Food Safety Hazards: To control food safety hazards effectively, it is important to understand the nature of possible hazards. Not all substances or microorganisms are hazardous until they reach a certain level, so it is important to know and understand the significance of these levels.

Possible hazards are always going to pose a risk to your company, so it is essential to know how to control these hazards. By using different methods such as destroying, removing, preventing, or reducing hazards to an acceptable level, contamination issues will be greatly reduced. To control food hazards, you must have a system in place that maintains control points within the process. You must have knowledge of how to develop this system so that any change can be taken into account and managed correct

3.1.1. The type of hazards is categorized in three groups:

- A. Biological hazards
- B. Chemicals hazards
- C. Physical hazards

#### A. Physical hazard

Physical contamination is caused by foreign objects entering food or coffee and during the coffee processing and service process and generally results in an injury rather than an illness.

- ✓ Glass fragments

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- ✓ Magnets and screens
- ✓ Dust
- ✓ Metal shavings from slicers
- ✓ wood
- ✓ Pest infestation.

### **B. Chemical hazard**

Chemical food poisoning is caused by the presence of toxic chemicals in food. Examples of **chemicals** that may contaminate food especially in coffee product include

**Myco toxins:-** Mycotoxins are toxic metabolites produced by some species of fungi, mainly from the genera *Aspergillus* and *Penicillium*

- Pesticide Residues
- pesticides,
- insecticides,
- cleaning agents, or Chemicals resulting from a chemical reaction between food and inappropriate storage containers, eg galvanized cans.

### **C. Biological contamination**

Bacteria transferred to the food either through poor handling practices, poor cleaning practices, and poor personal hygiene practices or from another food source (cross-contamination)

Cross-contamination; is the transfer of microorganisms from raw foods(usually animal foods) to cooked foods or ready to serve foods.

Includes

- ✓ Poor personal hygiene such as food handlers coughing or sneezing over food or not washing hands after eating or using the toilet;
- ✓ Pest infestations;

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- ✓ Poor storage practices resulting in food being Open to contamination

**Other industry hazards include**

Define HACCP

The hazards most commonly found in coffee are Chemical Hazards

HACCP (Hazard Analysis Critical Control Point) is a systematic way to identify, evaluate, and control food safety hazards.

Hazards are biological, chemical, or physical agents likely to cause illness or injury if they are not controlled.

HACCP prevents food safety hazards rather than reacts to food safety hazards.

To develop a HACCP plan, one follows the seven principles.

The HACCP system consists the following seven basic principles:

Principle 1 - Conduct a hazard analysis.

Principle 2 - Determine CCPs. (critical control point)

Principle 3 - Establish critical limits

Principle 4 – Establish monitoring procedures

Principle 5 Establish corrective actions.

Principle 6 – Establish verification procedures

Principle 7 – Establish record keeping.

**Conduct a hazard analysis**

**The first principle of HACCP** is to conduct a hazard analysis. Conducting a complete and accurate hazard analysis is the most important step in developing a valid HACCP plan, so the HACCP team.

Steps of conduct hazard should be:

- Hazard analysis process
- Hazard identification

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- Determination of acceptable levels
- Hazard evaluation
- Control measures

**Determine CCPs (critical control point)**

- A control point is any point, step, or procedure where biological, physical, or chemical factors can be controlled.
- A critical control point (CCP) is a point, step, or procedure where an identified hazard can be prevented, eliminated, or reduced to acceptable levels.
- Critical control points are monitored much more frequently than are control points.

**Establish critical limits**

- This step involves establishing criteria that must be met to prevent, eliminate, or the reduce the identified hazard at the CCP so that the food is safe to eat.

Examples of critical limits are: temperature, time, moisture content, relative humidity, physical dimensions, water activity, pH, and available chlorine

- Critical limits can come from regulatory standards and guidelines, scientific literature, experimental studies, and consultation with experts.

**Establish monitoring procedures**

- Monitoring is a planned observation or measurement: to determine if a CCP is under control

**Examples of monitoring include:**

- ✓ Visual observations
- ✓ Temperature measurements
- ✓ Moisture measurements

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Time assessment

- ✓ pH measurements
- ✓ Water activity measurements

**Establish corrective actions**

• Corrective actions focus on: What to do when a food does not meet the critical limit.

Example of a corrective action:

- The temperature of coffee storage is 10-18 °c after store(a CCP).
- The critical limit is storage the coffee to 18 °C or hotter.
- Maintain records of all corrective actions taken

**Establish verification procedures**

Four phases of verification needed for a HACCP plan:

- Determine that the critical limits at all CCPS are sound.
- Make sure that the establishment’s HACCP plan is being properly implemented.
- Have regulatory personnel review the plan to make sure that it is being properly implemented.
- Check the accuracy of all monitoring equipment
- Relative humidity

**Establish record keeping**

the following make up the records of a HACCP Plan

- List of HACCP team and their assigned responsibilities
- Description of each menu item
- Flow diagram for each menu item indicating CCPs
- Hazards associated with each CCP and preventive measures
- Critical limits

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**Table 2.1. HACCP plan for the coffee processing**

Stage	Cp/ccp	Hazards	Preventive measures	Critical limits	Monitoring(4WH)	Corrective action	recording	verification
Wagging	CP (F)	Leaves, stones, sticks	GAP: Training and qualification; sieve maintenance.	4%impurities	What? Impurities. How? Visual observation. When? Each process. Who? Person in charge of the operation	Reprocess (repeat wagging)	Control spreadsheet	Supervision and analyses of the spreadsheet; Programme for sampling and analyses.
Separation	CP (Q)	Ochratoxin	Separate effectively and keep separation of the float coffee from the immature and ripe cherries; Training and	Less than 2% of floats in the separated ripe cherries and immature fruits.	What? Floats How? Visual observation. When? Each separation Who? Person in charge of the operation.	Reprocess (repeat separation)	Control spreadsheet	Supervision and analyses of the spreadsheet; Programme for sampling and analyses.



			qualification of operators.					
Terrace drying (ripe and immature cherries, and floats)	CCP1 (Q)	Ochratoxin	GAP: Terrace installations, hygiene programme, spreading procedures, piling up and turning over the coffee fruits on the terrace; assure a fast and uniform drying process until a maximum moisture content of 13%.	Maximum 13% moisture at the end.	What? Moisture How? Moisture meter. When? Daily. Who? Supervisor.	Optimize drying; increase the number of times coffee is turned over; decrease thickness of the layer of coffee beans; supplement with mechanical drying.	Control spreadsheet	Supervision and analyses of the spreadsheet; Programme for sampling and analyses
Bulk storage	CP (F)	Insects and	GAP: MIP programme,	Absence of pest	What? Pest evidence. How?	Identify MIP	Pest evidence	Training and qualification



