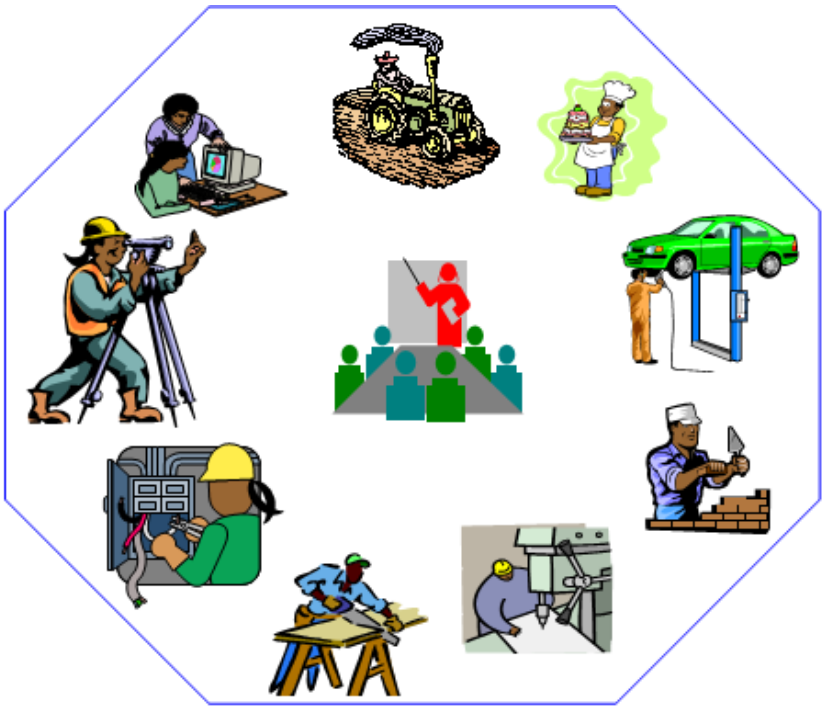
Cereal Processing
Level III



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Module Title: Monitoring the Implementation of Food Quality and Safety Programs

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Table of content

LG #38	LO #1- Ensure others in the work area are able to meet quality and food safety requirements

Instruction sheet

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

- Making and fitting available hazard control, clothing and equipment
- Personal hygiene requirements
- Making and communicating information on food safety/ quality responsibilities and procedures
- Information about hazards and outcomes of risk assessment
- Making risk control procedure and communicating to others
- Food safety hazards and quality control measures in the work area
- Mentoring and coaching individuals/groups to implement quality and safe food handling procedures
- Identifying and addressing training needs within level of responsibility

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:

- Make and fitting available hazard control, clothing and equipment
- Personal hygiene requirements
- Make and communicating information on food safety/ quality responsibilities and procedures
- Information about hazards and outcomes of risk assessment
- Make risk control procedure and communicating to others
- Food safety hazards and quality control measures in the work area
- Mentore and coach individuals/groups to implement quality and safe food handling procedures

- Identify and address training needs within level of responsibility

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
4. Accomplish the self-checks
5. Perform operation sheets
6. Do the “LAP test”

Information Sheet 1- Making and fitting available hazard control, clothing and equipment

1.1. Introduction

Definitions and/or description of the job

Mixes and bakes ingredients according to recipes to produce breads, pastries, and other baked goods; measures flour, sugar, shortening, and other ingredients to prepare batters, dough, fillings, and icings, using scale and graduated containers; dumps ingredients into mixing-machine bowl or steam kettle to mix or cook ingredients according to specifications; rolls, cuts, and shapes dough to form sweet rolls, pie-crust, tarts, cookies, and related products preparatory to baking; places dough in pans, molds, or on sheets and bakes in oven or on grill; observes color of products being baked and turns thermostat or other controls to adjust oven temperature; applies glaze, icing, or other topping to baked goods, using spatula or brush; may specialize in baking one type of product, such as breads, rolls, pies, or cakes; may decorate cakes; may develop new recipes for cakes and icings.

Related and specific occupations

Baker apprentice; baker helper; baker, laboratory; bakery supervisor; bakery worker; bakery worker, conveyor line; batter mixer; batter scaler; bench-hand; blender; broth mixer; cake decorator; cake-tester; chocolate temperer; cracker-and-cookie machine operator; cracker sprayer; decorator; dessert-cup-machine-feeder; depositing-machine operator; dividing-machine operator; dough-brake-machine operator; dough mixer; dough-mixer operator; doughnut-maker; doughnut-machine operator; enrobing-machine operator; filling-machine-tender; grain-wafer-machine-operator; icer, hand; icer, machine; icing mixer; ingredient-scaler; laborer, pie bakery; oven operator, automatic; oven tender; pan greaser, machine; pie maker, machine; pretzel cooker; pretzel-twisting-machine operator; pretzel twister quality-control inspector; racker; slicing-machine operator; sweetgoods-machine operator; trolley operator; unleavened-dough mixer; wafer-machine, operator.

Tasks

Baking; cooking; cooling; contacting (customers); cutting; decorating; developing; dividing; dumping; fermenting; handling (cash); measuring; mixing and remixing; observing; preparing; proofing; rolling; shaping; slicing; wrapping

Primary equipment used

Automatic flour hopper; baking pans; bowls; broth feeder; broth fermentation tank; broth heat exchanger; broth reservoir tank; brushes; cutting knives; dough pump; flour feeder; flour sifter; graduate container; grills; mixing-machine; molds; oven ; oxidation solution feeder; oxidation solution tank; panner; pans; pre-mixer; roller; rounder; scales; shaper; sheeter molder; shortening-blending kettle; shortening feeder; shortening-holding kettle; spatula; steam kettle

Workplaces where the occupation is common

Biscuit making; bread producing; cake making; confectionery; cracker making; pastry making; sweet-goods making; wafer making

1.2. Personal Protective Equipment (PPE)

Personal protective equipment, commonly referred to as PPE, is used as the last line of protection for workers against hazards or for temporary protection until more effective hazard control techniques can be used. The PPE used will depend on the work environment, the work conditions, and the process being performed. It is also important to remember that wearing the right PPE is important. Each piece of PPE has a specific use and may be made of specialized materials appropriate for one use, but not appropriate for another. PPE does not reduce the workplace hazard nor does it guarantee permanent or total protection for the wearer. Simply having it available is not enough. In order to ensure the required level of protection personal protective equipment must be:

- Selected considering the type of hazard and the degree of protection required.
- Useable in the presence of other workplace hazards.
- Used by workers that is trained in proper use and fit of the PPE.
- Properly stored and maintained.
- Discarded and replaced if it is found to be defective.

1. Eye and Face Protection

Selecting the most suitable eye and face protection should take into consideration the following elements:

- Ability to protect against specific workplace hazards
- Should fit properly and be reasonably comfortable to wear
- Should provide unrestricted vision and movement
- Should be durable and cleanable
- Should allow unrestricted functioning of any other required PPE

2. Foot Protection

Potential hazards which may lead to foot and leg injuries include falling or rolling objects, crushing or penetrating materials, hot, corrosive or poisonous substances, electrical hazards, static electricity, or slippery surfaces.

Different footwear protects in different ways. Check the product's labeling or consult the manufacturer to make sure the footwear will protect the user from the hazards they face. Foot and leg protection choices include the following:

- Safety-toed shoes or boots protect against falling, crushing or rolling hazards. Safety-toed footwear must meet the minimum compression and impact performance standards or provide equivalent protection.
- Some safety shoes may be designed to be electrically conductive to prevent the buildup of static electricity in areas with the potential for explosive atmospheres or nonconductive to protect workers from workplace electrical hazards.
- Metatarsal guards protect the instep area from impact and compression. Made of aluminum, steel, fiber or plastic, these guards may be strapped to the outside of regular work shoes.
- Toe guards fit over the toes of regular shoes to protect the toes from impact and compression hazards. They may be made of steel, aluminum, or plastic.
- Rubber overshoes are used for concrete work and areas where flooding is a concern
- Shoes with slip-resistant soles are required for certain departments and should be used in areas where slips and falls on wet floors are most likely.

- Studded treads and overshoes should be used when employees must work on ice or snow-covered walking surfaces.
- Leggings protect the lower legs and feet from heat hazards such as molten metal or welding sparks. Safety snaps allow leggings to be removed quickly.

3. Hand and Arm Protection

Potential hazards to hands and arms include skin absorption of harmful substances, chemical or thermal burns, electrical dangers, bruises, abrasions, cuts, punctures, fractures or amputations. Protective equipment includes gloves, finger guards and arm coverings.

a. Types of Protective Gloves

There are many types of gloves available today to protect against a wide variety of hazards. The nature of the hazard and the operation involved will affect the selection of gloves. The variety of potential occupational hand injuries makes selecting the right pair of gloves challenging. In general, gloves fall into the following four categories:

1. Leather, Canvas or Metal Mesh Gloves: These types of gloves protect against cuts, burns and punctures.
2. Fabric and Coated Fabric Gloves: These types of gloves are made of cotton or other fabric. They generally protect against dirt, chafing and abrasions.
3. Insulating rubber gloves: These gloves are used for protection against electrical hazards.
4. Chemical and liquid resistant gloves: When working with chemicals with a high acute toxicity, working with corrosive materials in high concentrations, handling chemicals for extended periods of time or immersing all or part of a hand into a chemical, the appropriate glove material should be selected, based on chemical compatibility. The following table includes major glove types and their general uses. This list is not exhaustive. For more information on chemical resistant glove selection, see PPE for Chemical Hazards or the Safety Data Sheet for a particular substance **(IND CRP3 M10 LO 1 LG 38 (5.1).**

b. Other Considerations

There are several factors besides glove material to consider when selecting the appropriate glove. The amount of dexterity needed to perform a particular manipulation must be weighed against the glove material recommended for maximum chemical resistance. In some cases, particularly when working with delicate objects where fine dexterity is crucial, a bulky glove may actually be more of a hazard.

- Dexterity: Where fine dexterity is needed, consider double gloving with a less compatible material, immediately removing and replacing the outer glove if there are any signs of contamination. In some cases, such as when wearing Silver Shield gloves, it may be possible to wear a tight-fitting glove over the loose glove to increase the overall dexterity.
- Glove thickness, usually measured in mils or gauge, is another consideration. A 10-gauge glove is equivalent to 10 mils or 0.01 inches. Thinner, lighter gloves offer better touch sensitivity and flexibility, but may provide shorter breakthrough times. Generally, doubling the thickness of the glove quadruples the breakthrough time.
- Glove length should be chosen based on the depth to which the arm will be immersed or where chemical splash is likely. Gloves longer than 14 inches provide extra protection against splash or immersion.
- Glove size may also be important. One size does not fit all. Gloves which are too tight tend to cause fatigue, while gloves which are too loose will have loose finger ends which make work more difficult. The circumference of the hand, measured in inches, is roughly equivalent to the reported glove size. Glove color, cuff design, and lining should also be considered for some tasks.

c. Glove Inspection, Use and Care

All gloves should be inspected for signs of degradation or puncture before use. Test for pinholes by blowing or trapping air inside and rolling them out. Do not fill them with water, as this makes the gloves uncomfortable and may make it more difficult to detect a leak when wearing the glove. Disposable gloves should be changed when there is any sign of contamination. Reusable gloves should be washed frequently if used for an extended period of time.

While wearing gloves, be careful not to handle anything but the materials involved in the procedure. Touching equipment, phones, wastebaskets or other surfaces may cause contamination. Be aware of touching the face, hair, and clothing as well.

Before removing them, wash the outside of the glove. To avoid accidental skin exposure, remove the first glove by grasping the cuff and peeling the glove off the hand so that the glove is inside out. Repeat this process with the second hand, touching the inside of the glove cuff, rather than the outside. Wash hands immediately with soap and water. Follow the manufacturer's instructions for washing and caring for reusable gloves.

4. Head Protection

a) Hard Hats

Hard hats can protect employees from impact and penetration hazards as well as from electrical shock and burn hazards.

Hard hats are divided into two types and three industrial classes:

- Type I hard hats are intended to reduce the force of impact resulting from a blow only to the top of the head. This form of impact, for example, may result from a hammer or nail gun falling from above.
- Type II hard hats are intended to reduce the force of lateral impact resulting from a blow which may be received off-center, from the side, or to the top of the head. This form of impact, for example, may result from contact with the sharp corner of a side beam.

Unlike hard hats, bump caps do not offer protection against falling or flying objects. However, bump caps provide excellent protection against accidental impact with fixed objects, such as exposed pipes or beams. They should be worn when working in areas with low overhead hazards.

b) Care and Storage

Periodic cleaning and inspection will extend the useful life of protective headgear. A daily inspection of the hard hat shell, suspension system and other accessories for holes, cracks, tears or other damage that might compromise the protective value of the hat is essential. Paints, paint thinners and some cleaning agents can weaken the shells of hard hats and may eliminate electrical resistance. Do not store protective headgear in direct sunlight, as UV light and extreme heat can cause damage.

Always replace a hard hat if it sustains an impact, even if damage is not noticeable. Suspension systems can be replaced when damaged or when excessive wear is noted.

5. Protective Clothing

There are many varieties of protective clothing available for specific hazards. Examples of the body/skin protection include laboratory coats, coveralls, vests, jackets, aprons, surgical gowns and full body suits. Uniforms, caps, or other clothing worn solely to identify a person as an employee would not be considered PPE.

Hats, long sleeves, long pants or sunscreen, while not defined as PPE, should be considered for protection against heat, cold, sun or insect exposure. Also included in this category may be the use of a personal fall arrest system or body positioning system when working on elevated surfaces.

6. Hearing Protection

When an employee's noise exposure cannot be reduced to safe levels, then hearing protection must be worn. There are several options for hearing protection available that include ear plugs, ear muffs, and hearing bands, which are also known as, canal caps. Each should be carefully considered for the noise reduction they will provide, as well as for comfort and fit.

a. Typical Hearing Protection Devices

- **Pre-molded Ear Plugs** - Come in different sizes and shapes to fit different sized ear canals. They have virtually no expansion or contraction, so obtaining a good seal with the ear canal may be challenging.
- **Formable or Foam Ear Plugs** - When placed in the ear correctly, this type of ear plug, will expand to fill the ear canal and seal against the walls. This expansion allows foam ear plugs to fit ear canals of different sizes.
- **Ear Muffs** - These devices fit against the head and enclose the entire perimeter of the external ear. The inside of the muff cup is lined with acoustic foam, which reduces noise. Their effectiveness depends on how tight the seal is between the foam cushion and the head.
- **Hearing Bands or Canal Caps** - These devices cover the ear canal at its opening. They do not provide as much of a seal inside the ear canal and generally provide less protection than ear muffs or plugs, so they are typically not recommended.

7. Respiratory Protection

For information on the use of respiratory protection.

Respirators should only be worn where other control measures are not reasonably practicable or do not provide adequate control. Some activities are known to cause high short-term exposures (e.g. cleaning up large spillages and maintenance activities) and respirators should be worn for these activities.

All respirators need to be properly selected for the individual wearer. The selection process should take account of the dust levels, the physical nature and duration of the work and the facial characteristics of the wearer. For tight-fitting respirators (such as disposable masks, half masks and full-face masks), the initial selection should include a face-fit test to ensure the wearer has the correct device. The test must be performed by a competent person using the appropriate test equipment. Test results should be recorded.

Figure 1: Use of protective clothing and RPE for emptying vacuum cleaner drum

Self-check 1	Written test

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

Test I Short Answer Questions

1. List some of PPE?(10pts)

Test II Write true if the statement is correct and false if statement is incorrect

1. Potential hazards to hands and arms include skin absorption of harmful substances, chemical or thermal burns, electrical dangers, bruises, abrasions, cuts, punctures, fractures or amputations. (2pts)
2. Protective equipment includes gloves, finger guards and arm coverings. (2pts)
3. Respirators should only be worn where other control measures are not reasonably practicable or do not provide adequate control. (2pts)

Note: **Satisfactory rating - 14 points** **Unsatisfactory - below 14 points**

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

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Test I

1. _____

_____

Test II

1. _____
2. _____
3. _____

Information Sheet 2- Personal hygiene requirements

2.1. Health Status

Food handlers shall undergo a medical examination by a registered medical practitioner annually to ensure that they are free from any infectious & other communicable diseases. A record of these examinations shall be maintained. Food handlers shall be inoculated against the enteric group of diseases as per the recommended schedule of the vaccine & records shall be maintained.

Medical examination to be concluded includes

- Physical examination
- Eye test
- Skin examination
- Compliance with schedule of vaccine to be inoculated against enteric group of disease
  - ✓ Vaccine to be inoculated against enteric group of disease, shall be decided by the medical practitioner according to the list as declared by the municipal corporation of that area
- Any test required to confirm any communicable or infectious disease which the person suspected to be suffering from, on clinical examination

2.2. Illness & injury

Food handlers suffering from of a disease shall not be allowed to handle food or material which comes in contact with food. Employees shall report the following conditions to the supervisor for possible exclusion from food handling areas –

- Jaundice
- Diarrhoe
- Vomiting
- Fever
- Sore throat with fever
- Visibly infected lesions
- Boils
- Cuts or sores & discharge from ears
- Eyes or nose.

Medical examination of a food handler shall be carried out apart from the periodic medical examination, if clinically or epidemiologically indicated. Personnel with open cuts, wounds or burns shall be required to cover them with suitably water proof dressings before starting operation. Any lost dressing must be reported to supervisor immediately. The dressing should preferably be of bright color & metal detectable.

Personal cleanliness: Food handlers shall maintain high degree of personal hygiene. They shall wear work clothing, head covering & footwear that is fit for the purpose, clean & in good condition (free from tears, rips or fraying material).

Work wear shall provide adequate coverage to ensure that hair, beard, perspiration etc. cannot contaminate the product. Work wear should be free from buttons, with outside pockets above waist level. Zips or press stud fastenings are acceptable. They should be laundered to standards and at intervals suitable for the intended use of the garments. Head cover should be worn first & footwear at the last, followed by sanitization.

Protective clothing mandated for the food production areas shall not be used for any other purpose. Protective clothing includes – hair net, moustache net, glasses, ear plugs, gloves, aprons, foot wear. The aprons & dresses of food handlers kept in an ozonized cabinet or UV induced cabinets when handling sensitive products like pies, cakes.

Where gloves are used for product contact, they shall be clean & in good condition. Working without gloves can be done provided there are necessary controls on periodic usage of disinfectants at work section & nature of the product being handled.

Hair shall be kept neatly tied & finger nails shall be kept trimmed. The food handlers shall prohibit the use of nail polish, false nails and false eyelashes; carrying of writing implements behind the ears. No strong perfume/lotion should be applied.

Shoes worn outside food handling area shall not be allowed to enter food handling area.

Shoes for use in processing areas shall be fully enclosed and made from non-absorbent materials. Street shoes either shall be changed or covered using foot cover.

All people entering the food handling area shall wash their hands. Hand-washing notices should be posted in appropriate areas. Hands shall also be washed after

- Handling non - food chemicals.
- Handling incompatible food products (such as raw versus cooked food) or contaminated material.
- Breaks
- Coughing or sneezing or blowing their nose.
- Using toilet facilities.
- Using cellphones
- Smoking

As a good practice, cell phones should be used as minimum as possible (especially in high risk areas) as they are also a source of contamination. Food handler should not handle soiled currency notes/cards to avoid contamination.

Food handlers shall pass through air curtain to remove any lint or hair while leaving the changing room.

2.3. Personal Behavior

All food handlers shall follow a good personal behavior. Any behavior or unhygienic practice which could result in contamination of food shall be prohibited in food handling areas. It includes

- Smoking
- Chewing
- Eating
- Unprotected sneezing or coughing
- Spitting

Food handlers shall avoid certain hand habits such as scratching nose, running fingers through hair, rubbing eyes, ears & mouth, scratching beard or part of bodies. When unavoidable, hands shall be effectively washed before resuming work after such actions. Personal effect such as jeweler, watch, pins or other items should not be worn

or brought into food handling areas if they pose threat to the safety and suitability of food.

Food contact tool & equipment shall not be kept in personal lockers. Processing equipment (for example, refrigerators and freezers) should not be used for personal storage (such as storing lunches).

2.4. Visitors

Visitors shall wear protective clothing, footwear and adhere to all the personal hygiene requirements as mentioned above while entering food handling areas.

Figure 2: Personal Hygiene

Self-Check – 2	Written test

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

Test I: Short Answer Questions (2pts for each)

1. Personal behavior includes
   A. Smoking
   B. Chewing
   C. Eating
   D. Unprotected sneezing or coughing
   E. Spitting
   F. All of the above

2. Hands shall also be washed after
   A. Handling non - food chemicals.
   B. Handling incompatible food products or contaminated material.
   C. Breaks or Smoking
   D. Coughing or sneezing or blowing their nose.
   E. Using toilet facilities or cellphones
   F. All of the above

3. Medical examination to be concluded includes
   A. Physical examination
   B. Eye test
   C. Skin examination
   D. Compliance with schedule of vaccine to be inoculated against enteric group of disease
   E. Any test required to confirm any communicable or infectious disease which the person suspected to be suffering from, on clinical examination.
   F. All of the above

Test II: Write true if the statement is correct and false if the statement is incorrect

1. Food handlers shall undergo a medical examination by a registered medical practitioner annually to ensure that they are free from any infectious & other communicable diseases. (2pts)
2. Food handlers suffering from of a disease shall not be allowed to handle food or material which comes in contact with food. (2pts)
3. Visitors shall wear protective clothing, footwear and adhere to all the personal hygiene requirements as mentioned above while entering food handling areas. (2pts)
4. Personal effect such as jewellery, watch, pins or other items should not be worn or brought into food handling areas if they pose threat to the safety and suitability of food. (2pts)

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

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

Score = _____

Rating: _____

Answer Sheet

Name: _____ Date: _____

Test I

1. _____
2. _____
3. _____

Test II

1. _____
2. _____
3. _____
4. _____

Information Sheet 3- Making and communicating information on food safety/ quality responsibilities and procedures

3.1 Introduction

One of your roles as a supervisor is to supervise the day-to-day implementation of the food safety program in your workplace. To do this it is essential that you have good communication skills. Being a supervisor also involves supporting others to implement the requirements of the food safety procedures.

Communicating the information you have learnt about the food safety program is about involving people in what should happen. Sometimes communication in a workplace happens in a haphazard way and this may go on until staff, manager, customers or suppliers complain about something that has happened that could have been prevented!

Don't just let communication happen by chance. Set up processes so that staff are aware how to get and receive the information they need.

3.2 Communicate information about the food safety program

Taking a systematic approach to managing food safety

A food safety program systematically identifies the food safety hazards that occur in all food handling operations of the food business. It identifies where and how each hazard can be controlled, describes how these controls are to be monitored, the corrective action required if control conditions are not met, and information to be recorded.

The food safety program must comply with relevant national, state and industry legislation and regulations. Every person involved in handling of food has a legal responsibility to ensure that it is handled according to the appropriate Acts, regulations and standards. Failure to follow the Food Act or its associated regulations and standards can result in fines or in extreme cases — jail sentences.

