



FOOD SAFETY AND STANDARDS  
AUTHORITY OF INDIA

*Inspiring Trust, Assuring Safe & Nutritious Food*  
Ministry of Health and Family Welfare, Government of India

# TRAINING MANUAL

Food Safety Supervisor Course  
Advance (Level 2) Catering



**Safe & Nutritious Food**  
*A Shared Responsibility*

[www.snfportal.in](http://www.snfportal.in)



*Inspiring Trust, Assuring Safe & Nutritious Food*  
Ministry of Health and Family Welfare, Government of India

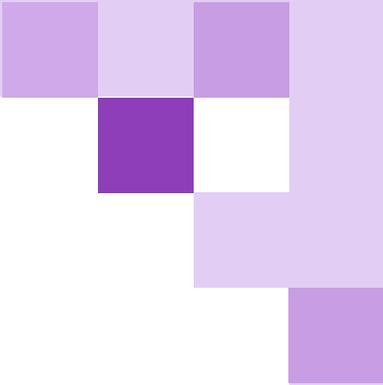
## SAFE AND NUTRITIOUS FOOD A SHARED RESPONSIBILITY



YOUR GUIDE FOR  
BECOMING SAFE AND NUTRITIOUS PLACE TO EAT

1st Edition  
05th July, 2017

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# PREFACE

Training of food handlers is a pre-requisite for ensuring food safety and the same is also mandated in the FSS Act, 2006. Food Safety and Standards Authority of India (FSSAI) has set up Food Safety Training & Certification (FoSTaC) ecosystem to ensure widespread and effective delivery of training to food businesses across the value chain. This ecosystem will train and certify the Food Safety Supervisor from each Food Establishment as it is envisaged to make this a regulatory requirement.

The manual is designed to train the personnel that can be designated as Food Safety Supervisors in the catering establishments. This manual details the requirements on food safety & hygienic practices to be followed by Food Business Operators engaged in catering sector. It is based on the Schedule 4 requirements of FSS (Licensing & Regulation of Food Businesses) Regulation, 2011 along with the industry best practices. It has been designed according to the flow of operation in catering establishments for ease of understanding of the Food Safety Supervisors. This one-in-all manual is supplemented by a Tutor Guide along with the visuals, specific to the catering industry for facilitating the trainers.

It is hoped that this manual will serve a wider purpose of training the Food Safety Supervisors and will also be useful to the food handlers in implementing the hygiene requirements in the catering premises.

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Chief Executive Officer

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# ACKNOWLEDGEMENT

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## WELCOME TO THE MANUAL

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The manual is designed for eating house, canteens and other catering businesses.

This manual explains General Requirements on Hygienic and Sanitary Practices to be followed by all Food Business Operators engaged in catering/food service establishments, as per Food Safety & Standards Act, 2006.

This manual presents bare minimum requirements of Food Safety and hygiene to be followed by Food Business Operators along with industry best practices.

## LEARNING OUTCOME

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The objective of this manual is to train the personnel that can be designated as Food Safety Supervisors in the catering establishment, about food safety and hygiene requirements which are to be followed in their businesses. The Food Safety Supervisors (FSS) may interpret these requirements according to the size and type of their establishment.

The desired outcome of this manual is better understanding of food safety and hygiene requirements and high standards of food safety in the catering industry.

## WHAT THE LAW SAYS

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In India, the mandatory sanitary & hygiene requirements for catering industry are –

“Part II of Schedule 4” of Food Safety and Standards (Licensing & Registration of Food Businesses) Regulation, 2011

(<http://www.fssai.gov.in/home/fss-legislation/fss-regulations.html>)

under Food Safety & Standards Act, 2006

(<http://www.fssai.gov.in/home/fss-legislation/food-safety-and-standards-act.html>)

&

“Part V of Schedule 4” of Food Safety and Standards (Licensing & Registration of Food Businesses) Regulation, 2011

(<http://www.fssai.gov.in/home/fss-legislation/fss-regulations.html>)

under Food Safety & Standards Act, 2006

(<http://www.fssai.gov.in/home/fss-legislation/food-safety-and-standards-act.html>)

For the ease of understanding, the relevant sections from Part II & Part V of Schedule 4 of Food Safety & Standards (Licensing & Registration of Food Business) Regulation, 2011 has been segregated as per flow of operations in catering establishments –

## 1. LOCATION, LAYOUT & FACILITIES

| S. No. | Part of Schedule 4 | Relevant Section | Heading  |
|--------|--------------------|------------------|--|
| 1.1    | Part 2             | Section 1        | Location and Surroundings                        |
|        | Part 2             | Section 2        | Layout and design of Food Establishment Premises |
|        | Part 2             | Section 3        | Equipment & Containers                           |
|        | Part 2             | Section 4        | Facilities                                       |
|        | Part 5             | Section 1        | Good Manufacturing Practices for whole premises  |

## 2. MATERIAL HANDLING

| S. No. | Sub Sections | Part of Schedule 4 | Relevant Section | Heading  |
|--------|--------------|--------------------|------------------|--|
| 2.1    | Receiving    | Part 2             | Section 5.1      | Food Operations & Control - Procurement of Raw Material    |
|        |              | Part 5             | Section 2.2      | Good Food Hygiene Practices - Raw Material                 |
| 2.2    | Storing      | Part 2             | Section 5.2      | Food Operations & Control - Storage of Raw Material & Food |
|        |              | Part 5             | Section 5        | Storage  |

## 3. PRE-PRODUCTION PROCESSING

| S. No. | Part of Schedule 4 | Relevant Section | Heading   |
|--------|--------------------|------------------|---|
| 3.1    | Part 2             | Section 5.3      | Food Operations & Control - Food Processing/Preparation, Packaging & Distribution Service |
|        | Part 5             | Section 2.2      | Good Food Hygiene Practices - Raw Material  |
|        | Part 5             | Section 2.5      | Good Food Hygiene Practices - Cross Contamination   |
|        | Part 6             | Section 6        | Special Requirement of High Risk Foods  |

#### 4. PRODUCTION

| S. No. | Part of Schedule 4 | Relevant Section | Heading                                |
|--------|--------------------|------------------|--|
| 4.1    | Part 5             | Section 2.3      | Good Food Hygiene Practices - Cooking  |
|        | Part 5             | Section 2.4      | Good Food Hygiene Practices - Chilling |
|        | Part 5             | Section 6        | Special Requirement of High Risk Foods |

#### 5. HOLDING, SERVING/CATERING/DINING & TRANSPORTATION

| S. No. | Part of Schedule 4 | Relevant Section | Heading   |
|--------|--------------------|------------------|---|
| 5.1    | Part 2             | Section 5.4      | Food Operations & Control - Food Packaging            |
|        | Part 2             | Section 5.5      | Food Operations & Control - Food Distribution/Service |
|        | Part 5             | Section 4        | Transportation and handling of food                   |

#### 6. PERSONAL HYGIENE

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|--------|--------------------|------------------|------------------|
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|        | Part 5             | Section 3        | Personal Hygiene |

#### 7. SUPPORT SERVICES

| S. No. | Sub Sections             | Part of Schedule 4 | Relevant Section | Heading   |
|--------|--------------------------|--------------------|------------------|---|
| 7.1    | Management & Supervision | Part 2             | Section 6        | Management & Supervision  |
| 7.2    | Food Testing Facilities  | Part 2             | Section 7        | Food Testing Facilities   |
| 7.3    | Pest Control             | Part 2             | Section 9.2      | Sanitation and Maintenance of Establishment Premises - Pest Control System      |
| 7.4    | Cleaning & Maintenance   | Part 2             | Section 9.1      | Sanitation and Maintenance of Establishment Premises - Cleaning and Maintenance |
|        |                          | Part 5             | Section 2.1      | Good Food Hygiene Practices - Cleaning  |
| 7.5    | Waste Handling           | Part 2             | Section 4.5      | Facilities - Drainage and waste disposal  |
| 7.7    | Training                 | Part 2             | Section 12       | Training  |
| 7.8    | Record Keeping           | Part 2             | Section 8        | Audit, Documentation and Records  |



# PART I

## INTRODUCTION TO FOOD SAFETY

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FOOD SAFETY &  
FOOD SAFETY HAZARDS

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ALLERGENS

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FOOD SPOILAGE

## FOOD SAFETY & FOOD SAFETY HAZARDS

Food Safety means an assurance that food is acceptable for human consumption according to its intended use.

Food Safety Management System means the adoption of Good Manufacturing Practices, Good Hygienic Practices, Hazard Analysis and Critical Control Point and such other practices as may be specified by regulation, for the food business.

Food Safety Hazard means biological, chemical or physical agent in food, or condition of food, with the potential to cause an adverse health effect. There are majorly four types of hazards -



### Physical Hazards

Any foreign object (inanimate) found in the food or a naturally occurring object (bone in fillet), that poses a hazard is called a 'Physical Contamination or Hazard'.

**Common Physical Hazards include:**

- Glass
- Chipped pieces of cutlery and crockery
- Metal shavings from cans and foils
- Stapler pins
- Blades
- Plastic films used for wrapping or chipped pieces of disposables
- Non edible garnishes
- Lint and threads
- Band- aids
- Hair
- Finger nails
- Bones
- Jewellery pieces

### Chemical Hazards

Naturally occurring and process induced chemical substances that can cause a food borne illness are called a 'Chemical Contaminant or Hazard'.

**Natural Chemical Contaminants include:**

- Ciguatoxin, Saxitoxin, Brevetoxin and Domoic Acid from Marine Algae
- Histamine/ scombroid poisoning from fish

**Process Induced Chemical Contaminants include:**

- Toxic metals in the catering set up or supply chain
- Pesticides, Colorants
- Equipment lubricants
- Cleansing products and sanitizers
- Chemical Food Additives, Preservatives

### Biological Hazards

Biological hazards are organisms, or substances produced by organisms, that pose a threat to human health. They are a major concern in food processing because they cause most food borne illness outbreaks.

### Major biological hazards include –

- **Bacteria ex:** Salmonella spp., Enterohaemorrhagic Escherichia coli, Campylobacter jejuni, Yersinia enterocolitica, Listeria monocytogenes, Bacillus anthracis, Bacillus cereus, Staphylococcus aureus, Clostridium botulinum, Clostridium perfringens, Vibrio vulnificus, Vibrio parahaemolyticus
- **Virus ex:** hepatitis A virus, Norwalk viruses, Rotavirus
- **Parasites ex:** Toxoplasma gondii, Cryptosporidia, Giardia spp., Trichinella spiralis, Taenia solium, Anisakis spp.

### Biological Hazards causes -

- **Food Borne Infections** - This results when a person consumes food containing pathogens; which grow in the human intestine and cause discomfort or disease. Typical symptoms of a 'Food Borne Infection' do not appear immediately.
- **Food Borne Intoxications** - This results when a person consumes food containing toxins in it; that causes discomfort or disease. Typical symptoms of a 'food borne Intoxication' appear quickly. **Food Borne Toxin** are mediated infections, that result when a person consumes food containing toxins produced by the pathogens in it; which grow in the human intestine and produce toxins that cause discomfort or disease.

### Conditions favouring growth of Microorganisms

#### FAT TOM

| Conditions  | Definition  |
|-------------|---|
| Food        | Food borne Microorganisms draw nutrients from Potentially hazardous foods   |
| Acidity     | Food borne Microorganisms grow well between the pH range of (3.5-7) which is present in most food.  |
| Temperature | Microorganisms grow well between the temperature range of 5°C – 63°C, most commonly known as the 'Danger Zone'                                  |
| Time        | Microorganisms need sufficient time to grow; when exposed to the 'Danger Zone'  |
| Oxygen      | Microorganisms require oxygen in free or combined state; to favor their growth. In the case of oxygen anaerobic bacteria will ferment the food. |
| Moisture    | Microorganisms require moisture to grow and is measured in the form of 'Water Activity (Aw)'  |

### ACTIVITY - 1

1. Food Hazards can be present in food when reduced to an acceptable level.  
 True  False
2. Equipment Lubricant is a  
 Physical Hazard  Chemical Hazard  Biological Hazard  Allergen
3. Microorganisms grow well between the temperature range of ....., most commonly known as the 'Danger Zone'.  
a. 7°C-74°C      b. 5°C-74°C      c. 5°C-63°C      d. 7°C-60°C
4. Food Borne ..... result when a person consumes food containing pathogens.  
a. Infection      b. Intoxication
5. Fish bone in a fish gravy dish is a physical hazard.  True  False

## Allergens

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### (Informative Purpose)

An **allergen** is normally, any harmless substance that causes an immediate allergic reaction in a susceptible person. Food allergens are almost always proteins although other food constituents, such as certain additives, are known to have allergenic (allergy-causing) properties.

**Food Allergy** is a potentially serious immune response to eating or otherwise coming into contact with certain foods or food additives.

### A food allergy occurs when the immune system:

- Identifies a particular food protein as dangerous and creates antibodies against it
- The next time the individual eats that food, immune system tries to protect the body against the danger by releasing massive amount of chemicals including Histamine
- Histamine is a powerful chemical that can cause a reaction in the respiratory system, gastrointestinal tract, skin or cardiovascular system.
- In the most extreme cases, food allergies can be fatal. Although any food can provoke an immune response in allergic individuals, a few foods are responsible for the majority of food allergies.



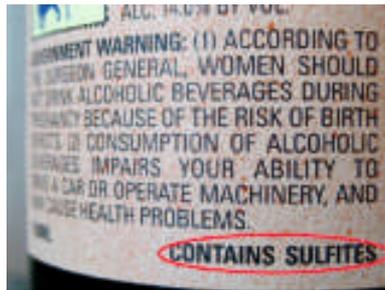
The following foods and ingredients are known to cause hypersensitivity and should always be declared by food Businesses -

1. Cereals containing gluten; i.e., wheat, rye, barley, oats, spelt or their hybridized strains and products of these;
2. Crustacean and products of these;
3. Eggs and egg products;
4. Fish and fish products;
5. Soybeans and products of these;
6. Milk and milk products (lactose included);
7. Peanuts tree nuts and nut products; and
8. Sulphite in concentrations of 10 mg/kg or more."

While the Codex list contains the major allergens on a world-wide basis, the foods, which are common causes of allergic reactions, differ between geographical areas, as a result of dietary preferences, for instance. Some countries have chosen to include additional foods on their national list of foods and ingredients that must be declared on food labels



Cereals containing gluten



Sulphite in concentrations of 10 mg/kg or more



Peanuts tree nuts and nut products

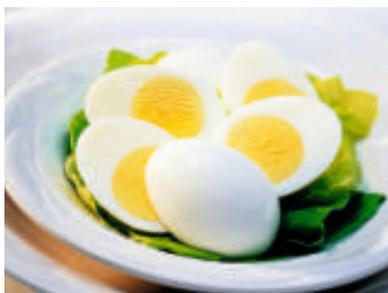


Crustacean and products of these

## Allergens



Milk and milk products



Eggs and egg products



Fish and fish products



Soybeans and its products

## Handling Allergens

### 1. Raw Material –

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- a. Review the labels of incoming raw materials for the appropriate allergen information or any changes.
- b. Tag each case/pallet/bag, etc. as appropriate of raw materials to ensure the allergen is clearly called out as the materials are stored and used in your facility.
- c. Handle appropriately any damaged containers of allergens to minimize cross-contamination at receipt.

### 2. Store –

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- a. Store allergenic ingredients or products separately to prevent minimize cross-contamination.
- b. Using clean and closed containers.
- c. Designating separate storage areas for allergenic and non-allergenic ingredients and/or products. When segregated storage is not possible, use other methods such as not storing allergens over non-allergens, storing like allergens (milk and whey) together, etc.
- d. Using and documenting clean up procedures for spills or damaged containers of allergens.
- e. Using dedicated pallets and bins.

### 3. During production –

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- a. Ensure the traffic patterns of raw materials, packaging supplies, and employees are limited during the production of allergen containing products and do not lead to cross-contact.
  - b. If possible, have dedicated processing equipment and containers to prevent allergen cross-contact.
  - c. Minimize the reuse of processing and/or cooking media such as water or oil.
  - d. Declare allergens when serving or on labels.
-

#### 4. Sanitation –

- a. Have standardized procedures for sanitation operations (SSOP's) and ensure they are followed
- b. Use appropriate cleaning methods (wipe/scrape, vacuum, soap and water wash, proper chemicals).
- c. Ensure adequate lighting in the proper locations (including flashlights to check inside equipment)
- d. Specify employee practices - hand washing at appropriate times (for example after handling a product that contains allergens, such as peanuts); proper hand washing procedures; clean clothing/aprons.

#### ACTIVITY - 2

1. Eggs and egg products are allergens.  True  False
2. Allergens and non-allergen product can be prepared in same containers without cleaning.  True  False
- 3.. Store allergenic ingredients or products separately to prevent minimize .....