(ripe and immature cherries, and floats)	CCP2 (Q)	rodents  Ochratoxin	installation hygiene.  Good practices of storage and control of temperature and humidity inside the storage facility	evidence.  Maximum 13% moisture in the beans, maximum 70% humidity inside the storage facility	Visual observation. When? Daily Who? Supervisor  What? Bean moisture and environment humidity. How? Moisture meter (beans) and hygrometer (environment). When? Daily. Who? Supervisor	Correct environmental humidity (ventilation); Reprocess coffee drying	spreadsheet  Bean moisture and environment humidity spreadsheet	programme; inspection.  Supervision, spreadsheet analysis; programme for sample collection and analyses of OTA and moisture
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<b>Self-check 3</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Choose the best answer (4 point)**

1. Which one of the following is toxic metabolite produced by some species of fungi? (2 points)
  - A. Mycotoxin    B. Physical hazards    C. Mechanical hazard    D. ergonomic hazard
2. Which one of the following is caused by foreign objects entering food during the food preparation and service process and generally results in an injury rather than an illness?(2 points)
  - A. physical hazard    B. chemical hazard    C. Biological contamination    D. all

**Test II: Short Answer Questions**

1. Write down HACCP Principles and explain it? (7 points)
2. Types of hazard and explain it? (5 points)
3. Write key source of hazard? (4 points)

Note: Satisfactory rating - 15 points      Unsatisfactory - below 10 points

You can ask you teacher for the copy of the correct answers

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<b>Information Sheet 4: Report the incident and taking corrective action</b>
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4.1. Report a food safety incident

A food incident is where there are concern about actual or suspected threats to the safety of food or feed that could require intervention to protect consumers interests.

Businesses are legally required to inform their local authority/ port health authority and the food standards agency if there is reason to believe that food or feed is not complaint with the safety requirements and should be immediately withdrawn or recalled from sale.

4.1.1. coffee and tea industry incidents

An employee walks down the hall, stepping over an extension cord stretched across his path. He turns a corner and nearly collides with another worker. To avoid the collision, he steps to the side, spilling coffee onto the floor and inadvertently jostling a shelving unit, on which a tool placed close to the edge of the top shelf falls and hits the ground.

No one is hurt in this fictional scenario. However, the employees in it experience multiple near-miss situations – any one of which could have led to a serious injury.

Some people may be tempted to write off near misses as “no harm, no foul” situations. But safety professionals such as Jeff Ruebesam say employers who track near misses, determine how and why they occurred, and take corrective action can prevent similar – or more serious – incidents from happening in the future.

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#### 4.1. 2. Food safety requirements and regulations

Food safety legislation includes key requirements that businesses must implement to ensure effective compliance.

##### **Good standards of food safety are necessary to prevent:**

- Food poisoning
- Food spoilage
- Food contamination
- Allergic reactions
- Loss of productivity
- Pest infestations;
- Prosecution for contravention of food safety legislation; and

##### **Legislative requirements concern food safety**

Under the Food Safety Act 1990 a food business must not:

- ✓ Cause food to be dangerous to health;
- ✓ Sell food that is not what the customer is entitled to expect in terms of content or quality; and
- ✓ Describe or present food in a way that is false or misleading.

#### **Reporting food safety control requirements**

##### **Food safety control**

A national food control system ensures that food available within a country is safe, wholesome and fit for human consumption, conforms to food safety and quality requirements and is honestly and accurately labeled as prescribed by the law. As such, food control systems protect the health and safety of consumers

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and help assure the safety and quality of foods being traded both nationally and internationally

Food handlers are responsible for reporting signs of a pest problem to their supervisor immediately. This is essential as uncontrolled pest infestations may lead to:

- Contamination of food items and spread of harmful bacteria
- damage to stock and premises
- Food waste
- customer complaints and business loss



**Fig13:Common food pests: insects and rodents**

All food items intended for storage should be covered or wrapped, and clearly labelled with the exact contents and date. This will help with stock rotation and control.

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**Table 3. Reporting coffee safety incident spread sheet**

**Incident and accident report**

Prepared by:----- date prepared----- check type

Date of incident		Company name		Accident
Time of incident		Store name		Hold up
AM/PM		Store address		House breaking
Date		Store city/state		Internal theft
Supervisor called				
Time supervisor called		General manager		Other incident

**Describe circumstances ( to completed for every accident & whenever police are called)**


Insurance co. called: contact----- date ----- time :-----

Police called: office name:-----badge#-----date----- time:-----

Police report filed: #----- phone -----

Hold-up & house breaking information

#\_robbers :----- male\_----- female---- weapons----- taken-----

Injuries:-----

How was the store entered? -----

Where all cash handling policies observed? -----

Where there two or more employees in the building? -----

Signature----- time ----- date:-----

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<b>Self-Check -4</b>	Written test
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Short Answer Questions**

1. Define food safety incident? (5 points)
2. Explain Legislative requirements concern food safety? (5 points)

Note: Satisfactory rating - 8 points      Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers

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## Information Sheet 5: Recording food safety information

### 5.1. Recording coffee safety information

- physical storage space
- Record automatically tallies amounts
- fire or theft
- costs to set up
- corrupted data
- types of hazards
- food safety and health
- high standard of personal safety and hygiene
- comply with legislation and regulation governing the organization

**Food safety program** is a written document that specifies how a business will control all food safety hazards that may be reasonably expected to occur in all food handling operations of the food business. The food safety program and related procedures must comply/fulfill with legal requirements of the food safety standards and must be communicated to all food handlers. Where no food safety program is in place, food safety requirements may be specified in general operating procedures.

#### A food safety program:

- Identifies where and how each hazard can be controlled;
- Describes how these controls are to be monitored;
- Describes the corrective action required if control conditions are not met; and Identifies records that must be kept.

### Sanitation Standard Operating Procedures (SSOPs)

- Sanitation Standard Operating Procedures is the common name given to the sanitation procedures in food production plants which are required by the Food Safety and Inspection Service of the USDA.

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- It is considered one of the prerequisite programs of HACCP
- Written Sanitation Standard Operating Procedures (SSOP) describe those procedures the establishment conducts daily to prevent direct contamination or adulteration of the product.
- Relate to specific tasks and should address the following:
  - ✓ the purpose and frequency of doing a task
  - ✓ who will do the task
  - ✓ a description of the procedure to be performed that includes all the steps involved
  - ✓ the corrective actions to be taken if the task is performed incorrectly
- (SSOP) Are prescribed methods specifically for cleaning and sanitizing.