Self-Check – 3	Written test

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

Test I: Short Answer Questions

1. Taking a systematic approach to managing food safety?(3pts)

Test II: write true if the statement is correct and false if the statement is incorrect

1. One of your roles as a supervisor is to supervise the day-to-day implementation of the food safety program in your workplace. (2pts)
2. A food safety program systematically identifies the food safety hazards that occur in some food handling operations of the food business. (2pts)
3. Every person involved in handling of food has a legal responsibility to ensure that it is handled according to the appropriate Acts, regulations and standards. (2pts)

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

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

Score = _____

Rating: _____

Answer Sheet

Name: _____ Date: _____

Test I

1. _____

Test II

1. _____
2. _____
3. _____

Information Sheet 4- Information about hazards and outcomes of risk assessment

4.1 Information about hazards and outcomes of risk assessment

Major Critical Points in processing are:

- Issue of raw material from store to processing
- Material preparation
- Processing
- Premixing
- Mixing
- Forming
- Baking
- Cooling
- Sandwiching/allow/center filled application
- Enrobing
- Slicing/packing of products

1. Issue of raw material from store to processing

- Only accepted material to be issued on First-Expiry-First-Out (FEFO) basis for raw materials and First-In-First-Out (FIFO) for packaging materials.
- Take out ready-to-eat products containing lightly-cooked or uncooked eggs (e.g. butter, cream, icing, mayonnaise, mousse) what is necessary from the chiller are supplied in small batches.
- Wherever thawing before use is a requirement (e.g. for compressed yeast, butter which are stored at lower temperature condition), required quantity of material should be thawed and issued at a time to production. In case if thawed material cannot be consumed it shall be stored back in Deep Freezer.
- Care to be taken to prevent deterioration of the material due to long storage under high temperature in processing area.

2. Material preparation

- Sieve all incoming ingredients, intermediates and add backs (if any) through appropriate standard mesh. If sieving is not feasible for example, oat flakes, viscous liquids, manual sorting and visual inspection shall be done.
- Keep sieved ingredients/additives in clean and dedicated containers/jars with proper identification, suitably above the floor.
- The recommended practices while handling eggs are:
  - ✓ Eggs are to be washed or cleaned before use to avoid any food cross contamination.
  - ✓ Pool required number of eggs just before use and break them (also known as 'pooling').
  - ✓ Raw eggs are to be prepared away from other food, especially cooked/ready-to-eat food to avoid cross-contamination.

3. Processing

- Use equipment namely, storage bins, sifters, dough mixers, rounders, dough dividers, racks, slicers, proofing equipment, oven, rollers, conveyors or utensils like baking pans, pans, bowls, trays, spoons, spatulas, beaters, which are clean, free from contaminants, evidence of insect or rodent infestation and maintained in good repair.
- Check the equipment for smooth edge, devoid of spot welding and any paint flaking.
- Maintain temperature and humidity in proofing equipment, ovens and cooling area.
- Maintain supply of filtered air to the processing area.
- Use a fine dust mask for silo cleaning and for other heavily dust-laden activities.
- Use heat protection gloves while operating ovens.
- Inspection cleaning ports on flour conveyor systems shall be accessible, easy to open and clean.
- Conveyor systems shall be free from loose threads and pest activity.
- Working area as well as the outside premises shall be free from spilled powders, liquids, trash etc. which may attract and harbor pests, rodents and micro-organisms.

4. Premixing

- Sieve flour through minimum BSS 30 mesh supplemented with a magnetic grill. Regularly clean the sieve.
- Reject consignment of flour if weevils are observed.
- Introduce a periodic cleaning mechanism to prevent cross contamination and dust generation and to ensure safe collection of unwanted materials like dust, dirt, foreign objects if any.
- Use good practices such as vacuum cleaning, collection of debris through sodium hypochlorite.
- Pass sugar through magnetic grill before use. Ensure periodic cleaning of the magnetic grill.
- Use egg trays free from dirt or pests
- Collect broken egg shells in plastic bags and dispose off at regular intervals. Do not reuse such bag.

5. Mixing

- Clean and dry mixing room without any spillage.
- All mixing utensils are free from grease and old batter.
- Washing of mixing bowls, beaters and scrappers with hot water at least once in 24 hours.
- Place mixers, bowls and tilts above the floor level for easy access while cleaning which otherwise becomes a neglected area and a breeding place/ infestation by pests.
- Use strainer for adding egg whisk while mixing. Clean the strainer with hot water at least once in each shift followed by swabbing with sodium hypochlorite solution. Keep the strainer dipped in 500 ppm sodium hypochlorite solution, when not in use.
- Clean the Mixing Room floor with hot water followed by mopping with sodium hypochlorite solution or other disinfectants and floor cleaners.

6. Forming

- Capture wet weight at pre-defined internal frequency to avoid underweight and weight variations. However, it is preferable to check the biscuit/ cookie weight at

oven end rather the forming, as this creates empty band patches which lead to edge dark biscuit/ cookies, a reason for consumer non-acceptance.

- Ensure thorough cleaning, verification and maintaining record wherever milk spray units or nut or sugar sprinkling units are used in forming section.

7. Baking

- Periodically cleaning the baking room, followed by mopping with 500 ppm sodium hypochlorite solution or other appropriate floor odorless cleaners and maintaining it dry.
- Maintain Ozonizer discharge in the baking room at 5 g per hour level, wherever necessitated.
- Keep the reference samples of finished product in daylight colour cabinets with white background, to evaluate the product for its colour

8. Cooling

- Biscuits and bar cakes are to be transferred immediately after baking to the ambient room.
- Maintaining positive pressure in ambient room.
- Maintaining Ozonizer discharge in ambient room at 2 g per hour level, wherever required.
- Always putting on UV lights during cooling of cakes.
- Restricting entry of personnel entry in this room when the UV light is on.
- Passing the product through metal detector.
- Cleaning the room, mopping of floor with 500 ppm sodium hypochlorite solution or other appropriate sanitizers at least once in each shift and drying.
- Checking the cooling canvas on daily basis for its physical conditions (like threads). Stitching torn canvases properly without keeping loose threads behind.
- Cleaning of supporting rollers, scrapper knife and catch trays as and when required.
- Use of disinfectant solution by workmen for disinfecting their hands before unloading cakes.
- Cakes/Pies can also be cooled under air conditioning provided with HEPA filtered air.

- Forced cooling at slab cooling room
  - ✓ Cleaning of the room and keeping it dry.
  - ✓ Weekly sanitizing the room with 500 ppm sodium hypochlorite solution.
  - ✓ Always putting on UV lights during cooling of cakes.
  - ✓ Restricting entry of personnel entry in this room when the UV light is on.
  - ✓ Maintaining room temperature at 8-10^{0}C with appropriate recording.

9. Sandwiching/mallow/center filled application

- Weigh raw materials for crème preparation in quantities as mentioned in the recipe.
- Sieve specific ingredients of crème and/or mallow and pass through magnetic grills.
- Pass sandwich pass through metal detector to avoid any presence of metal in the product.

10. Enrobing

- Wherever pie enrobing is done, monitoring the enrobed cake weight.
- Passing the enrobed cake through cooling tunnel at a pre-defined temperature.
- To ensure surface sanitation, then passing the enrobed cake through metal detector followed by UV light irradiation.

11. Slicing/packing of products

- Cooling baked products in clean cooling chambers and tunnels.
- Cooling bread by passing cool humidified air over the product.
- Clearing crumbles that are left after slicing the products.
- Spraying potassium sorbate uniformly on top surface of naked bar cakes before packing, if needed.
- Filtering the air of sorbate spray line through an Ultra Filtration Unit periodically checked and changed.
- Using clean food grade packaging to pack the products. Exposing of PVC trays, cakes and wrappers to UV light preferably before packing.

- Sterilizing slicer blades and conveyor belts with isopropyl alcohol at least 3 times in each shift or as and when required.
- Maintain temperature of cake slabs at the time of packing out from the slab cooling room within the range of 14 – 19 ^{0}C.
- Keeping control samples in a separate designated place. This is required to retest the samples during any special cases like customer complaints.

12. Air Handling Unit (wherever required)

- Maintaining the air handling unit inside the pre-slab and oven room. Positive pressure is maintained in the order pre-slab room > oven room.
- Air is blown inside the oven and pre-slab room through sets of micro filters – first through 20 micron, then through 10 micron and finally through 5 micron filter for the oven room.
- Additionally the air is passed through HEPA filter for pre-slab room.
- Cleaning of 20 and 10 micron filters by water and 5 micron filter by forced air at least once in a fortnight or as required.
- HEPA filter is changed when the same is choked or non-functional.

Self-Check – 4	**Written test**

Directions: Answer all the questions listed below.

Test : Choose the best answer

1. Major Critical Points in processing are
   A. Issue of raw material from store to processing
   B. Material preparation
   C. Processing, premixing, mixing, forming, baking and cooling
   D. Sandwiching/allow/center filled application
   E. Enrobing and slicing/packing of products
   F. All of the above

2. Which one of the following is issue of raw material from store to processing?

A. Only accepted material to be issued on First-Expiry-First-Out (FEFO) basis for raw materials and First-In-First-Out (FIFO) for packaging materials.
B. Take out ready-to-eat products containing lightly-cooked or uncooked eggs (e.g. butter, cream, icing, mayonnaise, mousse) what is necessary from the chiller are supplied in small batches.
C. Wherever thawing before use is a requirement, required quantity of material should be thawed and issued at a time to production.
D. Care to be taken to prevent deterioration of the material due to long storage under high temperature in processing area.
E. All of the above
F. None of the above

3. Which one of the following is true about raw material preparation?
   A. Sieve all incoming ingredients, intermediates and add backs (if any) through appropriate standard mesh.
   B. Keep sieved ingredients/additives in clean and dedicated containers/jars with proper identification, suitably above the floor.
   C. Eggs are to be washed or cleaned before use
   D. Pool required number of eggs just before use and break them.
   E. Raw eggs are to be prepared away from other food, especially cooked/ready-to-eat food to avoid cross-contamination.
   F. All of the above

4. Which one of the following is true about processing?
   A. Maintain temperature and humidity in proofing equipment, ovens and cooling area.
   B. Maintain supply of filtered air to the processing area.
   C. Use a fine dust mask for silo cleaning and for other heavily dust-laden activities.
   D. Use heat protection gloves while operating ovens.
   E. Inspection cleaning ports on flour conveyor systems shall be accessible, easy to open and clean.
   F. All of the above

5. Which one of the following is differ from other?
   A. Storage bins, sifters, dough mixers
   B. Rounders, dough dividers, racks, slicers
   C. Dividing, slicing, proofing
   D. Proofing equipment, oven, rollers
   E. Conveyors or utensils like baking pans, pans, bowls, trays, spoons, spatulas beaters
   F. None of the above

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

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

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Test

1. _____
2. _____
3. _____

Information Sheet 5- Making risk control procedure and communicating to others

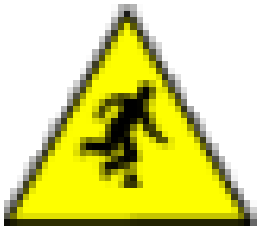
5.1. Making risk control procedure and communicating to others

A worker who mixes flour, salt, yeasts, spices, sugar, and other ingredients to prepare dough, batter, fillings, etc., which are then formed into bread, cakes, rolls, etc., and baked in ovens.

Risk of the job

- Bakers may suffer from allergies (mainly of the respiratory system and of the skin) caused by substances used in their work.
- Bakers work with hot equipment and sharp tools, which may cause such accidents as burns, cuts, etc.
- Bakers often handle heavy loads (e.g., flour bags). This may cause back pains and trauma.
- Bakers work in heat and, sometimes, at night or other irregular hours. This may cause fatigue, overexertion, and other harmful effects.

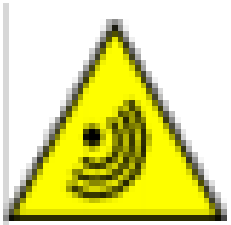
Hazards related to this job



- **Accident hazards**
  - ✓ Cuts and punctures, esp. while working with sharp tools
  - ✓ Falls of workers because of incorrect use of ladders, wet and slippery floors and unguarded scaffolds
  - ✓ Falls of bags of flour and sugar during transportation

- ✓ Danger of falls while carrying heavy loads
- ✓ Mechanical and electrical injuries during work with conveyors, mechanized equipment used for mixing ingredients to make dough, and baking processes
- ✓ Defective electrical equipment and installations, esp. hand-held tools which may cause electric shock
- ✓ Extensive use of liquid and/or gaseous fuels for baking creates increased fire and explosion hazard
- ✓ Dry flour presents a constant hazard of fire and dust explosion (cigarette lighting in such an environment may be extremely hazardous)

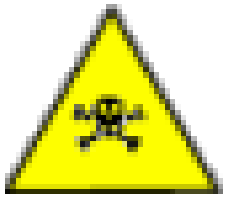
1



- **Physical hazards**
  - ✓ The high temperatures and the high levels of relative humidity may cause fatigue and thermal exhaustion in bakers
  - ✓ Exposure to infrared radiation; cataracts may be produced by prolonged exposure
  - ✓ Radiation leakage from defective microwave ovens

2

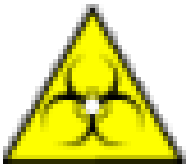
3



- **Chemical hazards**
  - ✓ Exposure to flour: may cause respiratory system disorders and skin diseases
  - ✓ Exposure to spices: many bakers working with some spices suffer from chronic conjunctivitis and chronic rhinitis; allergic skin diseases are sometimes found; after prolonged exposure, respiratory infections, particularly chronic bronchitis and sometimes even bronchial asthma, may develop
  - ✓ Exposure to sugar dust: may cause dental caries

- ✓ Exposure to carbon dioxide: in mechanized bakeries, dough which is in an active state of fermentation may give off dangerous amounts of carbon dioxide
- ✓ Exposure to carbon monoxide, combustion products and fuel vapors: firing equipment which is badly adjusted or has insufficient draw, or defective chimneys, may lead to the accumulation of unburned fuel vapors or gases or of combustion products, including carbon monoxide, which may cause intoxication or asphyxia

4



- **Biological hazards**
  - ✓ Exposure to fungi and yeast: hypersensitivity reactions and skin infections may be caused due to fungal antigens inhaled with dusts during the work time; these usually involve pneumonitis with asthmatic symptoms

5

  - ✓ Exposure to parasites: vanilla flour and coconut flour may be infested with cereal parasites, which cause lesions and "grain itch"

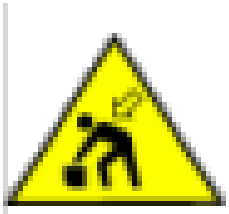
8

  - ✓ Exposure to molds: bakers may suffer from allergic skin conditions caused by molds such as Aspergillus glaucus and Penicillium glaucum that develop in stored flour

8

  - ✓ Presence of rodents and insects may result in bites and infectious diseases

6



Ergonomic, psychosocial and organizational factors

- ✓ Continuous repetitive movements, awkward postures (e.g., sitting or standing for long hours), and excessive efforts (esp. during lifting and moving of sacks and heavy loads) may result in cumulative trauma disorders 7
- ✓ Handling of heavy loads may cause acute disorders, esp. back pain and lesions of intervertebral discs
- ✓ Exposure to certain spices may cause specific positive or negative sensitivity to their odors, and/or addiction or distaste 8
- ✓ Regular work at odd hours, esp. in night shifts, may cause psychological stress

Preventive measures

1 Regularly wet-scrub or vacuum-clean (as applicable) floors and other surfaces, and install effective exhaust ventilation to prevent formation of dust (dry flour) clouds

2 Install effective exhaust ventilation and air conditioning to prevent air contamination and heat stress

3 Check microwave ovens for radiation leakage, and repair if needed

4 Adjust burners for clean burning, to reduce CO formation; install monitors to sound an alarm if CO level exceeds a hazard limit

5 Wear a respirator to avoid inhalation of dust or aerosols

6 Arrange periodic visits by professional pest exterminator, to control pest population, and special visits in the case of heavy infestation

7 Learn and use safe lifting and moving techniques for heavy or awkward loads; use mechanical aids to assist in lifting

8 Maintain a high level of personal hygiene; shower and change clothes at the end of work; do not take work-soiled clothing home

Food Safety Practices and General Requirements, a food business must ensure that all staff have ‘skills and knowledge in food safety and hygiene matters’. This requirement specifies that staff have skills and knowledge that corresponds to their duties so a supervisor would require different skills and knowledge from those required by a employee. The skills and knowledge required by staff will vary from establishment to establishment according to the duties they perform.

Food Safety Practices and General Requirements, staff have a legal responsibility to ‘take all reasonable measures not to handle food or surfaces likely to come into contact with food in a way that is likely to compromise the safety and suitability of the food’. They must be able to demonstrate and explain how to keep food safe while it is in their care.

- This means staff must be aware of:
  - ✓ The steps in the production process they are responsible
  - ✓ Food safety hazards associated with those steps
  - ✓ Control measures and critical limits for those hazards
  - ✓ How to monitor these production steps
  - ✓ What to do if critical limits are not achieved
  - ✓ How to complete the relevant documentation

- Additionally they must also be aware of their responsibilities in relation to the supporting policies and procedures of the food safety program. These include:
  - ✓ Personal hygiene and health
  - ✓ Cleaning and sanitizing
  - ✓ Pest control
  - ✓ Garbage disposal
  - ✓ Maintenance of premises and equipment
  - ✓ Storage

- ✓ Work instructions.

Communicating the requirements of the food safety program to staff

Communicating the requirements of the food safety program to all staff who work in food handling areas is essential. To organize this may seem overwhelming; however a planned and systematic approach — providing instructions and information — will help staff to perform their tasks to the required standard. Some ways to provide information to staff include:

- Induction training
- On-the-job training
- Other training sessions
- Briefings and staff meetings
- Noticeboards
- Staff intranet
- Memos, e-mail and sms
- Minutes of food safety team meetings
- Work instructions

Think about how information is communicated in the place where you work.
Do you:

- Train new staff and involve other staff members to participate in further training?
- Use an instruction manual for all employees to refer to?
- Informally talk with individuals about how they are going and to give them new information and on-the-job training?
- Use noticeboards, posters, signs, memos or newsletters?
- Get together regularly to discuss work issues, goals and objectives?

Effective supervisors will most often use a variety of methods to communicate with their staff. There are good reasons for having set communication processes that all staff understand. Some advantages of this are:

- All staff can follow the guidelines in the food safety manual

- Staff feel confident that they are doing their job correctly
- If replacement/agency staff are required they can follow written instructions/ guidelines
- Complaints can be responded to quickly if staff are aware and can identify non-compliance areas.
- Staff are not afraid to ask questions or report problems
- Staff feel comfortable contributing to team meetings

Self-Check – 5	Written test

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

Test I: Short Answer Questions

1. List some advantages of effective communication? (3pts)
2. How information is communicated in the work place? (3pts)
3. List the hazards related to this job? (3pts)
4. List the accident hazards? (3pts)
5. List the physical hazards? (3pts)
6. List the biological hazards? (3pts)
7. List the chemical hazards? (3pts)
8. List the ergonomic, psychosocial and organizational factors? (3pts)

Test II: Write true if the statement is correct and false if the statement is incorrect.

1. Communicating the requirements of the food safety program to all staff who work in food handling areas is essential.
2. Effective supervisors will most often use a variety of methods to communicate with their staff.

Test III: Choose the best answer.

1. Staff must be aware of:
   A. The steps in the production process they are responsible
   B. Food safety hazards associated with those steps
   C. Control measures and critical limits for those hazards
   D. How to monitor these production steps

E. What to do if critical limits are not achieved

F. How to complete the relevant documentation

G. All of the above

2. Staff must also be aware of their responsibilities in relation to the supporting policies and procedures of the food safety program. These include:

A. Personal hygiene and health

B. Cleaning and sanitizing

C. Pest control and Garbage disposal

D. Maintenance of premises and equipment

E. Storage

F. Work instructions

G. All of the above

3. Some ways to provide information to staff include:

A. Induction and on-the-job training

B. Briefings and staff meetings

C. Noticeboards and staff intranet

D. Memos, e-mail and sms

E. Minutes of food safety team meetings

F. Work instructions

G. All of the above

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

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

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Test I

1. _____

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2. _____
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8. _____
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Test II

1. _____ 2. _____

Test III

1. _____
2. _____
3. _____

Information Sheet 6- Food safety hazards and quality control measures in the work area

1.1. Procurement of Raw Materials and Food ingredients

- All raw materials and food ingredients should be procured from approved suppliers and must conform to FSSA Regulations.
- COA/COC should accompany each received consignment.
- No raw material or ingredient thereof shall be accepted by an establishment if it is known to contain parasites, undesirable micro-organisms, pesticides, veterinary drugs or toxic items, decomposed or extraneous substances which would not be reduced to an acceptable level by normal sorting and/or processing.
- All raw materials, food additives and ingredients, wherever applicable, shall conform to the Regulations and regulations laid down under the Act.
- Records of raw materials, food additives and ingredients as well as their source of procurement shall be maintained in a register for inspection.
- Raw materials should be purchased in quantities that correspond to storage/ preservation capacity
- Packaged raw material must be checked for 'expiry date'/ 'best before'/ 'use by' date, packaging integrity and storage conditions.
- Receiving temperature of potentially high risk food should be at or below 5 ^{0}C
- Receiving temperature of frozen food should be -18 ^{0}C or below.
- Records of raw materials, food additives and ingredients as well as their source of procurement should be maintained for inspection. The invoices of purchase should be kept for traceability purpose.

1.2. Storage of Raw Materials, Food ingredients, Food additives and Packaging materials

- All raw materials, food ingredients, food additives and packaging materials to be kept 6” off the floor and 18” off the wall; to enhance easy and adequate maintenance and cleaning and also to avoid any pest harborage.

Figure 3: Raw material should be stored on pallets

Figure 4: Stand for keeping batch cards for identification and traceability of raw materials

- Pallets to be cleaned at regular intervals to keep them free of cobweb, dust, dirt etc. and also to be inspected regular any repair/ replacement, if required. Best Practice is to avoid wooden pallets and to use plastic pallets. In case wooden pallets are used, care should be taken to a) Carry fumigation every 6 months; b) Periodic cleaning, inspection and maintenance c) Record keeping

- Wrappers & Trays, before going to production, are to be kept under fumigation and ionization.
- All wrapper rolls to be shrink-wrapped.
- Proper segregation shall be provided for storage of non-food chemicals, raw, processed, rejected, recalled, returned and re-cycled materials in a separate designated area to avoid any possibility of cross contamination.
- All materials to be appropriately labeled for proper identification.
- Adopt a First-Expired First-Out (FEFO)/ First-In First-Out (FIFO) approach for all raw materials, ingredients, work-in—progress, processed/ cooked and packaged food products. Do not use materials beyond their expiry date.
- Store materials at appropriate temperatures. Monitor and record temperatures of the chiller and freezer daily.
- As far as possible, store raw materials away from ready-to eat ingredients; in a separate chiller.
- Always store ready-to-eat materials/ ingredients in covered containers above raw materials/ ingredients.
- All raw materials, food additives and ingredients shall be stored in separate areas from printed packaging materials, stationary, hardware and cleaning materials/ chemicals.

1.3. Food Processing and Preparation

Temperature control: All microorganisms have a defined temperature range in which they grow, with a minimum, maximum, and optimum. An understanding of the interplay between time, temperature, and other intrinsic and extrinsic factors is crucial to selecting the proper storage conditions for a food product.