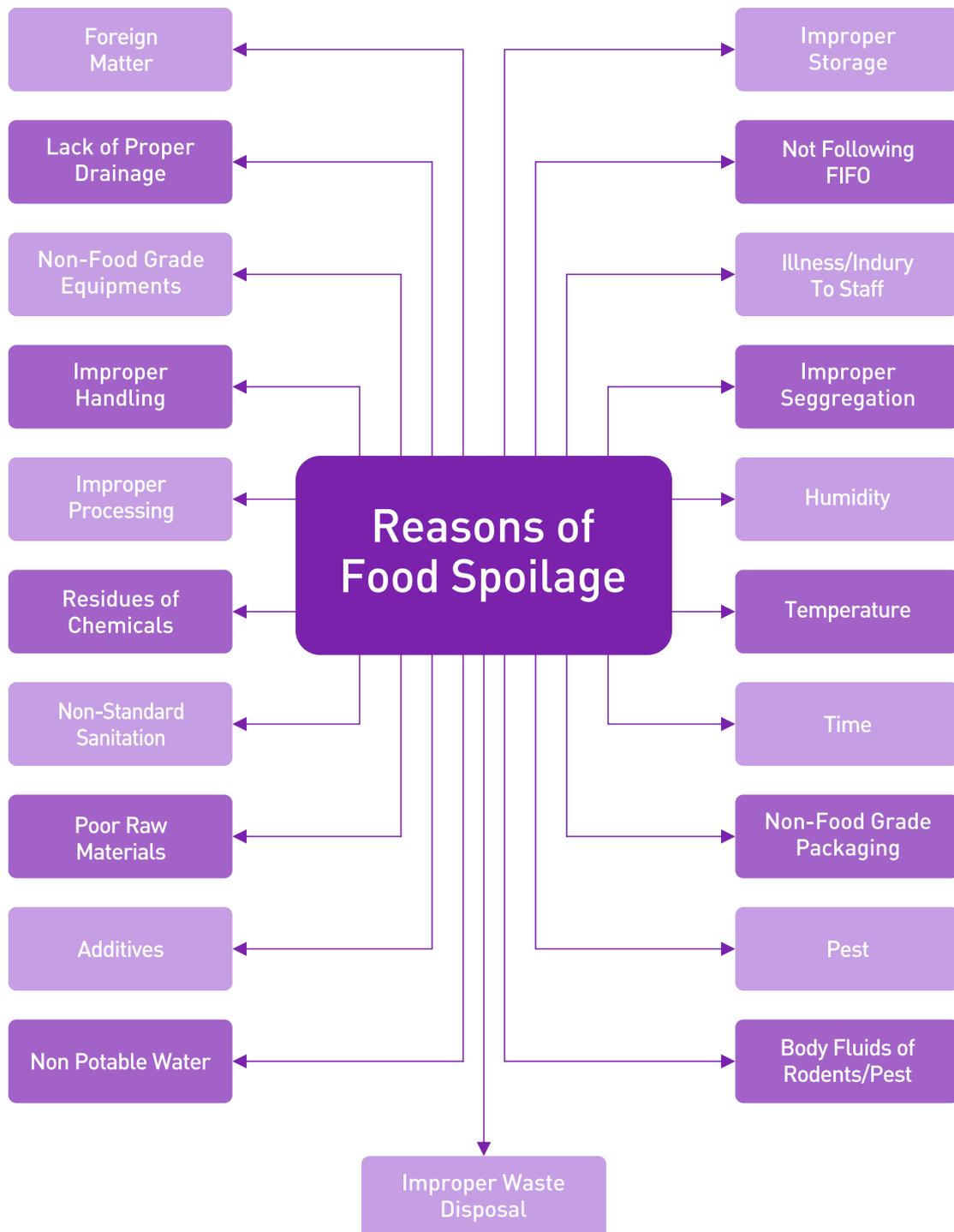
  - a. Production
  - b. Waste
  - c. Cross-contamination
  - d. Space

4. Which foods and ingredients are known to cause hypersensitivity and shall always be declared.  
 Chicken  Red Meat  
 Rice  Milk
5. .... is a powerful chemical that can cause a reaction in the respiratory system, gastrointestinal tract, skin or cardiovascular system.  
  - a. Cystine
  - b. Histamine
  - c. Keratin
  - d. Niacin

## FOOD SPOILAGE

Food spoilage means that the original nutritional value, texture, flavour of the food are damaged, the food becomes harmful to people and unsuitable to eat.

Major reasons for food spoilage are -



1. **Foreign matter:** Human hair, stapler, metal particles, fabric, plastic, alkali etc. are big threats to food safety and can cause food spoilage. Anything that is not considered as food or food substance is considered as foreign matter.
2. **Lack of proper drainage:** A drain in a food processing area must be flowing with no back flow and should be highly cleanable preventing re-entry of pest from a common drain.
3. **Non- food grade equipment:** There are many equipment that are used in modern catering practices, but very few materials like ceramic or high quality SS etc are allowed as food contact materials. So food grade equipment is essential for ensuring shelf life for product, reducing metal contamination and ensuring food safety.
4. **Improper handling:** With unclean hands and wrong selection of equipment and packing it in unsuitable material will result in food safety issues.
5. **Improper processing:** Wrong process method can lead to major changes in end product. Right temperature, right time, proper additives and understanding process steps is essential to ensure food safety.
6. **Residues of chemicals:** Chemicals come into contact in food as crop contaminants then later in the process of sanitizing voluntarily by our process. The next involuntary entry of chemicals into food can be through residues of equipment or utensil sanitation operations. It is important to ensure thorough washing is done before equipment is taken into production.
7. **Non-standard sanitation:** Sanitation must be based on strict guidelines of either historical data or validation. If chemicals are used in less or more quantity or in an unverified process or method, sanitation will fail to achieve proper results giving way for food to become unsafe.
8. **Poor raw materials:** Raw material selection must be based on strict scientific reference and frequent sampling.
9. **Additive:** Additives of any nature like essence, flavors etc can spoil food if not used in the right quantity. Unauthorized additive also must not be used.
10. **Non potable water:** Water is involved in food process in various stages from washing to soaking then involved in either directly food production as an ingredient or in some in direct manner to mix or bake or steam. It is also important for washing and sanitation operations. Water in food industry must conform to IS 3025 and IS 10500 standards.
11. **Improper storage:** Storage must not only be done by FIFO method but also properly segregated and with required ventilation. Right combination of duration, temperature ventilation and segregation defines a good storage. Any deviation in one of these will result in food becoming unsafe.
12. **Not following FIFO:** FIFO is first in first out; sometime FEFO is followed which is first expiry first out. But FIFO is the most adopted method because in food industry, expiry date is not waited for. Process should begin much before, the best before date or use by date to give the guest safe food.
13. **Illness/Injury to staff:** Food safety is much dependent on the food handler's personal behavior and health status. A person with cough, cold, open wound, itching and any illness which is of an irritable nature tends to make him handle things without washing his hands after touching the body. The most common danger to food safety is from cough and cold and open wounds for food handlers.
14. **Improper segregation:** Non vegetarian and vegetarians to name a few but guest preferences are increasing like vegan, fruitarian, eggetarian etc. For Every guest who has got a preference, a food which doesn't belong to his choice category becomes a sub-standard or unsafe food. For example, for a non vegetarian, a vegetarian dish with traces of egg is unsafe. So too is the case of a dairy product trace in a vegetarian dish for a vegan.

15. **Humidity:** Humidity is a major cause for enabling micro organism multiplication. Food zones must have less than 65 % humidity to ensure food safety.
16. **Temperature:** Temperature of cooking, holding, reheating, storing, serving, transporting, each one of this is an important factor in food being safe.
17. **Time:** Display time, holding time and discard time for already stored items is crucial for food safety.
18. **Non-food grade packing:** Food has to be packed only in acceptable packing material to ensure food safety.
19. **Pest:** Food invites pests and the movement of pest towards food is natural. Enough care must be taken to plan pest control devices and other forms of controls to ensure that they are highly restricted from either getting into food or contaminating food resulting in food safety issues.
20. **Body fluids of rodents/pests:** Many invisible things in food chain happen due to the contamination caused by rodents, reptiles, pests, nocturnal animals and birds present in the storage yard, marketing yard, transportation etc. If attention is not given it can also happen inside the store of hotels too. The body fluids like urine, fecal matter etc., get into the food process and make the food very unsafe for consumption.
21. **Improper waste disposal:** Waste is an outcome of process but often present very close to the process region. If it is not disposed in a scientific manner it can breed pest and micro organisms which are a threat to food safety.

### ACTIVITY - 3

1. Illness/injury to staff may lead to .....
  - a. Food Spoilage
  - b. Biological Hazard
  - c. Allergens
  - d. Cross-contamination
2. ...., right time, proper additives and understanding process steps is essential to ensure food safety.
  - a. Wrong Temperature
  - b. Cleaning of Utensils
  - c. Allergens
  - d. Right Temperature
3. ...., if not disposed in a scientific manner it can breed pest and micro organisms which is a threat to food safety.
  - a. Physical Hazard
  - b. Chemical Hazard
  - c. Waste
  - d. Allergens
4. Right combination of time, temperature ventilation and segregation defines a good storage. True/False
5. Food zones must have ..... humidity to ensure food safety.
  - a. More than 80%
  - b. Less than 65%
  - c. More than 65%
  - d. Less than 80%



# PART II

## LOCATION, LAYOUT & FACILITIES

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LOCATION & SURROUNDINGS

---

LAYOUT & DESIGN OF FOOD  
ESTABLISHMENT PREMISES

---

EQUIPMENT & CONTAINERS

---

FACILITIES

## LOCATION & SURROUNDINGS

Location of a catering establishment shall ideally be away from an environmentally polluted area, any residential area or any area where industrial activities that produce disagreeable odour, wastes, chemical or biological emissions etc are located.

The catering establishments shall also be away from areas which are prone to pest infestation or an area where industrial wastes cannot be removed effectively, as these location lead to food borne illnesses. In case there are hazards of other environment polluting industry located nearby, the catering establishment shall take appropriate measures to protect the manufacturing area from any potential contamination.



Dirty passage being used as Food Storage



Food Preparation area



Urinal without doors



Poor Civic Sense cause airborne bacteria



Garbage lying open - Source of Flies, Insects, Rodents



Open and unattended garbage bins



## LAYOUT & DESIGN OF FOOD ESTABLISHMENT PREMISES

1. **The designing of premises** shall be such that there should be no cross contamination in food preparation area occur from pre and post manufacturing operations. The material movement should be done in one direction only (no backward flow), to prevent cross contamination



2. **Floors, ceilings and walls** of the catering establishment must be made of impervious material. They should be smooth and easy to clean with no flaking paint or plaster and maintained in a sound condition to minimize accumulation of dirt, condensation & growth of moulds

### Floors, ceilings and walls



Cleanable, durable, Impervious to moisture



Cracks allow bacteria and molds to accumulate

### Floors, ceilings and walls



Good Repairs & Clean walls



Ceiling made of impervious material

3. The **doors** in the catering establishment shall be made of smooth and non-absorbent surfaces and they shall be easy to clean and disinfectant



Doors made of smooth and non-absorbent surfaces

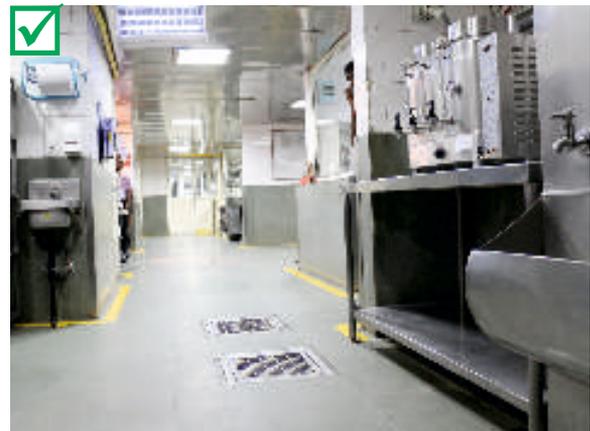


Floor with drainage of appropriate slope

4. The **floor** shall have adequate and proper drainage with appropriate slope and they should be easy to clean and disinfect. The drainage shall flow in a direction opposite to the direction of food preparation area to avoid contamination.



Repaired Floor



Floor with drainage of appropriate slope



Drains should be covered to prevent insects and rodents

5. The **drains** should be covered to prevent insects and rodents from entering the processing area



Floor with proper drainage

6. The **windows, doors & all other openings to outside environment** in the catering establishment shall be well screened with wire-mesh or insect- proof screen to protect the premise from pests. The doors shall be fitted with automatic closing springs to keep them closed at all times and also the mesh should be easy to remove & clean to avoid accumulation of dust & dirt.



Well screened windows

7. **Food preparation areas** shall have no smoke nuisance. The catering establishment shall install a chimney having appropriate suction prior to start of business. The food if contaminated from any privy, urinal, sullage, drain or place of storage of foul and waste matter, shall not be manufactured, stored or expose for sale.



Food preparation areas shall have a installed chimney



Food preparation areas shall have no smoke nuisance

## EQUIPMENT & CONTAINERS

The equipment and containers shall be separate for handling food, by-products handling, waste handling, storing cleaning chemicals & for storing inedible or dangerous substances. All food contacting items, fittings and equipment must be kept in good condition. The chipped enameled containers will not be used for production or handling food. Only stainless steel /aluminum / glass containers or brass utensils provided with lining shall be used. Also, cleaning & disinfectant system for equipment and containers shall be available and wherever possible, cleaning in place (CIP) system shall be adopted. If required, a waste water disposal system / effluent treatment plant shall be put in place.

### Equipment and containers for handling food shall be:

- Made of corrosion free materials
- Located, designed and fabricated in a way that it permits necessary maintenance and cleaning and disinfectant functions
- Kept at all times in good order and in a clean sanitary condition.
- Not be used for any other purpose.
- Either provided with a properly fitted cover or with a clean gauze net or other material of texture sufficiently fine to protect the food completely from dust, dirt and flies and other insects.
- Kept away from noxious or injurious exhalation to avoid food being noxious.

### Equipment and containers for handling waste, by-products, cleaning chemicals and inedible or dangerous substances, shall be:

- Specifically identifiable
- Suitably constructed
- Stored separately



Cooking containers with lids



Storage containers with lids



Equipments made of corrosion free material



Storage containers in the kitchen with lids



Cleaning of equipments



Sanitizing of equipment

If required, waste water disposal system/effluent treatment plant shall be put in place.

## ACTIVITY - 4

- Brass utensils, when used shall be provided with lining.  True  False
- Windows, doors & all other openings shall be well screened with wire-mesh to protect the premise from .....
  - personals
  - sunshine
  - pest
  - wind
- What are the requirements of ideal location?
  - .....
  - .....
  - .....
  - .....
- Material movement is allowed in ..... Direction.
  - One
  - bi
  - Uni
  - Multi
- Equipment and containers for waste, by-products, cleaning chemicals and inedibel or dangerous substances, shall be same.  True  False

## FACILITIES

The facilities required for producing and serving safe and hygienic food include, water supply, utensils and equipment cleaning facilities, raw material washing facilities, potable ice and steam facilities, personnel facilities & toilets, proper ventilation, air quality & lighting systems. The requirements are detailed as follows –

1. **Water Supply** - Only potable water in processing and cooking, food handling, washing shall be used and it shall be tested according to IS:10500 requirements. The storage tanks shall be cleaned periodically & records shall be maintained. The non potable water can be used for cleaning of equipment not coming in contact with food, food steam production, fire fighting & refrigeration equipment. The non potable water pipes shall prevent the use of this water for contamination of food material and shall be clearly distinguished from those in use for potable water by using color coding systems.



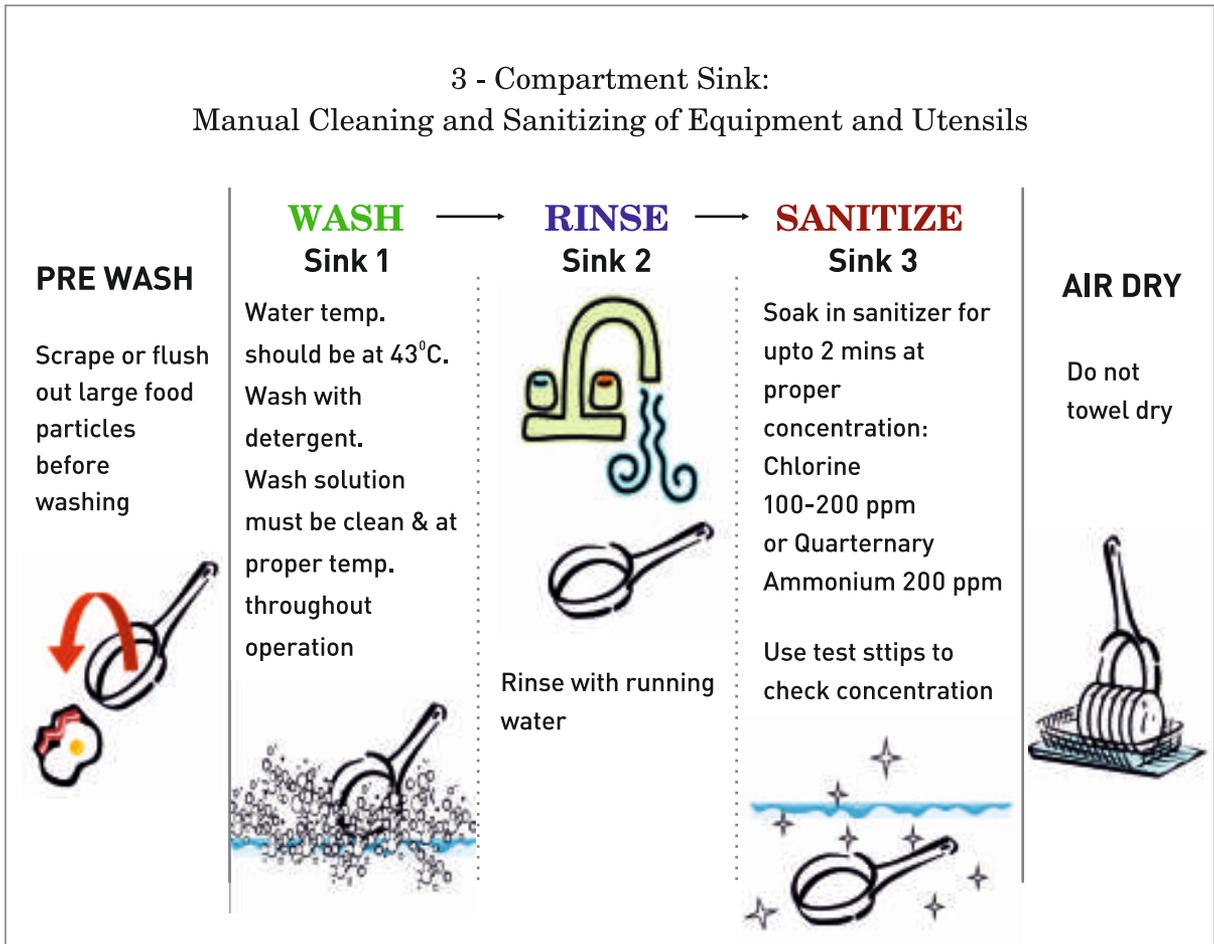
Colour coding of water pipes to avoid contamination



Cleaning of water storage tanks

2. For Cleaning Utensils / Equipment -

Adequate facilities for cleaning, disinfecting shall be provided with hot and cold water facility, if required. As a good industry practice, there shall be three compartment sink for wash, rinse and sanitize the equipment & containers. The equipment & containers after sanitizing shall be allowed to air dry for effective drying. The procedure for cleaning has been shown in poster below -



Clean and sanitize pot washing area.