**Sanitation Programs**

- ✓ Buildings and grounds
- ✓ Raw material handling and storage
- ✓ Processing hygiene and handling finished goods
- ✓ Pest control
- ✓ Waste disposal
- ✓ Employee hygiene and facilities
- ✓ Finished product storage
- ✓ Transportation

**Good Manufacturing Practices:** Good Manufacturing Practices GMPs are minimum sanitary and processing requirements necessary to ensure the production of wholesome food. Prescribed requirements for

- ✓ Personnel
- ✓ building and facilities

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- ✓ equipment and utensils
- ✓ production and process controls

## 5.2. Documentation and records keeping

Appropriate documentation & records of Processing, Production and distributions shall be maintained in a legible manner, retained in good condition for a period of one year or the shelf life of the product, whichever is more.

All records required under legislation are made, monitored and maintained e.g records includes temperature, moisture, relative humidity, cleaning records, use of reputable suppliers and maintenance records including a pest-control contract

### 5.2.1. The important records that shall be maintained :

#### A. Legal

- License and Registration of Manufacturer/Supplier/Dealers/Retailers
- Pollution Control Board Certificate of plant/manufacturing unit
- Record of Discharge Effluent & its Compliance with statutory requirements - ETP Compliance

#### B. Procurement/Quality

- 1) Raw material receiving and traceability records (including records for green coffee being received from coffee Collection Centers, BcCs, storage Centres).
  - 2) Receiving records for raw materials and additives (other than coffee)
  - 3) Quality Control / Lab test reports records/moisture analysis/Microbial test records – green coffee, processed coffee , instant coffee and coffee and tea products.
  - 4) External testing reports - Microbiological / chemical test reports pertaining to environment moisture and coffee beans products, water, other food ingredients, additives etc
- Certificates of Analysis/COA

#### C. Production/Processing

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1. Daily production records
2. Raw material consumption/utilization records
3. Process monitoring records – CCP's/OPRP's
4. Temperature and moisture records of storage room (s)/ storage tanks/silos (when in operation),
5. Consolidated daily production records.
6. Packing/Packaging records
7. Dispatch records

**D. Cleaning, Sanitation and Pest Control**

1. Cleaning, plant hygiene and sanitation records.
2. Pest Control and routine treatment records.
3. CIP Record - Processing Level
4. Record of Equipment Swabs for Monitoring Effectiveness of Cleaning
5. Record - Periodic Review of Residual Chemical after Cleaning
6. Records of Cleaning and Disinfection for Coffee and tea Stores
7. Cleaning and sanitation records coffee and tea processing area
8. Vehicle inspection record – coffee sacks, tea bags, trucks – coffee and tea handling and  
Material dispatch

**E. Human resource /Manpower related**

1. Training record of Food handlers.
2. Health record of the employees (involved in coffee and tea handling operations)
3. Record of system to prevent entry of Person from other Department suffering
4. from diseases/Visitor entry records

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5. Record of Hygiene monitoring of operators/ Workers
6. Training Records of Officer's (new Joinees/ or Identified Trainings)

**F. Common**

1. Calibration records – Processing equipment's & accessories, Lab equipment's & accessories, Moisture analyzers, environmental relative humidity analyzer to be maintained by concerned departments

**G. Marketing**

1. Consumer complaint records
2. Product Traceability Record - Mock Recall Simulation
3. Product recall and Traceability records pertaining of milk and milk products supplied/ distributed.

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<b>Self check 5</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Choose the best answer**

1. \_\_\_\_\_ Are prescribed methods specifically for cleaning and sanitizing? (1 points)
   
A. SSOP    B. HACCP    C. GAP    D. pest control
2. \_\_\_\_\_ are minimum sanitary and processing requirements necessary to ensure the production of wholesome food. ( 2 points)
   
A. Hazard    B. food safety    C. good manufacturing practice    D. all
3. The important records that shall be maintained include? (2 points)
   
A. Legal    B. procurement/quality    C. Processing    D. all

**Test II: Short Answer Questions**

1. Briefly explain good manufacturing practice? (5 points)
2. Write at least four sanitary programs? (5 points)

Note: Satisfactory rating - 10points      Unsatisfactory - below 7 points

You can ask you teacher for the copy of the correct answers.

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## Information Sheet 6:-Maintaining the workplace to meet workplace standards

### 6.1. Maintain the workplace to meet workplace standards

The lack of proper sanitation procedures can cost plant operators a lot of money. Good housekeeping involves ensuring equipment, floors, benches and other areas are properly cleaned so that no liquid or food remains to serve as a food source for pests and rodents.

During maintaining workplace of coffee and tea two things must be maintain according to workplace standards.

1. Maintain personal hygiene
2. maintain workplace hygiene

#### 6.1.2. Standard Operating Procedures (SOPs)

The most important requirement in the food industry is that every product meant for human consumption must be pure and safe. A significant amount of expenditure in any food industry business is spent on protecting consumers from contaminated or unsafe foods. These preventative measures are both time- and resource-intensive, but constitute an essential part of doing business in the food industry.

Ensuring food safety and product quality is a demanding, ongoing undertaking that affects every level of the food supply chain. In order to prevent recalls and improve productivity, food processors and manufacturers need an effective food safety management system.

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**maintain workplace discipline in organization while**

**Maintaining the respect of your employees:**

- The workplace should be a happy place
- Be considerate of the generation gap
- Come up with a set of guidelines
- Take corrective actions
- Allow enough storage and process room for your employees to work
- Regularly communicate with your staff

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<b>Self-check 6</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Short Answer Questions**

3. Write the ways to maintain workplace discipline in your organization? (5 points)
4. Explain the Standard Operating Procedures (SOPs) ( 5 points)

Note: Satisfactory rating - 8 points      Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

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## Information Sheet 7: Conducting work

### 7.1. Conducting work with workplace environmental guidelines

To manage these issues, your disciplinary process might cover two areas: employee performance and general workplace conduct. Conduct issues might include lateness, refusal to cooperate, misuse of bullying (aggressive violent man). It might even include violent behavior and other crimes.

#### More on employee conduct:

- Wash and sanitize all equipment storage and processing equipments like sacks, silos, jutes, bags, trolley, conveyor, measuring tools like moisture analyzer, environmental relative humidity and thermo meters, utensils, knives, chopping boards and work surfaces before and after use when preparing different foods,
- Avoid handling food (coffee and tea) and other product with bare hands,
- Wash hands between preparation tasks,
- Change single-use gloves after handling raw foods;
- Remove gloves when handling money or nonfood objects,
- Use a clean utensil each time you take sample for test food;
- Minimize contact with food wherever possible by using utensils or single-use gloves.