Time control: When considering growth rates of microbial pathogens, in addition to temperature, time is a critical consideration. Food producers or manufacturers address the concept of time as it relates to microbial growth when a product's shelf life is determined.

- The Food Business shall develop and maintain the systems to ensure that time and temperature is controlled effectively where it is critical to the safety and

suitability of food. Such control shall include time and temperature of receiving, processing, cooking, cooling, storage, packaging, distribution and food service up to the consumer, as applicable.

- Whenever frozen food / raw materials are being used / handled / transported, proper care should be taken so that defrosted / thawed material shall not be stored back and after opening for future use.
- Such systems shall also specify tolerance limits for time and temperature variations and the records thereof shall be maintained in a register for inspection.

  Wherever cooking is done on open fire, proper outlets for smoke/steam etc. like chimney, exhaust fan etc. shall be provided.
- Steam should be clean, dry and free from boiler carryover; which depends on boiler operating pressure and loading, water treatment management and efficient distribution; which influence the quality of steam.

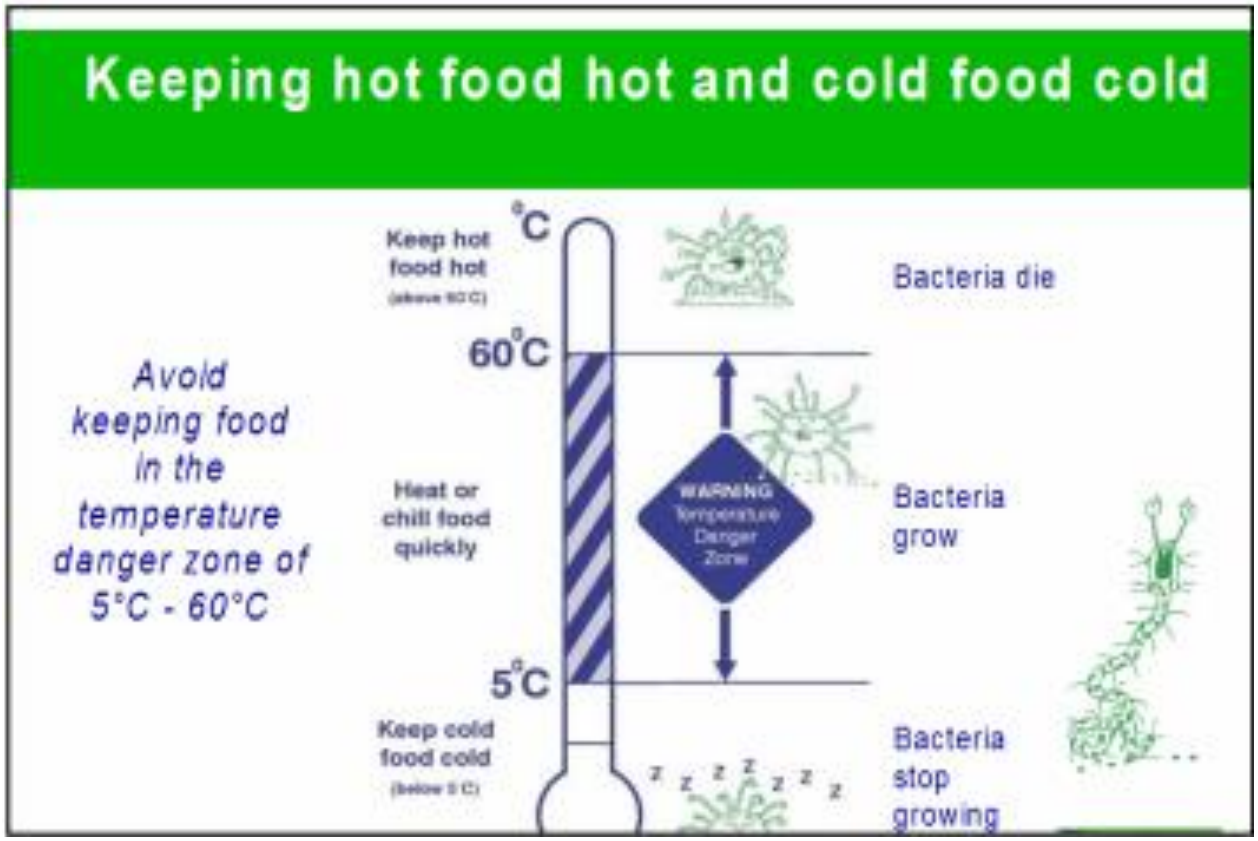

Figure 5: Temperature zones for different bacterial activity

Food Packaging

- Packaging materials shall provide adequate protection for all food products to prevent

  contamination, damage and shall accommodate required labeling as laid down under the FSS Act & the Regulations there under.
- Only Food grade packaging materials to be used. For packaging materials like aluminum plastic and tin, the standards to be followed are as mentioned under the FSS Regulations and rules framed there under.
- Packaging materials or gases where used, shall be non-toxic and shall not pose a threat to the safety and suitability of food under the specified conditions of storage and use.
- Packing material should be robust and secure enough to prevent spoilage and contamination during transit.

Distribution and Service

- An appropriate supply chain needs to be incorporated in the system to minimize food spoilage during transportation processed / packaged and / or ready-to-eat food shall be adequately protected during transportation and / or service.
- Temperatures and humidity which is necessary for sustaining food safety and quality shall be maintained. The conveyances and /or containers shall be designed, constructed and maintained in such that they can effectively maintain the requisite temperature, humidity, atmosphere and other conditions necessary to protect food Conveyances and / or containers used for transporting / serving foodstuffs shall be non-toxic, kept clean and maintained in good condition in order to protect foodstuffs from any contamination.
- Receptacles in vehicles and / or containers shall not be used for transporting anything other than foodstuffs where this may result in contamination of foodstuffs. Where the same conveyance or container is used for transportation of different foods, or high risk foods such as fish, meat, poultry, eggs etc., effective cleaning and disinfections shall be carried out between loads to avoid the risk of cross- contamination. For bulk transport of food, containers and conveyances

shall be designated and marked for food use only and be used only for that purpose.

Self-Check – 6	Written test

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

Write true if the statement is correct and false if the statement is incorrect.

1. All microorganisms have a defined temperature range in which they grow, with a minimum, maximum, and optimum. (2 pts)
2. All raw materials, food additives and ingredients shall be stored in separate areas from printed packaging materials, stationary, hardware and cleaning materials/ chemicals. (2 pts)
3. Proper segregation shall be provided for storage of non-food chemicals, raw, processed, rejected, recalled, returned and re-cycled materials in a separate designated area to avoid any possibility of cross contamination. (2 pts)
4. Records of raw materials, food additives and ingredients as well as their source of procurement should be maintained for inspection. (2 pts)
5. Packaged raw material must be checked for 'expiry date'/ 'best before'/ 'use by' date, packaging integrity and storage conditions. (2 pts)

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

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

Score = _____

Rating: _____

Answer Sheet

Name: _____ Date: _____

1. _____ 3. _____ 5. _____
2. _____ 4. _____

Information Sheet 7- Mentoring and coaching individuals/groups to implement quality and safe food handling procedures

7.1 Mentoring and coaching

- **Encourage workers to participate in the program**

By encouraging workers to participate in the program, management signals that it values their input into safety and health decisions.

How to accomplish it

- ✓ Give workers the necessary time and resources to participate in the program.
- ✓ Acknowledge and provide positive reinforcement to those who participate in the program.
- ✓ Maintain an open door policy that invites workers to talk to managers about safety and health and to make suggestions.

- **Encourage workers to report safety and health concerns**

Workers are often best positioned to identify safety and health concerns and program shortcomings, such as emerging workplace hazards, unsafe conditions, close calls/near misses, and actual incidents. By encouraging reporting and following up promptly on all reports, employers can address issues before someone gets hurt or becomes ill.

How to accomplish it

Establish a process for workers to report injuries, illnesses, close calls/near misses, hazards, and other safety and health concerns, and respond to reports promptly. Include an option for anonymous reporting to reduce fear of reprisal.

- Report back to workers routinely and frequently about action taken in response to their concerns and suggestions.
- Emphasize that management will use reported information only to improve workplace safety and health, and that no worker will experience retaliation for bringing such information to management's attention.
- Empower all workers to initiate or request a temporary suspension or shutdown of any work activity or operation they believe to be unsafe.

- Involve workers in finding solutions to reported issues.

- **Give workers access to safety and health information**

Sharing relevant safety and health information with workers fosters trust and helps organizations make more informed safety and health decisions.

How to accomplish it

- Give workers the information they need to understand safety and health hazards and control measures in the workplace. Some OSHA standards require employers to make specific types of information available to workers, such as:
  - ✓ Safety Data Sheets (SDSs)
  - ✓ Injury and illness data (may need to be redacted and aggregated to eliminate personal identifiers)
  - ✓ Results of environmental exposure monitoring conducted in the workplace (prevent disclosure of sensitive and personal information as required)
- Other useful information for workers to review can include:
  - ✓ Workplace job hazard analyses
  - ✓ Chemical and equipment manufacturer safety recommendations
  - ✓ Workplace inspection reports
  - ✓ Incident investigation reports (prevent disclosure of sensitive and personal information as required)

- **Involve workers in all aspects of the program**

Including worker input at every step of program design and implementation improves your ability to identify the presence and causes of workplace hazards, creates a sense of program ownership among workers, enhances their understanding of how the program works, and helps sustain the program over time.

How to accomplish it

- Provide opportunities for workers to participate in all aspects of the program, including, but not limited to helping:
  - ✓ Develop the program and set goals.

- ✓ Report hazards and develop solutions that improve safety and health.
- ✓ Analyze hazards in each step of routine and non-routine jobs, tasks, and processes.
- ✓ Define and document safe work practices.
- ✓ Conduct site inspections.
- ✓ Develop and revise safety procedures.
- ✓ Participate in incident and close call/near miss investigations.
- ✓ Train current coworkers and new hires.
- ✓ Develop, implement, and evaluate training programs.
- ✓ Evaluate program performance and identify ways to improve it.
- ✓ Take part in exposure monitoring and medical surveillance associated with health hazards.

7.2 Differences between mentoring and coaching

Mentoring - Mentoring is an indefinite, relationship based activity with several specific but wide ranging goals. It does not have to be a formal process. The mentor is a facilitator who works with either an individual or a group of people over an extended time period. The agenda is open and continues to evolve over the longer term. Mentoring seeks to build wisdom – the ability to apply skills, knowledge and experience to new situations and processes.

Coaching - The focus is on meeting very specific objectives within a set period of time. Coaching is mainly concerned with performance and the development of certain skills.

It usually takes place on a one-to-one basis and has a very specific purpose. There is usually a planned programme with a much shorter timeframe than in mentoring, so the learning goals are usually determined in advance. Mentoring and coaching can be ‘stand alone’ activities, but they can also be used to complement each other.

7.3 Parallels between mentoring and coaching

Both mentoring and coaching take place independently of line managers – they are open, honest relationships between the mentor or coach and their protégé. A mentor or coach is an 'accountability partner' who works in their protégé's best interests. He or she will bring a new approach to either a specific skill or an entire career.

Neither mentoring nor coaching is about teaching, instruction or telling somebody what to do. The role of mentors and coaches is to ask their protégé the right questions to promote greater self-awareness and more informed decision making. The role of mentors and coaches is not to solve problems, but to question how the best solutions might be found.

The mentoring or coaching process evolves over time. The aims are not inflexible, but may change as the protégé reaches the set goals and learns new behavior. The process continues until everybody is satisfied that the objectives have been achieved.

7.4 Mentoring and coaching skills

The skills of mentor and coach overlap to some extent. Both mentors and coaches are 'critical friends' although they might use different methods. A coach is more likely to use direct feedback, while a mentor relies more heavily on the questioning process. A coach is a specialist who works with the protégé on specific goals and objectives – the professional equivalent of a fitness trainer. A mentor is likely to have followed a similar career to the one their protégé is starting, and will pass on their expertise.

Mentoring or coaching might be appropriate for:

- Senior managers who are unlikely to benefit from conventional training courses
- Managers who need the space to develop or improve new or existing skills

- Those on a ‘fast track’ career program
- Staff who need to focus more on their career paths
- Managers who have reached a career plateau and want to progress, but do not know how to
- Anybody developing a new career
- Staff or managers who want to change career direction
- Employees returning to work after a career break
- Staff wanting to improve their skills and abilities
- Individuals who respond better to alternative learning methods
- Mentors and coaches themselves
- Staff or managers working through difficult issues.

7.5 Mentoring and coaching what can and cannot do

I. Mentoring can:

- Increase individual and team commitment to an organization and its goals
- Help improve communication within the organization
- Help to change organizational culture for the better
- Allow individuals to gain a greater insight into the organization’s workings
- Give individuals the chance to meet different people within the organization, and to network
- Improve levels of professional success.

II. Mentoring cannot:

- Succeed unless clear objectives are agreed in advance
- Succeed unless there is an agreed plan of action
- Act as a replacement for conventional training.

III. Coaching can:

- Provide individuals and teams with opportunities for gaining new skills, and personal development
- Offer learning opportunities geared to individual needs
- Encourage a positive attitude to learning

- Provide flexibility in the learning process
- Allow protégés to select what and how they learn.

IV. Coaching cannot:

- Effect change unless clear, measurable goals are set in advance
- Benefit the protégé unless there is support from senior managers
- Succeed unless both coach and protégé are fully committed to the coaching program.

7.6 Links to good management

The aims of coaching and mentoring are the same as those of good management. Both will try to maximize their staff potential. Good mentoring/coaching and good management have the following common characteristics:

- Willingness to listen
- Openness to new ideas
- A lateral, challenging way of thinking
- Encouraging protégés to become involved in new work experiences
- Making time available
- Enthusiasm.

One school of thought suggests that every manager should be a mentor or coach to his or her staff. The aim of this 'generative coaching' is to encourage a mutual learning process. It can be argued that managers already influence the learning and performance of their staff. In addition, some managers may be reluctant to adopt an active coaching style because of a potential conflict with their own agendas.

It is important that a clear distinction remains between a mentor/coach and a manager. If the line becomes blurred, mentoring and coaching can damage a good management style. For example, a manager might spend a large amount of time mentoring or coaching one team member at the expense of the rest of the team.

7.7 Bringing a mentoring and coaching mentality to the team

The best mentoring or coaching programs will not work if they are not accepted by the wider team. There is a danger that mentoring and coaching will be seen as a 'management ploy' and not a method of encouraging individual potential. The following points need to be applied for mentoring and coaching to be accepted. There needs to be:

- Sufficient information about the benefits of mentoring and coaching.
- An explanation of what mentoring and coaching can and cannot achieve.
- Clarity about who can be involved in mentoring and coaching programs.
- Clarity about how and when the mentoring and coaching programs could be used.
- Flexibility so that progress can be reviewed.

7.8 Setting up a mentoring or coaching procedure

The following stages need to be considered before a mentoring or coaching program can be planned and executed:

- How the mentoring or coaching links to the organization's purpose and strategy.
- Mentors and coaches need to be suitably matched to their protégés to avoid personality clashes or other issues.
- The objectives of the mentoring or coaching – what it aims to achieve.
- A process to support the mentoring or coaching programs, for example, who will cover the protégé's workload while they are being mentored or coached?
- Evaluation and feedback mechanisms need to be established.

Workplaces bring together staff from a variety of backgrounds and cultures. An awareness of communication skills is a major factor in helping your staff feels supported in meeting food safety requirements. Good communication skills will mean less misunderstanding and therefore improved productivity and efficiency. If you become a good communicator, your staff will know what is required to ensure the food safety plan is adhered to.

7.9 Non-verbal communication

When you are face to face with someone, you can pick up a lot of information from his or her non-verbal cues and the environment. Not all messages are communicated verbally. What you see around you and how the words sound is usually more important than the words themselves. This is what is known as nonverbal communication.

Non-verbal communication refers to all the interpersonal skills you use when communicating other than with words. This includes:

- **Body language**: eye contact, facial expressions, postures, gestures, how far we stand from people, touching
- **Voice characteristics**: tone, pitch/intonation, expression, volume, speed, emphasis/stress
- **Spatial arrangements**: for example the way the furniture or equipment is arranged
- **Design and décor** : the style of furniture, the use of colour
- **Dress and grooming**: this includes cleanliness, perfume, make-up, uniforms, tattoos or jeweler
- **Signs and symbols**: such as company logos
- **Timing**: such as the time of day a communication takes place, whether it is early or late.

Interpersonal skills for communication

You use interpersonal skills to develop shared meaning when you communicate with other people on a one-to-one or group basis. The skills you use will vary according to the needs of the people you are communicating with and the context.

These skills include:

- Speaking clearly
- Writing clearly
- Listening actively to others
- Giving feedback to show you understand
- Looking at the other person when listening or speaking

- Being courteous by giving the other person time to say what they want and not talking over them
- Showing respect for other people's views
- Asking questions to check that you understand
- Using appropriate and honest non-verbal behavior such as facial expressions and gestures.

Consider people's differences

Not all people are the same and you may need to think about the ways you support staff members to do their job. Each member of your staff may require a slightly different approach in your communication style. For example, dealing with staff members who have been part of the organization for a long time may require you asking their opinion. This approach sends the message that you value their input.

The following list may help you to identify people's differences:

- Age; experience; gender; physical condition; level of education and training
- Language, literacy and numeracy levels.

Some Tips when speaking with people from non-English background

1. Speak clearly and pronounce your words correctly.
2. Recognize that people wrongly think that turning up the volume somehow creates instant understanding. Avoid this common mistake (however, do not speak too quietly).
3. Do not cover or hide your mouth because listeners will want to watch you as you pronounce your words.
4. Avoid running words together (Do-ya wanna eat-a-pizza?).
5. When possible, opt for simple words instead of ones that are complex.
6. As much as possible, avoid using filler and colloquialisms ('um...', 'like...','Yeah, totally.')
7. If asked to repeat something, first repeat it as you said it the first time.
8. Be explicit: Say "Yes" or "No". Do not say: "Uh-huh" or "Uh-uh". Those words are not in grammar books!

9. Listen and try not to form your response while the other person is talking. Wait until the person is done so that you can clarify if needed and give correct information based on all they have said.
10. Be aware that other cultures have different standards regarding touching, eye contact and personal space.
11. Be patient and smile. The more relaxed you are, the more you are in control of your communication. Do not give a busy lifestyle or a meeting agenda permission to control your speech. Think as you speak and do not speak as you think.

Give your team regular feedback

People like feedback, because it helps them to feel valued and noticed. Some supervisors make a regular time to talk to each of their staff every few days. If you only communicate with people when there are problems, you'll only be aware of the 'negatives' and not the overall picture. Your staff, in turn, will learn that they only get to talk to you when there's a problem.

Manage by walking around

This simply means not hiding behind your desk or in your office. It means talking to all of your staff regularly during the day.

Self-Check – 7	Written test

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

Test: Write true if the statement is correct and false if the statement is incorrect

1. Encouraging workers to participate in the program, management signals that it values their input into safety and health decisions. (2pts)
2. Encouraging reporting and following up promptly on all reports, employers can address issues before someone gets hurt or becomes ill. (2pts)
3. Sharing relevant safety and health information with workers fosters trust and helps organizations make more informed safety and health decisions. (2pts)
4. Give workers the information they need to understand safety and health hazards and control measures in the workplace. (2pts)

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

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

Score = _____

Rating: _____

Answer Sheet

Name: _____ Date: _____

1. _____ 3. _____
2. _____ 4. _____

Information Sheet 8- Identifying and addressing training needs within level of responsibility

8.1 Introduction

All personnel should be aware of their role & responsibility in protecting food from contamination or deterioration. Training need identification to be done for all food handlers and accordingly training to be organized. Training should be given to personnel responsible for monitoring and measurements and corrective actions in the food safety management system, supervisors whose activities have an impact on food safety and internal auditors. Periodic assessments of the effectiveness of training should be done. Annual training calendar should be prepared covering all relevant topics pertaining to the food business (both behavioral and functional) with an objective to cover all food handlers in phased manner. All food handlers shall be instructed &trained in food hygiene & food safety aspects along with personal hygiene requirements commensurate with their work activities, the nature of food, its handling, processing, packaging, storage, service & distribution. Induction trainings (for new employees) and refresher trainings (for existing employees) should be conducted. Training programs shall be routinely reviewed & updated wherever necessary. Systems shall be in place to ensure that food handlers remain aware of all procedures necessary to maintain the safety & suitability of food. Records of training shall be maintained.

8.2 Education and training

Education and training provides employers, managers, supervisors, and workers with:

- Knowledge and skills needed to do their work safely and avoid creating hazards that could place themselves or others at risk.
- Awareness and understanding of workplace hazards and how to identify, report, and control them.
- Specialized training, when their work involves unique hazards.

Additional training may be needed depending on the roles assigned in the program. For example, employers, managers, and supervisors may need specific training to ensure

that they can fulfill their roles in providing leadership, direction, and resources for the safety and health program. Workers assigned specific roles in the program (e.g., incident investigation team members) may need training to ensure their full participation in those functions.

Effective training and education can be provided outside a formal classroom setting. Peer-to peer training, on-the-job training, and worksite demonstrations can be effective in conveying safety concepts, ensuring understanding of hazards and their controls, and promoting good work practices.

I. **Provide program awareness training**

Managers, supervisors, and workers all need to understand the program's structure, plans, and procedures. Having this knowledge ensures that everyone can fully participate in developing, implementing, and improving the program.

How to accomplish it

- Provide training to all managers; supervisors; workers; and contractor, subcontractor, and temporary agency workers on:
  - ✓ Safety and health policies, goals, and procedures
  - ✓ Functions of the safety and health program
  - ✓ Whom to contact with questions or concerns about the program (including contact information)
  - ✓ How to report hazards, injuries, illnesses, and close calls/near misses
  - ✓ What to do in an emergency
  - ✓ The employer's responsibilities under the program
  - ✓ Workers' rights under the OSH Act

- Provide information on the safety and health hazards of the workplace and the controls for those hazards.
- Ensure that training is provided in the language(s) and at a literacy level that all workers can understand.
- Emphasize that the program can only work when everyone is involved and feels comfortable discussing concerns; making suggestions; and reporting injuries, incidents, and hazards.

- Confirm, as part of the training, that all workers have the right to report injuries, incidents, hazards, and concerns and to fully participate in the program without fear of retaliation.

II. Train employers, managers, and supervisors on their roles in the program

Employers, managers, and supervisors are responsible for workers' safety, yet sometimes have little training on safety-related concepts and techniques. They might benefit from specific training that allows them to fulfill their leadership roles in the program.

How to accomplish it

- Reinforce employers, managers,and supervisors' knowledge of their responsibilities under the OSH Act and the workers' rights guaranteed by the Act.
- Train employers, managers, and supervisors on procedures for responding to workers' reports of injuries, illnesses, and incidents, including ways to avoid discouraging reporting.
- Instruct employers, managers, and supervisors on fundamental concepts and techniques for recognizing hazards and methods of controlling them, including the hierarchy of controls (see "Hazard Prevention and Control").
- Instruct employers, managers, and supervisors on incident investigation techniques, including root cause analysis.

III. Train workers on their specific roles in the safety and health program

Additional training may be needed to ensure that workers can incorporate any assigned safety and health responsibilities into their daily routines and activities.