Flush, scrape and pre-soak.

Wash in detergent.



Rinse in clean water.

Sanitize by immersion. Check concentration regularly.

Allow to air dry. Do not dry with a towel.



3. **For washing of raw materials**, sinks with a draining board, detergent and hot water shall be provided and these facilities must be kept clean and, where necessary, disinfected. Also ensure that separate sinks shall be used for washing raw foods & washing utensils or for any other purposes.



Vegetable washing machine

4. **Ice and Steam** for use in production of food shall be made of potable water. They should be handled hygienically to avoid cross contamination. The ice shall be handled using food grade plastic scoop and the ice machine shall be kept clean at all times.



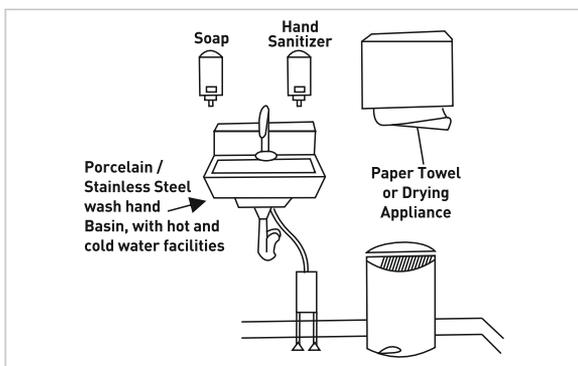
Clean &amp; hygienic ice machine



Dirty ice machine

5. **Personnel facilities and toilets** are of major importance as the personnels are constantly in touch with the food. Proper hand washing facilities shall be provided. The requirements of a Hand washing and drying system include –

- Porcelain/Stainless Steel Wash-hand basins, preferably knee operated
- Germicidal liquid Soap
- Sanitizer
- Supply of hot and /or cold water
- Wet hands drying system
- Clean and dry towels, preferably paper towel/rolls
- Covered Trash Bin, preferably pedal operated with plastic lining



Also, separate adequate number of hygienic lavatories and changing facilities shall be provided for the personnel. The restroom and refreshments rooms shall be separate from food process and service areas to avoid personnel from having their food in restroom. The catering establishment shall display hygiene requirements for the workers at a prominent place in English or in local language to help them in understanding and implementing personal hygiene.

| Suggested numbers of lavatories, Urinal stall & hand wash Basins/number of employees |  |         |             | Ideally 15-20 persons 1 tap   |             |
|--|--|---------|-------------|---|-------------|
| Staff Member   | Number of sanitary convenience   |         |             |   |             |
|  | Men  |         |             | Women   |             |
|  | Lavatories   | Urinals | Wash basins | Lavatories  | Wash basins |
| 10   | 1  | 1       | 1           | 1   | 1           |
| 20   | 1  | 2       | 2           | 2   | 2           |
| 40   | 2  | 3       | 2           | 3   | 3           |
| 60   | 3  | 3       | 2           | 4   | 4           |
| 80   | 4  | 4       | 3           | 6   | 5           |
| 100  | 4  | 4       | 3           | 8   | 6           |
| 120  | 5  | 5       | 4           | 9   | 7           |
| 140  | 5  | 5       | 4           | 10  | 8           |
| 160  | 5  | 6       | 5           | 11  | 8           |
|  | Add 1 lavatory, 1 urinals and 1 wash basin for every 70 persons in excess of 280 persons |         |             | Add 1 lavatory, and 1 wash basin for every 35 persons in excess of 280 person |             |



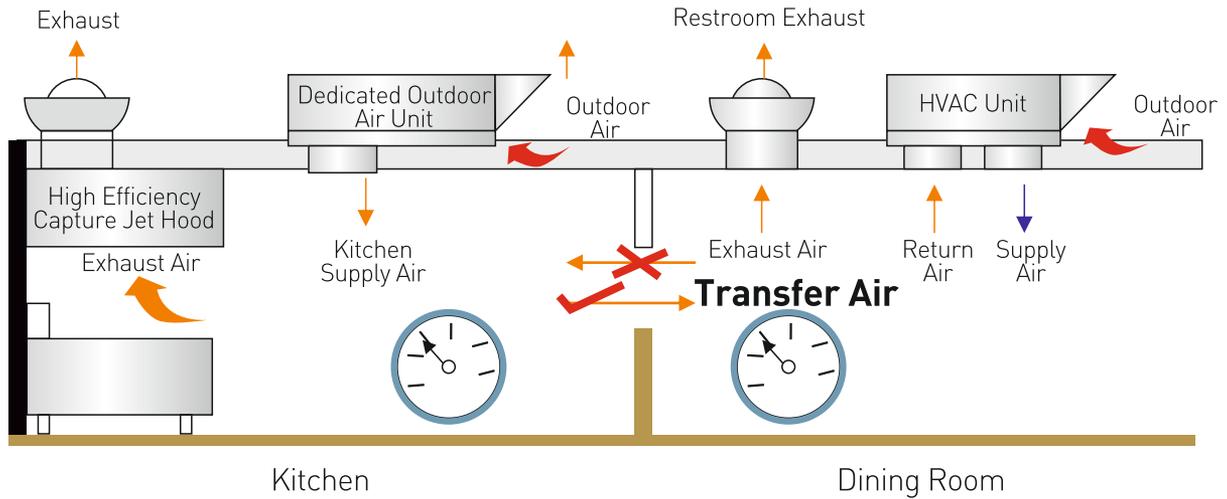
Separate Lockers for men and women for changing



Food shall be consumed in refreshment room not in rest room

6. **Air quality and ventilation system** shall be designed and constructed so that air does not flow from contaminated areas to clean areas. The suggested air changes/hour in separate section of the catering establishment are as follows -

| S. No. | Types of premises/work room | Air Cycles/hour |
|--------|-----------------------------|-----------------|
| 1      | Bar, public room, cafe      | 20-22           |
| 2      | Cellars                     | 3-5             |
| 3      | Kitchen                     | 20              |
| 4      | Toilet                      | 15              |
| 5      | Store room                  | 3-6             |
| 6      | Office                      | 6-10            |
| 7      | Bake houses                 | 20-30           |



7. **Lighting** should be sufficient to the food establishment area. Lighting fixtures should be covered to prevent breakages of electrical fittings to contaminate food. The suggested level of luminance in separate section of the catering establishment are as follows -

| S. No. | Area   | Level of luminance (Lux) |
|--------|--|--------------------------|
| 1      | Food storage area                                  | 220 approx               |
| 2      | Inspection area                                    | 540 approx               |
| 3      | General Area                                       | 220 approx               |
| 4      | At food preparation surface & pick up counters     | 500 approx               |
| 5      | Retail, dishwashing, hand washing, toilet areas    | 300 approx               |
| 6      | For reading, inspection, and monitoring equipments | 600- 1200 approx         |



Proper lighting facility in the work area



lights shall be covered

**ACTIVITY - 5**

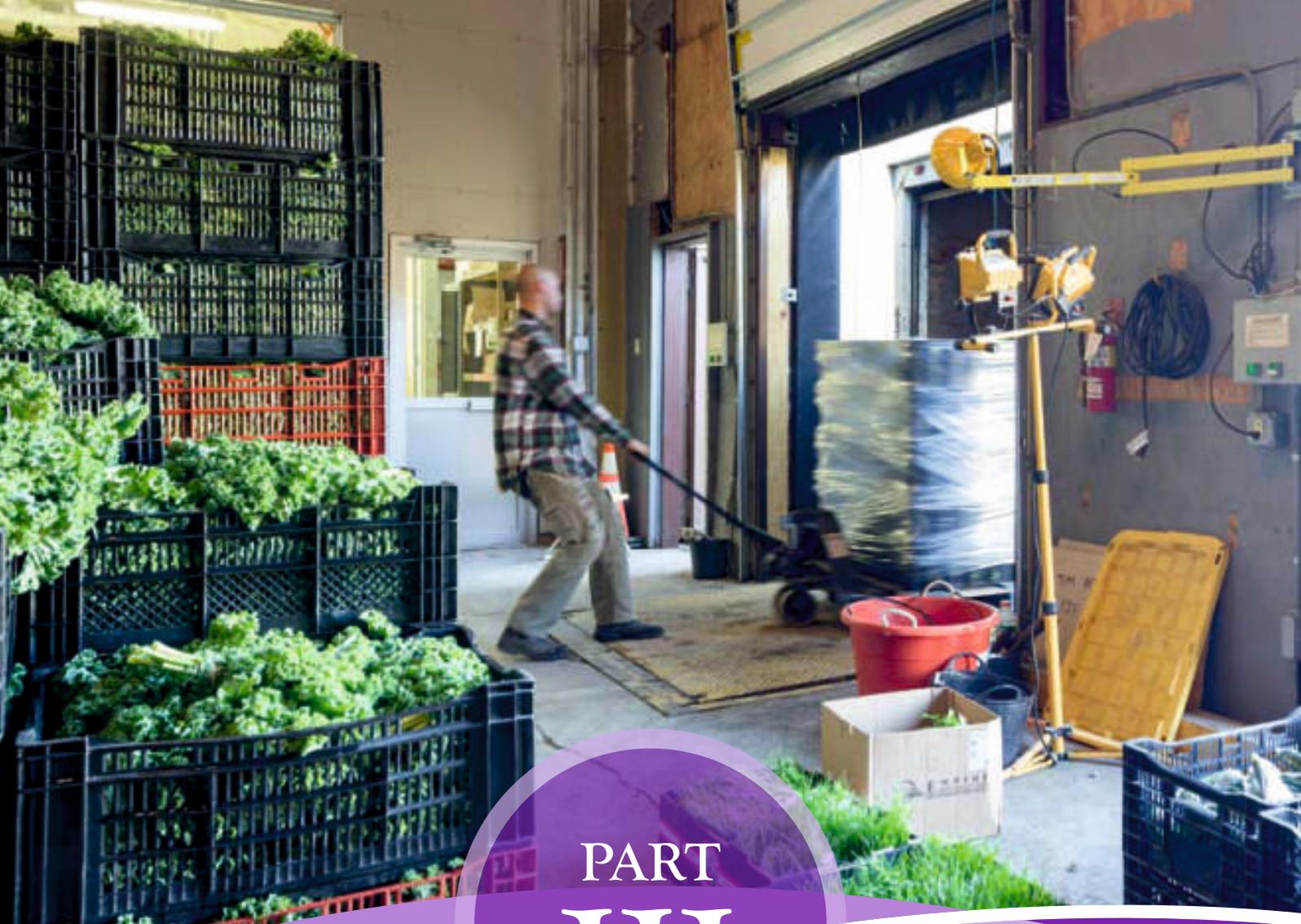
1. Non potable water can be used for steam production and refrigeration equipment.  True  False
2. Potable water shall be tested according to Indian Standard  
 IS:10500       IS:15000  
 IS:17025       IS:22500
3. Lux level requirement in food preparation area is .....

  - a. 500                      b. 200
  - c. 600                      d. 1200

4. Temperature of water for washing utensils, should be at .....

  - a. 55°C                      b. 25°C
  - c. 40°C                      d. 43°C

5. Potable water and non potable water shall be same.  True  False



# PART III

## MATERIAL HANDLING

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Receiving

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Storage

## RECEIVING

### Procurement of raw materials –

While procuring and receiving the raw material, the food handler shall ensure that -

- Raw materials shall be purchased from reliable and known dealers. As per condition of license, every manufacturer, distributor or dealer selling an article of food to a vendor shall give either separately or in the bill, cash memo or label a warranty in Form E i.e. Form of Guarantee. The supplier shall be licensed under food safety & standard Act, 2006.
- It shall conform to all the Regulations and standards laid down under the Food Safety & Standard Act, 2006.
- Records of raw materials & source of procurement shall be maintained in a register for inspection.
- All raw materials should be checked for visible deterioration & off- odour and cleaned physically thoroughly.
- No raw material or ingredient thereof shall be accepted if it is known to contain parasites, undesirable micro-organisms, pesticides, veterinary drugs or toxic items or decomposed or extraneous substances, which would not be reduced to an acceptable level by normal sorting and/or processing.
- Raw materials should be purchased in quantities that correspond to storage/preservation capacity of the catering establishment.
- 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<sup>0</sup>C
- Receiving temperature of frozen food should be -18<sup>0</sup>C or below.

An illustrative copy of Form E is displayed here. The food handler can download the same from Food Safety & Standards (Licensing & Registration of Food Businesses) Regulations, 2011 (Refer Regulations 2.1.14(2)).

[http://www.old.fssai.gov.in/Portals/0/Pdf/Food%20safety%20and%20Standards%20\(Licensing%20and%20Registration%20of%20Food%20businesses\)%20regulation,%202011.pdf](http://www.old.fssai.gov.in/Portals/0/Pdf/Food%20safety%20and%20Standards%20(Licensing%20and%20Registration%20of%20Food%20businesses)%20regulation,%202011.pdf)

| FORM E   |  |                      |          |  |
|--|--|----------------------|----------|--|
| Form of Guarantee  |  |                      |          |  |
| (Refer Regulation 2.1.14(2))   |  |                      |          |  |
| Invoice No. _____  |  |                      |          | Place: _____                                     |
| From: _____  |  |                      |          | Date: _____                                      |
| To: _____  |  |                      |          |  |
| Date of sale   | Nature and quality of article/brand name, if any | Batch No or Code No. | Quantity | Price  |
| 1  | 2  | 3                    | 4        | 5  |
|  |  |                      |          |  |
| I/We hereby certify that food/foods mentioned in this invoice is/are warranted to be of the nature and quality which it/ these purports/purported to be. |  |                      |          |  |
| Name and address of<br>Manufacturer/Packer<br>(in case of packed article)<br>License No. (Wherever applicable)   |  |                      |          | Signature of the manufacturer/Distributor/Dealer |

## RECEIVING OF RAW MATERIAL



Dedicated Raw material receiving section



Raw material receiving section covered with cloth to avoid dust, dirt etc.