### 7.2. Implement Food safety programs HACCP

Food safety programs are designed to help businesses identify and manage hazards to food safety. Most licensed businesses must develop and implement a

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documented food safety program (FSP). To find out if you need a food safety program for your business visit the industry sectors.

Food safety programs are based on Codex Alimentary Commission's HACCP system and guidelines, or Standard 3.2.1 of the Food Standards Code.

HACCP stands for Hazard Analysis and Critical Control Point.

Food safety programs:

Identify potential hazards that may occur in all food handling operations carried out in the business

- identify where these hazards can be controlled
- monitor these control methods
- provide corrective actions when a hazard is found to be not under control
- establish, document and verify detailed pre-requisite programs
- Be regularly reviewed for adequacy (at least every 12 months).

Food businesses should keep a record and retain copies of action taken demonstrating compliance with the food safety program and ensure it is audited by a food safety auditor.

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<b>Self-check 7</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Short Answer Questions**

1. Explain food safety program? ( 5 points)
2. What are the two disciplinary processes to conducting work? ( 5 points)

Note: Satisfactory rating - 8points      Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

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## Operation sheet-1. Controlling food safety hazards through food safety procedure

Objects: to implement safety and hygiene of food product standards

**Instruction:** follow the following procedures to implement HACCP in coffee and tea products

### Procedure of Implement food safety

### Techniques of Controlling Food safety hazards

Step 1. Wear appropriate personal protective clothing

Step 2. Identify hazard analysis

Step 3. - Determine CCPs. (critical control point)

Step 4 - Establish critical limits

Step 5 – Establish monitoring procedures

Step 6 Establish corrective actions.

Step 7 – Establish verification procedures

Step 8 – Establish record keeping.

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<b>LAP Test</b>	Controlling food safety hazards through food safety procedure
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Name: \_\_\_\_\_ Date: \_\_\_\_\_

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_  
 \_\_\_\_\_

**Instructions:** Given necessary templates, tools and materials you are required to perform the following tasks within 3 hours.

**Task -1. implement food safety by applying HACCP principles**

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## LG #16

## LO#2.Participate in maintaining and improving food safety

### Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Monitoring working area, materials, equipment and **product**
- Identifying and reporting processes, practices or conditions
- Taking corrective action and Raising food safety issues

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Monitor working area, materials, equipment and product
- Identify and report processes, practices or conditions
- Take corrective action and Raise food safety issues

### Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If your performance is satisfactory proceed to the next learning guide,

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## Information Sheet 1- Monitoring Work area, materials, equipment and product

### 1.1. Monitoring work area, materials, equipment and product

The whole process of monitoring is to ensure food safety hazards are reduced or eliminated before they become an issue. Regular checking and monitoring will ensure problems are highlighted early and effective controls can be implemented. Work area, materials, equipment and product are routinely monitored to ensure compliance/ fulfillment with food safety requirements. products or materials when when you handled and stored consider the following :

- raw materials
- packing materials
- ingredients
- consumables
- part-processed product
- finished product
- safety materials
- cleaning materials

#### when you Monitoring:

- ✓ recording moisture and temperatures
- ✓ collecting samples
- ✓ Conducting visual inspections the process.
- ✓ conducting other tests

#### (a) Raw materials and other ingredients.

**Raw materials and other ingredients** shall be inspected and segregated or otherwise handled as necessary to ascertain that they are clean and suitable for

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processing into food and shall be stored under conditions that will protect against contamination and minimize deterioration.

Raw materials shall be washed or cleaned as necessary to remove soil or other contamination. Water used for washing, rinsing, or conveying food shall be safe and of adequate sanitary quality. Water may be reused for washing, rinsing, or conveying food if it does not increase the

Water uses during wet cleaning or wet processing of coffee and tea after plucking.

Coffee and tea materials like conveyor, sacks, jutes, bags, storage floor and inside and external parts must be clean and sanitize.

**Recording of moisture and temperature of product/materials**

Coffee and tea highly expose for moisture and temperature variation therefore control moisture of coffee in post harvesting mechanism during picking, storage, sorting and cleaning. During transportation, storage and process of moisture and temperature product and storage area must be measure by using of moisture meter for coffee beans hygrometer instrument for relative humidity of environment. Measuring temperature of raw materials and environment by using of thermo meter. Write the moisture content and temperature of processing materials like product handling materials, packing materials, drying and storage equipment of coffee and tea processing equipment. Randomly taking collectively sample from raw materials/ingredient to monitor the remaining product. Write the moisture and temperature processed or finished product, safety materials like personal protective equipment, cleaning materials like sweep, air flow cleaner, water, other cleaning materials.

**B) Appropriate Tools and Equipment in coffee and tea Processing Product**

The main section of coffee and tea processing machine is the coffee processing equipments. It helps to perform the various operations and working on coffee and

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tea production such as picking coffee, plucking tea, sorting coffee, cleaning, grading, drying, grounding, rolling, separations, fermentation and some other operations. In modern days, the all coffee processing equipments have become more advanced with some latest and unique techniques. These advanced hi-tech machines are very useful for farmers for good quality coffee production without more human efforts. There are various coffee-processing machines helpful in coffee plants to produce best products like instant coffee, powder,



**Fig-14. coffee roasting machine**

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**Figure- 15. coffee bean sorter**

**Sorter is:-** our color sorter can choose out defectives and impurities. splits, color defects (caused by immaturity, disease or moisture damage), also can choose out unhulled ones.

**Product Protection (part-processed/finished product)**

- Effective measures shall be taken to protect finished food from contamination by raw materials, other ingredients, or refuse.
- ✓ When raw materials, other ingredients, or refuse are unprotected, they shall not be handled simultaneously in a receiving, loading, or shipping area if that handling could result in contaminated food.
- All ingredients, packaging material and finished products shall be handled, stored or processed in such a manner as to assure a safe, wholesome and unadulterated (substitute) product.
- All pesticides shall be stored in a locked area and separated from all ingredients, cleaning material, equipment/utensils and sanitizers.

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- All sanitizers, cleaning compounds, and chemicals shall be stored separately from all ingredients, packaging material and finished product in such a manner as to prevent any contamination..
- All product or product containers shall be adequately protected to preclude contamination.
- All product or product containers shall be adequately protected to preclude
- Contamination.