How to accomplish it

- Instruct workers on how to report injuries,illnesses, incidents, and concerns. If a computerized reporting system is used, ensure that all employees have the basic computer skills and computer access sufficient to submit an effective report.
- Instruct workers assigned specific roles within the safety and health program on how they should carry out those responsibilities, including:
  - ✓ Hazard recognition and controls
  - ✓ Participation in incident investigations

- ✓ Program evaluation and improvement

- Provide opportunities for workers to ask questions and provide feedback during and after the training.
- As the program evolves, institute a more formal process for determining the training needs of workers responsible for developing, implementing, and maintaining the program.

IV. Train workers on hazard identification and controls

Providing workers with an understanding of hazard recognition and control, and actively involving them in the process, can help to eliminate hazards before an incident occurs.

How to accomplish it

- Train workers on techniques for identifying hazards, such as job hazard analysis
- Train workers so they understand and can recognize the hazards they may encounter in their own jobs, as well as more general workrelated hazards.
- Instruct workers on concepts and techniques for controlling hazards, including the hierarchy of controls and its importance.
- Train workers on the proper use of work practice and administrative controls.
- Train workers on when and how to wear required PPE.
- Provide additional training, as necessary, when a change in facilities, equipment, processes, materials, or work organization could increase hazards, and whenever a worker is assigned a new task.

Meetings/training need to be clear and transparent and have a genuine purpose and useful outcomes. It's important that meetings/training do not become a place where people can 'dump issues' and people are criticised or embarrassed in front of others. Effective meetings/training should:

- Be inclusive (everyone gets to contribute and participate)
- Be planned
- Have an agreed agenda
- Have an agreed outcome or purpose (that is, what it is that you want to achieve from this meetings/training)
- Allow for informal feedback (things that may crop up at the meetings that need to be dealt with)

- Set an agreed time format: if the agenda is too large to cover in a one-hour meetings/training, set the meetings/training to take longer or make another meeting for the issues that are not so urgent.

8.3 Organising effectively meetings/training

- Talking to your key staff and get feedback from them. Sending out an agenda and ask staff to contribute to it. Making sure that you list the items you would like to discuss on the agenda as well.
- Setting some appropriate times and dates to ensure maximum participation and ensure they are achievable for people to attend. Don't choose 4.30 pm on a Friday afternoon (when everyone just wants to go home) or 8.30 am on a Monday morning (when you have staff who do not start until 9.00 am and who may have other responsibilities at that time in the morning).
- Ensuring that your wording includes an expectation that everyone who can attend, will attend.
- Making sure your communication includes words like Why? How? When? What? and Where to now?

Other good words to include are contribute, participate, listen, action plans, objectives, feedback.

- Have clear objectives and an action plan for how you will reach these objectives.
- Make sure that you do not organise meetings just for the sake of having meetings/training.

They must be productive and have a genuine outcome, or else staff will feel they are a waste of time, not important and certainly not valuable.

8.4 Importants of meetings/training

Meetings are important because they provide an opportunity to:

- Develop an ongoing effective communication process
- Generate and create new ideas
- Give positive feedback
- Problem solve issues
- Implement change
- Give positive feedback
- Have a formalised communication process that's inclusive of all staff

8.5 Preparation required in advance of meetings/training

It helps to be prepared before the meetings/training. Brief relevant people and send documents to the relevant participants or team centres. This provides an opportunity for meeting participants to review and prepare for the meetings/training. If feedback is required make sure you let participants know what is required. For example:

- Catering officer to have briefed GM on food safety program
- GM and service coordinator to have read the plan (copy supplied in electronic form)
- Action plan for all items to have been reviewed by GM, service coordinator and catering officer.

8.6 Agendas and minutes

Take an agenda to the meetings/training and issue minutes after it. One big time-waster in some workplaces is meetings/training where people are sitting there wondering, 'What's this about?

Why am I here?'

- A clear agenda will let people know why they are at the meetings/training
- Clear minutes will help ensure that people know who is to do what after the meeting

Self-Check – 8	Written test

Directions: Answer all the questions listed below.

Write true if the statement is correct and false if the statement is incorrect

1. Training may be needed depending on the roles assigned in the program. (2pts)
2. Employers, managers, and supervisors may need specific training to ensure that they can fulfill their roles in providing leadership, direction, and resources for the safety and health program. (2pts)
3. Workers assigned specific roles in the program (e.g., incident investigation team members) may not need training to ensure their full participation in those functions. (2pts)
4. Effective training and education can be provided outside a formal classroom setting. (2pts)
5. Peer-to peer training, on-the-job training, and worksite demonstrations can be effective in conveying safety concepts, ensuring understanding of hazards and their controls, and promoting good work practices. (2pts)
6. Training programs shall be routinely reviewed & updated wherever necessary. (2pts)
7. Refresher trainings (for new employees) and induction trainings (for existing employees) should be conducted. (2pts)
8. Periodic assessments of the effectiveness of training should be done. (2pts)
9. Annual training calendar should be prepared covering all relevant topics pertaining to the food business (both behavioural and functional) with an objective to cover all food handlers in phased manner. (2pts)

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

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

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____

Operation Sheet 1– Procedures for personal hygiene practices

Objectives : to maintain good personal hygiene practices

Materials

- Water
- Soap

Procedures:

- **Grooming**:
  - ✓ Arrive at work clean – clean hair, teeth brushed, and bathed with deodorant used daily.
  - ✓ Maintain short, clean, and polish-free fingernails. No artificial nails are permitted in the food production area.
  - ✓ Wash hands (including under fingernails) and up to forearms vigorously and thoroughly with soap and warm water for a period of 20 seconds:
    - When entering the facility before work begins.
    - Immediately before preparing food or handling equipment.
    - As often as necessary during food preparation when contamination occurs.
    - In the restroom after toilet use, and when you return to your work station.
    - When switching between working with raw foods and working with ready to-eat or cooked foods.
    - After touching face, nose, hair, or any other body part, and after sneezing or coughing.
    - After cleaning tables.
    - After cleaning duties.
    - Between each task performed and before wearing disposable gloves.
    - After smoking, eating, or drinking.
    - Any other time an unsanitary task has been performed – i.e. taking out garbage, handling cleaning chemicals, wiping tables, picking up a

dropped

food item, etc.

- ✓ Wash hands only in hand sinks designated for that purpose.
- ✓ Dry hands with single use towels. Turn off faucets using a paper towel in order to prevent recontamination of clean hands.
- ✓ Change disposable gloves as often as hand washing is required. Wash hands before donning and after discarding gloves

- **Proper Attire:**
  - ✓ Wear appropriate clothing – clean uniform with sleeves and clean non-skid, close-toed work shoes (or leather tennis shoes) that are comfortable for standing and working on floors that can be slippery.
  - ✓ Wear apron on site, as appropriate.
  - ✓ Do not wear apron to and from work.
  - ✓ Take off apron before using the restroom.
  - ✓ Change apron if it becomes soiled or stained.

- **Hair Restraints and Jewelry:**
  - ✓ Wear a hair net or cap in any food production area that completely covers all hair.
  - ✓ Keep beards and mustaches neat and trimmed. Beard restraints are required in any food production area.
  - ✓ Refrain from wearing jewelry in the food production area.
  - ✓ Only a plain wedding band is permitted.
  - ✓ No necklaces, bracelets, or dangling jewelry are permitted.
  - ✓ No earrings or piercing that can be removed are permitted.

Operation Sheet 2– Procedures for hand washing

Objectives : to ensure the safety of food

Materials

- Water
- Soap

Procedures: All employees involved in handling food must wash hands using the following steps

Steps 1: Wash hands (including under the fingernails) and forearms vigorously and thoroughly with soap and warm water (water temperature should be at least 100ºF) for a period of 20 seconds.

Steps 2: Wash hands using soap from a soap dispenser. Lather at least 10 seconds.

Steps 3: Use a sanitary nail brush to remove dirt from under fingernails.

Steps 4: Wash between fingers thoroughly.

Steps 5: Use only hand sinks designated for that purpose. Do not wash hands in sinks in the production area.

Steps 6: Dry hands with single use towels or a mechanical hot dryer. (Retractable cloth towel dispenser systems are not recommended.) Turn off faucets using a paper towel in order to prevent recontamination of clean hands if foot pedals are not available.

Figure 6: Steps of washing hands

Operation Sheet 3– Procedures for gloves or utensils use

Objectives : to ensure the gloves or utensils

Materials

- Water
- Soap
- Glove
- Deli-tissue
- Spatulas, or tongs

Procedures:

Steps 1: Wash hands thoroughly prior to putting on gloves and when gloves are changed.

Steps 2: Change gloves when:

- ✓ Beginning each new task.
- ✓ They become soiled or torn.
- ✓ They are in continual use for four hours.
- ✓ Finished handling raw meat and before handling cooked or ready-to-eat foods.

Steps 3: Use utensils, such as deli-tissue, spatulas, or tongs, as an alternative to gloves.

Steps 4: Cover cuts and sores on hands, including fingernails, with clean bandages. If hands are bandaged, clean gloves or finger cots (protective coverings) should be worn at all times to protect the bandage and to prevent it from falling into food.

LAP TEST	Performance Test

Name…… ID……Date……

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within **12** hour. The project is expected from each student to do it.

Task 1: Conduct for personal hygiene practices

Task 2: Conduct for hand washing

Task 3: Conduct for gloves or utensils use

LG #39	LO #2- Monitor observance of quality standards and food safety programs in the work area

Instruction sheet

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

- Defining, documenting and following work procedures
- Identifying, reporting and addressing deviation from procedures
- Workplace policies and procedures support food safety and quality
- Making personal behavior consistent to implement food safety and quality
- Identifying and reporting food safety hazards and/or quality
- Recording food safety and quality information with workplace reporting requirements
- Maintaining the work area with housekeeping standards
- Conducting work with workplace environmental guidelines

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**:

- Define, documente and follow work procedures
- Identify, reporte and address deviation from procedures
- Workplace policies and procedures support food safety and quality
- Making personal behavior consistent to implement food safety and quality
- Identifyand reporte food safety hazards and/or quality
- Recorde food safety and quality information with workplace reporting requirements
- Maintaine the work area with housekeeping standards
- Conducte work with workplace environmental guidelines

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 4. Accomplish the self-checks 5. Perform operation sheets **6.** Do the “LAP test”

Information Sheet 1- Defining, documenting and following work procedures

1.1 Defining, documenting and following work procedures

Common food safety system requirements: Without a well-designed and documented program that is properly implemented and maintained, the chances that a company will have a recall or have its products cause illness are significantly higher. Following are the main practices and systems followed internationally.

Pre-requisite programs (PRPs): PRPs are codes of good practice that comprise the fundamental principles, procedures and means needed for safe food production. PRPs are defined as basic conditions and activities that are necessary to maintain a hygienic environment throughout the food chain suitable for the production, handling and provision of safe end products and safe food for human consumption.

Good Agricultural Practices (GAP) and Good Hygienic: Practices (GHP) are these essential preconditions and are together called prerequisite programs (PRPs) in food safety systems. They form an integral part and the basis for implementing quality and safety assurance programs such as HACCP, ISO 22000, BRC Global Standards and their audits.

Good Hygiene Practices (GHP): GAPs are practices that ensure environmental, economic and social sustainability for on-farm practices (and post production practices) resulting in safe and quality food and non-food agricultural products. These are applied taking into consideration food safety hazards from the following sources:

- Environment
- Agricultural inputs (soil, water, seeds, agrochemicals, organic / inorganic fertilizers, animals) Workers
- Growing practices
- Harvest and transportation
- Facilities (storage areas for produce, equipment, pesticides etc.)
- Equipment, tools, utensils

Good Hygiene Practices (GHP): All practices regarding the conditions and measures necessary to ensure the safety and suitability of food at all stages of the food chain. These include

- Suitable facility design and maintenance
- Thoughtful equipment design and maintenance
- Documentation that includes procedures, forms and manuals
- Process validation
- Corrective and preventive actions
- Control of non-conforming products
- Traceability Management of incidents and product recall
- Job training and competence
- Hygiene and sanitation
- Waste removal
- Pest control
- Chemical and physical product contamination control
- Prevention of cross contamination
- Dispatch and transport
- Allergen management
- Product packaging and labeling
- Personal hygiene
- Internal audits for hygiene, food safety and quality

Hazard Analysis and Critical Control Points (HACCP): HACCP is a science-based system which systematically identifies, evaluates, and controls hazards which are significant for food safety. Food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.

Pre-requisite programs (GAP and GHP) must be working effectively within a system before HACCP is applied. If these pre-requisite programs are not functioning effectively, then the introduction of HACCP will not be effective.

ISO 22000: Food safety management systems: The development of ISO 22000 was based on the assumption that the most effective food systems are designed, operated and continually improved within the framework of an organization's structured

management system. ISO 22000 thus carries some management system requirements that are not explicitly stated in HACCP.

These include a food safety policy and related objectives, planning and documenting the food safety system, effective external and internal communication arrangements, the assignment of specific responsibilities to the food safety team leader, internal audits, management reviews, continual improvement and updating of FSMS.

Briefly, the ISO 22000 requirements are a combination of the following four key elements:

- Interactive communications
- System management
- Prerequisite programmes
- HACCP principles.

Main steps in meeting food safety system requirements

1. Form a multidisciplinary team for food safety.
2. Train the team on food safety and system requirements.
3. Chart the processes and their flow:
4. Develop a food safety plan with responsibilities
5. Develop and document Standard Operating Procedures (SOPs) including stepwise actions for each task, its monitoring, corrective and preventives actions.
6. Train all personnel to implement the procedures
7. Implement and record: Record keeping provides evidence that procedures are being followed. They are also a good means for improvement and control.
8. Verify/audit: The objective of verification is to make sure the system is working as designed and the food safety and quality objectives are being met. Internal audit should be done to ensure the following:
    - Procedures are being followed
    - Documentation is being done and documents are up to date.
    - Training/education/competencies have been done and are up to date

- Internal audit is carried out by people who are independent of the processes of the area being audited.

9. Review and update: Top management should review the food safety system at planned intervals to ensure its continuing suitability, adequacy and effectiveness. During the review, opportunities for improvement are assessed and the food safety plan updated.

Self-Check – 1	Written test

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 main steps in meeting food safety system requirements. (2pts)
2. List four key elements ISO 22000 requirements. (2pts)

Test II: Write true if the statement is correct and false if the statement is incorrect

1. Pre-requisite programmes (GAP and GHP) must be working effectively within a system before HACCP is applied. (2pts)
2. HACCP is a science-based system which systematically identifies, evaluates, and controls hazards which are significant for food safety. (2pts)
3. GAPs are practices that ensure environmental, economical and social sustainability for on-farm practices (and post production practices) resulting in safe and quality food and non-food agricultural products. (2pts)

Test III: Choose the best answer

1. Which of the following is not included Good Hygiene Practices (GHP)
   A. Environment, Agricultural inputs
   B. Process validation
   C. Workers
   D. Growing practices, Harvest and transportation
   E. Facilities (storage areas for produce, equipment, pesticides etc)
   F. Equipment, tools, utensils.

2. Good Hygiene Practices (GHP) include
   A. Suitable facility design and maintenance, Thoughtful equipment design and maintenance, Documentation that includes procedures, forms and manuals
   B. Process validation, Corrective and preventive actions, Control of non-conforming products, Traceability Management of incidents and product recall
   C. Job training and competence, Hygiene and sanitation, Waste removal, Pest control
   D. Chemical and physical product contamination control, Prevention of cross contamination, Dispatch and transport, Allergen management
   E. Product packaging and labeling, Personal hygiene, Internal audits for hygiene, food safety and quality
   F. All of the above

Note: **Satisfactory rating - 9 points** **Unsatisfactory - below 9 points**

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

Answer sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Test I

1. _____
2. _____

Test II

1. _____
2. _____
3. _____

Test III

1. _____
2. _____

Information Sheet 2- Identifying, reporting and addressing deviation from procedures

2.1. Introduction

Procedures must be established to ensure that products can be effectively withdrawn in the event of a food safety incident which requires a product recall. Managers should ensure effective procedures are in place to deal with any food safety hazard and to enable the complete, rapid recall of any implicated lot of the finished food from the market. Standard operating procedure (SOP) is a living document showing technical instructions of how to perform a routine or repetitive task. SOPs aim to achieve efficiency, quality output and uniformity of performance, while reducing miscommunication and failure to comply with establishment requirements. The SOPs help to handle, store, and process, prepare and display the food products safely and correctly and that the lot or batch can be easily traced and recalled if necessary. The SOP should be based on 5W's & 1H (i.e. why, when, what, where, who & how).

A good standard operating procedure

- Should provide all information necessary to perform a task.
- It is usually specific to the equipment used for the procedure
- Should be detailed
- Should be stand alone
- Should provide quality information
- Should provide references

2.1. Identifying, reporting and addressing deviation

Deviation is a departure from standard procedures or specifications resulting in non-conforming material and/or processes or where there have been unusual or unexplained events which have the potential to impact on product quality, system integrity or personal safety. For compliance to GMP and the sake of continuous improvement, these deviations are recorded in the form of deviation report.

Deviation should be raised when there is a deviation from methods or controls specified in manufacturing documents, material control documents, standard operating procedure for products and confirmed out of specification results and from the occurrence of an event and observation suggesting the existence of a real or potential quality related problems.

A deviation should be reported if a trend is noticed that requires further investigation. All batch production deviations (planned or unintended) covering all manufacturing facilities, equipment, operations, distribution, procedures, systems and record keeping must be reported and investigated for corrective and preventative action. If the deviation is the result of a problem in line design or equipment malfunction, a quick fix may be applied in order to continue running but a long term solution must seek. Non-compliant product must be placed hold on.

The re-evaluation process also become part of the HACCP program as the system evolves. You must maintain record of the corrective actions which occurred. HAACCP requires that immediate corrective action is already assigned and the CCP will be brought back into control before production continues. Immediately adjust the process and keep the product in compliance within the set criteria. In this case the correction action is immediate, and no production is hold because there has been no deviation. Stop the line. Hold all products not incompliance correct the problem on the line and then continues with production. Corrective action to address deviation

- The cause of the deviation is identifying and eliminated
- The CCP will be under control after the corrective is taken
- No products that are injuries to health or otherwise adulterated as a result of the deviation enter commerce.
- Corrective actions address deviation in critical limit.
- Corrective actions should define for each CCP.
- Corrective actions address the process and the product

2.2. Deviation of product

Manufacturing processes have many factors that influence their success, and in each, the possibility of variation is introduced. The specific types of variation depend on what is being manufactured -- for example, an adhesive is affected by factors unlike those that affect a machine. In general, however, the outcome-specific factors fit into five major areas.

- **Deviation due to raw materials:** All manufacturing processes begin with raw materials, whether it's ore from the ground or the end result of previous manufacturing processes. If the raw materials change, that change can create variations in the overall process. There might be a difference in quality from the same supplier, which may fall within the specified limits but is still enough to cause variation in the next process, or material from a different supplier may not be identical to the one from the first supplier.

- **Deviation due to equipment:** Whether a manufacturing process uses simple or complex equipment, changes in the equipment can cause variation. Variations occur with the use of more than one piece of equipment to complete the same task because even two pieces of equipment bought at the same time from the same company will not always behave exactly the same over time. Variations are also introduced in the performance of an individual piece of equipment, which can begin to break down or drift from the calibration point.

- **Deviation due to human actions:** Humans are by nature variable. Even with the best controls, an individual operator can have a bad day and introduce variations from one day to the next. Two different operators trained in the same way might have slightly different actions or criteria for decision making, which causes variation. Not all variation caused by human action can be considered human error, although that possibility also exists.

- **Deviation due to environment:** Changes in temperature and humidity affect various processes and some agro-food processes require a clean room environment and the introduction of particles from outside the clean room can

cause variation. Changes in the environment have the ability to trigger changes in raw materials, equipment and human action, even if the environmental changes do not directly affect the manufacturing process.

- **Devation due to method:** A manufacturing process is defined by a series of steps. Variation can be introduced if the time between the executions of the steps changes, the order of the steps changes, one is missed or a change is made in carrying out the step -- for example, if the step says to heat to a certain temperature but a different one is selected. Some variations in method can be tracked to variations in human action, but others may be approved alternatives.

Self-Check – 2	Written test

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 the five factor of variation of equipment? (3pts)
2. How environment create equipment variation? (2pts)

Test II: Write true if the statement is correct and false if the statement is incorrect

1. Whether a manufacturing process uses simple or complex equipment, changes in the equipment can cause variation. (2pts)

2. Changes in the environment have the ability to trigger changes in raw materials, equipment and human action. (2pts)

Note: **Satisfactory rating - 9 points** **Unsatisfactory - below 9 points**

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

Answer sheet

Score = _____

Rating: _____

Test I

1._____

2. _____

Test II

1._____

2._____

Information Sheet 3- Workplace policies and procedures support food safety and quality

3.1. Legislative requirements

Food legislation includes acts, regulations, and requirements or procedures prescribed by the government relating to export of foodstuffs to meet requirements of the importing country while ensuring conditions of fair trade.

Food control needs to be simple, complete, covering various aspects of the food chain as needed and address requirements of importing country - both issues of safety and quality. Legislation may also include provisions for registration of establishments or listing of certified processing plants, establishment approval, licensing or registration of traders or agents, equipment design approval, penalties, coding requirements and charging of fees. Necessary provisions need to be included for ensuring integrity, impartiality and independence of the official and officially recognized inspection and certification systems.

Labeling is regulated to protect consumers who should have the correct information to make confident and informed food choices based on diet, allergies, personal taste or Product identification.

- Hazard symbols
- Precautionary statements
- First aid measures

Use material that will not be a source of contamination for wrapping and packaging store wrapping materials so they are not at risk of contamination wrap and package the food in a way that avoids contamination of products. Make sure that any containers are clean and not damaged, particularly if you use cans or glass jars be able to keep the wrapping or packaging material clean.

Food authenticity : Food authenticity is when food matches its description. Mislabeled food deceives the consumer and creates unfair competition with manufacturers or traders. Everyone has the right to know that the food they have bought matches the description given on the label. Part of our role is to help prevent mislabeling or misleading descriptions of foods. The description of food refers to the information given about its: name ingredient origin processing.

Lot/Code/Batch identification: A batch number or code number or lot number which is a mark of identification by which the food can be traced in the manufacture and identified in the distribution, shall be given on the label.

Name and complete address of the manufacturer: The name and complete address of the manufacturer and the manufacturing unit if these are located at different places and in case the manufacturer is not the packer or bottler, the name and complete address of the packing or bottling unit as the case may be shall be declared on every package of food.

Net quantity: Net quantity by weight or volume or number, as the case may be, shall be declared on every package of food; and In addition to the declaration of net quantity, a food packed in a liquid medium shall carry a declaration of the drained weight of the food.