Inspection of Raw material - Non Veg



Inspection of Raw material - Vegetables



Checking Labelling requirements before receiving



Checking temperature of incoming material before receiving

# SPECIAL FOCUS BEFORE RECEIVING

|   |  |   |   |  |  |
|---|--|---|---|--|--|
| Odor Shall not be stale   | Body Should not have wound or injury marks. The skin of fish should not break when pressed | Mostly preferred at 700gms to 1100 gms of weight  | Should be Pinkish Rose in colour No Green patches in body                                       | Identification of Gender                     | No wound or injury mark on the body                                      |
| <b>FISH</b>   |  | <b>CHICKEN</b>  |   | <b>MEAT</b>                                  |  |
| ventral portion shall be clean. Eyes must be crystalline and not smudged of slimy | Gills should be fresh when inspected preferably pink in colour                             | Body should not have wound or injury marks, should not have excess slime formation on surface | The bird should not smell of any medicine When we squeeze the animal water should not come out. | Should check for authorised Government Stamp | Colour should not have turned black, if should be brown of pinkish brown |



Accepts fish and marine products below 5°C



Do not accept fish and marine products at above 5°C



Clean and intact



Do not receive broken & rotten eggs



Accept poultry products at/below 5°C



Do not accepts poultry products above 5°C



Receive products in clean crates



Do not receive products in polythene



Clean and sanitized trolleys for receiving raw material



Unclean trolleys



Accept fresh produce with no sign of spoilage



Reject spoiled fresh produce



Accept meat products at/below 5°C



Do not accept meat product above 5°C



Accept dairy at/below 5°C



Do not accept dairy products above 5°C



Receiving of potentially hazardous food such as cooked meat at above 65°C



Receiving of potentially hazardous food such as cooked meat below 65°C



Accept packed product in tact and good condition



Reject packed product if they are torn or damped



Accept Intact packed vacuum products



Reject torn or leaking vacuum product



Accept sealed and intact canned products



Reject swollen or dented canned products

**ACTIVITY - 6**

1. Receiving temperature of frozen food should be 0°C or below.  True  False
2. Receiving temperature of potentially high risk food should be at or below .....
  - a. 10°C                      b. 5°C
  - c. 7°C                        d. 15°C
3. Raw material or ingredient thereof shall be accepted if it is known to have -
 

|   |   |
|---|---|
| <input type="checkbox"/> Good sanitary conditions | <input type="checkbox"/> Foreign Object |
| <input type="checkbox"/> Parasite                 | <input type="checkbox"/> Pesticide      |
4. Every manufacturer, distributor or dealer selling an article of food to a vendor shall give either separately or in the bill, cash memo or label a warranty in .....
  - a. Form E                      b. Form D
  - c. Form B                      d. Form A
5. Packaged raw material must be checked for 'expiry date'/'best before'/'use by' date, packaging integrity and storage conditions.  True  False

## STORAGE OF RAW MATERIALS & FOOD

After receiving and accepting the raw material, there comes the need of storage. The storage facilities shall be designed and constructed to avoid cross - contamination during storage, permit adequate maintenance and cleaning and shall avoid pest access and accumulation. Cold Storage facility shall be provided for food that requires being stored below 5°C.

While designing the storage room, segregation shall be there for raw, processed, packaging, rejected, returned or recalled food items, allergen material & distinguishably marked and secured products (hardware & cleaning chemicals). The storage area for raw food shall be separate from the area of work-in-progress, processed, cooked and packaged products. Also, the containers made of non-toxic materials shall be provided for storage of raw materials, work-in-progress and finished / ready to serve products.

**While procuring and receiving the raw material, the food handler shall ensure that -**

1. Storage instructions over food packaging should be followed.
2. Temperature and humidity requisite for respective food materials / products shall be maintained, to enhance shelf life.
3. FIFO (First In First Out) & FEFO (First Expire First Out) stock rotation system as applicable, shall be followed in storage areas, work-in-progress and processed/cooked or packaged food products.
4. The food materials shall be stored on racks / pallets, well above the floor level and away from the wall.
5. Raw meat/poultry should be stored separately from other foods.

## 6. Storing cooked food –

- Foods should be cooked, stored and kept at right temperature
- Cooked food to be eaten later should be cooled quickly, and kept it in the refrigerator

## 7. Dry, fermented and acidified foods should be stored in cool and dry place.

## 8. When storing food in refrigerator –

- Veg. foods should always be stored above non-veg. foods and cooked foods above uncooked foods on separate racks in the refrigerator
- put date on food packages or containers before keeping inside the refrigerator
- non-veg. products should be stored covered in refrigerator below the veg products
- raw and cooked products should be stored physically separated with cooked products at the top.

## 9. Food to be kept for cold storage should be distributed in small volumes to ensure uniform cooling.

## 10. All packaged food viz. sterilized milk, bottled beverages, canned foods etc. should be stored properly during transportation to ensure that seals remain intact and undamaged.



No space between wall and stacks may lead to unhygienic conditions & pest infection



Proper stacking of raw material on pallets



No space between wall and stacks may lead to unhygienic conditions & pest infection



Proper stacking of raw material away from wall



Ensure all primary / secondary food packaging and disposable service items are stored covered at all times



Storage of frozen meat in deep freezer at -18°C



Proper storage of raw meat on shelves with packing date & expiry date.



Secured storage of vegetable in bin



Storage of fresh fruits



Storage in pre production area



Storage of fresh vegetables



Colour coded tray for storage of eggs



Storage of packed products in rack



Follow FIFO or FEFO



Store allergen products in designated racks

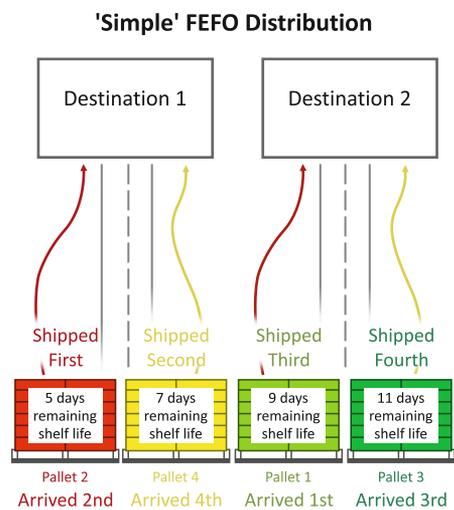
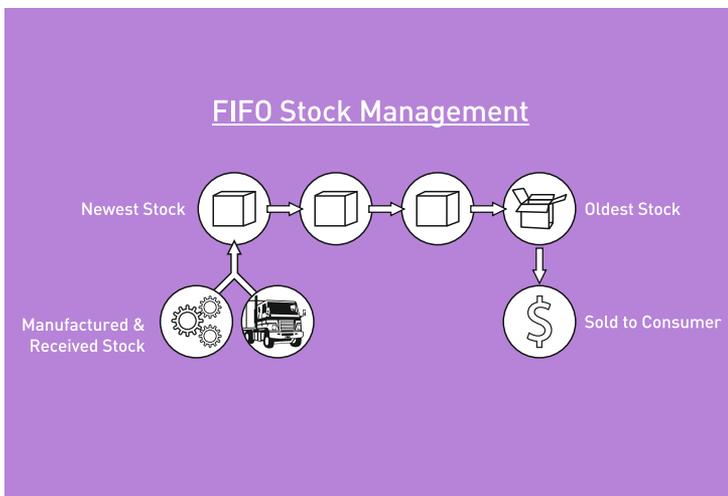
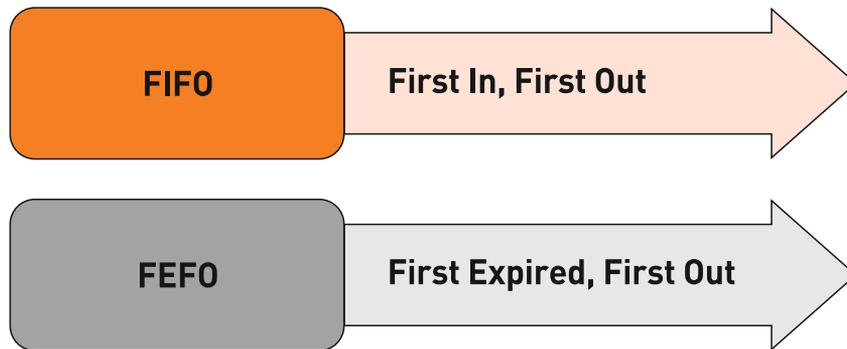


Stack all foods in glass packagings on lower most shelves with a safety string to avoid falling of bottles off rack



Do not store carton under dry store

### Stock Management



## STORAGE OF FOOD IN THE REFRIGERATOR

**Separate Fridge** is required for veg and non-veg food

**If separate refrigerator is available:-**

- Sequence in Veg Refrigerator – Ready to eat and salad at the top shelves, cooked vegetables at next top shelves and raw vegetables at the lower shelves.
- Sequence in Non Veg Refrigerator – Ready to eat and non-veg salad at the top shelf, cooked Non-Veg at next top shelves and raw Non-veg at the lower shelves.

**If separate refrigerator is not available:-**

Ready to eat and salad at the top shelf, cooked vegetables at next top shelves, Cooked Non-Veg In the next top shelves and raw food at the lower shelves





Raw food & prepared food storage



#### Cold Store Temperatures

Cold Storages at 1 to 5°C

Vegetables & Fruits upto 9°C

Frozen Foods at <-18°C

Ice-Cream at <-18 to -23°C

## ACTIVITY - 7

- The food materials shall be stored on racks / pallets, well above the floor level and away from the wall.  True  False
- Storage facilities shall be designed and constructed to avoid -
 

|   |   |
|---|---|
| <input type="checkbox"/> avoid contamination during storage | <input type="checkbox"/> permit adequate cleaning                           |
| <input type="checkbox"/> avoid pest access                  | <input type="checkbox"/> permit storage of allergen & non-allergen together |
- Raw material that enters the store first shall leave the store first. This stock rotation system is known as .....
  - FIFO
  - FEFO
- Containers made of ..... shall be provided for storage of raw materials, work-in-progress and finished / ready to serve products.
  - Copper
  - Non-food grade material
  - Tin
  - Non-toxic materials
- When storing raw meat in a refrigerator, storage of ready to eat food should be at bottom shelf.  True  False



# PART IV

## PRE- PRODUCTION PROCESSING

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Preparation of fruits & vegetables

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Preparation of non-vegetarian products

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Thawing

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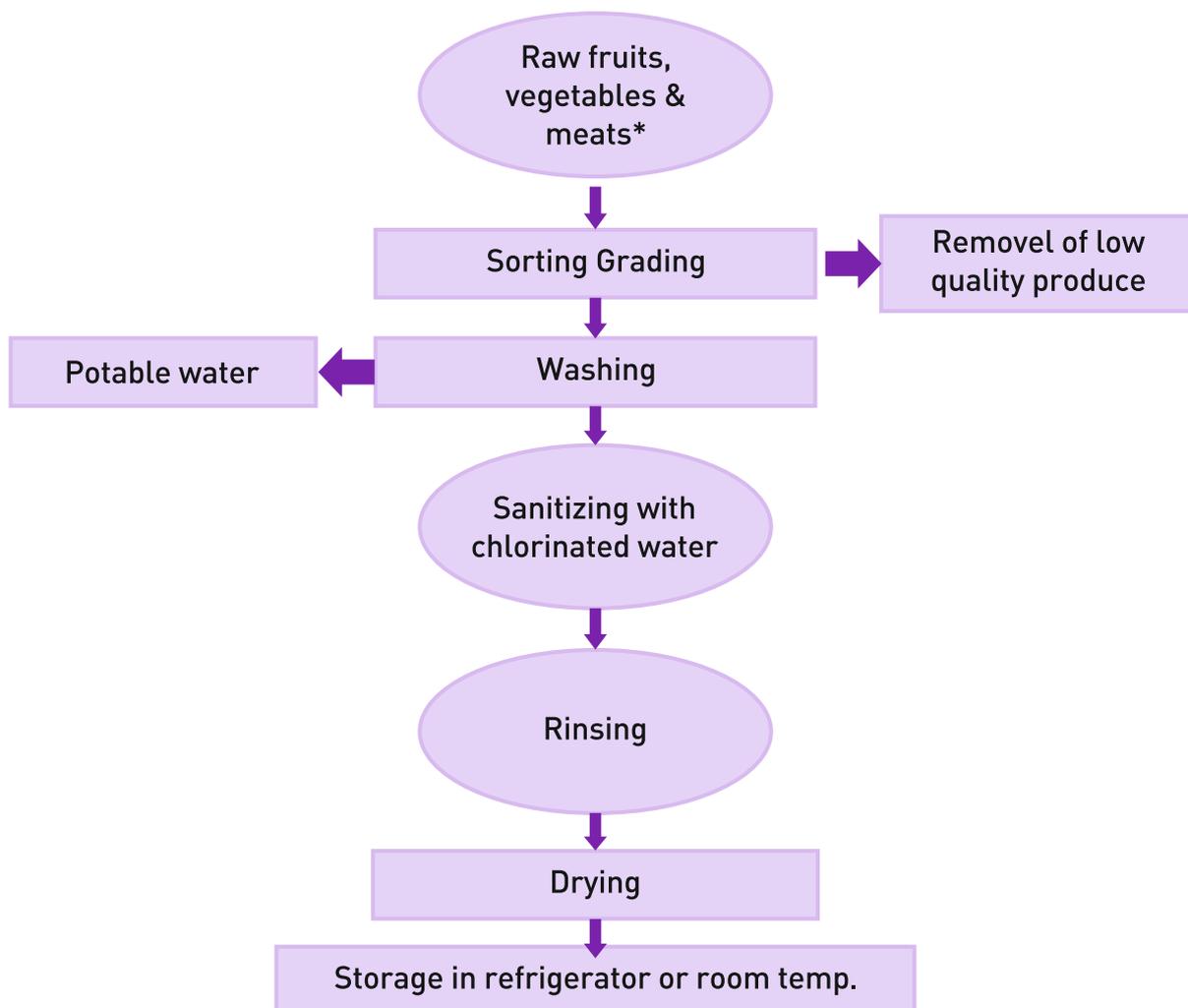
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Cross-contamination

## PREPARATION OF FRUITS & VEGETABLES

After storing and before raw material being sent for production, some pre – processing is done such as washing, cutting, thawing etc. This is one of the crucial steps as cross contamination occurs at this stage, if the raw material is not handled properly. Raw vegetables/fruits and non veg raw material are handled and pre-processed separately.

The raw vegetables are first physically check for physical contamination or microbial spoilage, then the damaged material is segregated and then washed with potable water. After rinsing, the vegetables are sanitized with 50 ppm chlorinated water and let the vegetable air dry to allow chlorine to evaporate from the surface. After the vegetables are dry, they can now be peeled, cut, served or chilled for future use. The prepared fruits/vegetables should be kept in clean and properly covered non-absorbent food grade containers at a required temperature.



\*Not advised for all, however this process may be used for applicable raw fruits, vegetable & meat

### Washing of raw vegetable with water

- Washing will help reduce bacteria, including e.coli, from the surface of fruit and vegetables.
- Most of the bacteria will be in the soil attached to the produce. Washing to remove any soil is, therefore, particularly important.
- When you wash vegetables, wash them under a running tap and rub them under water, for example in a bowl of fresh water. Start with the least soiled items first and give each of them a final rinse.
- Washing loose produce is particularly important as it tends to have more soil attached to it than pre-packaged fruit and vegetables.
- Peeling or cooking fruit and vegetables can also remove bacteria.

### Washing of raw vegetable with chlorinated water

- Chlorine bleach solutions may be used for sanitizing raw fruits and vegetables during the washing or pre-peeling process.
- The concentration of sanitizer in the wash water must not exceed 100 - 200 ppm hypochlorite (used when vegetables are highly dirty). However 50ppm is recommended for general sanitization.
- Contact time of not more than two minutes is typically sufficient to achieve a thorough kill.
- Do not use chlorinated water for sanitizing peeled fruits and vegetable.
- For immediate peeling of vegetables & fruits, re-rinse with potable water after sanitizing with chlorinated water.

### How to prepare chlorine solution of required strength

#### Formula used –

Initial Hypo chlorine solution concentration (ppm) x Initial Hypo chlorine solution volume (? In ml) = Final chlorine solution concentration desired (ppm) x Final chlorine solution volume (ml)

#### Example –

To prepare 100 ltr (100,000 ml) of 50 ppm solution, from a 12.5% (125,000 ppm) sodium hypochlorite (NaOCl) solution

$$125000 * ? = 100000 * 50$$

? = 40 ml of Initial Hypo chlorine solution volume shall be used.

Note - 1 ltr = 1000 ml & 1 ppm = 1ml in 1,000,000ml

## PREPARATION OF NON-VEG PRODUCTS

Non-Veg raw material shall be handled and pre processed hygienically to avoid cross-contamination. Proper cooking of all non vegetarian products shall be done to ensure all pathogens are killed. Used surfaces for handling raw meat should be washed with antibacterial cleaning agent, rinsed properly with water and sanitized after preparing non vegetarian products.

Food handlers should develop and maintain systems to effectively control time and temperature of receiving, processing, cooking, cooling, storage, packaging, distribution and food service upto the consumer shall be controlled.



Ensure proper cooking of cooked meat at an internal temperature of 75°C or above



Cleaning of surface area after preparing non veg products

## THAWING

Freezing food keeps most bacteria from multiplying, but it does not kill them. If food is allowed to enter the temperature danger zone of 5°C - 60°C, bacteria will grow rapidly. Thawing is a process of defrosting the frozen food. Thawing frozen food correctly is important for keeping food safe to eat. The temperature of food should not exceed 5°C during the thawing process. Cooks must plan ahead so that they can use an appropriate method for thawing. Thawed material should be consumed (Intend is processing) immediately. Do not store back thawed material for future use and only required portion of the food should be thawed at a time.

**There are three acceptable methods for thawing food -**

### 1. Thawing-In Refrigerator

- Identify a designated area for the defrosting of foods in the cold room/refrigerator or a labeled trolley (in a cool room) may be used for this purpose.
- Place the frozen food in the perforated pan so that dripping should not contaminate the food. Place the perforated pan in a tray/pan so that food dripping accumulates in the tray/pan and it cannot drip on other food.
- Items being thawed should be labelled with defrost date to indicate the beginning of 2nd shelf life. Label the thaw food and used within 12 hours.
- A product is deemed to be thawed when core temperature lies between 1°C to 5°C.

