



# FOOD SERVICE



# Class III B.Sc

## Unit – 1

### Origin of Restaurant

- Origin of Restaurant and commercial food services
- Types of institutional food service operation

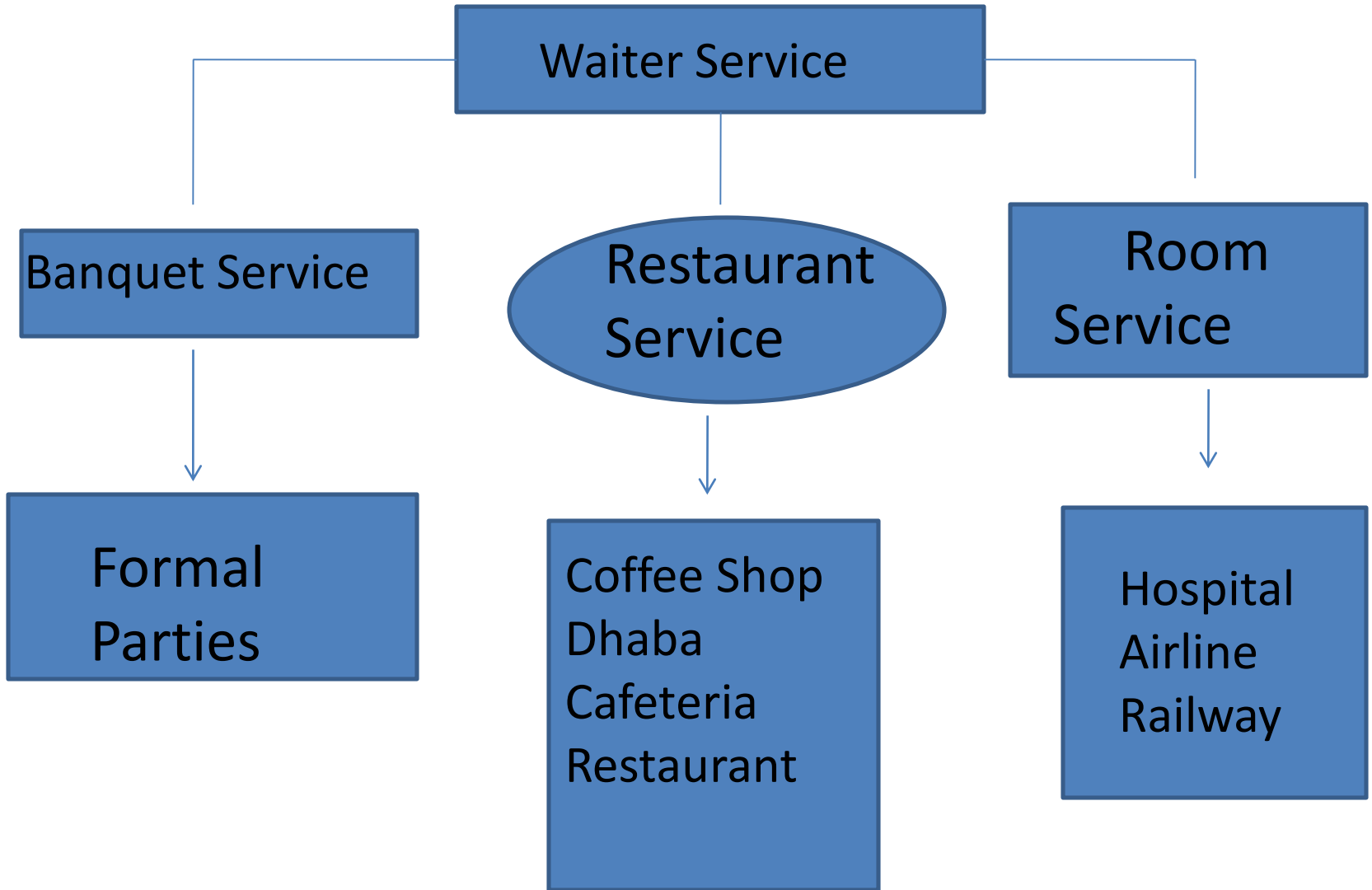
# INTRODUCTION

- The service of food is an art which can make or break the reputation of a catering establishments
- It represents the manner, as well as the atmosphere, in which food is presented to the customer
- Well prepared food, conforming to high standards of quality can be rejected if the service is slow and the server unkempt in appearance or careless

- To the customer, good service represents clean serving and dining areas, properly selected serving equipment, neatly dressed and well behaved serving staff who can welcome with a smile

# Styles of Service

- In particular occasions, food may be served in a numbers of ways, some formal others informal.
- Most common methods of service may be classified under three, they are
  - I. Waiter Service
  - II. Self – Service
  - III. Vending



# Banquet Service

- The most sophisticated style of waiter service and is usually carried out when the heads of states or governments are being entertained
- The tables are generally draped in white damask and each cover is set out with matching napkins and other table appointments

- Use of fancy table appointments like menu card holders, name cards, flowers and cruets are used for each cover
- The cutlery is usually of silver
- A name cards menu is placed in front of each cover according to status of each guest
- The menu is a table d- 'hote' one agreed upon by the host(ess)



- Meals are served in courses, which may vary from four to six, and the cover is left clean after each course
- Fresh sets of plates and cutlery to go with each course are placed
- The service is carried out by waiters performing perfectly while serving courses or removing plates
- More staff is needed for the service than in any other style, usually 6-8 waiters, depending on the size and arrangement of the banquet

# Restaurant Service

- Service styles in restaurants vary slightly from one place to another and are less formal than the banquet service
- Their objective is to provide an atmosphere for leisure dining to the customer
- Waiter service styles have been described differently in catering literature as English, French, Russian, American or compromise styles of service

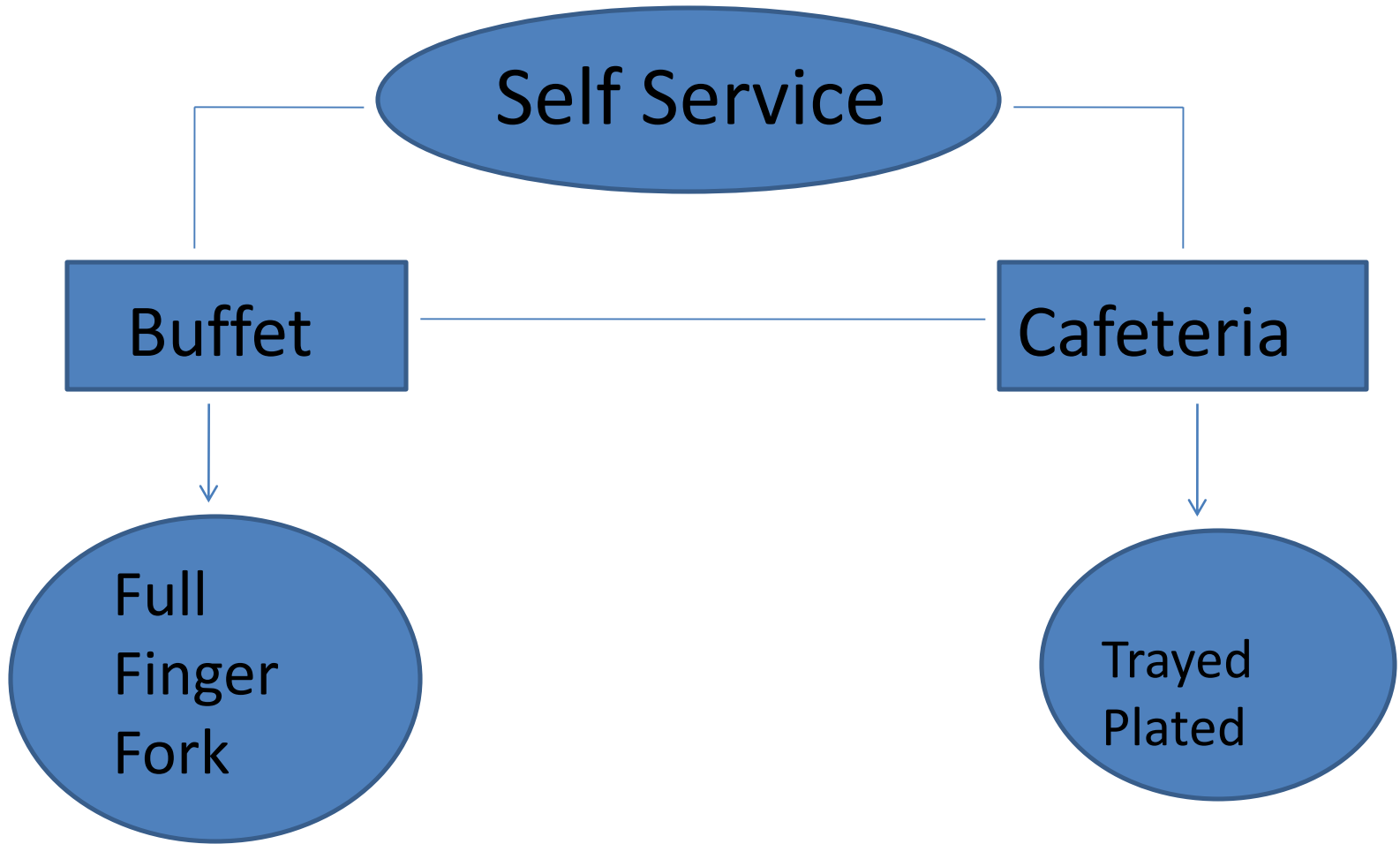
- Basically all these styles require one waiter to serve every 8-10 dinners
- Countries like India have largely been influenced by English ways of serving and eating food
- The traditional methods do exist where establishments follow traditional policies on service

- The 'Thali' service has now become a common feature of most restaurant services
- Similarly some speciality restaurants serving meals in a typically south Indian style, serve on banana leaves
- In certain regions, food is served on the peepal leaf
- There are no appointments, staff serve prepared dishes, salt, pepper, pickles on the leaf all at the beginning of the meal

- The server then waits and watches to refresh any leaf which is empty
- Traditionally, water is served in mud pots
- When these styles are adopted by restaurants, the leaf may be placed on the table and water served in tumblers

# Room Service

- The term has come from the fact that food is served in the room where a guest is staying
- Usually applied to public lodgings, it is essentially a waiter service, in that a waiter brings to the room whatever has been ordered



# Self – Service

- As the name indicates, it is a type of arrangement which requires customers to come to a counter, bay or table to serve themselves
- It is an informal style of service, it is nevertheless an organized one
- There are many types of self service styles, each adapted to the needs of the establishment and the customer



# Buffet Service

- The service of meals in buffet can be made to vary in the degree of formality desired
- The atmosphere created for the dinners depends on the manner of arrangements
- Buffet may be arranged in many ways depending on the space available, the occasion, number of people eating and the degree of formality desired

- Buffet may be classified into the three main types according to the menus planned and the types of dinning arrangements desired
  - I. Full Buffet
  - II. Finger Buffet
  - III. Folk Buffet

# Full Buffet

- This is generally a complete meal buffet, in which the service can be made very informal or as formal
- The meal planned may contain hot and cold foods
- Hot foods are often placed on the service table, over electric or spirit 'rechauds' to keep them hot during the entire service period