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<b>Self-check 1</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Short Answer Questions**

1. List at least three Products or materials handle and stored need to be monitor? ( 5 points).
2. List at least two coffee and tea materials? (5 points)

Note: Satisfactory rating - 8 points      Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers

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## Information Sheet 2. Identifying and reporting processes, practices

### 2.1. Identifying and reporting processes and practices or conditions

identifying breaches/breaks in food safety procedures

**Food safety breach** is identifying by inspection, food law and regulation and food control management

#### Food safety breach( failure)

- failure to check delivery temperatures of potentially hazardous chilled food
- Failure to place temperature-sensitive food in temperature controlled storage conditions correctly.
- failure to wash hands when required
- use of cloths for unsuitable purpose

#### 2.1.2. Identify and report any inconsistent practices

Inconsistent practices may lead to the failure of the control of food hazards.

Incidents where food hazardous are not under control include:

- food poisoning
- customer complaints
- misuse items
- stocks of out-of-date foodstuffs
- spoilt or contaminated food
- unclean equipment
- Existence of pests and vermin.

**Process control** is a statistical and engineering discipline that deals with the design and mechanisms for maintaining the output of a specific process within a desired range. These activities are involved in ensuring a process is predictable, stable, and consistently

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operating at the target level of performance with only normal variation. Process control enables mass production of continuous process as well a level of automation by which a small staff may operate a complex process from a central control room.

**Controlling Time and Temperature during Receiving through preparation**

**Receiving Food:-** it is important to make sure you check the temperature of TCS food during the receiving process.

**Storing Food:-** Maintaining proper temperature and moisture during storage of TCS food( coffee and tea) is very important.

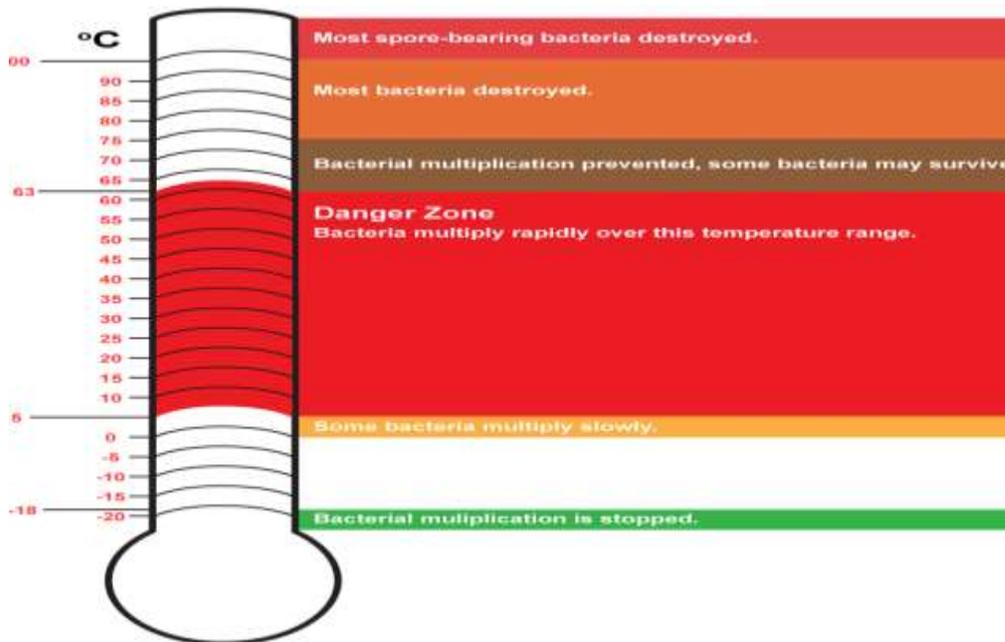


Fig-16. Temperature controller



Figure 17. coffee bean thermo meter

**Good Manufacturing Practices (GMPs)** describe the methods, equipment, facilities, and controls for producing processed food. As the minimum sanitary and processing

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requirements for producing safe and wholesome food, they are an important part of regulatory control over the safety of the nation's food supply.

### **The Importance of GMPs**

- GMPs extend the shelf and storage life of products
- GMPs reduce the risk of a product or process suspension
- Proper GMPs reduce the risk of food borne illnesses
- Reduced product reprocessing
- Compliance with federal and commercial product specifications
- Reduced number of product rejections, returns, and/or complaints

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<b>Self-check 2</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Short Answer Questions**

1. List down Food safety breach. (5 point)
2. What is Good Manufacturing Practices (5 points)
3. Briefly explain Process control? (5 points)

Note: Satisfactory rating >10 points      Unsatisfactory - below 7 points

You can ask you teacher for the copy of the correct answers

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### Information Sheet 3. Taking Corrective action and raising food safety issues

**3.1. Corrective actions** are the **actions** that must be taken if a critical limit is exceeded at any step of **food** production in a **food** business (e.g. delivery, storage, preparation). Critical limits mark the minimum or maximum acceptable level of an identified **food safety** hazard at each critical control point (CCP)

No system is perfect, so when preventive measures fail, corrective actions must be in place to prevent potentially hazardous foods from reaching consumers. Corrective actions should:

- Determine and correct the cause of non-compliance
- Determine the disposition of non-compliant product
- Record the corrective actions that have been taken

Specific corrective actions should be developed in advance for each CCP and included in the HACCP plan. As a minimum, the HACCP plan should specify what is done when a deviation occurs, who is responsible for implementing the corrective actions and that a record will be developed and maintained of the actions taken. Individuals who have a thorough understanding of the process, product and HACCP plan should be assigned the responsibility for oversight of corrective actions.

### 3.2. Taking corrective action with the food safety program

Taking corrective action when the food safety hazards occurred is based on Food safety program. This is required

- if control conditions are not met; and
- Processes, practices or conditions which are not consistent with the food safety program

Corrective action is taken within the level of responsibility. Responsibility for monitoring food safety is identifying breaches/breaks in food safety procedures.

Taking corrective action relates to own tasks and responsibilities and occurs in the context of the food safety program in the workplace

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**immediate corrective actions are:**

- throwing out coffee items that show signs of spoilage (e.g. bad smell, slimy skin)
- rejecting a food delivery with bite marks on the packaging (or other signs of pest infestation)
- transferring unrefrigerated perishable food items into cold storage (5°C or below)
- disposing of food items that have been in the Temperature Danger Zone for more than four hours

**Example of preventative corrective actions**

A preventative corrective action prevents a potential problem from happening. It stops a breach from occurring in the **future**.