## 2. Thawing In Running Water

- Sink should be sanitized before thawing starts and should not be used for any other purpose. Store food on a food grade container that allows the running water to pass over the food. No defrosting food can ever be left un-attended.
- Running water should be potable in nature. Cold running water (from mains) should be at 15°C or less. Ensure air break between tap and water.
- Thawing in running water is advisable for shellfish and seafood. Portions must not be too thick to allow for quick thawing.
- Thawing in running water should be complete within 90 minutes.
- A product is deemed to be thawed when core temperature lies between 1°C to 5°C.
- Label the thaw food and used within 12 hours

## 3. Thawing in Microwave Oven

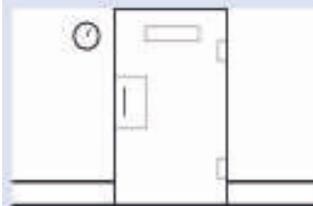
- Only small portion of food should thaw by this method
- A product is deemed to be thawed when core temperature lies between 1°C to 5°C.
- Use thawed product immediately



Ensure that frozen products are thawed properly. When thawing, mention date and time.



In a microwave oven, if the food will be cooked immediately after thawing



Submerge under running potable water, at or below 15°C



In a refrigerator, at or below 5°C

## ACTIVITY - 8

- How much initial Hypo chlorine solution is required to prepare 50 ltr of 100 ppm solution, from a 12.5% sodium hypochlorite (NaOCl) solution
 

|                                 |                                |
|---------------------------------|--------------------------------|
| <input type="checkbox"/> 80 ml  | <input type="checkbox"/> 60 ml |
| <input type="checkbox"/> 120 ml | <input type="checkbox"/> 40 ml |
- Recommended strength of chlorinated water for sanitizing fruits and vegetable is -
 

|                                 |                                      |
|---------------------------------|--------------------------------------|
| <input type="checkbox"/> 50 ppm | <input type="checkbox"/> 100-200 ppm |
| <input type="checkbox"/> 60 ppm | <input type="checkbox"/> 75 ppm      |
- Thawing should not be done by which method ?
 

|  |  |
|--|--|
| <input type="checkbox"/> Microwave           | <input type="checkbox"/> Submerged under running water |
| <input type="checkbox"/> Under refrigeration | <input type="checkbox"/> Room Temperature              |
- Cooking of cooked meat should be done at an internal temperature of ..... or above
 

|         |         |
|---------|---------|
| a. 74°C | b. 60°C |
| c. 75°C | d. 70°C |
- Chlorinated water can also be used for sanitizing peeled fruits and vegetable
 

|                               |                                |
|-------------------------------|--------------------------------|
| <input type="checkbox"/> True | <input type="checkbox"/> False |
|-------------------------------|--------------------------------|

## CROSS-CONTAMINATION

Cross contamination is one of the most common causes of food poisoning. It happens when harmful germs are spread onto food from other food, surfaces, hands or equipment.

**Cross contamination may occur from –**

### 1. Food to food –

Food can become contaminated by bacteria from other foods. This type of cross-contamination is especially dangerous if raw foods come into contact with cooked foods. Here are some examples of food-to-food cross-contamination:

- In a refrigerator, meat drippings from raw meat stored on a top shelf might drip onto cooked vegetables placed on lower shelf.
- Raw chicken placed on a grill touching a steak that is being cooked.

### 2. Hand to food –

People can also be a source of cross-contamination to foods. Some examples are:

- Handling foods after using the toilet without first properly washing hands.
- Touching raw meats and then preparing vegetables without washing hands between tasks.
- Using an apron to wipe hands between handling different foods, or wiping a counter with a towel and then using it to dry hands.

### 3. Equipment to food

Contamination can also be passed from kitchen equipment and utensils to food. This type of contamination occurs because the equipment or utensils were not properly cleaned and sanitized between each use. Some examples are:

- I. Using unclean equipment, such as slicers, can openers, and utensils, to prepare food.
- II. Using a cutting board and the same knife when cutting different types of foods, such as cutting raw chicken followed by salad preparation.
- III. Storing a cooked product, such as a sauce, in an unsanitized container that previously stored raw meat.

#### Following should be done to avoid cross – contamination

- Raw food/ meat/poultry and ready-to-eat foods should be kept separate at all times.
- Hands should be thoroughly washed before switching from preparing non vegetarian products to any other activity.
- Work surfaces, chopping boards and equipment should be thoroughly cleaned (intend clean and sanitize) before the preparing of food starts and after it has been used.
- Separate chopping boards and knives for raw fruit/ vegetables/ meat/poultry and ready-to-eat food should be used.
- Raw meat/poultry below ready-to-eat food should be kept in the fridge.
- Separate fridge for raw meat/poultry should be kept.
- Staff should be made aware how to avoid cross-contamination.



Segregate veg and non-veg area



Do not handle veg and non-veg products together.



Separate storage of raw vegetable and non veg products



Colour coded chopping boards and knives

### Prevent cross contamination

Use the correct colour coded chopping boards and knives

Raw meats and poultry only

Raw fish and shellfish only

Raw unwashed vegetables, salads and fruits only

Ready to eat and cooked foods only

Washed vegetables salads and fruits only

Bakery and dairy products only

Colour coded chopping boards may be used. A template of colour code for chopping boards and knives



Sanitizing chopping boards in chlorine water



Checking strength of chlorine (100-200ppm) water using chlorine strips



Sanitizing knives under Germicidal ultra violet Tubes

## ACTIVITY - 9

1. Handling foods after using the toilet without first properly washing hands, may lead to .....
  - a. pasteurization
  - b. sanitation
  - c. cross-contamination
  - d. incubation
2. Cross contamination may occur form -
 

|   |   |
|---|---|
| <input type="checkbox"/> Food to food         | <input type="checkbox"/> Utensils to food |
| <input type="checkbox"/> Food handler to food | <input type="checkbox"/> Customer to food |
3. Raw meat and raw vegetables may be stored together.  True  False
4. As a good hygiene practise, seprate chopping board shall be used for handling raw vegetable andraw meat.  True  False
5. Hands should be thoroughly washed before switching from preparing non vegetarian products to any other activity.  True  False



PART  
V

PRODUCTION

---

Cooking

---

Reheating of food

---

Chilling

---

Special requirement of high risk food

## COOKING

### Cooking

Since harmful contaminants can't be seen, smelled or tasted, it's important that you cook your food to a safe internal cooking temperature to avoid food poisoning. The cooking process should be adequate to eliminate and reduce hazards to an acceptable level. The cooking must be done to reach a minimum internal temperature of 75°C. The cooking of veg. & non-veg. products should be segregated to avoid contamination.

| S. No. | Food Products  | Minimum Internal Cooking Temperature |
|--------|--|--------------------------------------|
| 1      | Poultry (whole or ground chicken, turkey)  | 75°C for 2 minutes                   |
| 2      | Stuffing/Stuffed Meats   | 75°C for 2 minutes                   |
| 3      | When including previously cooked, potentially hazardous ingredients in the dish  | 75°C for 2 minutes                   |
| 4      | When including raw potentially hazardous ingredients in the dish   | 75°C for 2 minutes                   |
| 5      | Ground Meats(pork, other meat or fish)   | 75°C for 2 minutes                   |
| 6      | Pork, Tender Loin, Veal, Lamb Steaks/Chops   | 75°C for 2 minutes                   |
| 7      | Pork, Tender Loin, Veal, Lamb Roasts   | 75°C for 2 minutes                   |
| 8      | Fish   | 75°C for 2 minutes                   |
| 9      | Shell Eggs For Immediate Service   | 75°C for 2 minutes                   |
| 10     | Shell Eggs That Will Be Hot-Held   | 75°C for 2 minutes                   |
| 11     | Fruit or Vegetables That Will Be Hot-Held for Service  | 75°C for 2 minutes                   |
| 12     | Commercially Processed, Ready-to-Eat Food That Will Be Hot-held for Service (Includes cheese sticks, deep-fried vegetables, chicken wings, etc.) | 75°C for 2 minutes                   |

Checking the temperature of your cooked meat, poultry, and seafood with a food thermometer is the only reliable way to make sure your food has reached a safe internal cooking temperature.

- Remove your food from the heat and insert the digital food thermometer through the thickest part of the meat, all the way to the middle.
- Make sure that the thermometer is not touching any bones, since they heat up more quickly than the meat and could give you a false reading.

**Checking internal temperature of cooked food**



Thermometer inserted correctly-halfway through and in the centre



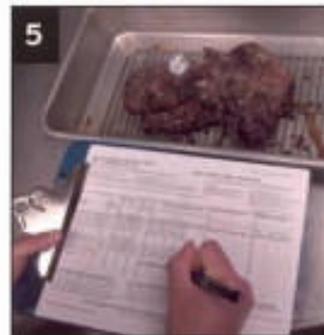
Thermometer is inserted too deep



Thermometer is not inserted deep enough



Thermometer is not inserted in the center



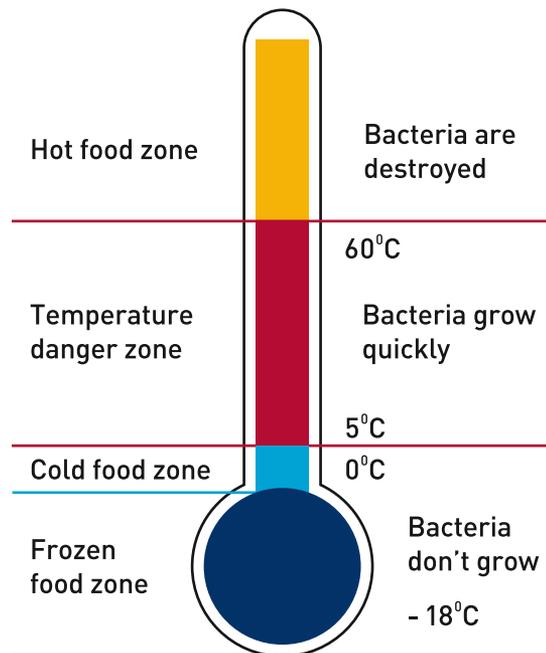
Record the correct internal temperature

The temperature danger zone is between 5°C and 60°C, when it is easiest for harmful bacteria to grow in food

Minimise the time that food spends at these temperatures in order to keep food safe

Refrigerated food needs to be kept a 5°C or below

Hot food needs to be kept at 60°C or above



## REHEATING OF FOOD

Foods hot held at 63°C-64°C and cooled at 21°C within 2 hrs or cooled to 5°C in 4 hours and thereafter stored in cold room at 1 to 5°C or freeze at -18°C might be reheated. The food that is reheated must reach a minimum internal temperature of 74°C and hold for two minutes. Food can be reheated quickly in ovens, steamer, microwave oven and/or on top of range in a steam kettle. When using microwave to reheat, food must reach a minimum temperature of 74°C and stay covered for 5 mins to allow the temperature to equilibrate. Never reheat food on a steam table, in a bain marie, in a bun drawer and/or under a heat lamp as risk of product not acquiring 74°C & above is high. Reheated food can be hold at 60°C or more and discard any food that is reheated and being unused.



## CHILLING

Microorganisms grow well in the temperature danger zone, i.e. 5°C to 63°C. Within this range, temperatures between 51°C to 21°C allow for the most rapid growth of microorganisms. For this reason food must pass through this range quickly.

### The 2-stage cooling method is –

- Stage 1 - from 63°C to 21°C with two hours; and
- Stage 2 - from 21°C to 5°C or below within four hours.

The initial 2-hour cool is the most critical time period since the food is passing through the temperature range that supports the most rapid microorganism growth. If food has not reached 21°C within two hours, it must be reheated to 74°C for 2 minutes and then cooled again or thrown away. Semi cooked or cooked dishes and other ready-to-eat foods having short shelf life should not be left standing at room temperature, thus should be cooled immediately. Food items that need to be chilled should be put straight away into the fridge. Fridge and display units should be set at 5°C to make sure that food is kept in chilled condition. Fridge and display units should be maintained in good working condition to avoid food spoilage and contamination.

### Best Practices for Cooling Food –

Food needs help cooling down quickly; it can't do it on its own. Factors that affect how quickly foods will cool down include:

- Size of the food item being cooled — the thickness of the food or distance to its center plays the biggest part in how fast a food cools.
- Density of the food — the denser the food, the slower it will cool. For example, chili will take longer than chicken noodle soup.
- Container in which a food is stored — stainless steel transfers heat from foods faster than plastic. Initially loosely wrap food items.
- Size of container — shallow pans with product depth less than two inches allow the heat from food to disperse faster than deep pans.
- Food does not move through the temperature danger zone fast enough if the food is still hot when placed in the cooler or freezer or kept in bulk. Placing hot food in a cooler may raise the temperature of everything being held and may put it in the temperature danger zone.
- Start by reducing the size or mass of food by cutting large food items into smaller pieces and dividing large containers into smaller containers.

#### Approved and efficient ways to cool food include -

- Ice-water bath and frequently stirring the food for faster and more even cooling
- Ice paddles (plastic container filled with water and frozen) used to stir food in an ice-water bath (made from potable water)
- Adding ice as an ingredient (if water is an ingredient)
- Blast or tumble chiller
- When placed in cooling or cold holding equipment, food containers in which food is being cooled can be loosely covered or uncovered if protected from overhead contamination, to facilitate heat transfer from the surface of the food.

#### Chilling Methods



Shallow pans



Refrigerate



Stirring



Ice Bath



Fridge and display unit should be set at 5°C to make sure that food is kept in chilled condition



Ensure proper temperature is maintained in chiller, cold room/freezer, deep storage and record the temp. from display unit

## SPECIAL REQUIREMENT OF HIGH RISK FOOD

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### 1. Cut fruits/salads, fresh juices and beverages

- 1) Fresh fruits /vegetables cut or juiced should be used immediately.
- 2) Storage should be only under refrigeration in sanitized and properly covered vessels for short period.
- 3) Portable water should be used for making beverages, ice etc.
- 4) Food or beverages should not be stored in the same container used to store the ice intended for consumption.
- 5) Juice concentrates must be checked regularly for any fungal growth / change of colour, odour or gas formation in the bottle.
- 6) Juice dispensing machine should be cleaned and rinsed with water (intend potable water) regularly.

### 2. Confectionery products

- 1) Prepared confectionery products should be kept in airtight containers and displayed hygienically.
- 2) Cream to be used should be stored covered under refrigeration.
- 3) Finished products should be refrigerated with proper labels indicating date of expiry.
- 4) Products should be properly wrapped/ packaged after proper cooling.

### 3. Meat, poultry & fish products

- 1) Non veg. products/raw materials should be purchased from licensed slaughter houses.
- 2) Chilled products temperature should be at or below 5<sup>0</sup>C and frozen products at or below -18<sup>0</sup>C
- 3) Processing area should be cleaned and disinfected promptly.
- 4) Preparation and processing of meat, poultry and marine products should be separate.
- 5) Non-veg. products are washed with potable water before use.
- 6) Non-veg. products are cooked thoroughly (core temperature 75<sup>0</sup>C) for at least 15 seconds or an effective time/temperature control e.g. 65<sup>0</sup>C for 10 minutes, 70<sup>0</sup>C for 2 minutes.

### 4. Water based chutneys, sauces etc.

- 1) All fruits/vegetables should be washed (intend washed & sanitize) properly before processing.
  - 2) Clean and disinfected chopping boards/grinding stone/machine should be used.
  - 3) Only permitted food additives should be used, if required, and be added in recommended quantities only.
  - 4) Water used in the chutneys should be safe and potable. Also good practice, use chilled potable water, as it will help in maintaining the temperature to 5<sup>0</sup>C. store the product in small size & store in chiller.
  - 5) Perishable/uncooked chutneys should be consumed immediately.
-

- 6) Spoiled products should be discarded immediately after confirmation of spoilage (change in colour/texture/ odour).
- 7) Sauces and chutneys should be stored in a refrigerator in clean and intact glass/food grade plastic containers with proper lids.

### **5. Foods transported to point of sale from the point of cooking**

- 1) Food should be reheated more than 74<sup>0</sup>C before consumption.
- 2) Food should be consumed or served for consumption within 4 hours of reheating, not held at 64<sup>0</sup>C

### **6. Foods with Gravy**

- 1) Food products should not be stored at room temperature for more than 2 hours during display or sale.
- 2) For prolonged (intend primarily for short duration display or holding for 2 hours) storage, foods should be stored in refrigerators or kept for hot holding at or above 64<sup>0</sup>C.
- 3) No water should be added after cooking/reheating/boiling.

### **7. Fried Foods**

- 1) Good quality / branded oils/fats should be used for food preparation, frying etc.
- 2) Use packaged oil only.
- 3) Use of oils with high trans fats (like vanaspati) should be avoided as far as possible.
- 4) Re-use of cooking oil should be avoided. In case of reheating of oil use maximum three times to avoid the formation of trans fat.

### **8. Adding ingredients after cooking**

- 1) Ingredients (Intend garnish) added to the cooked food should be thoroughly washed (intend washed and sanitized)/ cleaned.
- 2) After cooking or post cooked mixing, the food should be used immediately.
- 3) Garnishes (Intend leafy garnishes) etc., if added, should be prepared using fresh, thoroughly washed and freshly cut vegetables and used immediately.