# Finger Buffet

- Clearly, in this case, the menus offer finger foods only, eliminating or minimising the use of cutlery for eating
- Such buffets are served usually at tea time for cocktail parties, or festive occasions when a large number of guests have to be served

# Fork Buffet

- The term indicates, fork buffets are those which can be eaten with a fork only, the menus consisting mainly of snacks
- There are also informal and are generally arranged for teenage parties or conference lunches,
- Buffet services are becoming more and more popular as people have much less time for leisurely dining

# Cafeteria Self Service

- The cafeteria self-service may be established on the tray service style or the plated system
- The whole meal may be served on the tray or plate and priced as a single unit
- It has classified into two ways
  - I. Trayed Service
  - II. Plated Service

# Trayed Service

- It is a common method of serving meals to customers in transit, as on trains and aircraft
- Meals with the necessary accompaniments in individual portions are trayed and loaded on to the aircraft for service to passengers
- In western countries a central tray assembly method is used for service in hospitals

- In India, foods are trayed similarly at ward level for patients but there is no central assembly line



# Plated Service

- In this service the hot food is held in a bainmaric in full view of the customer, but separated from him by a sneeze guard to protect it from contamination
- Cold desserts and salads are preportioned and displayed in refrigerated cases for selection

# Vending

- Vending is an ancient method of serving food and originally consisted of a seller or vendor bringing food home, or supplying it at bus stations, railway platforms, on roadsides, market places, fairs etc.,

# TYPES OF FOOD SERVICE

- Table service and Counter service are the most common forms
- A hostess/ host is responsible for seating the guests
- Principles that a waiter must know:
  - Food is served onto guest plate from left
  - If food is pre-plated, then service is thru' right
  - Soups are served from right
  - Ladies are always served first and rest are served clockwise
  - Fresh cutlery and crockery is served thru' right
  - Soiled plates are cleared from right
  - Never reach across a customer



# 1. English service

- ☛ Often regarded as “host service”/ “family style” service
- ☛ Host plays an active role
- ☛ Usually found in coffee shops, family restaurants etc.



## Process involves:

- Food is brought on platters by waiter, shown to host for approval
- The waiter then places it on table
- Either host portions the food and serves to guest or portions it and allows waiter to serve
- Usually the main dish is meat
- Veggies. and potatoes are placed in centre for guests to help themselves while sauces are served by waiter



## 2. French service

- ❖ Its not very common
- ❖ Usually seen at upscale clubs and restaurants
- ❖ Involves Personalized service
- ❖ The waiter has a fancy cart for carrying foods
- ❖ The table is already made and waiter just have to serve carefully and neatly
- ❖ Sometimes foods are cooked in front of guests
- ❖ Guest serve themselves





## Advantages:

- Allows guests to see the food before they decide
- Proportioned acc. To guest's wish
- Chance to make additions before it is served

## Disadvantages:

- Cannot be opted for certain dishes
- Time consuming
- Expensive
- Space required for moving carts





## . Guéridon Service



Guéridon means “ trolley”

- ✗ Here food is partially prepared from kitchen and is fully cooked at guest's table side
- ✗ Here cooking is done on Guéridon trolley
- ✗ The waiter should be a showman as well as a good cook, He should carve a joint, fillet a fish, prepare coffees etc.



## Advantages:

- It is a visual display to customers
- An opportunity for waiter to show his skills
- Helps increase popularity of restaurant

## Disadvantages:

- More space required
- Safety concerned
- Skilled staff required
- Expensive
- Innovation of recipes required



# . Russian Food service

- Fairly elaborate silver service much on lines of French service with use of Guéridon trolley
- Waiter pre-portion food (whole joints, fish) and serves onto guest plate and places the plate in front of the guest
- Display and presentation is of

**concern**



## Advantages:

- Only one waiter is required
- Elegant and entertaining
- No extra space
- Guarantees equal portions because food is pre-cut
- Gives personal attention to guests



## Disadvantages:

- Initial big expense in silver equipment
- Since one platter is used for serving the last guest may see a less attractive display
- In party's the waiter must hold a heavy tray



## 5. American/ pre-plated service

- It is pre-plated from kitchen itself and is normally found in restaurants with large guest turnover
- Portion is predetermined from kitchen
- the waiter ensures accompaniments are already placed on table with right table cov



## Advantages:

- Saves time
- fast
- Cost efficient
- Nutrition information is easily accessed by nutrition label in menu
- Casual dining

## Disadvantages:

- Choice of portion size cannot be predetermined
- Some ingredients can be annoying to guests
- High in fat and energy
- Allows little recipe modification



## 6. Silver Service

- ➔ All food is presented in silver dishes with elaborate dressing
- ➔ Here the waiter serves the food to guests at the table
- ➔ The table is set for hors d'oeuvres
- ➔ Food is portioned to silver platters from kitchen and is placed at sideboards with

- ◆ Before service, waiter ensures if the food is served onto guest's plate in a stylish manner
- ◆ The waiter then picks the platter from hot plate and presents it for host approval
- ◆ Service is done using a spoon and fork
- ◆ the course is done in an organized way hence the courses follow one another at proper intervals



## Advantages:

- **Elegant**
- **Faster than French service**
- **Hot food is served at table quickly**

## Disadvantages:

- **Skilled waiter is required**
- **Capital investment on silver platters**

## 7. Buffet service

- Self service where food is displayed on tables
- The guest either takes his place a stack at the end of each table or requests the waiter to serve him
- For sit-down buffet service, tables are laid with crockery and cutlery
- For fork buffet, seating arrangements does not exist, guest uses fork and eats standing

## Advantages:

- ❖ Food is displayed in an attractive manner
- ❖ Less service skill required
- ❖ Servers can attend to many guests at one time

## Disadvantages:

- ❖ Careless in handling food
- ❖ Less personal attention to guests



A photograph of a cafeteria service counter. Several long trays are filled with a variety of pre-plated food items, including breads, meats, and vegetables. The trays are arranged in a row, and the food is neatly presented. The background shows a kitchen area with stainless steel equipment.

## 8. Cafeteria Service

- Menu is fixed and displayed on large boards
- Coupons have to be purchased in advance or indicate their choice of selection to counter attendant at the time of purchase
- Food is pre-plated and served along with cutlery
- Guests take the seats provided by the establishment
- Industrial canteens, colleges, hospitals

## Advantages:

- Minimal staffs are required
- Does not require any special equipment
- Last minute changes can be made

## Disadvantages:

- Choices are limited
- Foods are not prepared acc. to order



# **9. Counter service**

- **Developed in units where customers have limited time for meal**
- **Tall stools are placed for guests to have their meal**

## Advantages:

- Fast
- Lower costs
- Less service skill needed
- Customer has his own choice of selection

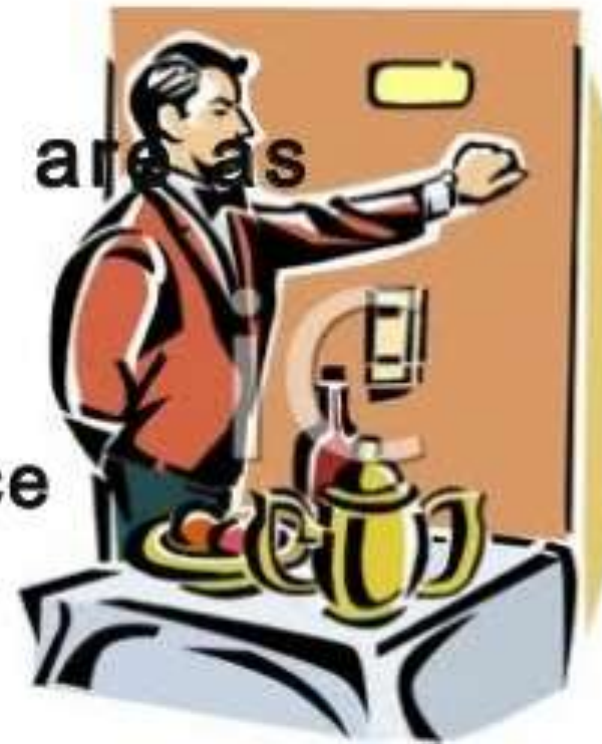
## Disadvantages:

- Less food safety
- Time consuming



# 10. Room Service

- ❖ A 5 star international hotel should provide 24/ 7hrs of service
- ❖ Highest level of service is considered
- ❖ 3 types of room services are as follows:
  - Centralized room service
  - Decentralized room service
  - Mobile room service





**THANKYOU!**



# FOOD SERVICE MANAGEMENT

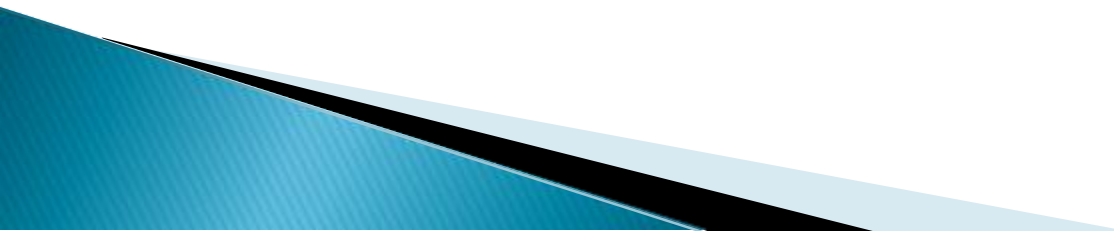
Prepared by  
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Assistant Professor

# Unit -II

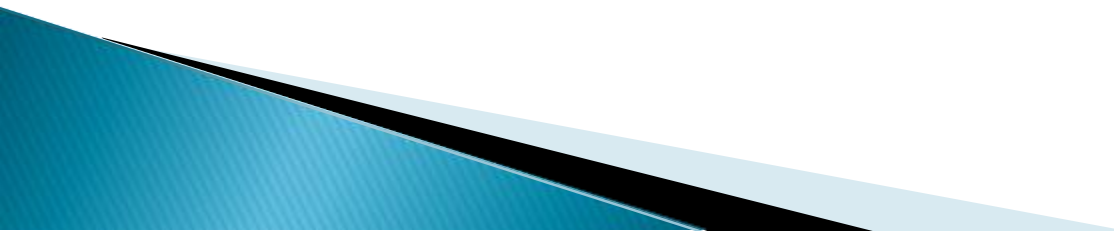
## Management Process

### Management and Organization

- ▶ - definition, principles and tools of management

- ▶ As the term indicates “ Tools of Management” refers to materials which have been developed by managers
  - ▶ These vary with the level of management and therefore each level uses different aids
  - ▶ The basic tool for any establishment is the organisation chart
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# Organisation Chart

- ▶ The organisation structure is the outcome of putting people and jobs together
  - ▶ The chart indicates activity authority relationships which exist in the establishment
  - ▶ According to Drucker, an organisation structure can be charted out by using three types
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# Organisation Chart