Self-Check – 3	Written test

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 the important of identifying variation? (3pts)

2. List the type of maintenance? (2pts)

Test II: Write true if the statement is correct and false if the statement is incorrect

1. Identifying equipment variation in the processing area is necessary to ensure accurate, reliable, and timely testing. (2pts)

2. This maintenance is the most technical, it requires advanced technical resources, and at times of strong mathematical, physical and / or technical knowledge (2pts)

Note: **Satisfactory rating - 9 points** **Unsatisfactory - below 9 points**

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

Score = _____

Rating: _____

Answer sheet

Test I

1._____

2. _____

Test II

1._____

2._____

Information Sheet 4- Making personal behavior consistent to implement food safety and quality

4.1 Making personal behavior consistent to implement food safety and quality

Food handlers engaged in food handling activities shall refrain from smoking, spitting, chewing, sneezing or coughing over any food whether protected or unprotected and eating in food preparation and food service areas. The food handlers should trim their nails and hair periodically, do not encourage or practice unhygienic habits while handling food. Beards should be covered with nets/masks. No jewellery shall be allowed inside processing areas other than simple marriage bands. Persons working directly with and handling raw materials or food products shall maintain high standards of personal cleanliness at all times. In particular:

i) Wash their hands at least each time work is resumed and whenever contamination of their hands has occurred; e.g. after coughing / sneezing, visiting toilet, using telephone, smoking etc.

ii) Avoid certain hand habits - e.g. scratching nose, running finger through hair, rubbing eyes, ears and mouth, scratching beard, scratching parts of bodies etc.- that are potentially hazardous when associated with handling food products, and might lead to food contamination through the transfer of bacteria from the employee to product during its preparation. When unavoidable, hands should be effectively washed before resuming work after such actions.

Care should be taken not to wear the protective clothing, head covers, face masks, gloves and footwear outside the processing areas; and appropriate measures should be taken for the same.

Self-Check – 4	Written test

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 the important of monitoring processing operation? (3pts)

Test II: Write true if the statement is correct and false if the statement is incorrect

1. Monitoring is a process of determining how well our plans are being implemented. (1pts)

2. Personnel allocated to quality control need a very good understanding of the quality and quality control of raw material to be processed. (1pts)

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

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

Score = _____

Rating: _____

Answer sheet

Test I

1._____

Test II

1._____

2._____

Information Sheet 5- Identifying and reporting food safety hazards and/or quality

5.1 Identifying and reporting food safety hazards and/or quality

Implementing Hazard Analysis and Critical Control Point (HACCP) is crucial for any food manufacturing process. A HACCP plan covers the total supply chain, from inbound logistics, through storage, processing, sanitation and maintenance to the final use by the consumer. Across the operations, it must be ensured that procedures are available for internal logistics, processing specifications, working instructions, hygiene procedures and preventive maintenance plans. These procedures must cover start-ups, shutdown and unexpected stoppages during processing.

In general, safety concerns, including all sorts of bakery products, also occurs when the food is minimally processed to achieve desirable texture and quality attribute; or when many ingredients are added after baking therefore chances of cross contamination is high from raw materials if not cleaned and stored properly.

All potentially hazardous products have pH > 4.5 and aw > 0.84.

Table 1: Bakery groups according to pH

Product	**pH**	**Example**
High-acid bakery products	< 4.6	apple pie
Low-acid bakery products	> 4.6 & < 7	whole wheat bread, hite bread, chocolate nut bread
Non-acid alkaline bakery products	>7	banana nut bread, muffins

Table 2: Bakery groups according to aw

Product	aw	Example
Low-moisture bakery products	< 0.6	cookies, crackers
Intermediate-moisture bakery products	> 0.6 & <0.84	doughnuts, pastries, cream filled cake
High moisture bakery products	> 0.84	breads, pies, custard cakes, pizza

Brief Introduction of HACCP: Hazard Analysis Critical Control Point (HACCP) is essential to carry out to identify the weakness of the production line and to suggest critical limits in compliance with legislation and therefore the preventive and corrective measures. Though HACCP system was designed to aim zero defect products, yet it is not feasible to achieve 100% defect free products. However, it sets a goal to minimize the associated risks during production and subsequently reduce unacceptable unsafe products.

During implementation of HACCP, it is imperative to set controls at each point of the production line at which safety problems (physical, chemical and microbiological) are likely to occur. A HACCP plan is required to be in place before initiating the HACCP system. A HACCP plan consists of 5 initial steps and 7 major HACCP principles.

5.1.1 Microbiological Hazards

Salmonella spp

Salmonella spp are destroyed in accelerated temperature conditions and remain viable under freezing and refrigerated conditions. Eggs are the most common and obvious source of Salmonella in bakery products. Other ingredients which can cause Salmonella are flour, milk, cheese, butter, fruits, nuts, spices, which are used in any one or more bakery products. These causes Salmonellosis; which is a common gastro-intestinal foodborne illness.

Control measures: Handling unclean and contaminated eggs can result in spreading contamination of work surfaces, hands and equipment. Therefore, through cleaning of eggs is required. Also, the eggs should be used as soon as they are cracked; or the planning of a specified quantity of eggs should be developed such that there is no longer time wait between eggs cracking and using into processing. Strict personal hygiene and good manufacturing practices are also critical.

Staphylococcus aureus

The common source of this microorganism is human nasal passages, throats and skin. It is also found everywhere in water, milk, sewage and on food contact surfaces. Although S. aureus is destroyed by heating, the enterotoxin still is active and not removed even under pasteurized conditions. Hence, food borne illnesses which caused by S. aureus may still occur even in the absence of viable cells. Mostly the bakery products are kept at ambient temperature in retails and sometimes they are held manually by staff and customers at self-serve areas. This increases highly the contamination potential of S. aureus and subsequently the growth and production of enterotoxin at ambient storage temperature.

Control measures: Improved sanitation, temperature control, use of preservatives, Good Manufacturing Practices (GMPs) are some factors which can effectively reduce the level of contamination.

Bacillus species

Bacillus spp. are found very commonly in soils, dust and water. Bacillus spores are found in flour, flour based products i.e. bakery and bakery environment. These spores are heat resistant and can grow to toxin production levels under favourable conditions.

Control measures: Proper sanitation and testing of raw materials helps to reduce initial

spore counts. The control of spore growth is difficult in the finished products; therefore, use of preservative can delay the germination.

Listeria Monocytogenes

This is widespread in soil, vegetation and water. It survives in aerobic, anaerobic and microaerophilic and also at elevated levels of CO_2. It can also grow at low pH and aw conditions.

Control measures: Under the above conditions, the only way to prevent contamination and growth of this pathogen is to maintain strict hygiene and temperature condition.

Mycotoxigenic Molds

Molds, though are visibly seen and rejected by consumer, yet some mold secretes mycotoxins into the bakery products which causes major health concerns.

Control measures: Proper storage of wheat flour to avoid moisture pick-up and moisture migration therefore prevents mold growth. Antimycotic agents like propionates and sorbates greatly reduce the risk of mold growth and mycotoxin production in breads. Regular air quality checks are also necessary for monitoring and hence controlling the high levels of microorganisms in the processing environment.

5.1.2 Chemical Hazards

Grease

Vehicle grease can transfer from raw material packaging surfaces during transport. Grease may also transfer at metal detection station.

Control measures: Vehicle inspection should be conducted regularly. Also control on cleanliness should be maintained from supplier's end.

Chemical contamination

Cross contamination of chemicals and raw materials / ingredients can occur in storage areas.

Control measures: Adequate physical separation should be maintained between other non-edible chemicals and food items. All possible measures should be developed and effectively implemented to avoid any chance of cross contamination.

Food color

High level of food colors in bakery products cause severe health effects including asthma, hyperactivity, etc.

Control measures: Food color concentration need to be controlled and approved levels shall be maintained.

Arsenic and heavy metals

Long term presence of arsenic in water and in products with water as an ingredient can cause cancer in skin, lungs, bladder and kidney. Also water that is used for cleaning and sanitation should be free of heavy metals.

Control measures: Periodic water testing is necessary for control and monitoring.

5.1.3 Physical Hazards

Some physical hazards and sources possible in bakery industry are from metals, thread hair, rice bran (from raw materials received in plastic containers and gunny bags and other processing areas); wood (raw materials received in liquid drums), unacceptable odor due to spoilage and fermentation (inappropriate storage of butter and other raw materials); dust and dirt (throughout processing areas).

Control measures: Regular inspection plans, control and effective cleaning and maintenance.

5.1.4 Allergen Hazards

Food intolerance or Allergen may happen through Gluten, Eggs, Lactose, whipped dairy Cream. An extreme care is needed in cleaning and sanitation and prevention of cross contamination both within allergen– allergen ingredients and allergen– non-allergen ingredients, during manufacturing processes. A robust program need to be developed and implemented effectively on Cleaning & Sanitation, GMP, Personal hygiene, GHP, etc.

The above mentioned allergic causing ingredients are seldom replaced by few industries which want to avoid the use of this allergen and hence save efforts for prevention of cross contamination and subsequent hazards related to it. In this scenario of replacement, when new ingredients are added, care is needed to control related hazards to these ingredients. Thus, all the above physical, chemical and microbiological hazards need to be analyzed with risk assessments and control measures to be specified and implemented, if applicable.

Gluten free baking includes challenge of replicating functionality of gluten in absence of wheat fiber use. Gluten intolerance/ celiac disease is a lifelong illness that is caused by sensitivity to gluten. Flour is thus replaced with combination of fine rice fiber, potato starch, tapioca fiber and xanthan gum.

Lactose is a double sugar found in milk and similarly, is replaced by Soy milk.

Whipped dairy cream is replaced by combination of veg based cream filling. It is also replaced by soft or silken soybean curd in case of cheese cakes.

Eggs are used to give moisture content. The moisture content can be replaced with milk

or other liquids. Commercial egg can be replaced by combination of potato starch, tapioca fiber, chemical leavened and carbohydrate gums. Lecithin can also be added which improves overall volume, texture and eating quality.

Control Measures: Allergen Control Program (ACP) should include the following Control Measures in a bakery industry:

- **People**:
  - ✓ Employee awareness through product and utensil identification
  - ✓ Hand washing in between non-allergic and allergic materials
  - ✓ Clothing- change of clothes wore while handling allergen materials.
  - ✓ Rework control- Utmost care to be taken to handle allergen materials to avoid any accidental cross-contamination.
  - ✓ Waste control- Allergen material wastes should not be allowed to pile up or spill which can result in environment cross contamination.

- **Raw materials & ingredients:**
  - ✓ Knowledge of ingredients from suppliers to avoid any possible cross-contamination.
  - ✓ Clear labeling and identification of all raw materials and ingredients
  - ✓ Safe transport from supplier to receiving place
  - ✓ Allergen items to store separately in food processing units. Avoid any spillage

- **Packaging:**
  - ✓ Good and safe package integrity from supplier
  - ✓ Correct labeling

- **Cleaning:**
  - ✓ Effective cleaning to avoid risk of cross contamination
  - ✓ Dedicated cleaning equipment

- ✓ Cleaning schedule to be developed keeping in mind all the chances of cross contamination
- ✓ Regular cleaning of spillages of allergen materials throughout processing

- **PRODUCTION:**
  - ✓ Minimize movement of materials
  - ✓ Scheduling of production runs with appropriate cleaning between the runs
  - ✓ Physical barriers between allergen and non-allergen materials

Self-Check – 5	Written test

Name…… ID……. Date…….

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

Write true if the statement is correct and false if the statement is incorrect

1. All out-of-specification products must be clearly identified, rectified, and reported to prevent unauthorized release.(2pts)

2. Determine the corrective action required to eliminate non-conformance of future product, i.e., through re-work or other means. (2pts)

3. Hands should be washed and disinfected thoroughly before handling products at different stages of processing. (2pts)

Note: Satisfactory rating - 6 points Unsatisfactory - below 6 points

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

Score = _____

Rating:

Answer Sheet

Name: _____ Date: _____

1. _____
2. _____
3. _____

Information Sheet 6- Recording food safety and quality information with workplace reporting requirements

6.1. Recording food safety and quality information with workplace reporting requirements

Records help to ensure consistency of processing operations and end-product quality and safety. Maintaining adequate documentation and records of processing operations is important in the event of recall of with raw material collection. Where appropriate, records should be maintained to adequately reflect product information, such as product formulations or specifications and operational controls. Records should be kept long enough to facilitate recalls and foodborne illness investigations, if required. This period will likely be much longer than the shelf life of the product.

Maintaining adequate documentation and records of processing operations is important if a trace back investigation of product is ever needed. Records are most useful when they begin by including the date and time, name of person(s) who completed the record, and the activity or production station being recorded. The record should include details of the food safety breach (e.g., what critical limit was exceeded at what critical control point), details about the corrective action that was taken, and why it was taken. Recording corrective actions makes it possible to identify recurring problems and trends that could be putting customers at risk and sending operational costs through the roof. For example, if there are a very high number of immediate corrective actions related to spoiled food, it could mean that there are underlying issues related to:

- Ineffective inventory management (e.g., ordering too much)
- Poor stock control (e.g., not practicing First In, First Out)

Examples of cereal processing records including:-

- Raw materials records
- Equipment monitoring and maintenance records
- Equipment calibration records
- Sanitation records

- Product processing records
- Pest control records
- Recall procedures
- Employee training records
- Temperature control records
- Calibration records
- Product processing batch records
- Corrective action records
- Distribution records
- Inspection records (e.g., incoming product, facility, production area)
- Microbiological contamination records (e.g., food contact surfaces, equipment)

Self-Check – 6	Written test

Name…… ID……. Date…….

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

Short Answer Questions

1. List the 10 good housekeeping rules?(10pts)

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

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

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

1. _____

Information Sheet 7- Maintaining the work area with housekeeping standards

7.1 Maintaining the work area according to housekeeping standard

Good housekeeping is an important part of safety and accident prevention. Good housekeeping involves the maintenance of good lighting and heating, power supply lines, tools, machinery and the facilities for the efficient storage of materials and equipment. Good housekeeping can significantly reduce the risk of an accident and injury, failure to maintain a clean and tidy. Work areas and equipment are to be thoroughly cleaned after use. A clean work environment leads to pride in workmanship and a safe operation. Everyone is responsible for safety and means that all management and every employee should have an understanding of good housekeeping practice, and how it can help to prevent a large number of accidents at work.

7.1.1 Workplace Housekeeping

Effective housekeeping can help control or eliminate workplace hazards. It includes keeping work areas neat and orderly, maintaining halls and floors free of slip and trip hazards, and removing of waste materials (e.g., paper, cardboard) and other fire hazards from work areas.

Effective housekeeping results in:

- Reduced handling to ease the flow of materials
- Decreased fire hazards
- Lower worker exposures to hazardous products (e.g. Dusts, vapors)
- More efficient equipment cleanup and maintenance
- Better hygienic conditions leading to improved health
- More effective use of space
- Reduced property damage by improving preventive maintenance
- Improved morale
- Improved productivity

Self-Check – 7	Written test

Name…… ID…… Date…….

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

Choose the best answer

1. What is the of benefits good housekeeping?
   A. Increased efficiency.
   B. The reduction of accident hazards.
   C. The reduction of fire hazards.
   D. All of the above
2. Good housekeeping involves the maintenance of:
   A. Good lighting
   B. Heating and power supply lines,
   C. tools and machinery
   D. All of the above
3. Which of the following is the characteristics of good housekeeping standard
   a. Change burned-out light fixtures in work areas, walkways, and exits.
   b. Keep floors and work areas clean, dry, and grease-free
   c. Keep steps and ladders in serviceable condition
   d. All of the above

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

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

Score = _____

Rating: _____

Answer Sheet

Name: _____ Date: _____

1. _____ 2. _____ 3. _____

Information Sheet 8- Conducting work with workplace environmental guidelines

7.1. Conducting work according with legislative requirement

Bread baking should be conducted according food standards code, including labeling, weights and measures legislation covering food safety, environmental management, OHS, anti-discrimination and equal opportunity. Every operator or processer has a legal and moral responsibility to ensure that baked bread offered for human consumption is safe to eat. Risks to food safety can be minimized if basic good processing and good hygiene practices are followed in processing and throughout the postharvest handling operations.

Legislative are applicable to the entire bakery operators at all stages in the processing of bakery products and without prejudice to more specific requirements relating to food hygiene. The regulation reinforces the responsibility to ensure food safety and lays down general rules for the in the hygiene of food taking particular account of the following principles: primary responsibility for bakery safety rests with the baking operation-

- Necessity to ensure food safety throughout the processing chain starting from the primary production.
- Provide assurance by the baking operation that the food is fit for human consumption and maintain confidence in nationally traded bakery which cannot be stored at ambient temperature shall be under controlled conditions.
- Implementation of procedures based on the HACCP principles (Hazard Analysis Critical Control Points), fully supported with Good Hygiene Practices (GHPs) that are necessary to maintain hygienic environment throughout the food chain, suitable for the production, handling and processing of clean and safe end product, fit for human consumption.
- Ensure consumers‟ clear and transparent information through proper baking about the use and handling of the products for safe consumption.

In the processing area the rules and procedures for food hygiene and handling

Produce are usually documented and available for staff reference. You should be aware of the sorting and grading rules and work procedures and ensure that the rules and procedures are known, understood and implemented by all the workers in your team. In relation to sorting and grading procedures; methodology and standards are based on the type of produce, operation circumstances, (scale of operation and equipment available), Industry Good Practices and Client or market requirements.

Hazard Analysis Critical Control Point (HACCP):

HACCP allows processors/regulator to look at what happens during the process to ensure safety. Major Concepts of HACCP;

1. A preventive system of control particularly on biological hazards
2. A system approach for estimating the risk in producing a food product
3. Universally recognized system as the most effective way to prevent food borne illness
4. Science - based systematic, identified specific hazards and measures for their control to ensure food safety
5. Capable of accommodating change, such as advances in equipment design, processing procedures, or technological developments that can be applied throughout the food chain from the primary producer to the final consumer
6. Applicable to establishments that produce, process, treat, pack, trade, transport, serve, or involve in food production

Implementing Hazard Analysis and Critical Control Point (HACCP) is crucial for any food manufacturing process. A HACCP plan covers the total supply chain, from inbound logistics, through storage, processing, sanitation and maintenance to the final use by the consumer. Across the operations, it must be ensured that procedures are available for internal logistics, processing specifications, working instructions, hygiene procedures and preventive maintenance plans. These procedures must cover start-ups, shutdown and unexpected stoppages during processing. Hazard Analysis Critical Control Point (HACCP) is essential to carry out to identify the weakness of the production line and to suggest critical limits in compliance with legislation and therefore the preventive and corrective measures. Though HACCP system was designed to aim zero defect

products, yet it is not feasible to achieve 100% defect free products. However, it sets a goal to minimize the associated risks during production and subsequently reduce unacceptable unsafe products. During implementation of HACCP, it is imperative to set controls at each point of the production line at which safety problems (physical, chemical and microbiological) are likely to occur. A HACCP plan is required to be in place before initiating the HACCP system. A HACCP plan consists of 5 initial steps and 7 major HACCP principles.

Probability/ Likelihood	What's the chance of the risk occurring?		Consequence/ Severity				
			How severe could the outcome be if the risk event occurs?				
			Severe	Major	Significant	Minor	Insignificant
		Frequent	Extreme	Extreme	Very High	High	Medium
		Likely	Extreme	Very High	High	Medium	Medium
		Occasional	Very High	High	Medium	Medium	Low
		Seldom	High	Medium	Medium	Low	Very Low
		Unlikely	Medium	Medium	Low	Very Low	Very Low

Figure 7: Severity and probability a processing step

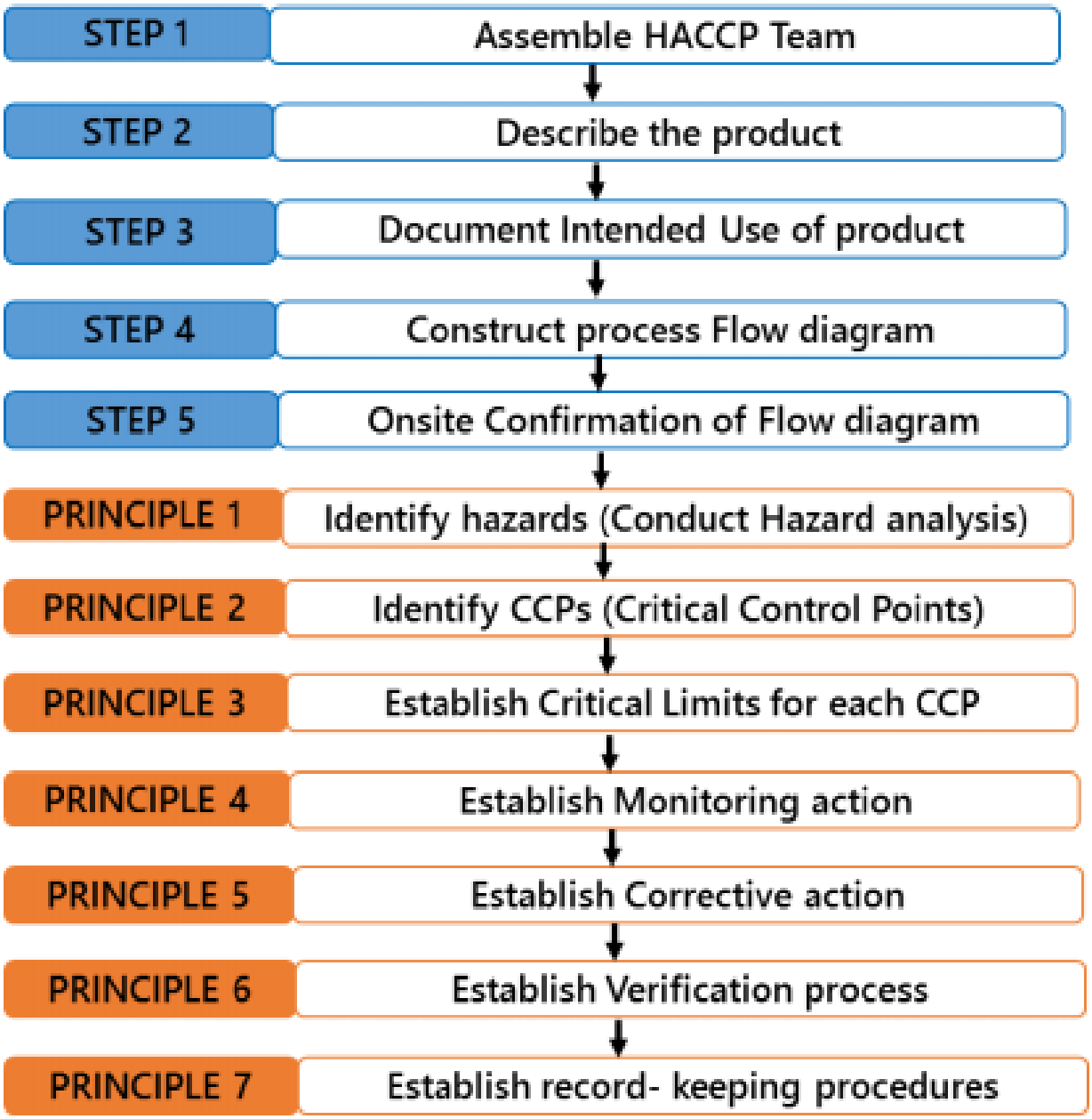

Figure 8: Seven major HACCP principles

The requirements for Sanitation Standard Operating Procedures (SSOPs) along with Good Manufacturing Practices (GMPs) & Good Hygiene Practices should be considered as Pre-requisite for HACCP. Risk assessment is a critical step in a HACCP plan. Below is a template to determine what severity and probability a processing step is involved with and therefore what level of criticality is holds in the processing line.