### **9. Reuse of cooked food is not recommended.**

- 1) Potentially hazardous foods and high risk foods such as hollandaise sauce, refried beans, scrambled eggs and cut fruits are to be discarded.
- 2) All food at banquet setting that has been on display are to be discarded.
- 3) Food kept at more than 63<sup>0</sup>C during service may be reused, only by following the procedure indicated below:
  - Never mix leftover with fresh product. If in doubt, throw out (intend discard) the product.
  - Reheat leftover food temperature to more than 74<sup>0</sup>C

### Here is the list of all important temperatures in catering industry

| S. No. | Activity   | Temperature                           |
|--------|--|---------------------------------------|
| 1      | Receiving temperature of potentially high risk food            | At or below 5°C                       |
| 2      | Receiving temperature of frozen food should be -18°C or below. | At or below -18°C                     |
| 3      | Temp. of water for washing utensils                            | 43°C                                  |
| 4      | Minimum Core temp. of cooked food                              | 75°C                                  |
| 5      | Thaw food in refrigerator                                      | 1°C to 5°C                            |
| 6      | Thaw food in running water (Water Temperature)                 | At or below 15°C                      |
| 7      | Reheating food   | 74°C                                  |
| 8      | Reheating done in microwave                                    | At or above 75°C                      |
| 9      | Chilling food  | At or below 5°C                       |
| 10     | Freezing food  | At or below -18°C                     |
| 11     | Cooling food   | from 64°C to 21°C<br>from 21°C to 5°C |
| 12     | Hot holding food display                                       | At or above 60°C                      |
| 13     | Cold holding food display                                      | At or below 5°C                       |
| 14     | Dish wash machine pre rinse temperature                        | 60°C approx                           |
| 15     | Dish wash machine final rinse temperature                      | 77°C approx                           |

### ACTIVITY - 10

- To receive correct internal temperature of cooked food, thermometer should be inserted -
 

|                                   |                                       |
|-----------------------------------|---------------------------------------|
| <input type="checkbox"/> Too deep | <input type="checkbox"/> Not too deep |
| <input type="checkbox"/> Centre   | <input type="checkbox"/> Near a bone  |
- Re-use of cooking oil should be limited to maximum ..... times to avoid the formation of trans fat.
 

|          |         |
|----------|---------|
| a. One   | b. Two  |
| c. Three | d. Five |
- Chilling of food should be done at ..... or less
 

|        |          |
|--------|----------|
| a. 5°C | b. -18°C |
| c. 0°C | d. 7°C   |
- Reheating of cooked food should be done at a minimum internal temperature of ..... or above
 

|         |         |
|---------|---------|
| a. 74°C | b. 60°C |
| c. 75°C | d. 70°C |
- You may use a steam table or a bain marie to reheat food.  True  False



PART  
**VI**

**HOLDING, SERVING,  
CATERING, DINING &  
TRANSPORTATION**

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Hot & cold holding

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Food packaging

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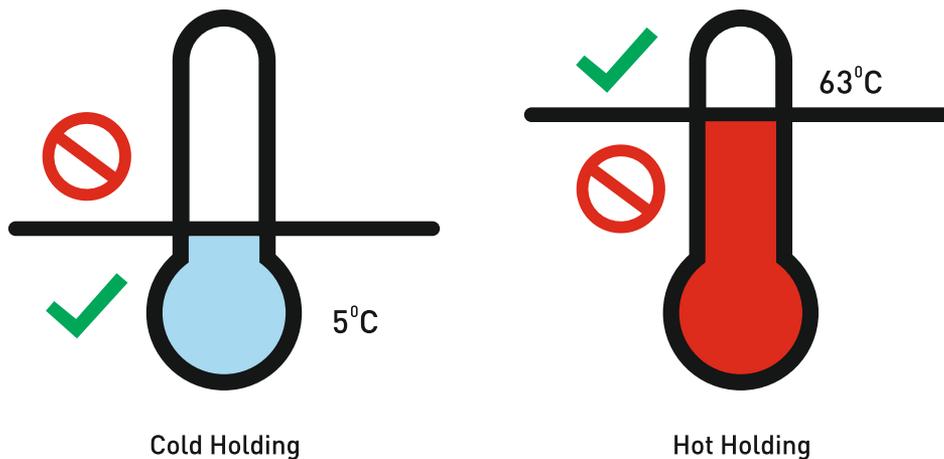
Food distribution/service

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Transportation

## HOT & COLD HOLDING OF FOOD

All potentially hazardous foods, except those prepared for immediate consumption, shall be maintained in such a fashion as to prevent the growth or development of bacteria. When holding foods for service, such as on a buffet line, always remember to keep hot foods hot and cold foods cold. Hot-holding equipment must be able to keep foods at a temperature of 63°C or higher and cold-holding equipment must be capable of keeping foods at a temperature of 5°C or colder.



**Hot food shall be hot hold and cold food shall be cold hold**

### Hot-Holding Guidelines

When holding hot foods for service, observe the following:

- 1) Stir the food at regular intervals, as it will help distribute heat evenly throughout the food.
- 2) Keep the food covered as covering will help retain heat and eliminate potential contaminants from falling into the food.
- 3) Use a food thermometer to measure the food's internal temperature every two hours.
- 4) Discard any hot food after 2.5 hours if it has not been maintained at a temperature of 63°C or higher.
- 5) Never using hot-holding equipment to reheat foods. Foods to be reheated should first be heated to an internal temperature of 74°C and then transferred to the hot-holding equipment.
- 6) Never mix freshly prepared food with foods being held for service as this practice can result in contaminated foods.

### Cold-Holding Guidelines

When holding cold foods for service, observe the following:

- 1) Protect all foods from possible contamination by covering them or using food shields.
- 2) Use a food thermometer to measure the food's internal temperature every two hours, and take corrective action whenever the temperature of a cold food item goes above 5°C.

- 3) Never store food items directly on ice. All food items, with certain exceptions, should be placed in pans or on plates when displayed. Ice used on a display should be self-draining, and all pans and plates should be sanitized after each use.



Display hot food should be kept at or above 60°C



Display cold food should be kept at or above 5°C

## FOOD PACKAGING

Food packaging prevents contamination, allows food to be transported easily and extends shelf life. Packaging also provides a surface for labelling and identification of products. Packaging materials also need to ensure that food is not contaminated from substances that could migrate from the packaging into food. The safety of food contact material is of high importance as the food which is prepared hygienically shall become contaminated when it comes in contact with contaminated packaging material.

The packaging material may be contaminated from physical hazard (such as dirt, hair etc), chemical hazard (such as process ink, adhesive etc) & biological hazard (such as bacterial or fungal contamination). The food packaging material shall conform to all the Regulations and standards laid down under the Food Safety & Standards Act, 2006. For primary packaging, only food grade packaging materials are to be used. The packaging materials or gases where used, shall be non-toxic and it shall not pose a threat to the safety and suitability of food. The packaging material should be free from contamination from physical, chemical & biological hazard.

The food contact material includes, all material which directly comes in contact with food like –

- 1) Primary Food Packaging Material.
- 2) Utensils, spoons, scoop etc.
- 3) Equipments & containers.
- 4) Chopping boards.
- 5) Cutting tools
- 6) Cling films used to cover foods.
- 7) Conveyor belts, others.



Packaging materials or gases shall be non-toxic



Use food grade packaging materials



It should not be threat to the safety and suitability of food

## FOOD DISTRIBUTION/SERVICE

- 1) All critical links in the supply chain need to be identified and provided for to minimize food spoilage during transportation.
- 2) Processed / packaged and / or ready-to-eat food shall be protected as per the required storage conditions during transportation and / or service.
- 3) Temperatures and humidity which are necessary for sustaining food safety and quality shall be maintained.
- 4) The conveyances and /or containers shall be designed, constructed and maintained in such manner that they can effectively maintain the requisite temperature, humidity, atmosphere and other conditions necessary to protect food.
- 5) Handling of food should be minimal. It should be ensured that utensils, crockery, cutlery and specially hands of the food handlers/seller are clean and sanitized.



Stir hot and cold foods service to maintain temperatures



Keep pots & pans covered for hot foods



For hot foods, heat service containers in over



Chill service containers in refrigerator

### Hygienic Serving Technique



Handling Dishes



Handling Glasses



Handling Cups



Handling Utensils



Serving Ice

## TRANSPORTATION

- 1) The vehicle/transportation being used to carry cooked/prepared/processed food should be clean and, dedicated for this purpose and should not carry anything else.
- 2) Time required for transportation should be minimum, to avoid microbial proliferation.
- 3) Cooked food served hot should be kept at a temperature of at least 63°C to prevent microbial growth.
- 4) Cooked food to be served cold should be kept below 5°C to prevent growth of pathogens.
- 5) All foods during transportation must be kept covered and in such a way as to limit pathogen growth (intend include dust, dirt) or toxin formation by controlling time of transportation, exposure, temperature control and using safe water for cleaning etc.
- 6) 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.



Dedicated food grade containers with closed lids



Temperature & humidity controlled vehicles

**FOOD USE ONLY**



Do not place laboratory reagents or supplies in this unit

**NOTICE**

**FOOD STORAGE ONLY**

**NO CHEMICALS IN THIS UNIT**

**REFRIGERATOR FOR FOOD ONLY**

Vehicles and containers shall be dedicated for "FOOD USE ONLY"

A.



B.



The vehicle/ container shall be closed, clean, disinfected and dedicated for food use only

## ACTIVITY - 11

1. Packaging materials or gases used to pack foods, shall be non-toxic.  True  False
2. Food contact material does not include -
  - a. Equipment & containers
  - b. Cling films
  - c. Primary Food Packaging Material
  - d. Five
3. Food should be held at a temperature of ..... or higher
  - a. 60°C
  - b. 74°C
  - c. 75°C
  - d. 63°C
4. The vehicle / containers shall be closed, clean, disinfected and dedicated for food use only.  True  False
5. Cold holding of food may be done on ice.  True  False



PART  
**VII**

PERSONAL  
HYGIENE

---

Health status

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Behavioural & personal  
cleanliness

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Visitors

## HEALTH STATUS

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No personnel suffering from a disease shall be allowed to enter into any food handling area. Any person suffering from a disease shall immediately report illness or to the management and medical examination of a food handler shall be carried out immediately.

All personnel shall be made medically examined once in a year and a record signed by a registered medical practitioner shall be maintained. All the personnel shall be compulsorily inoculated against the enteric group of diseases and a record shall be maintained. In case of an epidemic, all workers are to be vaccinated irrespective of the scheduled vaccination. Medical examination to be concluded –

- 1) Physical examination
- 2) Eye Test
- 3) Skin examination
- 4) \*Compliance with schedule of vaccine to be inoculated against enteric group of diseases
- 5) Any test required to confirm any communicable or infectious disease which the person suspected to be suffering from on clinical examination

Note - \* Vaccine to be inoculated against enteric group of diseases, shall be decided by the medical practitioners according to the list as declared by the municipal corporation of that area.



Health check up by medical practitioner

An illustrative performa is shown below and it can be downloaded from [www.fssai.gov.in](http://www.fssai.gov.in)

**PERFORMA FOR MEDICAL FITNESS CERTIFICATE FOR FOOD HANDLERS**  
(FOR THE YEAR .....)

[See Para No. 10.1.2, Part-II, Schedule -4 of FSS Regulation, 2011]

It is certified that Shri/Smt./Miss.....  
employed with M/s....., coming in direct  
contact with food items has been carefully examined\* by me on date .....  
Based on the medical examination conducted, he/she is found free from any infectious or  
communicable diseases and the person is fit to work in the above mentioned food  
establishment.

**Name and Signature with Seal**  
of Registered Medical Practitioner /  
Civil Surgeon

**\*Medical Examination to be conducted:**

1. Physical Examination
2. Eye Test
3. Skin Examination
4. Compliance with schedule of Vaccine to be inoculated against enteric group of diseases
5. Any test required to confirm any communicable or infectious disease which the person suspected to be suffering from on clinical examination.

## BEHAVIOURAL & PERSONAL CLEANLINESS

Personal cleanliness of food handlers is the most important link in preventing foodborne illness. These personal hygiene habits shall become a part of their behaviour.

- 1) All food handlers shall wear suitable clean protective clothing, head covering, face mask, gloves and footwear.
- 2) Food handlers shall always wash their hands with soap and clean potable water, disinfect their hands and then dry with hand drier or clean cloth towel or disposable paper.
- 3) Food handlers shall always wash their hands at the beginning of food handling activities immediately after handling raw food or any contaminated material, tools, equipment or work surface, where this could result in contamination of other food items or after using the toilet.
- 4) No Food handlers shall be engaged in smoking, spitting, chewing, sneezing or coughing over any food and eating in food preparation and food service areas.

- 5) The food handlers should trim their nails and hair periodically.
- 6) Food Handlers shall avoid certain hand habits such as scratching nose, running finger through hair, rubbing eyes, ears and mouth, scratching beard, scratching parts of bodies etc. When unavoidable, hands should be effectively washed before resuming work after such actions.
- 7) Street shoes inside the food preparation area should not be worn while handling & preparing food.
- 8) Food handlers should not handle soiled currency notes/cards to avoid cross contamination.



- Wear clean protective clothing
- Tie your hair & wear head gear
- Cover your face with face mask while preparing food
- Cover your hands with gloves
- Wear protective boots

## BASIC REQUIREMENTS FOR PERSONAL HYGIENE

### Do (क्या करें)

Hair should be properly tucked inside the cap   
अच्छी तरह टोपी से ढकें

No earrings or necklace/chains   
कान की बालियां गले का हार वर्जित है

No outer pockets   
बाहरी जेब न रखें

Wear neat and clean clothes   
साफ सुथरे कपड़े पहनें

No wrist watch/rings   
घड़ी और अंगूठी मना है

Cover all wounds   
जखम पर पट्टी लगाएँ

Nails should be short and clean   
नाखून छोटे और स्वच्छ रखें

Torn clothes should be repaired or replaced   
फटे हुए कपड़े न पहने

Wear clogs and safety shoes   
सेफ्टी वाले जूते पहनें

### Do't (क्या ना करें)

Hair coming outside the cap  
टोपी से बाहर निकलते हुए बाल

Earring and necklace / Chains  
टोपी से बाहर निकलते हुए बाल

Outer pockets and contents  
बाहरी जेब और सामान

Dirty clothes  
गंदे कपड़े

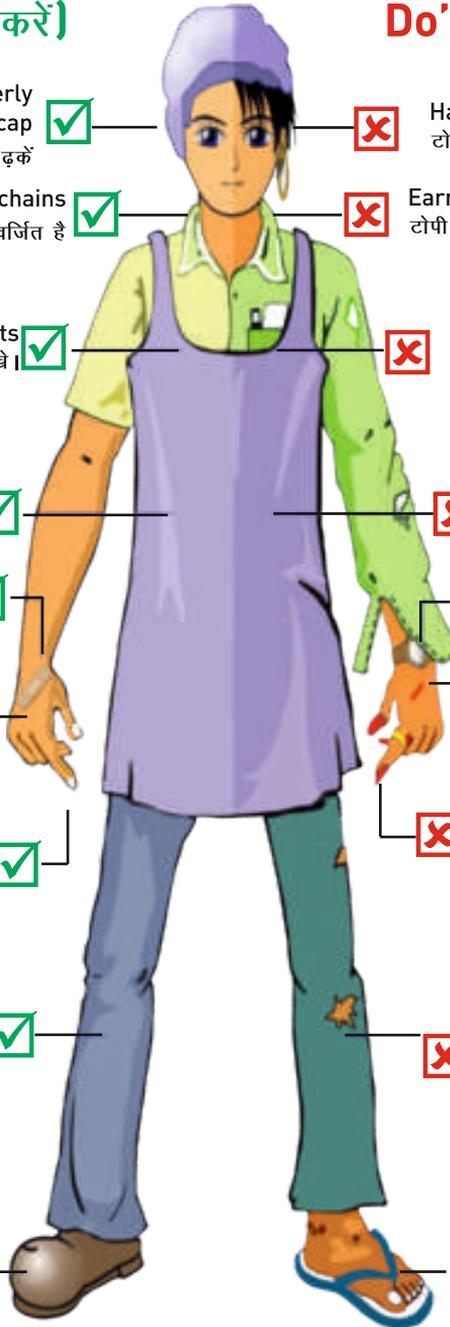
Wrist watch/Rings  
घड़ी गहने

Open and bleeding wounds  
खुले जखम

Long and painted nails  
बड़े और रंगे हुए नाखून

Torn clothes  
फटे हुए कपड़े

Bare feet/slippers  
खुले पैर चप्पल



## HAND WASHING STEPS

Here's procedure for how to properly wash hands and when to wash hands.



Wet hands



Soap



Scrub backs of hands, wrists, between fingers, under fingernail.



Rinse



Paper towel dry



Turn of taps with towel

## HOW TO WASH HANDS



Palm to palm



Between fingers



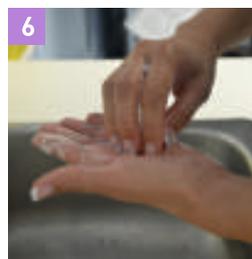
Back of hands



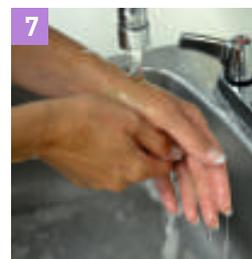
Base of thumbs



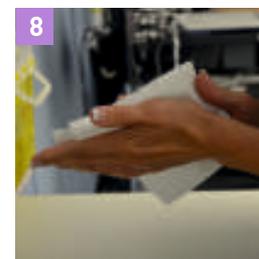
Back to fingers



Fingernails



Wrists



Rinse and wipe dry

## WHEN TO WASH YOUR HANDS



### GOOD HYGIENE PRACTICES FOR FOOD HANDLER



**GOOD BEHAVIOURAL PRACTICES FOR FOOD HANDLERS**



Food handlers shall avoid certain hand habits such as scratching nose, running finger through hair, rubbing eyes, ears and mouth, scratching beard, scratching parts of bodies etc



Do not wear loose clothing, watches or jewellery



Nails should be trim with no nail paint



Hair Should be trim with hair net



No perfume allowed



Wound should be dressed



Do not use mobile phones

## VISITORS

- 1) Generally visitors should be discouraged from going inside the food handling areas.
- 2) Visitors when entering food manufacturing, cooking, preparation and storage or handling areas shall wear protective clothing, footwear.
- 3) Visitors shall adhere to the personal hygiene provisions as mandate for food handlers.