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graph TD; A([Organisation Chart]) --- B[Activity Analysis]; A --- C[Decision Analysis]; A --- D[Relation Analysis];
```

Activity  
Analysis


Decision  
Analysis

Relation  
Analysis

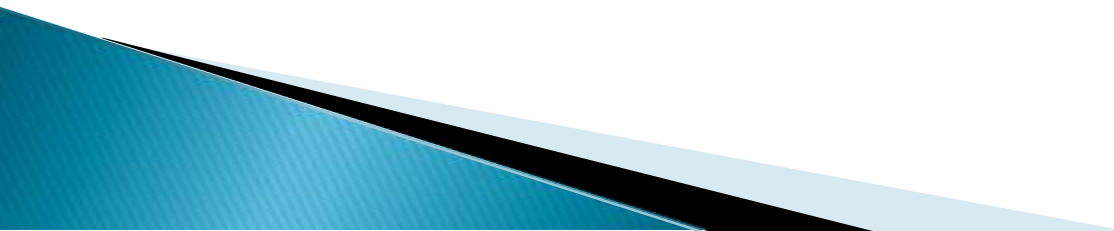
# Activity Analysis

- ▶ Determining activities
- ▶ Listing according to importance
- ▶ Grouping interrelated unitary ones together

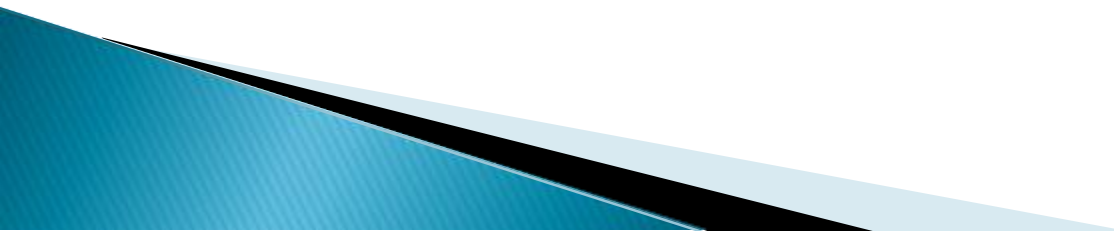
# Decision Analysis

- ▶ Determining how far in the future, a decision will show its effect
  - ▶ Impact of decision on other activities or functions
  - ▶ Dependence on ethics
  - ▶ How often decisions are taken
- 

# Relation Analysis

- ▶ Defining managers role in relation to his contribution to goals
  - ▶ Interaction with other people
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- ▶ An organisation chart tell us about the subordinate– superior relationships and the lines of decision making authority that exist in an establishment, in other words ‘who’ reports to ‘whom’
  - ▶ The two types of authority relationships that most often exist in food services are line and line– staff relationships
  - ▶ Organisation structures can grow in two directions, vertically and horizontally
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catering Manager

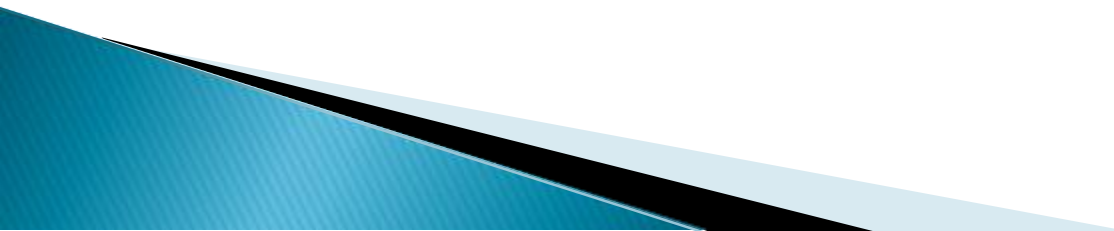
Assistant Catering Manager

Kitchen and Dinning Supervisor

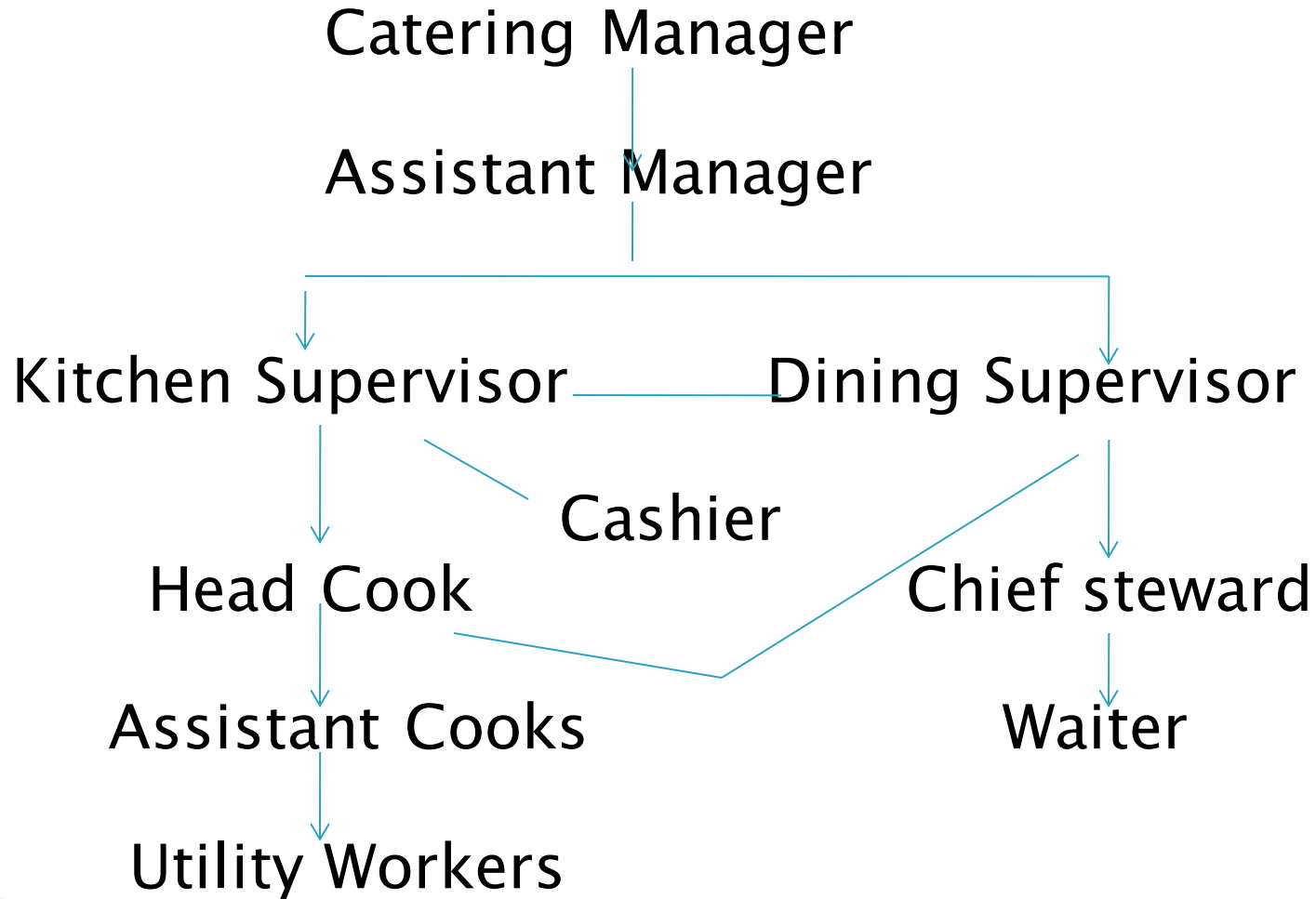
Head Cook

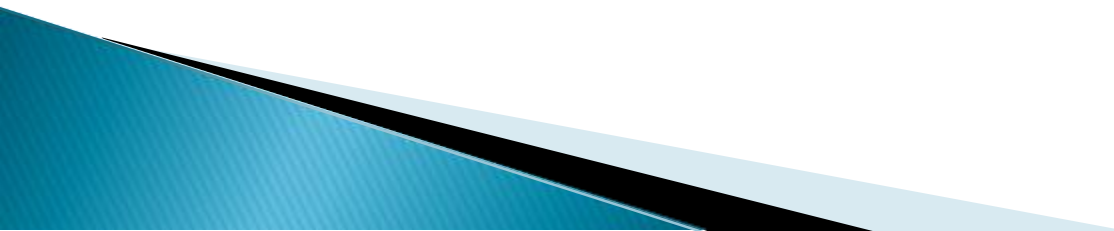
Assistant Cook

Utility worker

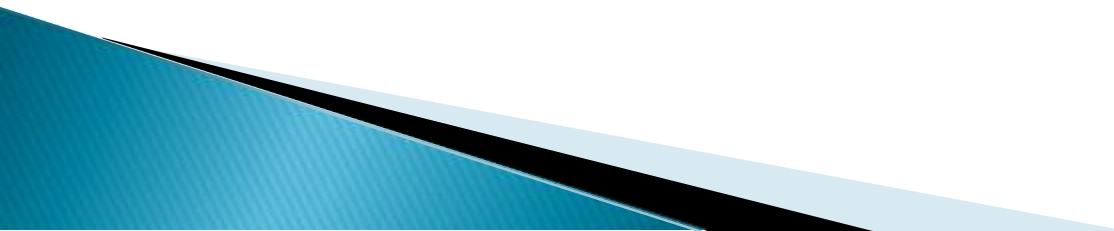


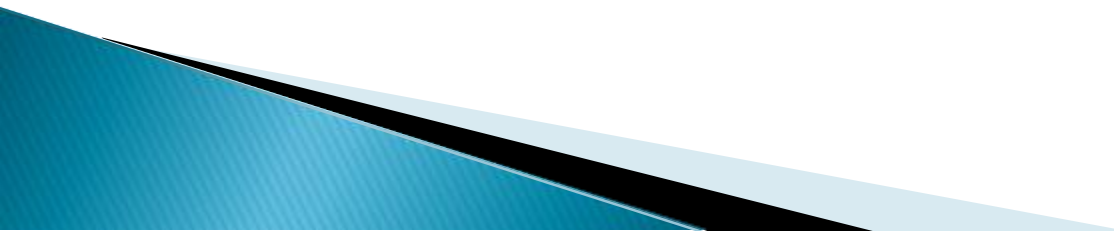
- ▶ As the length of the structure increases, coordinating the activities of the establishment become difficult



- ▶ An organisation chart thus indicates functional units as well
  - ▶ Functions and positions are represented graphically by blocks
  - ▶ Solid lines indicate formal authority relationships while dotted ones represent informal relationship
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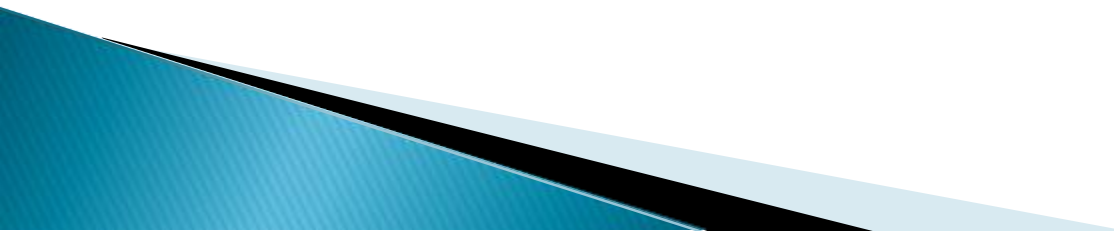
# JOB DESCRIPTION

- ▶ A job in a precise manner indicating exactly what is to be done by people who are occupying a job position in an establishment
  - ▶ A job brings about greater certainty of what is expected in terms of the performance and when actual results match expected ones
  - ▶ Job descriptions are therefore effective tools for managing at every level of the organization structure
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- ▶ As one proceeds along the chain of command towards the operative level in the organization
  - ▶ A higher level of have have a better knowledge of the work for which they are appointed and are expected to have a higher mental calibre
  - ▶ The results of their work are not immediately seen in the case of operative staff
  - ▶ As the proportion of mental work increases they have greater flexibility in timing their work
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# Job specification



- ▶ A job specification is a statement indicating standards to be achieved for a particular job.
  - ▶ It also covers duties expected to be performed, working conditions in which the job would be carried out, and the qualifications required.
  - ▶ A job specification is generally used as a tool for selection of the right employee for a particular job.
- 



# Example for job specification

**Job Title:** Cook

**Department:** Kitchen

**Supervisor:** Catering Manager

**Job summary:** As under job description

**Education:** Craft course in catering

**Experience required:** At least two years experience in a institutional kitchen

**Knowledge and skills:** Knowledge of Indian and continental cooking

**Personal standards:** Clean appearance and habits

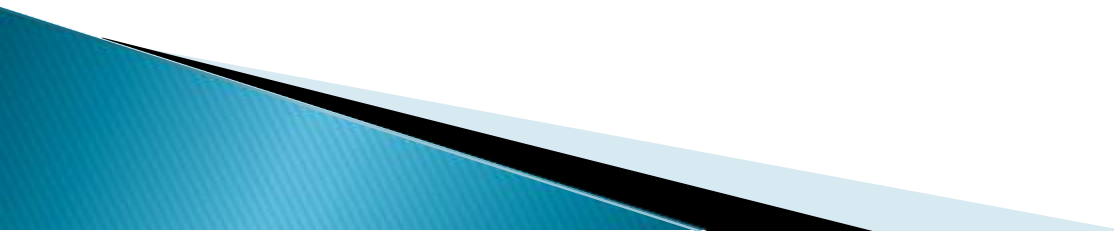
**References required:** One at work and one personal

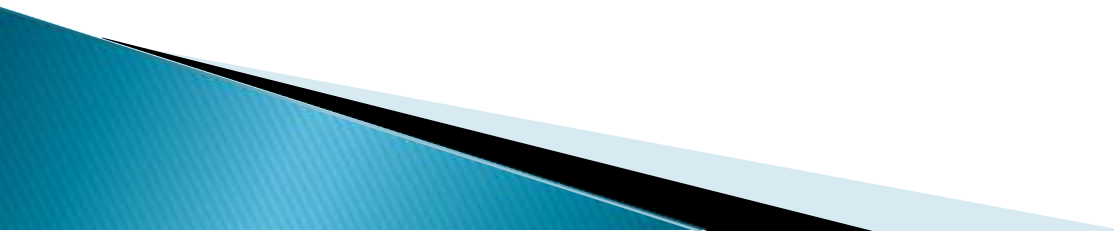
**Hours of work:** 40 hours a week

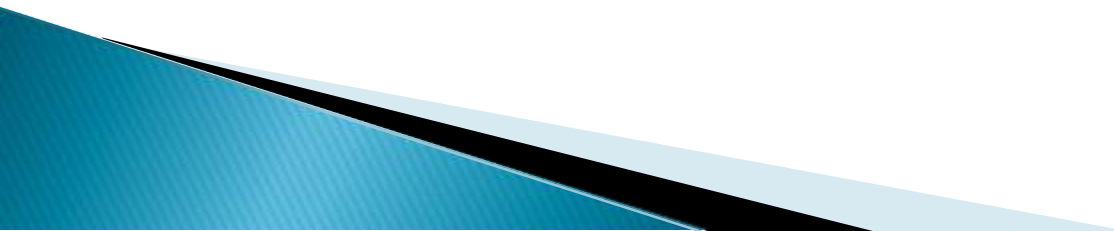
**Promotional opportunities:** To head cook, and with extra qualification to kitchen supervisor.

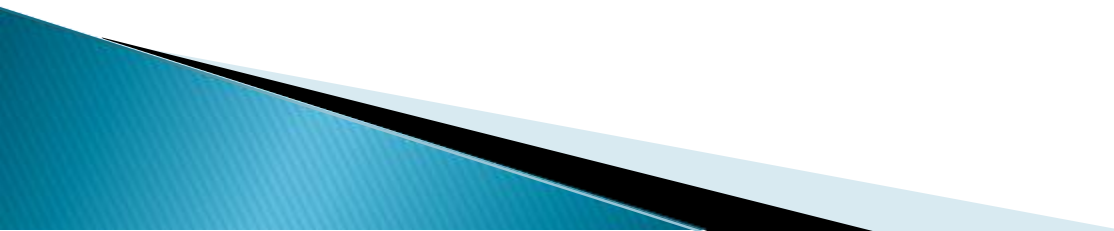
**Ability tests:** Actual performance tests to be passed to expected standards.

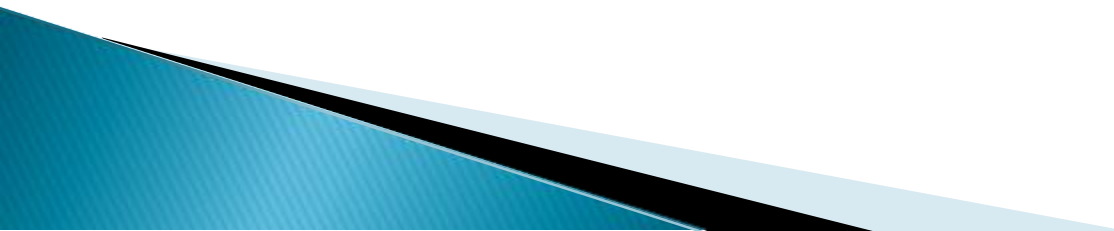
# Work Schedule

- ▶ This represents an outline of the work to be done by an employee.
  - ▶ When this is to be completed within a time schedule as well, then it is referred to as a time and activity plan.
  - ▶ In catering, the production day can be divided into low and high production periods, and an understanding of these is important in scheduling tasks.
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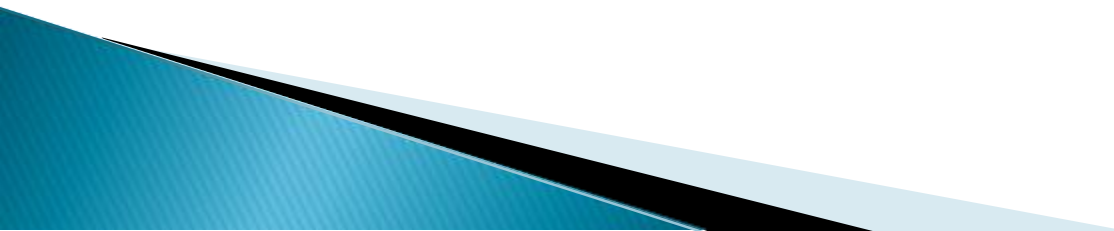
- ▶ As a rule tasks requiring minimum effort, time and attention, should be scheduled or planned for performance during periods of low production
  - ▶ Besides providing the necessary relaxation, such scheduling gives a sense of achievement and motivates staff to cope with the pressures of peak hours.
  - ▶ If complicated tasks are fixed for a low production period, they appear to get more complicated.
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- ▶ The best time to schedule such tasks is first thing in the morning when workers are fresh and rested.