Some examples of preventative corrective actions are:

- repairing broken, cracked or chipped equipment, dishware or glassware
- replacing food preparation surfaces (e.g. chopping boards, countertops) with cracks or deep scratches
- changing work procedures to improve food safety and / or quality
- appointing a Food Safety Supervisor to manage food safety risks in the business
- ensuring that all staff receive comprehensive food safety training

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### 3.3. Raising food safety issues

food safety issues is the factors involved in the potential threat caused by foods are inappropriate agricultural practices, poor hygiene at any stage of the food chain, lack of preventive controls during processing and preparation of the food, incorrect use of the chemical materials, contaminated raw materials, food and water and Cause of food safety issues: Bacteria and Viruses: Bacteria and viruses are the most common cause of food poisoning. The symptoms and severity of food poisoning vary, depending on which bacteria or virus has contaminated the food. Parasites: Parasites are organisms that derive nourishment and protection from other living organisms known as hosts.

#### **Food Safety, Quality and Consumer Protection**

The terms food safety and food quality can sometimes be confusing. Food safety refers to all those hazards, whether chronic or acute, that may make food injurious to the health of the consumer. It is not negotiable. Quality includes all other attributes that influence a product's value to the consumer. This includes negative attributes such as spoilage, contamination with filth, discoloration, off-odours and positive attributes such as the origin, colour, flavour, texture and processing method of the food. This distinction between safety and quality has implications for public policy and influences the nature and content of the food control system most suited to meet predetermined national objectives.

Food control is defined: 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 safety and quality requirements; and are honestly and accurately labelled as prescribed by law.

Confidence in the safety and integrity of the food supply is an important requirement for consumers. Foodborne disease outbreaks involving agents such

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as *Escherichia coli*, *Salmonella* and chemical contaminants highlight problems with food safety and increase public anxiety that modern farming systems, food processing and marketing do not provide adequate safeguards for public health. Factors which contribute to potential hazards in foods include improper agricultural practices; poor hygiene at all stages of the food chain; lack of preventive controls in food processing and preparation operations; misuse of chemicals; contaminated raw materials, ingredients and water; inadequate or improper storage, etc.

Specific concerns about food hazards have usually focused on:

- Microbiological hazards;
- Pesticide residues;
- Misuse of food additives;
- Chemical contaminants, including biological toxins; and
- Adulteration.

### 3.3.1. Raising food safety issues:-

What are some food safety issues?

The factors involved in the potential threat caused by foods are inappropriate agricultural practices, poor hygiene at any stage of the food chain, lack of preventive controls during processing and preparation of the food, incorrect use of the chemical materials, contaminated raw materials, food and water and

**Specific concerns about food hazards have usually focused on:**

- Chemical contaminants, including Myco toxins; and Pesticide residues;
- Microbiological hazards;
- ✓ Misuse of food additives;
- ✓ Substitution

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<b>Self-Check 3</b>	<b>Written Test</b>
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Name :-----ID ----- Date -----

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Test I. short answer questions

1. Define corrective actions (3 points)
2. Write two types of corrective action (2 points)
3. Write the different between food safety and food quality (5 points)
4. Mention at least two key principles of safe food raising (5 points)

Note: Satisfactory rating - 10 points      Unsatisfactory - below 7 Points  
You can ask you teacher for the copy of the correct answers

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## LG #17

## LO #3 - Comply with personal hygiene standards

### Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Meeting personal hygiene requirements
- Reporting health condition or illness
- Wearing appropriate clothing and footwear
- Organizing Movement around the workplace

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Meet personal hygiene requirements
- Report health condition or illness
- Wears appropriate clothing and footwear
- Organize Movement around the workplace

### Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If your performance is satisfactory proceed to the next learning guide,



## Information Sheet 1. Meeting personal hygiene requirements

### 1.1. Legislation governing personal hygiene

Food handlers and food businesses have legal obligations with regards to their personal health and hygiene. The Food Safety Standard states that food handlers must take all practicable measures to ensure his or her body, anything from his or her body, and anything he or she is wearing, does not contaminate food or surfaces likely to come into contact with food. This means that as a food handler, you must do everything in your power to make sure you are preparing food safely.

**Personal hygiene:** Good personal hygiene is essential for any food handler and minimizes the risk of food contamination. Most people carry harmful bacteria on their bodies and can unwittingly transport them to food. Touching your mouth, nose, hair or even your clothing can spread bacteria and cause contamination. Even healthy people are not immune and must practice good personal hygiene to minimize this risk. So what can you do to help prevent the spread of harm

#### **Personal hygiene including:-**

- Wear mouth musk, hat/hairnet beard snoods, gloves and overshoes that completely cover the hair.
- Do not comb your hair in a processing room or store room.
- Cover all cuts, burns, sores and abrasions with a clean, waterproof dressing.
- Do not smoke or eat in any room where there is open food because bacteria can be transferred from the mouth to the food.
- Do not spit in a processing room or storeroom.
- Wash hands and wrists thoroughly with soap after using the toilet, eating, smoking, coughing, blowing your nose, combing your hair, handling waste food, rubbish or cleaning chemicals.

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- Dry them on a clean towel before handling food again.
- Keep finger nails cut short.
- Do not wear perfume or nail varnish as these can contaminate products.
- Do not handle any food if you have sores, boils, septic spots, a bad cold, chest infection, sore throat or a stomach upset full bacteria

### **Hand washing**

Hands should be thoroughly washed after starting work, handling money, handling coffee and tea during storage and processing, sneezing or touching the face, and of course, visiting the toilet. One gram of feces can contain as many as one trillion bacterial microbes! That is why it is so important to wash your hands thoroughly after visiting the toilet and handling coffee and tea product such as green bean, roasted bean, plucked tea leaf, sem processed tea and parchment coffee. this sounds easy enough, but many food handlers do not understand the correct process for hand washing.

### **Personal Cleanliness (Hygiene).**

Food handlers shall maintain a high degree of personal cleanliness and shall wear work clothing, head covering, and footwear that are fit for purpose, clean and in good condition. Work wear shall provide adequate coverage to ensure that hair, , moustaches, perspiration, etc. cannot contaminate the product.

Where gloves are used for product contact, they shall be clean, food grade (like nitrile etc.) and in good condition.

Food handlers must wear clean and washable or disposable over clothing (including headgear, nose mask, shoe cover and where appropriate, neck-covering and/or beard snood)

The provision of clear information to all contractors of any hygiene requirements specific to the manufacturing area in which they will be working,

The implementation of 'return to work' procedures following illness or foreign holidays, particularly in relation to diseases that may have been contracted while away.