Seven (7) HACCP Principles

1. Hazard analysis
2. Identify critical control points
3. Establish Control limits
4. Monitor critical limits
5. Establish corrective actions in case of deviation from established critical limits
6. Establish verification procedure to ensure that the system is consistent
7. Establish record keeping procedures

General Hazards Characteristics

- The product contains sensitive ingredients, which can be assumed as potential sources of contamination under normal circumstances.
- The manufacturing process does not contain controlled processing steps that effectively destroy harmful bacteria.
- There is substantial potential for microbiological abuse in distribution or in consumer handling that could render the product harmful when consumed.
- Product is subject to contamination after processing and before packaging.
- No terminal heat process after packaging.

HACCP Pre-Requisite Programs

Good Manufacturing Practices (GMP): GMPs are systems put in place to ensure that food prepared in a plant is sound and free of contamination. GMPs include:

- Plant grounds and building facilities emphasize pest control;
- Equipment design provides ease in cleaning and maintenance;
- Personal hygiene practices and facilities are set;
- Storage and warehousing are free from contamination.

Sanitation Standard Operating Procedures (SSOP): SSOP are components of GMP that emphasize sanitation procedure. They include:

- Safety of water that gets in contact with food and food surfaces;
- Measures to prevent contamination;
- Employee hygiene practices;

- Control of employee health conditions that could result in contamination of food and food surfaces;
- Protection of food and food contact surfaces from adulteration with toxic and other harmful components;
- Proper labeling and storage and use of toxic; and control of pests.

Self-Check – 8	Written test

Name…… ID…… Date…….

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

Short Answer Questions

1. Why maintain work place records?(2)

2. Write some workplace records during primary processing spices and herbs?(3)

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

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

Score = _____

Rating: _____

Answer Sheet

Name: _____ Date: _____

LG #40	LO #3- Take corrective action in response to quality and food safety non-compliance

Instruction sheet

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

- Implementing workplace procedures
- Quality and food safety non-compliance
- Investigating hazardous events to identify cause
- Implementing control measures to prevent recurrence and minimize risks of hazardous events

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**:

- Implement workplace procedures
- Quality and food safety non-compliance
- Investigate hazardous events to identify cause
- Implement control measures to prevent recurrence and minimize risks of hazardous events

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
4. Accomplish the self-checks
5. Perform operation sheets
6. Do the “LAP test”

Information Sheet 1- Implementing workplace procedures

1.1. Implementing workplace procedures

Good Manufacturing Practices: Include practices preventing and controlling post-harvest hazards affecting produce safety and having minimum effect on workers and the environment .From the chain stand point, hazard prevention and control in stages previous to production and harvest of produce using GAP are essential to assure success of implementing Good Manufacturing Practices programs. The objective is to ensure that safe raw materials go into the packaging plants with assured safety resulting from using best practices in post-harvest handling. Enforcing GMP programs supposes identifying associated hazards in post-harvest handling and suitable preventive and control practices.

Good Hygienic Practices: Include all those measures and conditions required to prevent and control produce contamination hazards, mainly biological. In practical terms, the implementation of GAP and GMP (at primary and post-harvest stages) already includes all recommendations regarding hygiene practices to produce and handle safe products.

Good Practices as programs for safety assurance of cereal processing

- Good Practices, as seen from safety assurance programs for fresh fruits and vegetables imply:
- Knowing the product's potential contamination hazards in production and handling;
- Prioritizing these dangers (define risk);
- Determining prevention and control procedures for each operation (implementing GAP and GMP), for identified and prioritized hazards;
- Applying support procedures, standardized sanitary operating procedures (SSOP) and product recall procedures;
- Traceability: consumers tracking and information procedures;
- Continuous training to different chain players;
- Keeping a record and documentation system.

Standard operating procedures (SOPs): A written, detailed and accessible description for use by personnel explains how each operation in the flow diagram is performed, including cleaning and maintenance procedures. All are known as SOPs.

Operating programs for sanitation and maintenance are put in place to assure that maintenance and sanitation (cleaning) of facilities, tools and equipment, as well as pests' control and waste handling, are efficiently and appropriately done.

Establishing a HACCP system: The document specifies that before applying the HACCP system to any sector of the food chain, it should be working according to the Codex General Principles of Hygiene, relevant Codex Codes of Practice and to legislation relating to food safety. Prior to applying the HACCP system, prerequisite programs (GAP, GMP, GHP, training programs, traceability, standardized sanitary programs, etc.) should be in place.

Establishing a HACCP program relies on the application of the seven HACCP principles:

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

Self-Check – 1	Written test

Name…… ID……. Date…….

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

Test I short answer

1. What are standard operating procedures? (3)
2. What are Good Hygienic Practices? (3)
3. What are Good Manufacturing Practices? (3)

Test II Write true if the statement is correct and false if the statement is incorrect

1. Prior to applying the HACCP system, prerequisite programs (GAP, GMP, GHP, training programs, traceability, standardized sanitary programs, etc.) should be in place. (2pts)
2. Enforcing GMP programs supposes identifying associated hazards in post-harvest handling and suitable preventive and control practices. (2pts)

Note: **Satisfactory rating - 9 points** **Unsatisfactory - below 9 points**

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

Score = _____

Rating: _____

Answer Sheet

Name: _____ Date: _____

Test I

1. _____
   _____
2. _____
   _____
3. _____
   _____

Test II

1. _____
2. _____

Information Sheet 2- Quality and food safety non-compliance

2.1. Respond to quality and food safety non-compliance

A food safety program enables food establishments to ensure food production methods are safe, hygienic and that they comply with food regulations and legislation. The food safety program systematically identifies the food safety hazards that may be reasonably expected to occur in your workplace. It identifies where and how each hazard can be controlled, describes how these controls are to be monitored, the corrective action required if control conditions are not met, and information to be recorded.

2.1.1 Collect and analyses food safety data

Collecting and analyzing food safety data is an essential component of any food safety program. You should collect and analyze data on an ongoing basis to enable any breaches of food safety procedures to be identified and corrected.

Sources of food safety data: The systems, procedures and support programs that assist with the implementation of food safety programs not only give direction and advice to staff implementing the program, but also provide information and data to supervisors through the use of monitoring forms such as check sheets.

As a supervisor, you will be required to collect this data and analyze it to identify any irregularities and noncompliance with regulations. The data may also highlight areas where improvements could be made to ensure that food quality is maintained.

Standard operating procedures (SOPs): Standard operating procedures cover all areas of production and support functions, which contribute to the production (and safety) of the final product. Standard operating procedures must comply with the Food Safety Standards and any relevant industry codes. They give staff clear direction for following sound hygiene procedures and often have associated check sheets that provide a range of data.

The Standard operating procedure identifies:

- The staff responsible for the activity (e.g. receiver and stores staff)
- The nature of their responsibilities (e.g. to ensure acceptable goods are received and non-conforming goods returned following correct procedures)
- Check sheets or reporting sheets that must be completed as part of the procedure.

Standard operating procedures may include:

1. Cleaning schedules
2. Pest control programs
3. Maintenance schedules
4. Calibration of equipment
5. Supplier standards
6. Staff training schedules.

   Examples of these SOPs can be found at the end of this document.

1. Cleaning schedules: The basis of clean premises is a regular cleaning program, sometimes referred to as a cleaning schedule or a cleaning plan. This means guidelines or a schedule of tasks — in writing — which cover all cleaning needs and which every member of staff can understand and follow.

The cleaning schedule identifies the best method of cleaning and equipment needed for the task. It must be in writing and should include:
WHAT: is to be cleaned
WHO: which section, which staff member
WHEN: how often
HOW: method, materials and equipment

Monitoring and reporting sheets associated with the cleaning schedule will provide data showing how well the schedule is working.

2. Pest control programs: Pest control programs are planned and documented and should contain information about the methods of treatment, the frequency of treatment, what pests and areas were treated, and which chemicals were used.

3. Maintenance schedules: Regular maintenance is important, as it will ensure that all areas of the premises and all equipment are in working order. Regular maintenance also enables all the related policies and procedures to operate effectively. For example:

- If cracked and damaged floor tiles are replaced, it will enable effective cleaning of the floors and stop pests in the kitchen area

4. Calibration of equipment

Equipment calibration is required to ensure all equipment fitted with thermostats is working accurately. A fridge gauge might read 4°C, but it could be operating at 8°C if the gauge is faulty. Regular calibration would reduce the likelihood of this happening. Equipment that needs calibration includes:

- Hand held thermometers
- Refrigeration equipment
- Freezers
- Hot boxes
- Salad bars
- Sandwich bars
- Bain-maries
- Ovens
- Dishwashers and glass washers.

5. Supplier standards: Food safety does not begin on the premises — it starts with the supply of food and beverages. It is also directly related to other products used on the premises, such as cleaning chemicals and packaging products.

Suppliers need to be aware of your food safety program and the part they play in it. The Purchase and Supplier Standard Operating Procedure describes the process for selecting suppliers, assessment criteria for suppliers and the use of purchase specifications.

In addition to keeping a register of approved suppliers, specifications are provided for the supplier in relation to hygiene and food safety.

6. Staff training schedule: A planned and systematic approach to staff training, providing instructions and information, will help staff to perform their tasks to the required standard.

They must be able to demonstrate and explain how to keep food safe while it is in their care. This means staff must be aware of:

- The steps in the production process they are responsible
- Food safety hazards associated with those steps
- Control measures and critical limits for those hazards
- How to monitor these production steps
- What to do if critical limits are not achieved
- How to complete the relevant documentation.

Additionally they must also be aware of their responsibilities in relation to the supporting policies and procedures of the food safety program. These include:

- Personal hygiene and health
- Cleaning and sanitizing
- Pest control
- Garbage disposal
- Maintenance of premises and equipment
- Storage
- Work instructions

Work instructions and check sheets: Work instructions provide detailed practical instructions and critical limits that must be followed when handling food to ensure that food safety requirements are met. They ensure that the control measures will be implemented correctly. The work instructions cover stages of food handling including:

- Temperature control
- Food receipt
- Food storage
- Food processing
- Food display
- Food packaging
- Reporting food safety problems.

Work instructions differ from standard operating procedures in that they are directly linked to a Critical Control Point rather than being a general policy document. Work instructions can be used as a source of information when conducting training.

The work instruction identifies the staff responsible for the activity (e.g. manager) and also the nature of their responsibilities (e.g. to ensure these procedures are in place and carried out). Below is a sample work instruction for food storage.

Self-Check – 2	Written test

Name…… ID…… Date…….

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

Test I short answer

1. Standard operating procedures may include:
   A. Cleaning schedules and Pest control programs
   B. Maintenance schedules and Calibration of equipment
   C. Supplier standards
   D. Staff training schedules
   E. All of the above

2. The Standard operating procedure identifies:
   A. The staff responsible for the activity
   B. The nature of their responsibilities
   C. Check sheets or reporting sheets that must be completed as part of the procedure
   D. All of the above
   E. None of the above

3. Equipment that needs calibration includes:
   A. Hand held thermometers
   B. Refrigeration equipment, freezers and hot boxes
   C. Bain-maries and ovens
   D. Dishwashers and glass washers
   E. All of the above

Test II Write true if the statement is correct and false if the statement is incorrect

1. Staff must be aware of the steps in the production process they are responsible. (2pts)
2. Staff must be aware of food safety hazards associated with those steps. (2pts)
3. Staff must be aware of control measures and critical limits for those hazards. (2pts)
4. Staff must be aware of how to monitor these production steps. (2pts)
5. Staff must be aware of what to do if critical limits are not achieved (2pts)
6. Staff must be How to complete the relevant documentation. (2pts)

Note: **Satisfactory rating - 6 points** **Unsatisfactory - below 6 points**

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

Score = _____

Rating: _____

Answer Sheet

Name: _____ Date: _____

Test I

1. _____
2. _____
3. _____

Test II

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Information Sheet 3- Investigating hazardous events to identify cause

3.1 Identify non-conformance in food safety

Non-conformance is when the control measures identified in the food safety manual are not being applied or critical limits are not being met. Non-conformance may lead to the food becoming contaminated either by physical, chemical or biological means which can lead to a breach of food safety legislation. In large scale catering, such as hospitals, nursing homes and childcare centers any breakdown in good hygienic practices can have very serious consequences.

You can identify non-conformance through:

- Analyzing monitoring forms such as check sheets and reports
- Customer complaints
- Observation of work practices
- Feedback from audits.

Let's look at each of these areas these in more detail.

I. Monitoring forms

Monitoring procedures form an essential component of food safety procedures as they indicate whether or not control measures and critical limits are being achieved. If you are looking to improve systems and processes you will need to 'diagnose before you prescribe'. The food safety manual should contain monitoring forms associated with the work instructions and standard operating procedures that allow you to collect meaningful information and analyze it. The monitoring forms show you where and how often the problem is occurring. Only then can you attempt to fix it.

The monitoring forms usually work like a tally sheet where incidents can be recorded on a daily or weekly basis. This way, you can measure the number of times a particular error has occurred over a time period and whether or not there are any patterns emerging.

Below are some examples of monitoring records.

Monitoring records

Table 3: Monitoring record

Process step	Monitoring record
Receiving	Incoming goods record sheet Reject goods incident form
Storage	Cold storage temperature records Dry storage temperature records
Preparation/ processing	Production sheets
Cooking/	Fruit and vegetable sanitizing record Production sheets
Cooling	Production sheets Cooling check sheet
Reheating	Production sheets
Hot hold or cold hold	Holding temperature check sheet
Holding temperature check sheet	Wastage sheets
Transport and dispatch	Dispatch records

II. Customer complaints

Customer complaints provide useful feedback on food safety and quality. They should be dealt with promptly. A customer complaint procedure should be implemented as part of the quality procedures. The procedure should include the reporting, recording and resolving of customer complaints. Investigating customer complaints is essential as it may uncover unsafe practices that could result in food poisoning.

Where an incident of food adulteration, food contamination or food poisoning is alleged, it should be immediately reported to the supervisor. The supervisor should investigate the incident immediately by interviewing the customer and food service staff on duty at the time of the alleged incident. If the investigation reveals a broader risk to public health, the manager must advise the Local Regulatory Authority.

III. Observation of work practices

General observation of staff carrying out tasks may identify practices or procedures that are not consistent with the food safety program. Sometimes staff takes shortcuts which may result in unsafe practices. These unsafe practices may not be picked up through the monitoring check sheets.

IV. Audits

A HACCP (Hazard Analysis Critical Control Point) audit is an independent examination of your food safety program. Specifically, the auditor will determine if the food safety procedures and their supporting policies and procedures are satisfactory for controlling the likely hazards. To identify non-conformance, your first step is to determine if the data reported by staff conforms to the food safety program, i.e. are the work instructions being followed? If it does not, you must investigate the cause of this 'non-conformance' and decide if food practices and procedures should be reviewed. This process can be used to maintain food quality and make improvements to your food safety program.

6.1. Investigating and responding to non-conformance

Once you have identified an incident or non-conformance you need to investigate the cause and respond appropriately. It may be a one off incident, or it may be a recurring problem. The monitoring forms associated with the work instructions and standard operating procedures will provide this information. A record of non-conforming product on corrective action sheets will enable you to investigate further. If the incident is recurring, then further investigation will be required.

The best way to gather the information you require will be to talk with the staff to find out what happened and the circumstances that may have contributed to the incident. Factors that could contribute to nonconformance include:

- Low level of skills and knowledge of staff or insufficient staff
- Lack of information on procedures or unclear information
- Malfunctioning equipment

Here are some suggestions of how to gather the information you need:

Investigating non-conformance

Table 4: Investigating non conformance

People Talk to the staff	Are the staffs adequately trained to carry out monitoring? Were there new staff members who may not have been familiar with the requirements of the food safety program? Were they short staffed? Do they need extra training on safe food handling?
Equipment and resources Look at the equipment and the resources available	Is there sufficient equipment to carry out the monitoring? Has thermostatically controlled equipment been regularly monitored? Have there been problems previously with the equipment? Are there sufficient resources available to apply the safe food handling procedures, e.g. single-use gloves?
Procedures: Look at the standard operating procedures and work instructions	Is there a procedure for staff to follow? Are the procedures clear? Do they need expanding to include the area of noncompliance?

Responding to non-conformance

Your response will depend on the reason for the non-conformance.

First, you need to check that corrective action has been taken in the context of the food safety program. Corrective actions need to be taken as soon as possible to prevent further contamination and to ensure contaminated food is not served to customers. Actions to respond to non-conformance may have included:

- Rejecting stock upon delivery

- Moving stock to appropriate storage (that has remained at or below 5°c) to alternative
  refrigeration, while one fridge is under repair
- Continued cooking of the food until the correct temperature is reached
- Discarding the unsafe food items. Non-conforming products that cannot be corrected, for example food that has been contaminated by glass shards, must be separated from other products and disposed of
- Where monitoring has indicated that equipment is not functioning correctly this should be followed up with a service call.

Further action may be required for recurrent incidents. If a lack of information on procedures or unclear information is determined to be the cause of the non-compliance, then you would recommend practices and procedures be reviewed to prevent future occurrences

- Control measures to prevent the breach from recurring
- Control measures to prevent the breach from recurring include:
  - ✓ Providing additional training to staff depending on the nature of the incident, e.g. training staff how to use a thermometer correctly
  - ✓ Supporting staff, e.g. provide the necessary equipment/materials such as thermometers, so they can comply with the work instruction
- Checking and repairing equipment
- Reviewing and amending work instructions and standard operating procedures to include the area of non-compliance
- Developing additional work instructions and standard operating procedures to include the area of non-compliance.

All or a combination of these actions will help you to overcome the problem and bring the production process back to food safety standard.

Consider the example shown in figure below. Any food that is not correctly labeled and dated should be considered unsafe and discarded. But this only occurred on one of the reported incidents! In this case, your first action would be to follow up with the staff involved and clarify the correct procedure to follow when non-conformance occurs. The

corrective action to be followed when non-compliance is identified must be documented if it is not already included.

You will then need to find out who was working on the shift when the incident occurred and talk with those staff members to determine what further action could be taken to prevent recurrences. Perhaps the staffs weren't aware that they needed to label cooked foods, or maybe they had run out of items needed to label the food, or maybe they were really busy on those days. Their answers will help you decide what control measures you should take to prevent the breach from happening again.

It is important to discuss the problem with staff so you can determine the cause of the problem, e.g. they may not have enough time to complete the procedure. If this is the case, you may have to review the work instruction or support your staff in some other way to ensure they have enough time to complete all the required tasks.

Corrective action form

Includes all identified contamination incidents, returned food to supplier and other corrective actions taken within the food production process.

Week Commencing: 04/05/04

Verified by: Bob

Date	Identified problem	Corrective action taken	Corrective action completed
04/05	*Precooked food not labelled*	*Food thrown out*	*04/05*
06/05	*Precooked food not labelled or dated*	*Food held in cold storage, then thrown out*	*15/05*
07/05	*Precooked food not labelled*	*Identified as chicken — used for lunch*	*18/05*
10/06	*Precooked food not labelled*	*Food reheated to 80°C and served.*	*13/06*

Figure 9: Corrective action form

Product recall

If a manufacturer believes a product may have been contaminated and pose a risk to consumers they are required to recall their products. Food Safety Practices and General Requirements require all food manufacturing businesses to have effective food recall procedures. There call procedures must be clearly documented in the food safety manual.

Products that have been deemed unsafe because they are out of date, subject to recall or other issue should be separated from other products, clearly labeled so they are not returned to the store, stored under appropriate temperature conditions and returned to the supplier (in the case of recall). Checks will need to be made of products that have been prepared using the recalled product. These products should be separated from other products, recorded on waste check sheets and disposed.

Self-Check – 3	Written test

Name…… ID…… Date…….

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

Write true if the statement is correct and false if the statement is incorrect

1. The monitoring forms usually work like a tally sheet where incidents can be recorded on a daily or weekly basis. (2pts)
2. Monitoring procedures form an essential component of food safety procedures as they indicate whether or not control measures and critical limits are being achieved. (2pts)
3. Customer complaints provide useful feedback on food safety and quality. (2pts)
4. The customer complaints procedure should include the reporting, recording and resolving of customer complaints. (2pts)

Note: Satisfactory rating - 6 points **Unsatisfactory - below 6 points**

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

Score = _____

Rating: _____

Answer Sheet

Name: _____ Date: _____

Test

1. _____
2. _____
3. _____
4. _____

Information Sheet 4- Implementing control measures to prevent recurrence and minimize risks of hazardous events

4.1 Control measures

Control Measure Definition: Any action and activity that can be used to prevent or eliminate a food safety hazard or reduce it to an acceptable level.

- Control measures are established to prevent, control and eliminate food safety hazards.
- Control measures describe how to keep food safe and will also improve food quality.
- Control measures do not work in isolation — they are all closely linked.

Control measures for each production step ensure that actions of staff:

- Do not cross-contaminate food through poor personal hygiene, poor standards of cleanliness or the presence of pests
- Do not expose food to chemical or physical contamination
- Do not expose food to the danger zone for sufficient time enabling the growth of food poisoning bacteria.

The cooking and reheating steps are also important because at these steps you can destroy many food poisoning bacteria by heat.

Examples of non-conformance may include:

- Perishable food that is kept out of the refrigerator for too long
- Refreezing thawed food
- Undercooked food
- Storing food on the floor, etc.

Critical limits

The critical limits for the Critical Control Points will include at least one of the following criteria:

- Temperature
- Time
- Tolerance for contamination (chemical or physical)
- Packaging
- pH
- Water activity

4.1. Review practice and procedures to minimize non-conformance

Once you have identified the causes of non-conformance and have put into place control measures to prevent a recurrence you may need to develop additional procedures - or revise existing ones - to support the effective control of food safety hazards.

Food Safety Practices and General Requirements, a food business must also ensure that all staff has skills and knowledge in food safety and hygiene. This requirement specifies that staff have skills and knowledge that correspond to their duties - so a chef would require different skills and knowledge from those required by a waiter. The skills and knowledge required by staff will vary from establishment to establishment according to the duties they perform. You need to consider this when reviewing practices and procedures to ensure that staffs are trained sufficiently trained to carry out their duties.

If the area of non-compliance is not included in your standard operating procedures or work instructions then you will need to develop one to cover it. Or you may need to amend the existing procedures to include more detailed instructions, e.g. how to use a thermometer accurately. Any changes to the food safety procedures need to be communicated to kitchen staff. Kitchen staff will need to know about the changes and how this will affect or change the way they perform their kitchen/processing functions. Kitchen staff may be required to undergo retraining in certain job functions to make them aware of changes to procedures.

Depending on the causes for the non-conformance that you discover when investigating it you may need to:

- Review the storage work instruction to clarify or highlight the requirement to label cooked foods
- Amend the storage work instruction to include the corrective action that needs to occur if the critical limits are not met
- Retrain staff on the importance of labeling and the implications of not following this procedure
- Support staff in implementing this procedure, e.g. by displaying prompts such as posters to remind staff of this requirement
- Review the process for ordering items used to label foods to ensure consistent supplies are maintained.

Updating practices and procedures

You should carry out regular review of practices and procedures. As well as addressing any ongoing issues it presents the opportunity to include recent technological advances in your food safety program. As the number of businesses implementing food safety programs increases, new products to streamline the monitoring of these programs become available. New technology may be able to improve your food safety program and increase efficiency and reliability in implementing food safety practices.

Self-Check – 3	Written test

Name…… ID……. Date…….