  - ▶ sometimes catering staff are required to work late hours, and perhaps continue in the morning because of the high rate of staff absenteeism or turnover.
  - ▶ In such cases people who have worked more than eight hours a day should be given simple jobs, which do not require a lot of care and attention, because mental and physical fatigue sets in.
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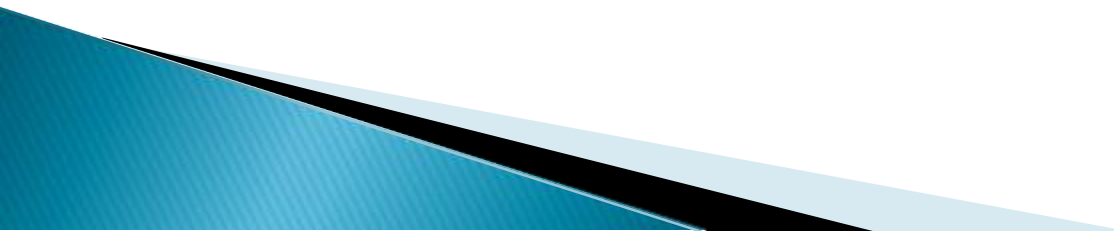
- ▶ If all jobs are considered in the light of their physical, psychological, social and environmental effects on the performers, work has number of advantages:
    - I. More work can be done in a day. imparting a sense of achievement.
    - II. Resource are better utilised, making work more productive.
    - III. A busy schedule leaves very little idle time, gives greater satisfaction, and raises staff morale.
    - IV. The involvement is greater and staff perform their best.
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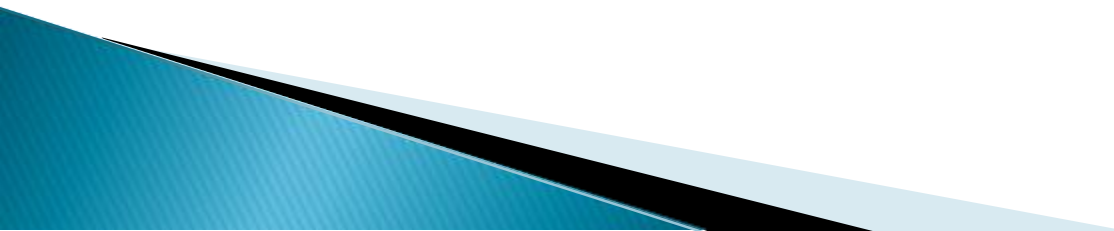
- ▶ Work and time schedules not only chalk out the work plan for staff, but at a glance help to identify tasks which may be combined, eliminated, or modified for greater efficiency.
  - ▶ For effective scheduling a food service manager must have data on the time required for performing a particular job.
  - ▶ Schedules are important tools for demarcating the responsibilities of each worker and giving them a sense of achievement at the end of a task.
  - ▶ A schedule may also indicate changes or additions to normal duties on a particular day, and helps to check any claims for overtime work performed.
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# Job Analysis

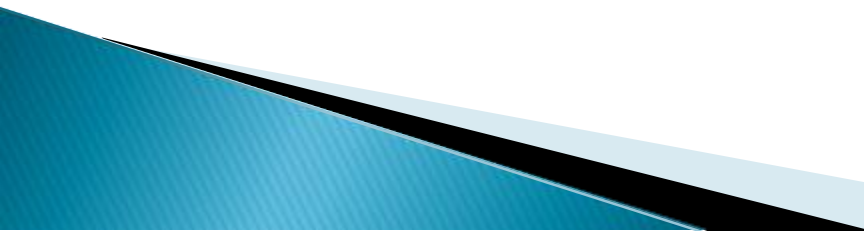
- ▶ The term clearly means analysing jobs to know precisely what they involve.
  - ▶ The purpose of breaking up jobs into their respective components is to take an objective look at a job at frequent intervals.
  - ▶ This helps to bring into focus any overlapping, neglected or problem areas, which can then be remedied by conscious effort, to increase efficiency.
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- ▶ Food Service Institutions are made up of a number of interdependent parts of variables, and job analysis helps to simplify them and reveal possibilities for improvement.
  - ▶ The possibilities of making labour intensive jobs easier and less time-consuming are enormous.
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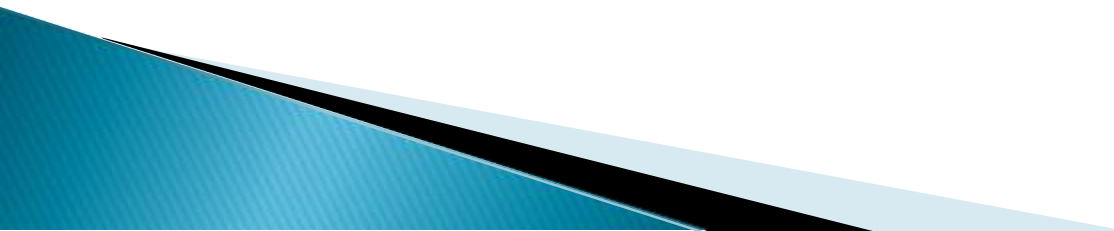
- ▶ Jobs may be analysed by many methods, such as charting out the steps or a performer and preparing travel patterns for a job.
  - ▶ These records are known as:
  - ▶ *pathway charts and help to analyse areas where unnecessary time and energy is being used.*
  - ▶ The data can then be used to develop procedures and aids for better resource use.
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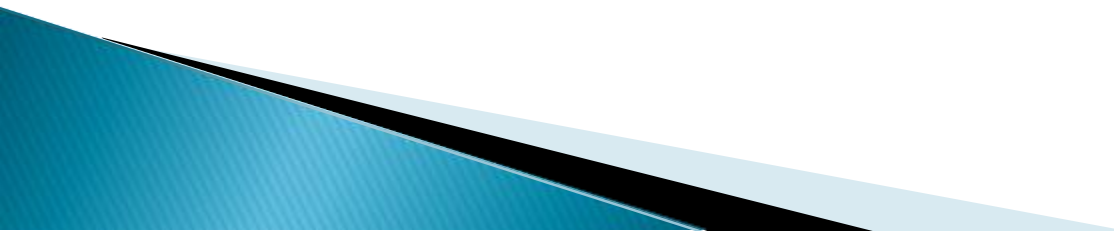
# Production, Service and Staff Analysis Statements

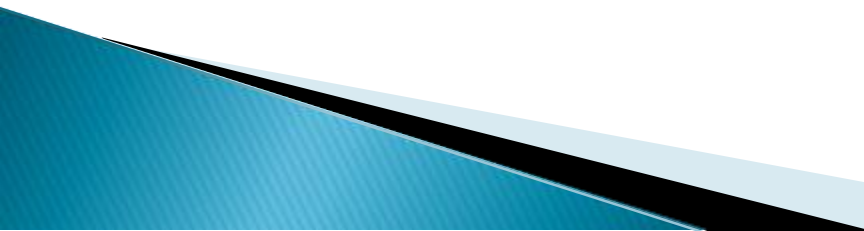
- ▶ Statements indicating the quantities or portions of food produced, served and left over each day
  - ▶ The type of records are production records, sales charts, records of stocks and leftovers over a specified period, menu records and standard costing sheets.
  - Any number of tools can be developed by a food service manager according to the specific requirements of the establishment.
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- ▶ Each establishment can thus devise certain records which are suitable for controlling and managing its operation.
  - ▶ Another aid is a record of staff absenteeism.
  - ▶ This can help to analyse which workers are constantly absenting themselves from work.
  - ▶ The reasons if identified can lead management to take corrective action.
  - ▶ Records of sickness and absenteeism also indicate productive hours lost, leading to increasing labour costs which establishments can least afford.
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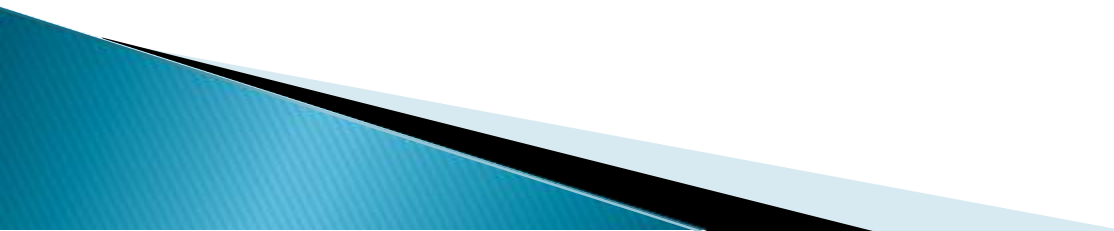
# Budget

- ▶ A budget is a projected plan for the operation of a business.
  - ▶ It is sometimes expressed in terms of money, but at other times may also be expressed in units or percentages.
  - ▶ It is an important tool for managing an operation as it establishes targets for future production, sales staff numbers, purchases and so on.
  - ▶ Budgets are of different kinds and are classified and designed according to the use for which they are intended in various establishments.
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- ▶ Budgets may also be referred to as *fixed or flexible with respect to the levels* of sales assumed.
  - ▶ In fixed budgets, the amount to be spent on certain items is fixed at the beginning of a budget period.
  - ▶ In flexible ones, a judgement of costs is made from previous years experiences in relation to the possible volume of sales.
  - ▶ Food services which are subject to seasonal sales like canteens and cafeterias
  - ▶ situated in hill resorts or at sea sides also prepare flexible budgets for labour costs.
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- ▶ Budgets are prepared on basis of forecasts of sales volume, which in turn help to determine:
    - I. The proportion of variable and semi-variable costs;