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All people entering food processing, storage, distribution and handling areas shall wash their hands with soap and potable water, followed by drying and sanitizing, where required such as:

- before starting work;
  - after handling chemicals;
  - after handling incompatible food products (for example, raw versus cooked or ready-to eat) or contaminated materials;
  - after breaks;
  - after coughing or sneezing or blowing their nose; and
  - after using toilet facilities.
  - after using telephone / cell phones,
  - after smoking in designated areas etc.
- Hand washing notices shall be posted at appropriate places



**Fig-18. Steps of Washing and sanitize**

### Utensils

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## Equipment

- Return tools and attachments to their proper place after use.
- Check product surfaces before starting equipment. Remove any foreign objects or dirt.
- Replace brushes that lose bristles.

## Personnel Practices

- Do not lean, sit or step on product surfaces.
- Do not handle ingredients or products with either cut or infected hands.
- Do not engage in horseplay.
- Keep hand contact with ingredients and product to a minimum

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<b>Self check 1</b>	<b>Written test</b>
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**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Choose the best answer (4 point)**

1. Which one of the following are Personnel Practices? ( 2 points)
  - A. Do not engage in horseplay
  - B. Do not lean, sit or step on product surfaces.
  - C. Do not handle ingredients or products with either cut or infected hands.
  - D. all

**Test II: Short Answer Questions**

1. Write three examples Personnel Practices? (6 points)
2. Write down Steps of hand washing? (7 points)

Note: Satisfactory rating - 10 points      Unsatisfactory - below 7 points

You can ask you teacher for the copy of the correct answers

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## Information sheet- 2. Reporting health condition or illness

### 2.1. Reporting health conditions and illness

Food handlers must report health problems to the manager of the establishment before working with food. If they become ill while working, they must immediately report their condition, and the food handler must stop working and see a doctor. It is important for food handlers to report their health problems to their manager because:

- Their illness could contaminate food;
- Their illness could cause financial loss to the business because of producing poison food.

The required reporting of Emergency Illnesses and Health Conditions by healthcare providers, which include healthcare facility managers, is done in accordance with the Department of public health's (DPH's) annual List of Reportable Diseases, Emergency Illnesses and Health Conditions in a format approved by the Commissioner.

Epicenter includes:

- Facility identifier
- Encrypted visit number
- Date and time of healthcare encounter
- Patient date of birth or age in years
- Patient gender
- Patient class and etc.

#### Reporting Health Status and Illness & Injury

- Coffee and tea product handlers of the manufacturing facility shall undergo a medical examination by a registered medical practitioner before joining for work

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and thereafter annually to ensure that they are free from any infectious or communicable diseases. A record of these examinations shall be maintained.

- The employees in manufacturing units shall be inoculated against the enteric group of diseases as per recommended schedule of the vaccine and records shall be maintained.
- Food handlers shall report the following conditions to the management for possible exclusion from coffee and tea processing product handling areas, visibly infected lesions, (boils, cuts or sores) and discharges from ear, eye or nose. Medical examination of a dairy and dairy product handler shall be carried out apart from the periodic medical examination, if clinically or epidemiologically indicated.
- In the manufacturing areas, personnel with open cuts, wounds or burns shall be required to cover them with suitable water-proof dressings before starting operations. Any lost dressing must be reported to supervision immediately. The dressings should preferably be brightly coloured and metal detectable

### **Illness**

- Doctor's certificate on hiring
- Inform your supervisor or human resource if you are ill with symptoms that could contaminate ingredients or products
- No medication allowed in factory  
Ensure that a clean bandage covers any open wounds

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<b>Self-check 2</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Short Answer Questions**

1. Write down at two foods borne disease caused by spoilage of contaminated food? (5 points)
2. Write down example of Symptoms related to food borne illness? (5 points)

*Note:* Satisfactory rating - 7 points Unsatisfactory - below 5 Points

You can ask you teacher for the copy of the correct answers.

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## Information sheet 3: Wearing appropriate clothing and footwear

### 3.1. Appropriate clothing and footwear

Appropriate clothing should be designed to ensure the body and clothing itself does not contaminate food or surfaces likely to come into contact with food.

Examples of clothing designed to prevent contamination by the body include:

- purpose designed overalls or uniforms,
- hair-nets,
- beard snoods,
- gloves and overshoes

#### 3.1.1. Making clothing and footwear

Dirty clothing is one of the leading causes of cross contamination in the kitchen as it can carry bacteria from one place to another. It is important that all clothing be laundered and stored correctly to prevent the spread of bacteria. Clothing must also be microbial clean, meaning that the microbes on the garment have been reduced to a safe level. Always use good quality cleaning products and be sure to store clean clothes in a clean, dry place, away from any possible sources of contamination. Many protective items such as gloves and hairnets are designed to be used once only, and must be disposed of after use and never re-used. Long hair should always be tied back and preferably contained using a hair net. Jewelers should also be kept to a minimum

#### **Wearing cloth, foot wear and Grooming**

- ✓ Personnel who work in, or enter into, areas where exposed products and/or materials are handled shall wear work clothing that is fit for purpose, clean and in good condition (e.g. free from rips, tears or fraying material).

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- ✓ Work wear shall not have buttons and outside pockets above waist level. iv. Work wear shall be laundered at predefined intervals.
- ✓ Work wear shall provide adequate coverage to ensure that hair, perspiration, etc. cannot contaminate the product.
- ✓ Hair, beards, and moustaches shall be protected (i.e. completely enclosed) by restraints, vii. Personal protective equipment, where required, shall be designed to prevent product contamination and maintained in hygienic condition.

### **Clothing**

- Everyone must wear pants and covered sleeves.
- Separate shoes (no open toes or high heels) are to be worn in the factory.
- Personal belongings and street clothing must be stored in locker rooms.

### **Headwear**

Let's start at the top. A lot of work on modern dairy farms is inside and wearing baseball caps or stocking caps does provide some protection from the elements. Given that we are beginning the cold winter months stocking caps will probably be the head protection of choice. Consider bright fluorescent yellow, orange or green stocking caps or hats to help with enhanced visibility of employees for safety considerations.

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**Fig 19 coffee washing station**

### **Eye Protection**

Eye protection is also important and safety goggles or glasses should be required by all employees. Employees often deal with many different chemicals or hazardous objects that have the potential to "propel" and could possibly end up in the eye. Additionally there are objects such as feed particles and dirt that could be blown into the eyes. There are many different types available in the market. However, if they are not comfortable and affordable they will not be purchased or worn.