Visitor policy shall be documented



Visitor shall be given visitor card with restricted entry

Visitor shall wear protective clothing & footwear and shall adhere to food safety provisions as mandate



### ACTIVITY - 12

1. Any person suffering from a disease, shall immediately report illness or to the management and does not resume work.  True  False
2. Only specific personnel shall be compulsorily inoculated against the enteric group of diseases.  True  False
3. Visitors shall adhere to the personal hygiene provisions as man date for Food handlers.  True  False
4. Street shoes are allowed inside the food preparation area while handling & preparing food.  True  False
5. All food handlers shall wear suitable clean protective clothing, head covering, face mask, gloves and footwear.  True  False



# PART VIII

## SUPPORT SERVICES

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Management & supervision

---

Food testing facilities

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Pest control

---

Cleaning & maintenance

---

Waste handling

---

Training

---

Record keeping

---

Consumer awareness

## MANAGEMENT & SUPERVISION

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A detailed Standard Operating Procedure (SOP) for the processing of food as well as its packing, despatch and storage should be developed. A standard operating procedure, or 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 SOP should be based on 5W's & 1H concept (i.e. why, when, what, where, who & how)

A good standard operating procedure –

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

The technical managers and supervisors shall have appropriate qualifications, knowledge and skills on food hygiene principles and practices. As per the condition of FSSAI license – The Food Business Operator shall employ at least one technical person to supervise the production process. The person supervising the production process shall possess at least a degree in science with Chemistry/ Bio-chemistry/ Food and nutrition/ Microbiology or a degree or diploma in Food Technology/ Dairy Technology/ Dairy Microbiology/ Dairy chemistry/ Dairy engineering/ Oil technology/ Veterinary science / Hotel management & Catering technology or any degree or diploma in any other discipline related to the specific requirement of the business from a recognized university or institute or equivalent.

## FOOD TESTING FACILITIES

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A well equipped laboratory for physical, microbiological and chemical analysis shall be in place inside the premise of catering establishment. In case of any suspicion or possible contamination, food materials shall be tested before dispatch by the Food Business Operator.

If there is no in house laboratory facility, then regular testing shall be done through an accredited lab notified by FSSAI. In case of complaints received and if so required, the company shall voluntarily do the testing either in the inhouse laboratory or an accredited lab or lab notified by FSSAI. As per the condition of FSSAI license – Food Business Operator shall ensure testing of relevant chemical and/or microbiological contaminants in food products in accordance with these regulations as frequently as required on the basis of historical data and risk assessment to ensure production and delivery of safe food through own or NABL accredited /FSSAI notified labs at least once in six months.



Chemical analysis facilities



Microbial analysis facilities

## PEST CONTROL

---

A pest is any living organism that causes damages or discomfort, or transmits or produces diseases.

The major pest in catering sector includes –

- 1) Cockroaches
- 2) Rodents (mice, rats, squirrels etc.)
- 3) Flies
- 4) Stored product pests (Flour beetle, sawtooth grain beetle, cigarette beetle, indianmeal moth etc.)
- 3) Flies

### 1) Cockroaches

Cockroaches are the most common pests in food service facilities. They are active mostly at night. They prefer places that are warm (26°C or higher) and moist (65% humidity or higher, which is another reason to keep relative humidity at or below 50%). Cockroaches like to hide in cracks and crevices and they frequently take advantage of “free rides” in delivery boxes, bags and personal items. Cockroaches leave coarse pepper-like fecal droppings, as well as fecal smears that dry on surfaces. Other signs of cockroach activity are the presence of egg cases under and inside drawers, cabinets, equipment and other hiding areas.

### Critical areas for Cockroaches

Cockroaches are attracted to spilled food and water or beverages. Equipment, such as microwave ovens and electric grills need to be checked carefully. Inspect and clean all food preparation equipment and surfaces (such as the area above the refrigerator shown in the upper right picture). Remove food scraps from drains.

## Chemical Control of Cockroaches

Crack and crevice treatment and spot treatment

- Target use of insecticides to reduce amount used
- Avoid contaminating food, preparation surfaces and equipment
- Apply insecticides after business hours

## 2) Rodents

Rodents mainly include rats and mice (usually mice are the more common problem). They damage/contaminate food and property. The rodents can spread diseases through their feces and urine or by contact with surfaces. Rodents nest outdoors in areas hidden by tall grass, landscaping, “clutter” or down in sewers.

### Control of Rodents

#### i. Rodents Traps

Mechanical traps are the best choice for indoor rodent control. Lethal traps include sticky traps and regular snap traps. Mechanical rodent traps include “live traps”. Traps must be checked daily and rodents or their carcasses removed as soon as possible.

#### ii. Rodent Baiting

Poison baits can be used outdoors and indoors. However, if baits are used indoors, rodents may die in a wall void, under appliances or in some other inaccessible place. Keep track of rodent feeding activity on these baits. Placement is critical. Rodents prefer to travel along walls, so place the stations where rodents are likely to find them. One important point to remember: if you bait in public areas (i.e., accessible to people or animals), then you must place the baits in a secure bait station

If indoors bait used, NEVER use pellet baits (as shown on the left). Mice may carry the bait away and drop it somewhere else (“bait translocation”) where it could contaminate food or water.

Always use the paraffin (“wax”) “bait blocks” as shown on the right. The bait are more difficult for the mouse to remove from a bait station.

## 3) Flies

“Filth flies” are the most common fly problems associated with food-handling facilities. They include house flies and the green, blue or coppery colored blow flies commonly seen around garbage cans.

Fruit flies are found near damaged or discarded fruits and vegetables. Drain flies breed in floor/sink drain, as well as the drip lines for air conditioners, freezers and ice-makers. Fungus gnats can also be found where indoor plants are overwatered.

Sanitation is very important to fly control and prevention. Keep food prep areas clean and dry.

Clean up spills around beverage dispensing stations. Routine drain cleaning prevents debris from building up and reduces the likelihood of problems with drain flies or fruit flies.

Check your refrigeration and icemaker drip lines several times each year and clean them when necessary.

## Control of Flies

### i. Light Traps

Lights traps are helpful indoors and outdoors to trap flies. They should be mounted preferably 4-6 feet off the ground, but out of the way of employee activities. Indoors, place these traps where they will not be visible from outside. Otherwise, they might attract flies to the building. Bulbs should be replaced yearly and the replacement date noted on the trap.

### 4) Stored product pest

Important pests in food service are those that attack store foods. The Indian meal moth (a small moth with coppery-colored wings) is probably the most common stored products pest.

Flour and grain beetles are other important stored product pests. All of these insects attack a wide variety of foods.

Items such as flour, spices, pasta and cereals are particular favorite foods of these beetles and moths. However, you also need to think about "non-food" items that may be in or near your building.

Birdseed is often infested with beetles and moths. Rodent baits use grain as an attractant.

Insects can feed readily on these baits without being harmed by the chemicals in the bait. This is not usually a problem unless the bait is placed in storage areas and left unchecked for months

### Procedure to control pests

- 1) Food establishment, including equipment shall be kept in good repair to prevent pest access and to eliminate potential breeding sites.
- 2) Animals, birds and pets shall not be allowed to enter into the food establishment areas/ premises.
- 3) Food materials shall be stored in pest-proof containers stacked above the ground and away from walls.
- 4) Pest infestations shall be dealt with immediately and without adversely affecting the food safety or suitability.
- 5) Treatment with permissible chemical, physical or biological agents, within the appropriate limits, shall be carried out without posing a threat to the safety or suitability of food. Records of pesticides / insecticides used along with dates and frequency shall be maintained.
- 6) In order to control the settlement of pests in the surroundings (i.e. not to provide them place of refuge and feed resources) it is necessary to maintain a non attractive environment which includes:
  - i. Isolated storage of unutilised materials, pallets and machines, without contact with the walls and buildings.
  - ii. Design and maintenance of external spaces, including:
    - a) Elimination of holes and spaces in waste land with high vegetation.
    - b) Regular cutting of grass lawns.
    - c) The elimination of stagnant water.
    - d) The absence of rags, papers, plastic films and other detritus abandoned on the ground.

- iii. Keeping of interior surfaces (racks, tops of pieces or furniture) clean so as not to leave feed sources for rodents and insects.
- iv. Tidying and cleaning of technical buildings (machine shop, boiler room, refrigeration rooms, electrical cabinets) to avoid rodent settlement.
- v. Mosquito nets at window and suitable screens on access doors.
- vi. Rigorous management of waste containers, which include:
  - a) Frequent cleaning so as not to attract insects.
  - b) Storage in a clean and easily available washing area equipped with a source of water and floor drainage system for waste water.
  - c) Keeping them closed (to prevent use as a feed source by all types of pests).
  - d) Not filling them in to excess to avoid overflowing and dropping of food waste on the ground.
  - e) A waterproof design and easy to clean and disinfect.
  - f) Frequent removal of waste from production area.

### Some of the potential sources of pest entrance



Broken glass of the window



Open exhaust



Gap in between shutter & floor



Space in blinds on exhaust

### Some of the pest control methods (4 D's Approach)



Deny entry



Deny food



Deny shelter



Destruction

### Some of the pest control methods



Rat cage protected by steel frame



Glueboard for insect trapping in production

Maintain 1.5m radius gap



End seal for pipelines not in use



Insectocutor used outside production area

Maintain 3m radius gap



Tamper resistant bait station secured onto group

hook up baits



Mesh and grit for drainage

### Some of the pest control methods



Food materials shall be stored in pest-proof containers stacked above the ground and away from walls

### ACTIVITY - 13

1. An ideal SOP should be based on 5W's & 1H. What are 5W's & 1H?  
....., ....., ....., ....., ....., .....
2. Testing of relevant chemical and/or microbiological contaminants in food products shall be done through own or NABL accredited / FSSAI notified labs at least once in ..... months
  - a. Three
  - b. Nine
  - c. Twelve
  - d. Six
3. Pest can inhibit through -
  - a. The elimination of stagnant water
  - b. Wire mesh at window
  - c. Open holes and spaces in waste land
  - d. Frequent removal of waste from production area.
4. Light traps should be mounted preferable ..... feet off the ground.
  - a. 2-4
  - b. 4-6
  - c. 6-8
  - d. 3-5
5. Food materials shall be stored in pest-proof containers stacked above the ground and near to walls. True/False

## SANITATION & MAINTENANCE OF ESTABLISHMENT PREMISES

Microorganisms can be passed from person to person by both dishes and utensils, therefore proper cleaning and sanitation is important in preventing the spread of pathogens.

### Cleaning –

It is the process of removal of visible dirt, oil, grease and organic matter from an object using detergent, warm water and scrubbing. Effective cleaning must occur before sanitising, as sanitizers may not work as well if the food contact surface or utensil has not had all visible contamination removed. Detergents are chemicals that remove dirt and grease, however detergents do not kill bacteria and other microorganisms. Microorganisms may be removed during the cleaning process. However, cleaning is not intended to destroy microorganisms, sanitising is required for this purpose.

### Sanitizing –

A process that reduce pathogenic organisms to acceptable level using either hot water (77°C) or chemical agents or a combination. It is applicable for decontaminating utensils, cutlery and food contact surfaces. Sanitizers are substances capable of destroying microorganisms including those bacteria that cause food poisoning and other diseases. When used properly, they can reduce surface contamination by bacteria to a safe level. It is important to read and follow the directions on sanitizers carefully.

### Types of sanitizers

There are two type of chemical sanitizer preferred by food industry as well as international standard) for sanitizing the perishable and food contact surfaces.

- i) **Chlorine sanitizer** is generally preferred for sanitizing the perishable because chlorine sanitizer concentration require continuously monitored because of its evaporation.
  1. Residual Chlorine in water - 0.2 ppm (parts per million)
  2. Chlorine for overhead water tank sanitization - 0.5 to 1 ppm

### Process of sanitization of perishable

- i. Wash with clean water
  - ii. Sanitize with 100 –200 ppm of chlorine for minimum 30 sec to 2 min max.
  - iii. Rinse (wash again) with tap water containing 0.2 ppm of chlorine
- ii) **QMBA Sanitizer** is used for food contact surfaces because its concentration not vary with time.

### Process of sanitization of Food Contact surface

- i. Wash with clean water and detergent
- ii. Sanitize with 100 –200 ppm of QMBA sanitizer for minimum 3 minutes
- iii. Removed and dry before using

### Points to remember about sanitising

1. Some sanitizers are toxic and residue must be rinsed off. Toxic sanitisers include:
  - i. QACs (quaternary ammonium compounds)
  - ii. chlorine release agents (hypochlorites)
2. Some sanitizers, such as chlorine dioxide, are food-safe and do not require rinsing.
3. Sanitizers all work best at the correct dilution. If they are too weak, they do not work effectively, if they are too strong you are wasting your money.
4. Sanitizers need time to work. The contact time varies and may be seconds or minutes depending on the job.
5. Sanitising solution can be made up as needed and put into labelled spray bottles for use on bench tops, fridges, door handles and other surfaces.

6. Check the dilution, contact time, safety precautions, shelf life and storage of all chemicals before use.
7. For effective use of a sanitizer, follow the manufacturer's instructions provided on the label.

A cleaning and sanitation programme shall be maintained in catering establishment, indicating specific areas to be cleaned, cleaning frequency, cleaning procedure & equipment and materials to be used for cleaning. Cleaning chemicals shall be handled and used carefully in accordance with the instructions of the manufacturer. Cleaning chemicals shall be stored separately away from food materials, in clearly identified containers.

Food areas and equipment between different tasks, especially after handling raw food shall be cleaned. The cleaning and sanitizing schedule should include what needs to be cleaned, how often it needs to be cleaned & how the cleaning should be done. The surface shall be thoroughly cleaned in case if somebody spills food/water/drink.

Cleaning instructions should indicate what cleaning products should be used, how the products should be stored, how much they should be used or diluted & how long that should be left in contact with the surface.

### Sanitation and Maintenance of Establishment Premises

#### Template for Cleaning/Sanitation Program

| Item                         | Frequency                                    | Equipment and Chemicals                        | Methods   | Responsible Person |
|------------------------------|--|--|---|--------------------|
| <b>Structure</b>             |  |  |   |                    |
| Floors                       | End of each day or as frequently as required | Broom, damp mop, brush detergent and sanitizer | <ol style="list-style-type: none"> <li>1. Sweep the area</li> <li>2. Apply detergent and mop the area</li> <li>3. Use scrub for extra soil</li> <li>4. Rinse thoroughly with water</li> <li>5. Remove water with mop</li> </ol> |                    |
| Walls, windows and ceiling   | Monthly or as required                       | Wiping cloth, brush and detergent              | <ol style="list-style-type: none"> <li>1. Remove dry soil</li> <li>2. Rinse with water</li> <li>3. Apply detergent and wash</li> <li>4. Rinse with water</li> <li>5. Air dry</li> </ol>   |                    |
| <b>Food Contact Surfaces</b> |  |  |   |                    |
| Work Tables and Sinks        | After use                                    | Wiping cloth, detergent and sanitizer          | <ol style="list-style-type: none"> <li>1. Remove food debris and soil</li> <li>2. Rinse with water</li> <li>3. Apply detergent and wash</li> <li>4. Rinse with water</li> <li>5. Apply sanitizer</li> <li>6. Air dry</li> </ol> |                    |

#### Proper Cleaning Chemical Storage and Safety

1. Never store chemicals near food, food storage areas or any tools or equipment that will touch food. Keep them under lock in a designated area only for cleaning tools and chemicals.
2. Never leave chemicals on or near a food preparation area. That includes on top of counters, stoves, etc.

3. Do not store chemicals above food prep areas, kitchen sinks or drain boards.
4. Store chemicals in their originally labelled containers and make sure they are closed properly.
5. Never use beverage cups, pitchers, drinking, beverage or food storage containers to store, transport or mix chemicals.
6. Always read the instructions on the label before use, even if it's a product you use regularly. You don't want to accidentally use the product in the wrong area or use it incorrectly.
7. Use safety posters or graphics to warn employees about chemical safety precautions. In businesses where language barriers could be a problem, create materials that are either bilingual or use pictures that don't require further descriptions.
8. Always spray chemicals holding the spray nozzle away from you.
9. Never mix two different chemicals together.
10. Always wear protective gloves and goggles when recommended.

## DRAINAGE & WASTE DISPOSAL

Food waste and other waste materials shall be removed periodically. A refuse bin of adequate size with a proper cover shall be provided. It shall be emptied and washed daily with a disinfectant and dried before next use.

The disposal of sewage and effluents (solid, liquid and gas) shall be in conformity with requirements of Factory/Environment Pollution Control Board. Adequate drainage, waste disposal systems and facilities shall be provided to eliminate risk of contaminating food or portable water.