    - II. The cash position of the establishment; and
    - III. The amount of expenditure to be made on equipment, furniture and overheads.
  - ▶ In every establishment, however, there are certain key factors which govern
  - ▶ the volume of sales achieved, and these need to be considered while forecasting and budgeting.
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These factors prevent sales from increasing and are therefore sometimes known as *limiting factors*. Some of these factors are:

- (i) Capital at hand
  - (ii) Size of spaces
  - (iii) Staff at hand
  - (iv) Poor management
  - (v) Demand of the customer
- 





# **FOOD SERVICE MANAGEMENT**

Prepared by  
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## UNIT 4

# Financial Management

- Book keeping
- Account maintenance
- Balance sheet



- Every food service establishment needs to be assessed periodically to determine its state of efficiency.
- This assessment is greatly facilitated if accurate books of account are maintained for all transactions that take place.
- The process of recording transactions is referred to as book-keeping or record keeping.
- The preparation of statements for assessing the state of profitability, and their interpretation for guiding decisions regarding the operation of the business are considered as accounting function.



# GOLDEN RULES OF ACCOUNTING

There are basically three types of accounts

- **Personal account** - debit the receiver  
- credit the giver,
- **Real account** - debit what comes in  
- credit what goes out and
- **Nominal accounts** – debit all expenses and losses  
- Credit all incomes and gains,
- all book-keeping record will be based on these principle

.



# Personal Account

- When all transactions relating to a single person are set out on one page in a book of accounts, it is known as a personal account.
- The transactions shown on that page are in debit and credit form, the receiver is debited and the giver is credited according to the rules of double entry book-keeping system.



## Real Account

- When all transactions relating to a property are recorded on a single page the account is called real account.
- The rule of recording the transactions followed is to *debit what comes in*, and *credit* what goes out.

## Nominal Account

- When expenses or incomes are recorded independently on separate pages, they are termed as *Nominal* accounts.
- In recording transactions it is usual to *debit all expenses and losses* and credit all incomes and gains.



# Single Entry System

- The single entry system is not, strictly speaking, a system as it is not based on sound principles.
- Some transactions are not recorded whereas there is only partial record for others and reliable results cannot therefore be obtained.



# Double Entry System

- The double entry system is more soundly based on the concept that all transactions involve giving and receiving a benefit.
- This system provides for an accurate and complete record of both aspects of all transactions in an establishment





## *Advantages of the Double Entry System*

The double entry system of book-keeping has a number of advantages:

- An establishment can know whenever it wants, how much profit it has earned, or how much it has suffered in a particular period.
- This information is essential to ascertain whether the business is being run on the right path or whether it needs correction.
- The precise reasons leading to profit or loss can be ascertained, and necessary remedial action taken well in time.



- It is possible to prepare a Balance Sheet at the end of a trading period, disclosing the financial state of affairs during that period, to know whether the firm is solvent or insolvent.
- Moreover, a comparative study of different years can be undertaken to ascertain the progress of the operations, over time.
- The amount owing from debtors and owing to creditors, can be known at any moment.



# BOOKS OF ACCOUNT

The transactions of a food service establishment fall into three main categories namely:

- Cash receipts and payments, including payments and withdrawals from a bank account.
- Purchase of goods and materials.
- Sale of goods and services.
- The following books are initially kept to record the transactions of different categories as
- **Cash book** (for recording cash receipts and payments, including those for cash purchases, expenses incurred, cash sales, discounts allowed and discounts received.)
- **Purchase book** (for recording all goods purchased on credit.)



- **Sales book** (for recording all goods sold on credit.)
- **Purchases returns book** (for recording all purchases returned to suppliers, that is, creditors.)
- **Sales returns book** (for recording all sales returned by the customers.)
- Except the cash book, all other books of account are auxiliary books of original entry and simply aid in recording the transactions further into the principle book of account, the *ledger*.
- All the entries in the ledger are made according to the double entry system, recording them both as debit and credit entries.



# The Cash Book

- The cash book maintains the daily record of transactions relating to receipts and payments of cash.