**Fig-20. Coffee grinding**

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## Clothing



**Fig 21 coffee sorting and grading factory**

Dressing in layers is important on the coffee and tea processing. Employees and producers are often exposed to varied risks within their job. Clothing should be fairly tight fitting, free of tears or strings that can become entangled in PTO's or caught on equipment

### Footwear

Foot wear on coffee and tea farms is extremely important. Oftentimes, we talk about wearing leather boots and hard soles to protect our feet in case an parchment coffee depulper in storage steps on them or while operating equipment. However, leather may not provide the best protection if the primary job of the employee is dealing with a lot of moisture and chemicals, such as the grease and oil protective shoe. Rubber boots with non-skid sole, and some arch

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support are good choices, as they protect the foot from excess moisture and can be easily cleaned.



**Fig 22. Wear boots in coffee farm**

### **Gloves**

We often do not think about our hands, but on a coffee and tea processing lab, employees working in the coffee processing laboratory and farm should wear rubber gloves. The increased amount of moisture and chemical exposure in pre and harvesting area of the picking and plucking product and sanitation of the equipment will damage the skin. If employees are not working with chemicals, gloves that protect hands from the elements are ok. There are many styles, including cotton, leather, rubber, nylon, or a combination. Things to consider are fit, durability, protection from the hot or cold environment, and price



**Fig 23 coffee processing lab glove**

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<b>Self-check 3</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Short Answer Questions**

1. Write personal protective equipment? 5(points)
2. Write down at least two Wearing cloths and foot wear. (5 point)
3. Write the advantages of appropriate clothing and footwear? ( 5points)

Note: Satisfactory rating - 10 points      Unsatisfactory - below 7 points

You can ask you teacher for the copy of the correct answers

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## Information Sheet- 4 Organizing Movement around the workplace

### 4.1. Complying movement around the workplace

In your workplace you will be expected to comply with safe food handling practices as indicated by three possible sources:

- Legislation
- Enterprise policies and procedures :
- Internal safe food handling systems

#### Legislation

You must research the requirements of any legislation impacting on your workplace to determine the specifics of the legally imposed obligations you, personally, and the business where you work are under.

- ✓ Speak with management, the owner, your supervisor and/or more senior staff and enquire about what applies where you work
- ✓ Visit your local health/food safety authority in-person and ask them what applies and what obligations you are under

**Enterprise policies and procedures** : Policies and procedures will vary between businesses however all operations can be expected to have internal requirements reflecting their legislated obligations and addressing identified workplace food safety hazards. Potentially, food safety hazards exist in every food premises at every stage of food handling:

- Purchasing food for use in the premises
- Receiving goods from suppliers into the premises
- Food storage prior to preparation and/or service

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- Preparing of raw materials for sale/service and the processing coffee and tea (including sorting, cleaning, grading, drying, grinding, plucking, withering, rolling, fermentation, storing and packaging after it has been picking and plucking)
- Cleaning and sanitizing of food utensils, equipment, areas and food contact and preparation surfaces

**Organizing movement:** Success is a result of long-term planning and daily action. Good organization helps you gain control of your time so you can plan and complete the tasks needed to achieve your goals.

**There are eight organizational tips** that will help you reach your long-term goals at work.

**Focus on what's Important:** Remind yourself of your long-term goals and revise them when necessary. Set daily priorities to meet your goals. Keep photos of your family or inspirational pictures nearby.

**Make lists:** Make daily, weekly and monthly to-do lists of important tasks. Review your daily priorities at the beginning of each day.

**Manage your time well:** Schedule quiet time at work to accomplish tasks that need extra concentration. Do your most challenging work when your energy is at its highest; save less demanding work for other times. If you tend to procrastinate, focus on the sense of accomplishment you'll feel when the job is done. Use commute time to plan your day's activities.

**Use calendars and planners:** Check your work calendar daily to review your activities and avoid conflicts. Write down all commitments in pencil rather than trusting your memory. Use planning and scheduling forms and software to help you map out long-term projects.

**Delegate tasks:** Assign tasks to others when the task is not on your level of expertise. Provide adequate training and feedback on assigned projects.

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**Manage your mail and phone calls:** Sort incoming mail into categories by priority or action. Use voice mail to screen phone calls.

**Reduce clutter:** Clear your workspace. Keep only the most critical items and information you need daily on the top of your desk. Archive resource materials you rarely use. Toss out duplicate information and materials that will soon be outdated. Leave blank space on bookshelves for growth.

**Stay organized:** Organize files by priority and keep the most important ones within arm's reach. Spend 15 minutes at the end of each day clearing your desk and 15 minutes the next morning planning for your day's activities. Review items one through seven on this list.

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<b>Self-check 4</b>	<b>Written test</b>
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Name..... ID..... Date.....

**Directions:** Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

**Test I: Short Answer Questions**

1. Write at least three the possible sources of comply with safe food handling practices? (5 points)
2. Write down at least five organizational tips that will help you reach your Long-term goals at work. (5 points)

Note: Satisfactory rating - 8 points Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

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List of Reference Materials
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- Coffee quality and safety manual  
Agnihotri, N.P. (1999). Pesticide Safety Evaluation and Monitoring. IARI. New Delhi. P 135.
- Arunachalam, K. (1995). Tea Processing. A Hand Book on Indian Tea. Arunachalam Associates. Pondicherry. P 194.
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- Carson. Anna H962). Silent Sorina. Boston. . -. MA: ~ou~htbn ~iffli'n'combany.
- Codex Alimentarius Commission, (1996). FAO-WHO Food Standards, Rome, Italy: FAO.
- Deming, W.E. (1951). Elementary Principles of the Statistical Control of Quality, Nippon Kogaku Gijutsu Rernmei JUSE, Tokyo.

WEB ADDRESSES

- <http://www.extension.iastate.edu/foodsafety/Lesson/homepage.html>
- Institute of Food Technologist
- <http://www.iftsa.org/outreach/so/labs/wa/>
- National Restaurant Association Education Foundation. Serve Safe.4th ed.
- [http://www.iitb.ac.in/safety/sites/default/files/Machine%20Safety\\_0\\_0.pdf](http://www.iitb.ac.in/safety/sites/default/files/Machine%20Safety_0_0.pdf)
- <https://www.fda.gov/media/109408/download>
- [https://www.flexiblemachining.com/pdf/quality\\_policy.pdf](https://www.flexiblemachining.com/pdf/quality_policy.pdf)
- ([http://www.iufost.org/reports\\_resources/bulletins/](http://www.iufost.org/reports_resources/bulletins/)).

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