Waste storage shall be kept in covered containers. It shall be removed at regular intervals as per local rules and regulations. It shall be located away to avoid contamination



Food waste and other waste material shall be dumped periodically



Clean and sanitized, segregated waste bin system with lids and inner linings

## TRAINING

1. All food handlers shall be aware of their role and responsibility in protecting food from contamination.
2. Food handlers shall have the necessary knowledge and skills which are relevant to food processing / manufacturing, packing, storing and serving.
3. All food handlers shall be trained in food hygiene and food safety aspects along with personal hygiene requirements.
4. Periodic assessments of the effectiveness of training, awareness of safety requirements and competency level shall be made.
5. Training programmes shall be routinely reviewed and updated wherever necessary.



Training of Food handlers and support staff

## AUDIT, DOCUMENTATION & RECORDS

1. A periodic audit of the whole system according to the SOP shall be done.
2. Appropriate records of food processing / preparation, production / cooking, storage, distribution, service, food quality, laboratory test results, cleaning and sanitation, pest control and product recall shall be kept.
3. The records shall be retained for a period of one year or the shelf-life of the product, whichever is more.



Periodic audit of the whole system to ensure food safety

**List of records as mandated under Part 2 & Part 5 of Schedule 4 of Food Safety & Standards (Licensing & Registration of Food Businesses) Regulation, 2011**

| S. No. | Section              | Section Name   | Clause | Requirement   |
|--------|----------------------|--|--------|---|
| 1      | Part 2<br>Section 4  | Facilities   | 4.1.3  | Water storage tanks shall be cleaned periodically and records of the same shall be maintained in a register.  |
| 2      | Part 2<br>Section 5  | Food operations and controls                         | 5.1.3  | Records of raw materials, food additives and ingredients as well as their source of procurement shall be maintained in a register for inspection.   |
| 3      | Part 2<br>Section 8  | Audit, documentation and records                     | 8.2    | Appropriate records of food processing / preparation, production / cooking, storage, distribution, service, food quality, laboratory test results, cleaning and sanitation, pest control and product recall shall be kept and retained for a period of one year or the shelf-life of the product, whichever is more.  |
| 4      | Part 2<br>Section 9  | Sanitation and maintenance of establishment premises | 9.1.1  | A cleaning and sanitation programme shall be drawn up and observed and the record thereof shall be properly maintained, which shall indicate specific areas to be cleaned, cleaning frequency and cleaning procedure to be followed, including equipment and materials to be used for cleaning. Equipment used in manufacturing will be cleaned and sterilized at set frequencies.                    |
| 5      | Part 2<br>Section 9  | Sanitation and maintenance of establishment premises | 9.2.3  | Pest infestations shall be dealt with immediately and without adversely affecting the food safety or suitability. Treatment with permissible chemical, physical or biological agents, within the appropriate limits, shall be carried out without posing a threat to the safety or suitability of food. Records of pesticides / insecticides used along with dates and frequency shall be maintained. |
| 6      | Part 2<br>Section 10 | Personal hygiene                                     | 10.1.2 | Arrangements shall be made to get the food handlers / employees of the establishment medically examined once in a year to ensure that they are free from any infectious, contagious and other communicable diseases. A record of these examinations signed by a registered medical practitioner shall be maintained for inspection purpose.   |
| 7      | Part 2<br>Section 10 | Personal hygiene                                     | 10.1.3 | The factory staff shall be compulsorily inoculated against the enteric group of diseases as per recommended schedule of the vaccine and a record shall be kept for inspection.  |
| 8      | FSS<br>Regulation    | Condition of license                                 | 8      | Maintain daily records of production, raw materials utilization and sales separately  |
| 9      | FSS<br>Regulation    | Condition of license                                 | 14     | The manufacturer/importer/distributor shall buy and sell food products only from, or to, licensed/registered vendors and maintain record thereof.   |

## PRODUCT INFORMATION & CONSUMER AWARENESS

1. All packaged food products shall carry a label and requisite information as per provisions of FSS Act, 2006 and Regulations made there under. (Please refer <http://www.fssai.gov.in/home/fss-legislation/fss-regulations.html>)
2. The label shall provide information to enable the food handler to store, process, prepare and display the food products safely.
3. The label shall enable easy traceability and recall if necessary.

As per the Condition of FSSAI license,

1. Proprietors of hotels, restaurants and other food stalls who sell or expose for sale savouries, sweets or other articles of food shall put up a notice board containing separate lists of the articles which have been cooked in ghee, edible oil, vanaspati and other fats for the information of the intending purchasers.
2. Food Business Operator selling cooked or prepared food shall display a notice board containing the nature of articles being exposed for sale

### Labelling of pre-packaged food shall include –

- |  |   |
|--|---|
| 1. The name of food                          | 7. Net Quantity                         |
| 2. List of ingredients                       | 8. Lot/Code/Batch Identification        |
| 3. Nutritional information                   | 9. Date of manufacture or packing       |
| 4. Declaration regarding veg or non-veg      | 10. Best before or use by date          |
| 5. Declaration regarding food additives      | 11. Country of origin for imported food |
| 6. Name and complete address of manufacturer | 12. Instruction for use                 |



Labelling of food products as per FSS Act requirement for consumer awareness and product traceability



## TUTOR GUIDE

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Introduction for Tutors

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Course Ethos

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Tutor Qualifications

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Learning Objectives

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Course Conduct

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Group Work

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Assessment

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Session Breakup

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Programme of the Training

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Session Plan

## INTRODUCTION FOR TUTORS

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This tutor guide is intended for trainers who will train the Food Safety Supervisors in Catering Establishment. There are many training partners and different trainers associated for training, thus it is necessary that all training partners should provide the trainers with a standard framework, so that the deviation in imparting training is minimal. This guide provides tutors with guidance on delivery of the Food Safety Supervisor Training. This guide is restricted information and may be issued as controlled copies only to those personnel authorized to deliver the course.

## COURSE ETHOS

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The design of the course is based on the idea of the tutor's role as a mentor and coach, rather than simply a lecturer. The tutor is encouraged to use accelerated learning techniques which involve delegates and accommodate multiple learning styles. Adjustments in course methods and delivery may be made to accommodate the needs of the delegates, local circumstances, or unforeseen situations, but tutors are responsible for ensuring that all activities, topics and learning objectives are satisfactorily covered.

The course is designed to run with maximum thirty delegates with one tutor. Practical exercises will be used throughout the course to allow delegates to utilize knowledge general hygiene and food safety and develop the skills required to implement the same in catering establishment.

## TUTOR QUALIFICATIONS

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Only qualified, certified and authorized tutors who have attended the appropriate train-the-trainer session and hold the following minimum qualification may deliver this course:

1. Should be a hotel management/ nutrition/ Food Technology/etc. having 2 years' experience in food safety aspect in Indian food context.
2. He should have at least 2 years of training experience in field of food catering.

## LEARNING OBJECTIVES

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The course is designed to equip the participants (Food Safety Supervisor category personnel) with the knowledge and skills to enable them to implement correct food safety and hygiene requirements in catering establishments and to also cascade the same to the food handlers of his business operations.

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## COURSE CONDUCT

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It is recommended that tutors source the latest version of Food Safety and Standards Act, Rules & Regulations along with latest version of "Safe & Nutritious Food – Handbook for Advance Catering".

## GROUP WORK

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Many of the exercises and activities are designed to be undertaken in groups of 3-4 delegates as small group activities provide opportunities for more reflective members of the group to participate. Where possible, try to select groups with a range of experience levels to give learners the opportunity to learn from each other. As applicable, juggle roles within groups so all delegates obtain a range of learning opportunities.

## ASSESSMENT

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At the end of the 8 hours training, there will be 30 minutes competency based assessment. The assessment consists of written examination along with continuous evaluation of the interaction/contribution/presentations during the sessions.

Each trainee has to successfully pass the assessment. If the trainee fails the assessment, they are required to reappear for the assessment within the next one year.

## SESSION BREAKUP

| S. No. | Session   | Duration   |
|--------|---|------------|
| 1      | Part 1 - Introduction to food safety                        | 30 minutes |
| 2      | Part 2 - Location, layout & facilities                      | 45 minutes |
| 3      | Part 3 - Material handling                                  | 45 minutes |
| 4      | Part 4- Pre production processing                           | 45 minutes |
| 5      | Part 5 - Production   | 45 minutes |
| 6      | Part 6 - Holding, serving/catering /dining & transportation | 45 minutes |
| 7      | Part 7- Personal hygiene                                    | 45 minutes |
| 8      | Part 8- Support services                                    | 60 minutes |
| 9      | Practical session   | 45 minutes |
| 10     | Assessment  | 30 minutes |

## PROGRAMME OF THE TRAINING

| Time          | Topic   |
|---------------|---|
| 09:00 – 09:15 | Inauguration  |
| 09:15 – 09:45 | Part 1 - Introduction to food safety                        |
| 09:45 – 10:30 | Part 2 - Location, layout & facilities                      |
| 10:30 – 11:15 | Part 3 - Material handling                                  |
| 11:15 – 11:30 | Tea Break   |
| 11:30 – 12:15 | Part 4- Pre production processing                           |
| 12:15 – 13:00 | Part 5 - Production   |
| 13:00 – 13:30 | Lunch   |
| 13:30 – 14:15 | Part 6 - Holding, serving/catering /dining & transportation |
| 14:15 – 15:00 | Part 7- Personal hygiene                                    |
| 15:00 – 16:00 | Part 8- Support services                                    |
| 16:00 – 16:15 | Tea Break   |
| 16:15 – 17:00 | Practical Session   |
| 17:00 – 17:30 | Assessment  |
| 17:30 – 18:00 | Certification & closing remarks                             |

## SESSION PLAN

### INAUGURATION

| S. No. |                  |  |
|--------|------------------|--|
| 1.     | Topic            | The trainer will inaugurate the training session, introduce himself & all other trainees, set the background of the training & explain the session plan. |
|        | Learning Outcome | The participants will learn about food safety & hygiene requirements to be followed by Food Safety Supervisor in catering establishment.                 |
|        | Examples         | Industry based examples on importance and effectiveness of GHP, GMP and cascaded training  |
|        | Mode of training | Briefing by faculty and collective views of the participants   |
|        | Activity         | Introduction and expectations from participants  |

## PART I – INTRODUCTION TO FOOD SAFETY

| S. No. |                  |   |
|--------|------------------|---|
| 1.     | Topic            | This part covers key terminologies, FSMS Program based on participants & Schedule 4, General introduction to food safety and food safety hazards, Introduction to Allergens and Allergen handling including Food Handler and Consumer Responsibilities. |
|        | Learning Outcome | The participants will learn about physical, chemical, biological hazards that are needed to be controlled, allergen handling and major reasons behind unsafe food.  |
|        | Examples         | Industry base examples for ease of understanding  |
|        | Mode of training | Lecture/ discussion using slides & handbook   |
|        | Activity         | Ask participants about complaints that they have received from their customer and then categorize them under various hazards.<br>Activity Sheet 1 to 3 needs to be filled by participants.  |

## PART II – LOCATION, LAYOUT & FACILITIES

| S. No. |                  |   |
|--------|------------------|---|
| 2.     | Topic            | This part 2 covers general requirements for location & surroundings for catering establishments, what should be the layout & design of food establishment premises. This part also cover the equipment & containers requirements and the facilities required for making safe & hygienic food. |
|        | Learning Outcome | The participants will learn about the surrounding and facilities requirements for catering establishment, as this is the first step before food preparation and handling starts.  |
|        | Examples         | Industry base examples for ease of understanding  |
|        | Mode of training | Lecture/ discussion using slides & handbook   |
|        | Activity         | Ask participants about designing a restaurant and what are the general hygiene requirements.<br>Activity Sheet 4 & 5 needs to be filled by participants.  |

## PART III – MATERIAL HANDLING

| S. No. |                  |  |
|--------|------------------|--|
| 3.     | Topic            | This part 3 covers procurement of raw material, receiving of raw material and safe storage of raw material.  |
|        | Learning Outcome | The participants will learn general hygiene requirements for procuring and receiving raw material and how to safely and hygienically store them.   |
|        | Examples         | Industry base examples for ease of understanding   |
|        | Mode of training | Lecture/ discussion using slides & handbook  |
|        | Activity         | Ask participants to mention the food safety & hygiene requirements to procure a raw material, receive it & store the material.<br>Activity Sheet 6 & 7 needs to be filled by participants. |

## PART IV – PRE PRODUCTION PROCESSING

| S. No. |                  |   |
|--------|------------------|---|
| 4.     | Topic            | This part 4 covers food safety & hygiene requirements involved in preparation of fruits & vegetables, preparation of non-vegetarian products, thawing process and how to avoid cross-contamination. |
|        | Learning Outcome | The participants will learn about general food safety & hygiene requirements involved in pre production processing i.e. preparing vegetables, thawing, handling raw food/meat, cross contamination. |
|        | Examples         | Industry base examples for ease of understanding  |
|        | Mode of training | Lecture/ discussion using slides & handbook   |
|        | Activity         | Ask participants to mention the food safety & hygiene requirements to prepare a frozen meat or raw vegetable for production<br>Activity Sheet 8 & 9 needs to be filled by participants.             |

## PART IV – PRE PRODUCTION PROCESSING

| S. No. |                  |   |
|--------|------------------|---|
| 5.     | Topic            | This part 5 covers production process that involves cooking, reheating of food & chilling.  |
|        | Learning Outcome | The participants will learn about the food safety & hygiene requirements involved in cooking, reheating & chilling of food.                                   |
|        | Examples         | Industry base examples for ease of understanding  |
|        | Mode of training | Lecture/ discussion using slides & handbook   |
|        | Activity         | Ask participants to mention food safety & hygiene requirements to cook meat/vegetable or chill food.<br>Activity Sheet 10 needs to be filled by participants. |

## PART VI - HOLDING, SERVING/CATERING /DINING & TRANSPORTATION

| S. No. |                  |   |
|--------|------------------|---|
| 6.     | Topic            | This part 6 covers requirements involved in holding, serving and transporting cooked food.  |
|        | Learning Outcome | The participants will learn about the food safety & hygiene requirements involved in holding food while displaying. Serving the food to customers & transportation of cooked food for outdoor catering. |
|        | Examples         | Industry base examples for ease of understanding  |
|        | Mode of training | Lecture/ discussion using slides & handbook   |
|        | Activity         | Ask participants to mention food safety & hygiene requirements to transport cooked food for outdoor catering and displaying food.<br>Activity Sheet 11 needs to be filled by participants.              |

## PART VII – PERSONAL HYGIENE

| S. No. |                  |   |
|--------|------------------|---|
| 7.     | Topic            | This part 7 covers personal hygiene requirements for food handlers.   |
|        | Learning Outcome | The participants will learn about personal hygiene requirements for food handlers in catering establishments.   |
|        | Examples         | Industry base examples for ease of understanding  |
|        | Mode of training | Lecture/ discussion using slides & handbook   |
|        | Activity         | Ask participants to create a poster for personal hygiene requirements for food handlers before entering preparation areas.<br>Activity Sheet 12 needs to be filled by participants. |

## PART VIII – SUPPORT SERVICES

| S. No. |                  |  |
|--------|------------------|--|
| 8.     | Topic            | This part 8 covers all the support services in the catering establishments. The support services include management & supervision, food testing facilities, pest control, cleaning & maintenance, waste handling, training, record keeping & consumer awareness. |
|        | Learning Outcome | The participants will learn about handling pest control, waste disposal, cleaning & sanitation and other support services.   |
|        | Examples         | Industry base examples for ease of understanding   |
|        | Mode of training | Lecture/ discussion using slides & handbook  |
|        | Activity         | Ask participants to design a pest control plan or cleaning & sanitation plan or waste disposal plan.<br>Activity Sheet 13 & 14 needs to be filled by participants.   |

## PRACTICAL SESSION

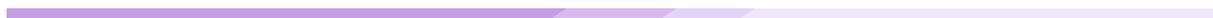
| S. No. |                  |  |
|--------|------------------|--|
| 8.     | Topic            | This part covers the practical session in kitchen covering practical demonstration of food safety & hygiene requirements to be followed in catering establishment. |
|        | Learning Outcome | The participants will learn the practical implementation of food safety & hygiene requirements   |
|        | Examples         | Industry base examples for ease of understanding   |
|        | Mode of training | Practical  |
|        | Activity         | Practical of food safety & hygiene requirements in kitchen.  |

## ASSESSMENT

| S. No. |                  |   |
|--------|------------------|---|
| 8.     | Topic            | This part will cover the assessment of PARTICIPANTS. This will cover objective and subjective question followed by practical. |
|        | Learning Outcome | The participants will be assessed and marked.   |
|        | Examples         | Industry base examples for ease of understanding  |
|        | Mode of training | Written & practical   |
|        | Activity         | Written & practical   |

## CERTIFICATION & CLOSING REMARKS

| S. No. |         |   |
|--------|---------|---|
| 8.     | Topic   | This part will cover the certification of successful candidates. Unsuccessful candidates will be required to reappear for the exam. The trainer will close the training session with closing remarks. |
|        | Outcome | The participants will be certified as Food Safety Supervisors.  |



# fOSTaC

Food Safety Training & Certification

## FOOD SAFETY TRAINING AND CERTIFICATION





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