- As the number of transaction relating to cash are usually large and there is risk of cash being unaccounted, it is necessary to maintain up-to-date cash records which are properly supervised.



- The *Cash Book* is maintained on the basis of the principles of the double entry system, and it involves the record of transactions relating to a property (cash).
- All receipts are recorded on the debit side (what comes in), and all payments on the credit side (what goes out).
- The cash book has both debit and credit columns for recording cash receipts and payments, including those for cash purchases, expenses



### CASH BOOK

RECEIPTS				PAYMENTS			
DEBIT				CREDIT			
DATE	PARTICULARS	L.F.	AMOUNT	DATE	PARTICULAR	L.F.	AMOUNT
			Rs.   P.				Rs.   P.

Fig. 23.1. Single column cash book.

Example 1 gives some cash transactions for a certain...



### CASH BOOK

RECEIPTS				PAYMENTS					
DEBIT				CREDIT					
DATE	PARTICULARS	L.F.	AMOUNT		DATE	PARTICULAR	L.F.	AMOUNT	
			Rs.	P.				Rs.	P.
1993					1993				
Jan. 1	To Capital A/c		14,000.00		Jan. 1	By Bank A/c		10,000.00	
	To Sale of food A/c		300.00		1	By Provisions for Kitchen A/c		2,000.00	
	To Sale of bread and butter A/c		60.00		1	By Kitchen furniture A/c		1,200.00	
					1	By Stationery A/c		150.00	
					1	By Rent A/c		400.00	
					1	By Bread A/c & Butter A/c		50.00	
					1	By Wages A/c		5.00	
					1	By Balance c/d		555.00	
			14,360.00					14,360.00	
Jan. 2	To Balance b/d		555.00						

Fig. 23.2. Entry of transactions in a Single Column Cash Book.



## ***Double Column Cash Book***

- This is known as the ***Discount Column Cash Book***. In addition to the two amount columns on each side a discount column is also added to each amount column.
- Usually a cash discount is allowed to customers when prompt payment is made.
- Cash discounts accompany cash receipts from customers and payments to suppliers.



- It is therefore convenient to record discount allowed or received along with cash payment.
- The discount allowed (loss) on receipt of cash from a customer will, according to the principles of double entry, be recorded in the discount column on the debit side, and the discount received (gain) on payment to the supplier will be recorded on the credit side in the discount column.



## CASH BOOK

RECEIPTS					PAYMENTS				
DEBIT					CREDIT				
DATE	PARTICULARS	L.F.	DISCOUNT Rs. P.	AMOUNT Rs. P.	DATE	PARTICULAR	L.F.	DISCOUNT Rs. P.	AMOUNT Rs. P.

Fig. 23.3. Sample of Double Column Cash Book.

Transactions made in a newly established coffee shop



## *Triple Column Cash Book*

- This is also known as the Bank Column Bank Book.
- Today, in almost all establishments, transactions are made through the banks rather than in cash.
- Organisations prefer to keep cash in the bank rather than on the premises due to various reasons.
- Moreover, money in the bank is as good as cash.



...the cash book on the credit side

### TRIPLE COLUMN CASH BOOK

DEBIT					CREDIT						
Date	Particulars	L.F.	Discount Rs. P.	Office Cash Rs. P.	Bank Rs. P.	Date	Particulars	L.F.	Discount Rs. P.	Office Rs. P.	Bank Rs. P.
1993						1993					
Feb. 1	To Balance b/d			20	2,000	Feb. 2	By Furniture A/c	12			250
5	To Sales A/c (banked)	10			215	3	By M/s Handa A/c	13	5.00		45
12	To B. Nayyar A/c	11	3.00		27	4	By Postage A/c	14	—	3	—
13	To Sales A/c	10	—		245	10	By Wages A/c	15	—	—	82
26	To Bank A/c	C	—	50	—	11	By M/s Super Bazar A/c	17	2	—	118
	To Sales A/c	10	—	190	—	13	By Travelling Expenses A/c	18	—	6	—
28	To Office Cash A/c	C	—	—	160	20	By Wages A/c	1	—	—	92
						21	By Stationery A/c	21	—	5	—
						22	By Flowers A/c	22	—	2	—
						26	By Office Cash A/c	C	—	—	50
						27	By M/s Kapur & Sons A/c	20	5	—	65
						28	By Postage A/c	14	—	3	—
							By Wages A/c	15	—	5	—
							By Salaries A/c	19	—	—	86
							By Bank A/c	C	—	160	—
							By Balance c/d		—	76	1,859
		16		260	2,647			16	12	260	2,647
March 1	To Balance c/d			76	1,859						

Fig. 23.5. Entry of transactions in a triple column cash book.

# The Ledger

- The ledger is a book of account in which individual accounts are opened for suppliers, customers who buy on credit, such as, sales on account page for Messers, xyz furniture, postage and so on.
- For contra transactions, both the aspects are recorded. The individual accounts help to complete the double entry record



Dr.

## M/S KAPOOR &amp; SONS ACCOUNT Page 20

Cr.

DATE	PARTICULARS	L.F.	AMOUNT Rs. P.	DATE	PARTICULARS	L.F.	AMOUNT Rs. P.
1993 Feb. 27	To Cash Book	20	70. 00				

Dr.

## STATIONERY ACCOUNT Page 21

Cr.

DATE	PARTICULARS	L.F.	AMOUNT Rs. P.	DATE	PARTICULARS	L.F.	AMOUNT Rs. P.
1993 Feb. 21	To Cash Book	20	5. 00				

Dr.

## FLOWERS ACCOUNT Page 22

Cr.

DATE	PARTICULARS	L.F.	AMOUNT Rs. P.	DATE	PARTICULARS	L.F.	AMOUNT Rs. P.
1993 Feb. 24	To Cash Book	20	2. 00				

Fig. 23.6. Entries in the ledger.

It will be observed from the above postings that every transaction has been recorded twice, once in the

## **Purchases Book**

- This book is maintained in order to make a preliminary record of the goods purchased on credit from the suppliers.
- There is no record in the form of debits or credits.
- It is merely a memorandum book. After a purchases book is prepared and totalled, it is posted according to the principles of the double entry system.





- The suppliers being the *givers*, their accounts will be credited with the amounts.