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

Test: Choose the best answer.

1. Control measures for each production step ensure that actions of staff:
   A. Do not cross-contaminate food through poor personal hygiene, poor standards of cleanliness or the presence of pests
   B. Do not expose food to chemical or physical contamination
   C. Do not expose food to the danger zone for sufficient time enabling the growth of food poisoning bacteria
   D. All of the above
   E. None of the above
2. Non-conformance may include:
   A. Perishable food that is kept out of the refrigerator for too long
   B. Refreezing thawed food
   C. Undercooked food
   D. Storing food on the floor, etc.
   E. All of the above
3. Critical Control Points will include
   A. Temperature and time
   B. Tolerance for contamination (chemical or physical)
   C. Packaging
   D. pH and water activity
   E. All of the above

Note: Satisfactory rating - 6 points **Unsatisfactory - below 6 points**

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

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Test I

1. _____ 2. _____ 3. _____

Operation Sheet 1– Procedures for food safety program verification

Objectives: to ensure the gloves or utensils

Materials

- Water
- Soap

Procedures:

Steps 1: Observe employees performing tasks, especially at critical control points (CCPs)

- Receiving,
- Storing,
- Preparing,
- Cooking/processing,
- Transporting, and
- Serving

Steps 2: Establish appropriate verification inspection schedules.

Steps 3: Check CCP records.

Steps 4: Review critical limits to verify that they are adequate to control hazards.

Steps 5: Check monitoring records.

Steps 6: Check corrective action records to review deviations and their resolution.

Steps 7: Check process or finished product.

Steps 8: Check equipment calibration records.

Steps 9: Verify accuracy of equipment that continuously monitors temperatures, such as freezers and refrigerators.

Steps 10: Review the entire food safety program periodically.

Steps 11: Review hazard analysis and related CCPs.

Steps 12: Review written record of verification inspections.

Steps 13: Validate food safety program through on-site review and verification of the flow diagrams and CCPs.

Steps 14: Review modifications of the food safety program.

Operation Sheet 1– Procedures for storage

Objectives: To storing food items in order to minimize the risk of contamination and spoilage

Procedure

1. Goods once received will be transferred to the appropriate store room or cool room without delay.
2. All food received will be stored in the appropriate store (dry; chilled; frozen) in their original inner packaging where practical.
3. All outer packaging is to be removed before placing items in the storeroom to prevent possible contamination or infestation by pests.
4. All food items will be controlled and FIFO (first-in-first-out) used, especially for food items with a limited shelf life and explicit ‘use-by’ dates. These food items will be stored in a manner that ensures older stock is used first.
5. The manager will ensure that all food items are received, stored and handled in a manner that will prevent temperature variations and contamination.
6. All food items must be clearly identified or labeled with the date of delivery/production, covered during storage if appropriate with either a lid or plastic film. Container lids must not be stored on the floor.
7. Raw and ready-to-eat food must be stored separately, ideally in separate cool rooms. If this is not possible, ready-to-eat food is to be stored on upper shelves above the raw foods.
8. Cool room doors are to be kept closed at all times (when not in use), and the temperature of food in cool rooms will be monitored and recorded twice a day. Any deviations in temperatures must be investigated to initiate correction. All refrigeration units will be properly cleaned and maintained at all times.
9. Checks of refrigerators will be made first thing in the morning and in the afternoon and recorded on the cold storage check sheet. Any food items with an expired use-by date will be discarded.
10. All cooked food items will have the date of cooking displayed.

LAP TEST	Performance Test

Name……. ID…… Date……

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within **12** hour. The project is expected from each student to do it.

Task 1: Conduct food safety program verification

Task 1: Conduct store food items

LG #41	LO #4- Maintain and improve quality and food safety in the work area

Instruction sheet

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

- Breach of food safety procedures or quality specifications
- Identifying, assessing, removing or land/reporting processes or conditions non-conformance of food safety and quality
- Conducting risk assessments
- Identifying and implementing control measures
- Implementing recommendations arising from risk assessments
- Reporting requirements of health condition and illnesses
- Identifying and reporting inadequacies in control measures
- Resolving and/or referring matters raised relating to quality/food safety
- Consulting and advising quality/food safety matters
- Identifying and raising opportunities for improving food safety and quality
- Developing or revising procedures to support effective control of quality and food safety hazards
- Reviewing and monitoring quality/food safety records

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:

- Breach of food safety procedures or quality specifications
- Identify, assess, remove or land/report processes or conditions non-conformance of food safety and quality
- Conducting risk assessments
- Identifying and implementing control measures
- Implementing recommendations arising from risk assessments
- Report requirements of health condition and illnesses
- Identify and report inadequacies in control measures

- Resolve and/or refers matters raised relating to quality/food safety
- Consult and advise quality/food safety matters
- Identify and raise opportunities for improving food safety and quality
- Develop or revise procedures to support effective control of quality and food safety hazards
- Review and monitor quality/food safety records

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
4. Accomplish the self-checks
5. Perform operation sheets
6. Do the “LAP test”

Information Sheet 1- Breach of food safety procedures or quality specifications

1.1. Breach of food safety procedures or quality specifications

Food safety is critical to ensure that the food served to customers is safe to eat. Various legislation and regulations exist to ensure this happens across all hospitality businesses, and that procedures are in place to see that they are properly enforced and maintained.

Food safety legislation includes key requirements that businesses must implement to ensure effective compliance. These requirements include the following:

- All staffs are in receipt of relevant, regular and accurate food safety and health and safety training. Records of training undertaken must be kept.
- All staff practice and demonstrate a high standard of personal safety and hygiene. For example, this includes regular and appropriate hand washing, for instance, between dealing with raw and cooked foods and after going to the toilet, and using oven gloves when picking up hot pans.
- Staff must comply with legislation and regulations governing the organization.
- Staff must follow and comply with organizational policies written in accordance with such legislation.
- All records required under legislation are made, monitored and maintained. Examples of such records should include temperature records, cleaning records, use of reputable suppliers and maintenance records including a pest-control contract.

Councils can issue infringement notices for certain food safety or hygiene offences. This includes a range of offences regarding:

- Failure to store, process, display and transport food
- Lack of cleanliness and adequacy of food premises
- Failure to clean and sanitize food equipment
- Operating food premises without registration or notification
- Failure to keep the required records on site

Systems for controlling/monitoring food safety

There are many systems of monitoring that take place within a kitchen in the catering industry. These include the following:

- The head chef monitoring and recording items produced by others to ensure that they meet acceptable standards and quality.
- Temperature logs of equipment, such as fridges and freezers.
- Cleaning schedules and completed documentation.
- Maintenance records and requests.
- Records regarding health and safety equipment
- Contractor agreements

Enforcement options

When faced with an alleged breach of the legislation, council officers must consider what would be a proportionate response to the case at hand. Enforcement options include:

- Providing advice or guidance to educate a proprietor of a food premises about how to comply
- Issuing a warning
- Issuing an infringement notice
- Taking other statutory action
- Commencing a prosecution

Council officers have discretion as to whether an infringement notice ought to be issued and may do so when it is considered appropriate in the given circumstances. The infringement notice gives councils another way to address what are less severe food safety or hygiene problems, in those cases where a warning or education are not considered sufficient.

Self-check 1	Written test

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

Test: Choose the best answer

1. Enforcement options include:
   A. Providing advice or guidance to educate a proprietor of a food premises about how to comply
   B. Issuing a warning
   C. Issuing an infringement notice
   D. Taking other statutory action
   E. Commencing a prosecution
   F. All of the above

2. Systems for controlling/monitoring food safety
   A. Temperature logs of equipment, such as fridges and freezers.
   B. Cleaning schedules and completed documentation.
   C. Maintenance records and requests.
   D. Records regarding health and safety equipment
   E. Contractor agreements
   F. All of the above

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

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

Score = _____

Rating: _____

Information Sheet 2- Identifying, assessing, removing or land/reporting processes or conditions non-conformance of food safety and quality

2.1. Introduction

The food safety program systematically identifies the food safety hazards that may be reasonably expected to occur in your workplace. It identifies where and how each hazard can be controlled and describes how these controls are to be monitored, the corrective action required if control conditions are not met, and information to be recorded.

2.2. Identifying processes or conditions that could breach food safety requirements

As a supervisor or manager, your role is to monitor the implementation of the food safety program in order to ensure the safety of food. To maintain food safety in the workplace you also need to identify processes or conditions that could result in a breach of food safety and take action to prevent these breaches occurring.

The food safety program identifies control measures that are designed to keep food safe by controlling the food safety hazards. Monitoring these control measures will ensure that conditions that could breach food safety requirements are identified and that actions are taken to prevent or correct the food safety hazard. Effective control measures for each production step must ensure that actions of staff:

- Do not cross-contaminate the food through poor personal hygiene, poor standards of cleanliness or the presence of pests
- Do not expose the food to chemical or physical contamination
- Do not expose the food to the danger zone for sufficient time to enable the growth of food poisoning bacteria.

Control measures taken at the cooking and reheating steps are important because at these steps you can destroy many food poisoning bacteria by heat.

Some examples of ways control measures are implemented include:

- Standard operating procedures
- Work instructions
- Company policy documents
- Staff training

Ensuring to meet control measures

Implementing systems and programs that support the food safety program is an important way to ensure control measures are being met. Another way is to monitor check sheets associated with work instructions or standard operating procedures.

Systems and programs that support the food safety program

As the supervisor or manager, you are responsible for implementing the systems and programs that support the food safety program. These systems and programs also require monitoring to identify processes or conditions that could breach food safety requirements. You need to ensure that the food safety procedures contained in the food safety manual are being followed and control measures are being applied across the supporting systems.

Some of the systems and programs that you will be responsible for implementing and monitoring include:

- Supplier standards
- Maintenance schedule
- Calibration schedule
- Pest control program
- Cleaning schedule
- Staff training program
- Personal health and hygiene procedures
- Customer complaints
- Waste collection program

I. Supplier standards

The quality of goods purchased is paramount to the production of safe food. All regular suppliers must be assessed according to the criteria listed on the supplier assessment form and a register of current approved suppliers should be established and maintained. Files that relate to the performance of each supplier should be kept and should include any nonconformance reports and any records that relate to poor quality.

II. Maintenance schedule

All areas including floors, walls, benches, fixed and portable equipment, window and door screens and waste facilities must be well maintained. The condition of the exterior of buildings, storage areas and amenities must also be addressed. Poor maintenance can lead to:

- Physical contamination of food products, e.g. peeling paint can fall into food
- Difficulty maintaining the cleanliness of the premises, e.g. chipped or cracked tiles, leading to possible bacterial contamination
- Pests gaining access through broken screens or holes or gaps in ceilings, walls or floors.

Regular maintenance enables related policies and procedures to operate effectively. A detailed maintenance inspection should be conducted every three months. This will identify any areas that need attention. A system should also be put in place for staff to report maintenance issues as they arise.

III. Calibration schedule

The accuracy of all temperature measuring equipment must be regularly checked to ensure reliable and accurate results. All equipment fitted with thermostats requires regular calibration. This includes refrigeration temperature gauges, gauges on hot-holding equipment such as bain-maries and thermometers used for measuring the temperatures of food products at receipt and during food preparation activities.

The calibration schedule details the calibration requirements of equipment on the premises. It should include:

- The equipment to be calibrated
- The frequency of calibration required for each piece of equipment
- The method of calibration to be used
- Who is responsible for conducting the calibration - calibration may be performed by the supplier or accredited laboratory if required.

As a general guide:

- Cool room and freezer temperature gauges are generally checked against a calibrated hand thermometer every three months and annually by refrigeration contractors to ensure accuracy.
- Hand-held thermometer guns should be tested using the system recommended by the manufacturer (e.g. the manufacturer's calibration test kit) every month or sooner if recommended by the manufacturer or supplier.
- Hand-held probe thermometers are generally tested every three months.

IV. Pest control program

A pest control maintenance contract should be undertaken with a licensed, reputable pest control company. Regular pest inspections of both inside and outside the premises should be carried out and any reported pest infestations attended to immediately.

V. Cleaning schedule

The cleaning schedule, sometimes referred to as a cleaning plan, ensures that no cleaning task is overlooked. Many large establishments now use contract cleaners. Their contract will be based on meeting the requirements of the food safety program. Staff must be clear on their cleaning responsibilities. Cleaning should be checked regularly to ensure that the cleaning schedule or plan is being adhered to.

VI. Staff training program

The law states that all persons undertaking or supervising food handling operations must have skills and knowledge in food safety and food hygiene matters commensurate with their work activities. All staff must be given basic food hygiene training, prior to handling food.

VII. Personal health and hygiene procedures

All food handlers must be informed of their health and hygiene obligations. Staff should be given written instructions for personal health and hygiene procedures. Poor health and hygiene practices of staff could cause food to become contaminated. Clear health and hygiene procedures and regularly observing and giving feedback to staff on their

hygiene practices are the best ways to ensure high standards are maintained. Before allowing staff to return to food handling duties, you must see a copy of a medical certificate stating that the staff member is no longer suffering from the disease, nor is a carrier of it.

VIII. Customer complaints

Where an incident of food adulteration, food contamination or food poisoning is alleged, it must be reported immediately. The incident should be investigated by interviewing the complainant and food service staff on duty at the time of the alleged incident. Follow-up action should be taken following investigation. You should remove and isolate any product that may possibly be contaminated and take further action to prevent recurrences.

IX. Waste collection program

You must ensure that the waste facilities are sufficient for the volume of waste generated, that waste is collected regularly and that waste areas are clean and well maintained - for example, lids should be used on all waste bins and they should never overflow. Recyclable materials should be separated from general waste.

Reviewing monitoring procedures

Monitoring carried out by staff and recorded on check sheets should be reviewed to identify where nonconformance to the food safety control measures has been identified. These incidents should be followed up to ensure that appropriate corrective action has been taken. If there are any recurrent incidents, these should be investigated to identify where improvements could be made.

2.2.1. Oversee food safety monitoring

Your role as a manager or supervisor is to ensure that monitoring meets the requirements of the food safety program and to support staff to monitor effectively. Implementing a ‘buddy system’ for new staff is one way of ensuring ongoing support is

available. New staffs are partnered with more experienced staff to help them learn about the food safety program.

Monitoring serves three main purposes in maintaining food safety. It:

- Informs us if the critical limit for each Critical Control Point (CCP) is being met
- Signals if and when corrective action is required
- Provides written documentation for use in verification of the food safety program.

Ensuring monitoring meets the requirements of the food safety program

The monitoring check sheets detail when the monitoring was carried out and the results of that monitoring. Reviewing these will help you to ascertain if the monitoring is being carried as required by the food safety program, e.g. as frequently as required, and that the monitoring covers all areas identified by the food safety program. It can also confirm that corrective action has been taken.

Ensuring staff monitor effectively

Supporting staff to monitor effectively involves ensuring that they have the information required and the necessary skills to carry out their duties. Staff should be trained to conduct monitoring procedures effectively and additional training should be provided when new monitoring equipment is introduced or procedures are amended. For monitoring to be effective and maintain the safety of food it must be carried out correctly. For example if thermometers are not used properly they can give a false or misleading temperature reading, or cause cross-contamination.

Table 5: Monitoring procedures

Question	Process	Example
What is to be monitored?	The food, the time, the personnel, the store room, etc.	Product
How it is to be	The method that is to be used, e.g. checking	Probe

monitored?	the temperature with a thermometer or visual inspection, etc and the equipment that should be used.	thermometer
Where does the monitoring occur?	In the case of food the surface or core temperature would be specified, for visual checks the place, e.g. storeroom, would be specified.	Each batch
When the monitoring is to occur?	How often or the frequency of the monitoring, e.g. each batch of food may be monitored during the cooking/ baking process. The cool rooms could be monitored twice a day	Chef/ supervisor
Who is responsible for monitoring?	Chef, supervisor, kitchen hand, delivery driver, service personnel, etc.	

Staff Training

A breach of food safety can occur when:

- Staff fail to understand workplace procedures
- Management does not conduct regular and ongoing training
- Staff regularly fill in temperature charts at the end of their shift

Staff training ensures that staff understands how to monitor correctly. Training should include how to:

- Select the correct monitoring equipment for various tasks
- Monitor correctly including how to use the equipment correctly
- Identify non-conformance where visual observation is used
- Apply corrective action

- Complete monitoring records

Staff also needs adequate information on the critical limits for the monitoring they are carrying out and the appropriate corrective action they should take if they identify non-conformance. This should be clearly detailed on the monitoring check sheets to avoid any confusion.

Monitoring techniques

In health & aged care the main forms of monitoring are visual observations or inspections and time and temperature measurement.

- Visual observations or inspection includes:
  - ✓ Inspecting stock, incoming and during storage
  - ✓ Observing practices of other staff
  - ✓ Checking for cleanliness of premises, equipment, staff, products in storage, etc.
  - ✓ Checking temperature gauges on fridges, dishwashers, bain-maries, etc.
- Time and temperature measurement includes:
  - ✓ Using a thermometer to check temperatures of food
  - ✓ Noting times for service, reheating, cooling, etc.

These will be discussed in more details on the next slides. Visual observations Observational monitoring is primarily sensory, for example to see if the food is as per the specification and not contaminated or otherwise unacceptable. For staff to be able to monitor effectively they need clear advice on what they are looking for and examples of non-conformance to guide them. Supporting new staff while carrying out observations is the best way to provide training for this type of monitoring.

Posters are also a useful way of providing visual cues for staff to reinforce training. For example, pictures of conforming and non-conforming products could be displayed in the

receiving area, or examples of conformance could be displayed where visual monitoring involves checking work surfaces or work areas.

Temperature measurement

Correct type of thermometer for the task

When monitoring, you must have the appropriate thermometer for checking temperatures. An infrared thermometer is not appropriate to check the temperature of foods in a bain-marie or in cooking, although they are often used when receiving goods. Probe thermometers are the recommended way to properly check the temperature of food.

Time measurement

A 24-hour time system should be used to ensure results are interpreted accurately and consistently. Using a 24-hour clock in the workplace will reduce any confusion about time, and this will ensure that your records are accurate.

2.2.2. Maintain food safety records (supporting staff)

Maintenance of records is one of the most important aspects of a food safety program. Records verify that safe food handling procedures have been applied and that appropriate corrective action has been taken if required. Keeping food safety records also helps to ensure that checks are actually performed.

Food safety records must also be kept to demonstrate compliance with the food safety program as well as legislative requirements. Monitoring records form the basis of an external audit and if an incident occurs, they enable it to be more easily investigated. Take care that monitoring records are completed accurately and legibly. They are no use if they cannot be read. The records should be filed in a clearly labeled, easy to follow format and be easily accessible. Examples of records that are overseen by a supervisor or manager include:

- Supplier assessment form
- Staff training records
- Employee illness incident record
- Customer complaint records
- Calibration schedule and certificate
- Service records from pest control company. Chemicals used on the premises will also be identified in the documentation
- Material safety data sheets for cleaning chemicals used on the premises
- Audit reports
- Maintenance inspection records

Examples of monitoring check sheets that are completed by staff include:

- Incoming goods record sheet
- Reject goods incident form
- Cold storage temperature records
- Production sheets
- Fruit and vegetable sanitizing record (high risk groups only)
- Holding temperature check sheet
- Wastage sheets
- Dispatch records

3.3 Participate in audits

All those working within a food safety program may be asked at some time to participate in a food safety audit. Auditing a food safety program involves reviewing the written food safety program and its associated recording documents, in a planned and systematic manner. An audit ensures that all critical steps in the handling and processing of food conform to the requirements of a food safety system such as HACCP (Hazard Analysis

Critical Control Point), that they are monitored and that appropriate corrective action is taken with any non-conforming product.

An audit will help you to:

- Ensure that the food safety program is effective in ensuring the safety of food
- Highlight any irregularities and non-compliance with regulations
- Improve the food safety program
- Maintain a high level of efficiency and therefore viability.

Audits may be performed by internal or external auditors.

Internal audit: An internal audit aims to improve the food safety system by identifying recurrent failures, and highlighting the need to review the causes of these failures. This is followed by necessary changes to the handling and processing of food to eliminate the problem.

Continual feedback on how a program is going allows you to continue to develop the food safety plan, to review its progress and make adjustments where necessary. This ensures that food safety and quality are maintained and improvements are achieved. It will also help your team and business to:

- Achieve a better understanding of food safety
- Comply with legislation when producing and serving food
- Manage and distribute food products safely
- Provide high quality service to customers.

External audit: An external audit is an independent examination of your food safety program by an authorized food safety auditor. Currently external audits are not a legislative requirement, but it is anticipated that they will be in the near future. It is expected that high-risk food businesses such as hospitals, nursing homes and childcare centers will be the first to be required to have external audits of their food safety system and premises. The process will most likely be gradually introduced across all food premises.

The auditor's role is to determine if the food safety system and its supporting policies and procedures are satisfactory for controlling likely hazards and comply with legislative requirements. Auditors can also provide advice on how to improve the food safety system if required. An external food safety audit generally involves a desk audit followed by an on-site inspection.

Self-Check – 2	Written test

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

Test I: Choose the best answer (2pts)

1. Control measures are implemented include:
   A. Standard operating procedures
   B. Work instructions
   C. Company policy documents
   D. Staff training
   E. All of the above

2. The calibration schedule should include:
   A. The equipment to be calibrated
   B. The frequency of calibration required for each piece of equipment
   C. The method of calibration to be used
   D. Who is responsible for conducting the calibration - calibration may be performed by the supplier or accredited laboratory if required.
   E. All of the above
   F. None of the above

Test II: Write true if the statement is correct and false if the statement is incorrect

1. Monitoring these control measures will ensure that conditions that could breach food safety requirements are identified and that actions are taken to prevent or correct the food safety hazard. (2pts)
2. Control measures taken at the cooking and reheating steps are important because at these steps you can destroy many food poisoning bacteria by heat. (2pts)
3. Implementing systems and programs that support the food safety program is an important way to ensure control measures are being met. (2pts)

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

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

Score = _____

Rating: _____

Information Sheet 3- Conducting risk assessments

3.1. Conducting risk assessments

In short, a risk assessment is an examination of a given task that you undertake at work that could potentially cause harm to people.

The goal is to understand any potential hazards, before then outlining and undertaking reasonable steps to prevent harm. Therefore, a risk assessment can help you to understand and take precautions for such eventualities.

Finally, remember that some regulations will likely require certain control measures to be put in place, see step 3 for more information on this.

If you need help creating a risk assessment, then be sure to use our free risk assessment template online or download our free app to streamline the process, and undertake risk assessments wherever you may be

The five steps to risk assessment

Below are the five steps to risk assessment, as outlined by the HSE. These steps should be adhered to when creating a risk assessment.

Step 1: Identify the hazards

- Workplace hazards can come in many forms, such as physical, mental, chemical, and biological, to name just a few.
- Hazards can be identified by using a number of techniques, although, one of the most common remains walking around the workplace to see first-hand any processes, activities, or substances that may injure or cause harm to employees.
- Of course, if you work in the same environment every day, then you may miss some hazards, therefore, the HSE also recommend looking at and considering;
  - ✓Your accident and ill-health records
  - ✓Non-routine operations
  - ✓Long-term hazards to health.