- The total of the purchases book will be posted to the debit side of the purchases account at the end of a particular period, as it represents the expenses incurred on purchase, and expenses are always debited according to the double entry system.



PURCHASES BOOK				
DATE	PARTICULARS	L.F.	DETAILS	AMOUNT
				Rs.      Rs.
				Total _____

(a) Purchases book .

SALES BOOK				
DATE	PARTICULARS	L.F.	DETAILS	AMOUNT
				Rs.      Rs.
				Total _____

(b) Sales book

Fig. 23.7.



## Sales Book

- This is also a memorandum book and there are no debit and credit columns in it.
- It is maintained in order to record credit sales of goods to customers during a particular period.
- The total of this book represents total credit sales made to customers.
- The total, therefore, will be credited (being a gain) to the sales account at the end of the period, and the individual customer's accounts (being the receivers of benefit) will be debited in the ledger.
- In this way, with the help of the basic records in separate books, the double entry records are completed.



## Purchases Returns Book

- This is also a memorandum book and records the return of goods to the suppliers.
- The format of this book is similar to that of the purchases book.
- While posting, the total of this book will be posted to the *Returns Outwards*
- *Account* and the supplier's individual accounts will be debited, he being the receiver of the value.



## **Sales Return Book**

- The returns from customers are recorded in this book on a memorandum basis.
- It has already been mentioned that in catering establishments there is practically no occasion for customers to return the product since it is consumable generally on the premises.
- In establishments which offer a takeaway service, there may be a single instance when the food is brought back with a complaint.



## Journal

- This book records an analysis of every transaction that takes place in an establishment.
- It states the two accounts which are involved in the transaction and which one has to be debited and which to be credited.
- There are certain transactions which cannot be recorded either in the Cash Book, Sales Book, Purchases Book, Purchases Returns Book or the Sales Returns Book, neither can these be recorded in any subsidiary book.



- Such transactions are credit purchases and sales of assets, bad debts, depreciation on assets, outstanding expenses and income earned but not yet received, etc. the initial record of such transactions are made in the journal.
- At the end of a given period, the various accounts involved in the transactions are posted with the help of the journal entries.
- Entries in the journal are recorded on the basis of the double entry system.



## Trial Balance

- Once all the transactions are recorded in various the books of account, it is necessary to check their accuracy by preparing a statement known as the *Trial Balance*.
- This lists the balances of all the accounts in debit and credit from.
- As each transaction has been entered twice, both in debit and credit, the total of the two sides should be equal.
- The equality of the totals will prove that the accounts have been correctly prepared.





- While preparing the Trial Balance, the personal and real (property) accounts are balanced, and the amounts of the nominal accounts are noted against each item in the respective column.
- With the help of a Trial balance, which is prepared at the end of a financial year, the profit or loss for the year and Balance Sheet can be determined as on that date.
- In fact, with the Trial Balance for the month, the profit or loss for the month can also be calculated.



## **Profit and Loss Account**

- If the Trial Balance is analysed, it is seen that items appearing on the debit side represent nominal expenses, properties (cash and furniture) and personal accounts of debtors (from whom amounts are due, like M/s Modern School).





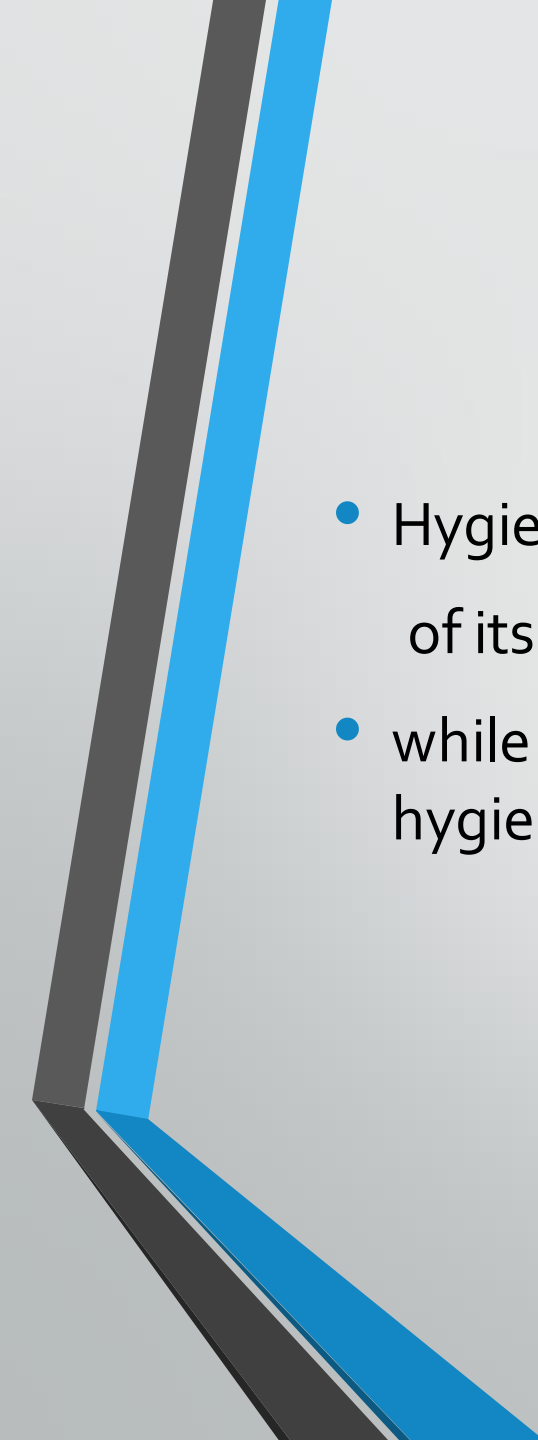
# FOOD SERVICE MANAGEMENT

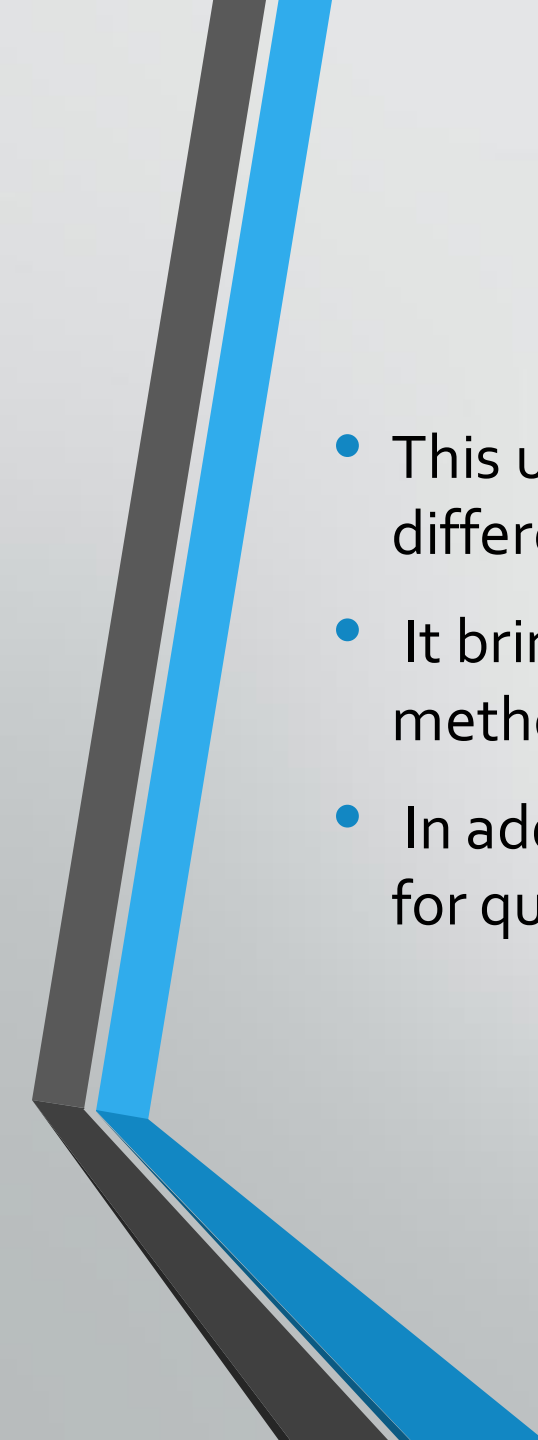
Prepared by  
U. Krishnapriyal  
Assistant Professor

# Unit 5

## Hygiene and Sanitation

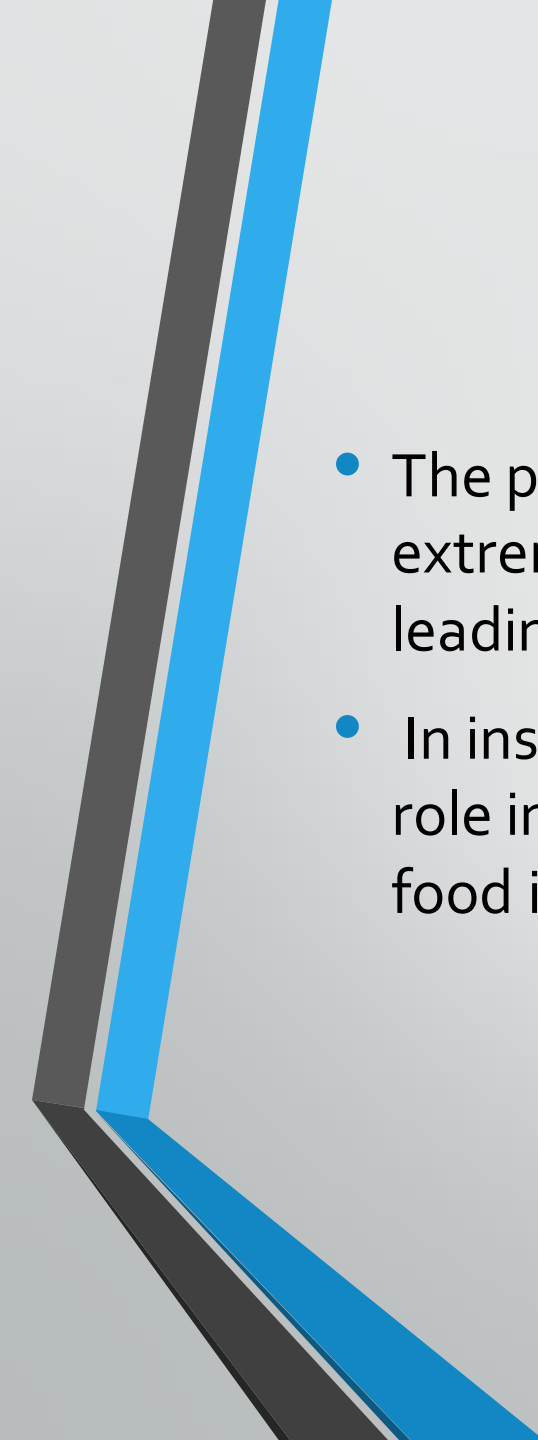
- a) definition and importance of hygiene and sanitation in food handling
- b) Personal hygiene
- c) Causes and prevention of accidents and safety education

- 
- Hygiene in a food service establishment refers to the general cleanliness of its environment and the people in the work situation;
  - while sanitation involves activities which help to maintain healthy and hygienic conditions, free from the hazards of infection and disease.

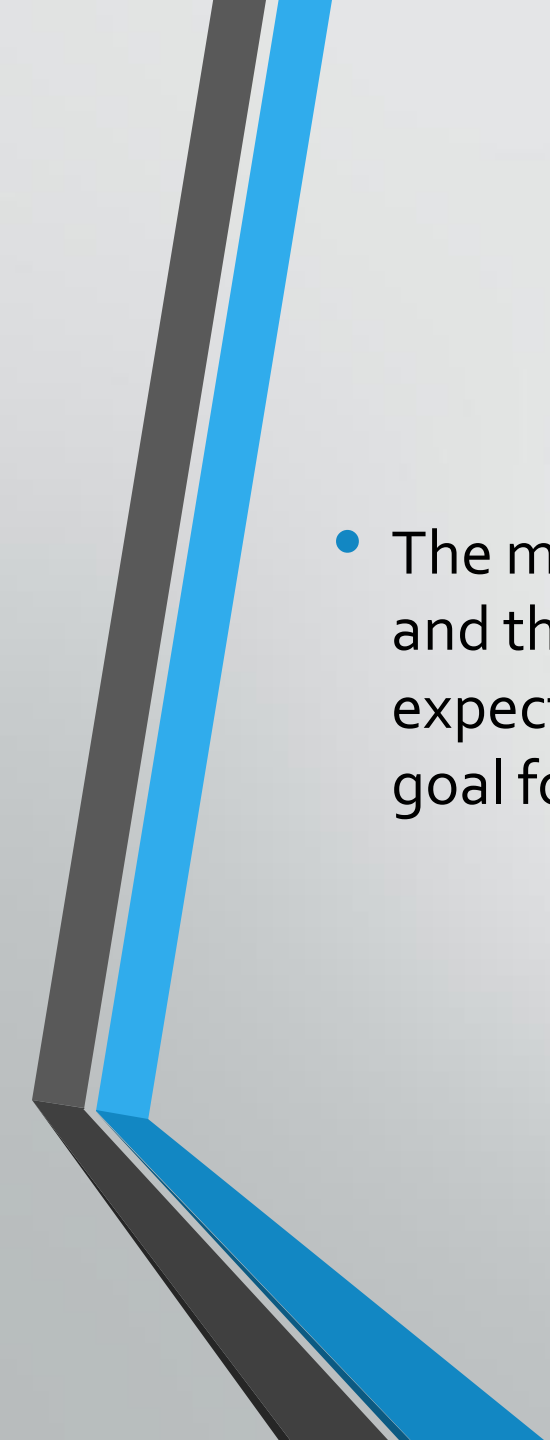
- 
- This unit emphasizes the importance of hygiene, sanitation and safety in the different areas of an establishment.
  - It brings to light what can happen if they are ignored, and suggests methods by which a safer and healthier environment can be established.
  - In addition it focuses attention on food laws which need to be adhered to for quality food production and service.

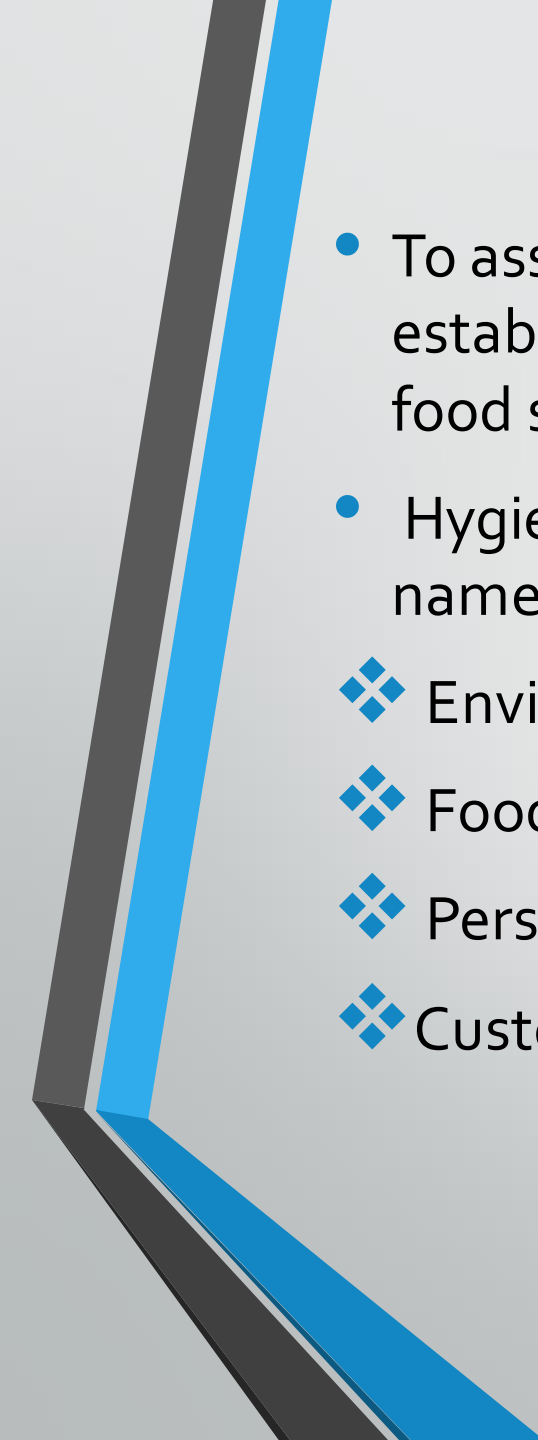
# Introduction

- Hygiene refers to the general cleanliness of the establishment and its surroundings including people, their work habits and behavior.
- *Sanitation* on the other hand, encompasses all the activities necessary to bring about, establish and maintain healthy and hygienic conditions free from the hazards of infection and disease.