Step 2: Decide who may be harmed and how

- Identifying who may be at risk extends to full and part-time employees, contract staff, visitors, clients, and other members of the public at the workplace.
- You should also consider people that may not be in the office all the time or at different times, such as employees working night shifts for example, and lone workers.
- For each hazard you will need to understand who may be harmed, this of course, will help you to identify preventive measures for controlling a given risk.

Step 3: Evaluate the risks and decide on control measures

- Once you've identified hazards, the next logical step it to completely remove the associated risks, however, where this is not possible, then certain control measures should be put in place.
- For example, if an employee is a cleaner, then they'll inevitably come into contact with chemicals. The likelihood is that such a hazard cannot be removed, however, certain control measures, such as providing protective gloves, mops, and even training for safely storing and handling cleaning chemicals can and should be in place.
- Below is an example of just some hazards, which can easily be applied to risk assessments using our risk assessment template and award winning safety app.
  - ✓ Contact with Cleaning Chemicals e.g. Bleach with risk of skin irritation or eye damage from direct contact with Cleaning chemicals Vapor from Cleaning Chemicals can cause breathing problems
  - ✓ Dust and off-cuts will be produced with possible slip / spillage
  - ✓ Electrical Tools Required to Carry out work with risk of potentially Fatal Shocks or Burns
  - ✓ Falling objects from work area above which could be Fatal
  - ✓ Lone Working with risk of injury or ill health while working alone
  - ✓ Manual Handling - Materials will need to be carried to Work Area which if not done correctly can cause immediate or longer term injury
  - ✓ Noise from nearby equipment or other Tradesmen which can cause discomfort and potential damage
  - ✓ Possible Asbestos on site with risk of fibers in air inhaled when disturbed

- ✓ Possible disturbance of Water / Gas or Electrical Works
- ✓ Slips, Trips and Falls which can cause sprains, fractures etc. if people fall over debris / offcuts / tools or slip on spillages
- ✓ Working at Height - with risk of potentially Fatal falls, or bruising / fractures

Step 4: Record your findings

- The HSE recommend that you should record your significant findings. Such findings will include, the hazards, how people may be harmed by them, and essentially the control measures that you have implemented.
- It's worth highlighting that currently only organizations' with five or more staff are required to record in writing the findings of a given risk assessment, regardless, it's still good practice to have a reference.
- Recording your findings does not need to be a lengthy exercise, in fact, the HSE currently states "For most people this does not need to be a big exercise - just note the main points down about the significant risks and what you concluded ".

Step 5: Review the risk assessment

- Last, but not least, reviewing the risk assessment. Overtime workplaces will change there may be new equipment, substances, and or tasks, that have been introduced since the last assessment took place. With this in mind, it's recommended that you look back on past risk assessments and consider if there have since been significant changes, and if so, are there new hazards, and or control measures that should be introduced?

Note: the information provided in this article derives from the HSE, and is correct at the time of publishing. The information here is provided as a guide and as general background information; this article should not be taken as legal advice.

Self-Check – 3	Written test

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

Test: write true if the statement is correct and false if the statement is incorrect

1. The goal is to understand any potential hazards, before then outlining and undertaking reasonable steps to prevent harm.
2. Workplace hazards can come in many forms, such as physical, mental, chemical, and biological, to name just a few.

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

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

Score = _____

Rating: _____

Information Sheet 4- Identifying and implementing control measures

4.1 Implementation of control measures

Implementation involves giving effect to the selected control measure(s), development of implementation plan, communication on the decision on control measure(s), ensuring a regulatory framework and infrastructure for implementation exists, and a monitoring and evaluation process to assess whether the control measure(s) have been properly implemented**.**

HACCP system is as critical to ensuring food safety as the development of a good plan in the first place. When a deviation from a critical limit has occurred at a CCP, prompt corrective action is necessary in order to re-establish control at this critical step in your process. A corrective action procedure facilitates prompt action and should anticipate any deviation likely to occur at that CCP. Correcting a deviation includes:

- Temperature
- Time,
- Humidity,
- Moisture content,
- Concentration levels,
- Component rations,
- Quantity of preservative,
- Additives pH,
- Chemical or physical properties

Designing and implementing corrective action procedures

Step 1: For each control measure applied at a CCP, identify who will take the corrective actions.

Step 2: Document what will need to be done to re-establish control and how it will be done.

Step 3: Document the steps to be taken if the deviation affects the safety of other production lots that have already entered the marketplace.

Step 4: Document the steps for determining the root cause of the deviation and preventing recurrence.

Step 5: Prepare a standardized record to document the details of the corrective actions

Self-Check – 4	Written test

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

Test: Short Answer Questions

1. List the correcting of a deviation. (3pts)
2. Describe implementing corrective action procedures. (4pts)

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

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

Score = _____

Rating: _____

Information Sheet 5- Implementing recommendations arising from risk assessments

5.1. Implementing recommendations arising from risk assessments

- Identifying what has already been done to minimize the risk.
- Deciding on additional precautions required to prevent similar accidents/ incidents.
- Ensuring the additional precautions is implemented.
- Reviewing the new precautions after a while to ensure they remain effective.

Self-Check – 5	Written test

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

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

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

Score = _____

Rating: _____

Information Sheet 6- Reporting requirements of health condition and illnesses

3.1 Reporting requirements of health condition and illnesses

Food handlers suffering from of a disease shall not be allowed to handle food or material which comes in contact with food. Employees shall report the following conditions to the supervisor for possible exclusion from food handling areas –

- Jaundice
- Diarrhoe
- Vomiting
- Fever
- Sore throat with fever
- Visibly infected lesions
- Boils
- Cuts or sores & discharge from ears
- Eyes or nose.

Medical examination of a food handler shall be carried out apart from the periodic medical examination, if clinically or epidemiologically indicated. Personnel with open cuts, wounds or burns shall be required to cover them with suitably water proof dressings before starting operation. Any lost dressing must be reported to supervisor immediately. The dressing should preferably be of bright color & metal detectable.

You should encourage your workforce to report any symptoms of injury as soon as they notice them. Early reporting of symptoms enables early diagnosis, proper treatment and rehabilitation. In general, back pain can best be tackled by keeping gently active rather than resting.

Self-Check – 6	Written test

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

Short Answer Questions

1. Food handlers suffering from of a disease shall not be allowed to handle food or material which comes in contact with food. (2)
2. Personnel with open cuts, wounds or burns shall be required to cover them with suitably water proof dressings before starting operation. (2)
3. Early reporting of symptoms enables early diagnosis, proper treatment and rehabilitation.(2)

Note: **Satisfactory rating - 6 points** **Unsatisfactory - below 6 points**

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

Score = _____

Rating: _____

Information Sheet 7- Identifying and reporting inadequacies in control measures

7.1 Identifying and reporting inadequacies in control measures

Inadequate food temperature control is one of the most common causes of foodborne illness or food spoilage. Such controls include time and temperature of cooking, cooling, processing and storage. Systems should be in place to ensure that temperature is controlled effectively where it is critical to the safety and suitability of food. Temperature control systems should take into account.

- The nature of the food, e.g. Its water activity, pH, and likely initial level and types of microorganisms;
- The intended shelf-life of the product;
- The method of packaging and processing; and
- How the product is intended to be used, e.g. further cooking/processing or ready-to-eat. Such systems should also specify tolerable limits for time and temperature variations. Temperature recording devices should be checked at regular intervals and tested for accuracy.

It should not be assumed that risk control measures will always be adequate to solve a problem. New or existing risk controls should always be checked in case they do not effectively protect health and safety. Newly implemented risk controls should tested in some way before workers begin using the new system, if this is feasible.

In the case of existing controls, changes in work practices may inadvertently introduce new risks or undermine the efficacy of existing risk controls. Checking the methods chosen to solve OHS problems is known as ‘monitoring and evaluation of risk controls’. This can be done using the hazard identification procedures already covered for example, by asking workers whether they are aware of on-going risks, making observations and taking relevant measurements.

If deficiencies are found in risk controls, or better ways are found to fix a problem (‘better’ in this sense means using strategies from further up the hierarchy of risk

control), management should promptly provide sufficient resources to enable the risk to be properly controlled. Risk management is not an optional process to be carried out when the employer has time it should be built into routine procedures such as purchasing and induction.

Self-Check – 7	Written test

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

Test: Write true if the statement is correct and false if the statement is incorrect

1. Inadequate food temperature control is not one of the most common causes of foodborne illness or food spoilage. (2pts)
2. Checking the methods chosen to solve OHS problems is known as ‘monitoring and evaluation of risk controls’. (2pts)
3. Risk management is not an optional process to be carried out when the employer has time it should not be built into routine procedures such as purchasing and induction. (2pts)

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

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

Score = _____

Rating: _____

Information Sheet 8- Resolving and/or referring matters raised relating to quality/food safety

8.1. Resolving and/or referring matters rose relating to quality/food safety

Traceability is the capacity to identify a product origin: where it was produced, inputs received, tracking post-harvest handling, and through appropriate records, following it along the supply chain. These records must be kept for some time (two years) as proof of its history. In quality and safety assurance programs, traceability allows proving conformance to specific standards. Traceability, more than just being a label identifying production, origin and price, is a system promoting customer confidence and useful to settle quality and safety disputes. To allow for efficiency, traceability schemes rely on an adequate coordination of the many actors in the production and post-harvest handling chain. Proper information must flow easily from link to link, enabling the adoption of actions resulting in safe handling and storage. Consumers should also have this information available to ensure maintaining the required hygienic and use aptitudes

Self-Check – 8	Written test

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

Test: Write true if the statement is correct and false if the statement is incorrect

1. Traceability is the capacity to identify a product origin. (2pts)
2. Traceability, more than just being a label identifying production, origin and price, is a system promoting customer confidence and useful to settle quality and safety disputes. (2pts)
3. Consumers should not have this information available to ensure maintaining the required hygienic and use aptitudes. (2pts)

Note: **Satisfactory rating – 6 points** **Unsatisfactory - below 6 points**

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

Score = _____

Rating: _____

Information Sheet 9- Consulting and advising quality/food safety matters

9.1. Consulting and advising quality/food safety matters

The Food Business shall ensure that technical managers and supervisors have appropriate qualifications, knowledge and skills on food hygiene principles and practices to be able to ensure food safety and quality of its products, judge food hazards, take appropriate preventive and corrective action, and to ensure effective monitoring and supervision. The FBO management shall provide and maintain documented standard operating procedure for food safety management system (FSMS) systems compliance and its supervision at site through records/ checklists on routine basis to control any possible hazards throughout supply chain. Commitment from management is essential to communicate the importance of producing safe food, both for the consumer and the business. Managers should continually improve the effectiveness of the food hygiene systems in place by:

- Ensuring that roles and responsibilities are clearly communicated in the food business;
- Ensuring the availability of resources;
- Maintaining the integrity of the food hygiene system when changes are planned and implemented;
- Verifying that controls are working and documentation is up to date;
- Ensuring the appropriate training and supervision is in place for personnel;
- Ensuring compliance with relevant statutory and regulatory requirements; and
- Enable a strong food safety culture by demonstrating commitment to providing safe and suitable food and encouraging appropriate food safety behaviors.

Self-Check – 9	Written test

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

Test: Write true if the statement is correct and false if the statement is incorrect

1. Commitment from management is essential to communicate the importance of producing safe food, both for the consumer and the business. (2pts)
2. Managers may ensure that roles and responsibilities are clearly communicated in the food business. (2pts)
3. Managers may maintain the integrity of the food hygiene system when changes are planned and implemented. (2pts)

Note: **Satisfactory rating - 6 points** **Unsatisfactory - below 6 points**

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

Score = _____

Rating: _____

Information Sheet 10- Identifying and raising opportunities for improving food safety and quality

10.1 Identifying and raising opportunities for improving food safety and quality

HACCP based procedures provide businesses with a cost effective system for control of food safety, from ingredients right through to production, storage and distribution to sale and service of the final consumer. The preventive approach of HACCP based procedures not only improves food safety management but also complements other quality management systems. The main benefits of HACCP based procedures are:

- Saves your business money in the long run
- Avoids you poisoning your customers
- Food safety standards increase
- Ensures you are compliant with the law
- Food quality standards increase
- Organizes your process to produce safe food
- Organizes your staff promoting teamwork and efficiency
- Due diligence defense in court.

Self-Check – 10	Written test

Directions:

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

Test: Write true if the statement is correct and false if the statement is incorrect

1. HACCP based procedures are avoids you poisoning your customers. (2)
2. HACCP based procedures are organizes your staff promoting teamwork and efficiency. (2)
3. HACCP based procedures are food quality standards increase. (2)

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

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

Score = _____

Rating: _____

Information Sheet 11- Developing or revising procedures to support effective control of quality and food safety hazards

11.1 Developing or revising procedures to support effective control of quality and food safety hazards

Periodic review of monitoring data at relevant process steps should be used to inform the effectiveness of risk management decisions and actions, as well as future decisions on the selection of specific control measures, and provide a basis for their validation and verification. Information gained from monitoring in the food chain should be integrated with human health surveillance, food source attribution data, and withdrawal and recall data, where available to evaluate and review the effectiveness of control measures from primary production to consumption. Where monitoring of hazards or risks indicates that regulatory performance goals are not being met, risk management strategies and/or control measures should be reviewed.

For successful implementation of a HACCP plan, management must be strongly committed to the HACCP concept. A firm commitment to HACCP by top management provides company employees with a sense of the importance of producing safe food. Food safety systems based on the HACCP principles have been successfully applied in food processing plants, retail food stores, and food service operations. Review control procedures periodically, and whenever the operations change. These systems should be applied throughout the food chain to control food hygiene.

The standard is based upon the principle that food safety is best ensured through the identification and control of hazards in the production, manufacturing and handling of food as described in the (HACCP) system, adopted by the joint WHO/FAO Codex Alimentary Commission, rather than relying on end product standards alone. This standard enables states and territories to require food businesses to implement a food safety program based upon the HACCP concepts. As a part of the quality management system, the laboratory must establish a quality control (QC) program for all quantitative

tests. Evaluating each test run in this way allows the laboratory to determine if patient results are accurate and reliable.

The steps for implementing a quality control program are:

1. Establish policies and procedures
2. Assign responsibility for monitoring and reviewing
3. Train all staff in how to properly follow policies and procedures
4. Select good quality control material
5. Establish control ranges for the selected material
6. Develop graphs to plot control values
7. Establish a system for monitoring control values
8. Take immediate corrective action if needed
9. Maintain records of quality control results and any corrective actions taken

Self-Check – 11	Written test

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

Test: Write true if the statement is correct and false if the statement is incorrect

1. Review control procedures periodically, and whenever the operations change. (2pts)
2. Implementing a quality control program is established policies and procedures. (2pts)
3. Implementing a quality control program is assign responsibility for monitoring and reviewing. (2pts)
4. Implementing a quality control program is train all staff in how to properly follow policies and procedures. (2pts)
5. Implementing a quality control program is select good quality control material. (2pts)

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

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

Score = _____

Rating: _____

Information Sheet 12- Reviewing and monitoring quality/food safety records

12.1 Reviewing and monitoring quality/food safety records

Food Business organization shall conduct a self-evaluation through internal and external audits or other mechanisms at periodic intervals, but at least once in a year to verify the effectiveness of the implemented food safety systems. For continual improvement, Food Business organization should undertake a complete review of the systems including self-evaluation results, customer feedback, complaints, new technologies and regulatory updates at periodic intervals, but at least once in a year. Necessary corrective actions based on self-evaluation results shall be taken.

Appropriate documentation & records including incoming material checks, inspection and testing, calibration of food safety equipment's, water testing, operational controls (such as temperature, pressure, time etc.), product recall and traceability, storage, cleaning and sanitation, pest control, medical examination and health status of food handlers, training etc. 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. Any changes to records should be traceable (for example, errors are identified by a strike out and followed by initials). Each entry on a record should be signed and dated by the responsible person at the time the specific event occurred. Record-keeping requirements and responsibilities should be communicated to staff. Records should be kept in a secure location, maintained and readily available for a period of one year or shelf life, whichever is more.

2.2.3. Monitor the recording of food safety information

Monitoring forms must be reviewed regularly as there is a great deal of information recorded upon them. This is often considered to be the most tedious and sometimes time-consuming part of a implementing a food safety program, and can be neglected. However it is an essential part of the process. You must monitor all records that provide evidence that the food safety program is being implemented. If accurate records aren't

kept then you can't be confident that the food was processed correctly and that it is safe to consume.

Your role is to monitor the recording of food safety information to confirm that the recording:

- Accurately reflects performance
- Meets the requirements of the food safety program

Documentation that must be monitored includes:

- Check sheets from the food safety program including:
  - ✓ Check sheets for each CCP that is monitored
  - ✓ Records of deviation from critical limits and the corrective action taken.
- The records that accompany the food safety support programs. For example:
  - ✓ Product recall
  - ✓ Cleaning schedules
  - ✓ Pest control programs
  - ✓ Calibration schedules
  - ✓ Staff training record
  - ✓ Visits from environmental health officers
  - ✓ Internal and external auditor reports.

To determine that records accurately reflect performance you will need to regularly observe monitoring practices. It is not enough to collect check sheets and other monitoring documentation. You also need to monitor that staff are carrying out correct procedures and completing forms accurately and in a timely manner. You should walk around and talk to staff so you know what is going on in all areas of food preparation.

This will also help you to be on hand to assist and coach staff. You will find by doing this that you will be close to an important source of information.

Staff may have difficulty identifying food safety hazards or correctly filling in documentation. This may be for a number of reasons. Perhaps:

- They were not inducted to the workplace
- Training needs to be updated
- Signs are not appropriate for the work area.

Self-Check – 12	Written test

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

Test: Write true if the statement is correct and false if the statement is incorrect

1. Record-keeping requirements and responsibilities should be communicated to staff.
2. Records should be kept in a secure location, maintained and readily available for a period of one year or shelf life, whichever is more. (2pts)

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

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

Score = _____

Rating: _____

Operation Sheet 1– Techniques of correcting temperature

Objectives: to use a thermometer properly for food handlers

Materials

- Thermometer

Procedures:

1. Check the temperature in the thickest part of the food
2. Ensure the thermometer is placed in the center of the food. If pushed to the bottom of the container holding the food the reading will be inaccurate
3. Give the thermometer enough time to give a true reading once you have inserted it into the food
4. Report if they think the thermometer may not be giving an accurate reading
5. Remember that some parts of the refrigerator or bain-marie may be cooler or warmer than other parts and check all parts
6. Measured the temperature receiving chilled food by placing the temperature probe between two packages of food
7. Clean and sanitize the thermometer probe between checking different foods to avoid cross contamination. Alcoholic swabs are often used for this.

Reference Materials

Book:

1. Encyclopedia of Occupational Health and Safety, 1998 4th Ed., ILO, Geneva, Vol.3, p. 67.25 - 67.28.
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3. Alexa Michael, 2008. Mentoring and coaching, Topic Gateway Series No. 50
4. HLTFS309C Oversee the day-today implementation of food safety in the workplace. Version 12.1.
5. Food Safety Programs A guide to Standard 3.2.1 Food Safety Programs Chapter 3 of the Australia New Zealand Food Standards Code. First edition, June 2007.
6. A Baker's dozen. Thirteen essentials for health and safety in bakeries, 2003. web-friendly version of HSG233

WEB ADDRESSES

https://www.riskassessor.net/news/detail/five-steps-to-risk-assessment

https://www.fsai.ie/food_businesses/haccp/benefits_of_haccp.html

https://www.pearsonschoolsandfecolleges.co.uk/FEAndVocational/HospitalityAndCatering/BTEC/BTEC-Firsts-in-Hospitality-2013/Samples/BTECFirstsinHospitalityStudentBookSamples/BTECFirstsinHospitality2013StudentBookUnit3Draft.pdf

LG #38 LO #1

Self-Check – 1

Answer Test I

1. Eye and Face Protection, Head Protection, Respirators, Hearing Protection, Foot Protection, Protective Clothing and Hand Protection

Answer Test II

1. True
2. True
3. True

Self-Check – 2

Answer Test I

1. F
2. F
3. F

Answer Test II

4. True
5. True
6. True
7. True

Self-Check – 3

Answer Test I

2. A food safety program systematically identifies the food safety hazards that occur in all food handling operations of the food business. It identifies where and how each hazard can be controlled, describes how these controls are to be monitored, the corrective action required if control conditions are not met, and information to be recorded.

Answer Test II

1. True
2. False
3. True

Self-Check – 4

Answer Test

1. F
2. E
3. F
4. F
5. C

Self-Check – 5

Answer Test I

1. All staff can follow the guidelines in the food safety manual; Staff feel confident that they are doing their job correctly; If replacement/agency staff are required they can follow written instructions/ guidelines; Complaints can be responded to quickly if staff are aware and can identify non-compliance areas; Staff are not afraid to ask questions or report problems; Staff feel comfortable contributing to team meetings

2. Train new staff and involve other staff members to participate in further training?; Use an instruction manual for all employees to refer to?; Informally talk with individuals about how they are going and to give them new information and on-the-job training?; Use noticeboards, posters, signs, memos or newsletters?; Get together regularly to discuss work issues, goals and objectives?

3. Accident hazards; Physical hazards; Chemical hazards; Biological hazards and Ergonomic, psychosocial and organizational factors.

4. Cuts and punctures; Falls of workers because of incorrect use of ladders, wet and slippery floors and unguarded scaffolds; Falls of bags of flour and sugar during transportation; Danger of falls while carrying heavy loads; Mechanical and electrical injuries during work with conveyors, mechanized equipment used for mixing ingredients to make dough, and baking processes; Defective electrical equipment and installations; Extensive use of liquid and/or gaseous fuels for baking creates increased fire and explosion hazard; Dry flour presents a constant hazard of fire and dust explosion (cigarette lighting in such an environment may be extremely hazardous)

5. The high temperatures and the high levels of relative humidity may cause fatigue and thermal exhaustion in bakers; Exposure to infrared radiation; cataracts may be produced by prolonged exposure; Radiation leakage from defective microwave ovens

6. Exposure to flour; Exposure to spices; Exposure to sugar dust; Exposure to carbon dioxide; Exposure to carbon monoxide, combustion products and fuel vapors

7. Exposure to fungi and yeast; Exposure to parasites; Exposure to molds; Presence of rodents and insects may result in bites and infectious diseases

8. Continuous repetitive movements, awkward postures, and excessive efforts may result in cumulative trauma disorders; Handling of heavy loads may cause acute disorders, esp. back pain and lesions of intervertebral discs; Exposure to certain spices may cause specific positive or negative sensitivity to their odors, and/or addiction or distaste; Regular work at odd hours, esp. in night shifts, may cause psychological stress

Answer Test II

1. True
2. True

Answer Test III

1. G
2. G
3. G

Self-Check – 6

1. True
2. True
3. True
4. True
5. True

Self-Check – 7

Answer Test

1. True
2. True
3. True
4. True

Self-Check – 8

Answer Test

1. True
2. True
3. True
4. True
5. True
6. True
7. False
8. True
9. True

LG #38 LO #1

Answer Test I

1. Form a multidisciplinary team for food safety; Train the team on food safety and system requirements; Chart the processes and their flow; Develop a food safety plan with responsibilities; Develop and document Standard Operating; Train all personnel to implement the procedures; Implement and record; Verify/audit; Review and update.
2. Interactive communications; System management; Prerequisite programs; HACCP principles.

Answer Test II

1. True
2. True
3. True

Answer Test III

1. B
2. F

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