- Because of their interrelationship, hygiene and sanitation are words that are used synonymously when it concerns food service establishments and the quality of the food expected to be served in any unit.

- 
- The preparation and service of food requires handling of materials which are extremely vulnerable to becoming the media of contamination thereby leading to the spread of infection and disease.
  - In institutional food handling, therefore, hygiene and sanitation play a vital role in promoting and protecting health and well-being of people for whom food is prepared and served, be they customers, staff or visitors



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- The maintenance of good standards of hygiene are of particular importance and therefore kitchen and service staff must be told what standards are expected of them, since achievement of food safety standards is the prime goal for any food establishment.

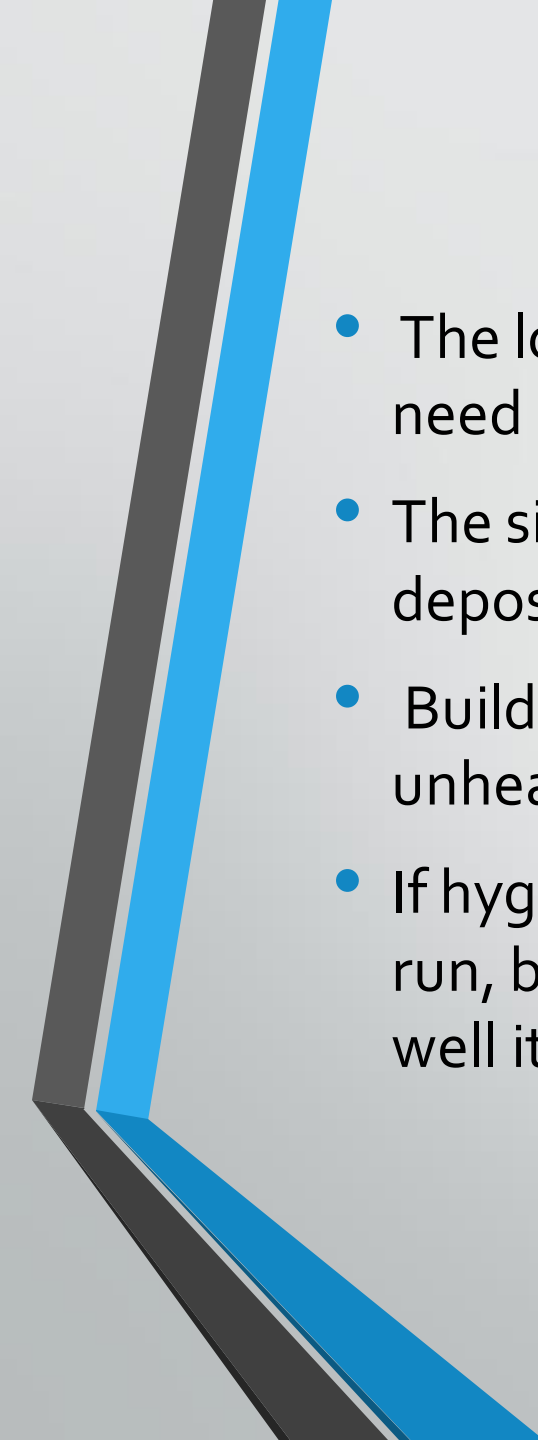
- 
- To assess the hygiene and sanitation requirement of a catering establishment, it is important to look at its various aspects operating in the food service environment.
  - Hygiene and sanitation may be considered under four broad categories namely:
    - ❖ Environmental hygiene
    - ❖ Food handling practices
    - ❖ Personal hygiene and
    - ❖ Customer perceptions and hazards.

## **ENVIRONMENTAL HYGIENE AND SANITATION**

- This refers to the total environment in which food is delivered, prepared and served.
- Unfortunately, hygiene of the environment and the habits of the people handling food are both factors which are most often neglected in the food preparation and service areas of an establishment.
- The discussion that follows will indicate how hygiene and sanitation can be built into the environment at each stage of establishing a food service.

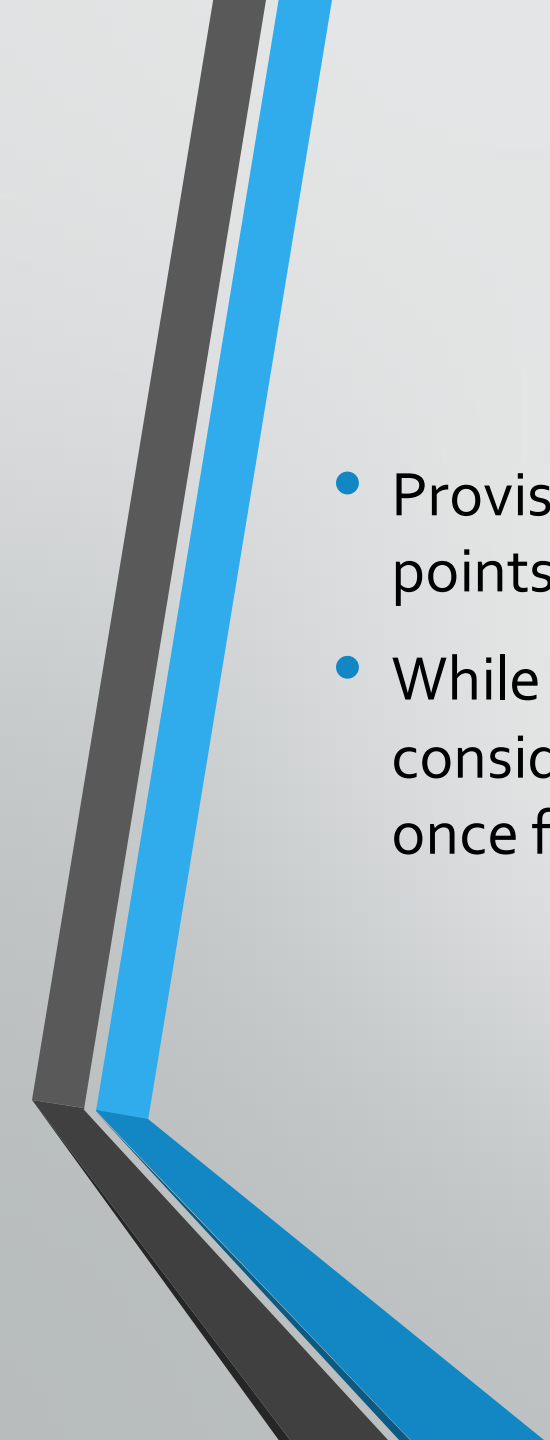
## Site

- When a site is being examined for establishing a food service, it should be scrutinized for the amount of air pollution or whether it is free from the potential hazards of infestation by insects and rodents.
- If the food service unit is part of a large building, the location of water supply and sewage disposal lines need to be examined.
- They should not run too close to each other, because in the event of a leak, the water supply can get contaminated.
- Separate sanitary conveniences for catering staff should be provided located away from food storage, production and service centers.

- 
- The location of routes by which deliveries are made and refuse removed need consideration as well.
  - The site should also be checked for whether it constitutes filled up waste deposition pits.
  - Buildings on such site appear fine, but in the long run would become unhealthy and insanitary once food production activity starts.
  - If hygiene is ignored at this stage, it can mean a drop in customers in long run, because of the potential danger of infecting the food no matter how well it is cooked.

## Structure

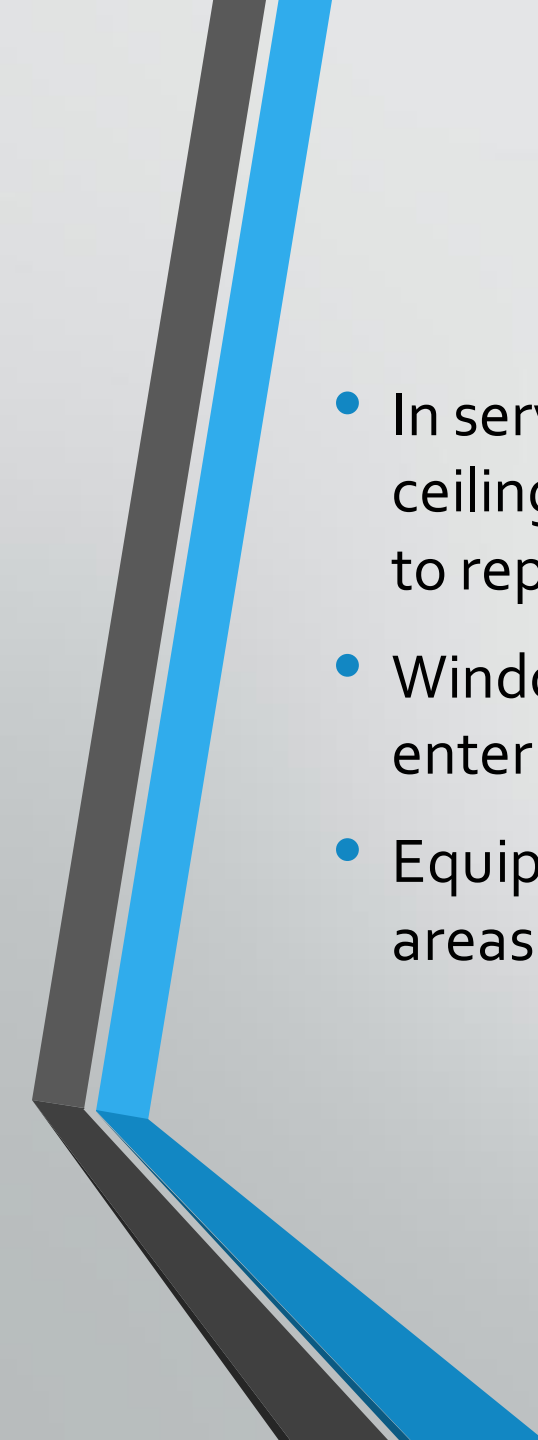
- The cleanability of floors, walls, ceilings or any other surfaces built into the establishment is the basis for maintaining a structure free from the hazards of infection.
- The materials selected therefore should be non-absorbent, noncorrosive and easy to keep clean.
- Facilities for proper sewage disposal and the construction of adequate plumbing for kitchen and service areas is of consequence in sanitation, as serious outbreaks of food poisoning have often been traced to carelessness in this area.
- All sewage lines must be directed into the public sewage system.
- Faulty plumbing can prove a hazard as it leads to frequent blockages of drains or results in backflows.

- 
- Provision of sufficient handwashing facilities is also necessary at strategic points in the establishment.
  - While the structure may have taken into account all hygiene and sanitation considerations it would have to be subject to regular pest control treatment once food is handled, prepared and served on the premises.

## Equipment, Furniture and Fittings

- Equipment includes production and service equipment as well as furniture and fittings.
- The construction and arrangement of furniture, equipment and fittings in spaces and the selection of materials.
- It would suffice here to say that, in general, these should be designed so that they do not harbour dust or dirt, which is the source of microorganisms.
- It is important to discard any equipment which are chipped, dented or damaged if in use for food preparation or service activities.
- In addition, a knowledge of the use of proper detergents to keep surfaces, equipment and fittings clean is essential to avoid leaving chemical residues on surfaces that may contaminate food.



- 
- In service areas while overcrowding needs to be avoided, the provision of ceiling fans to push out the warm air, and enough windows and ventilators to replace it, are important to hygiene.
  - Windows and ventilators should be hinged in such a way as to allow air to enter a room in an upward direction.
  - Equipment are now available which can help to purify the air in congested areas or areas subject to fumes, dust and other forms of pollution.

# Ventilation

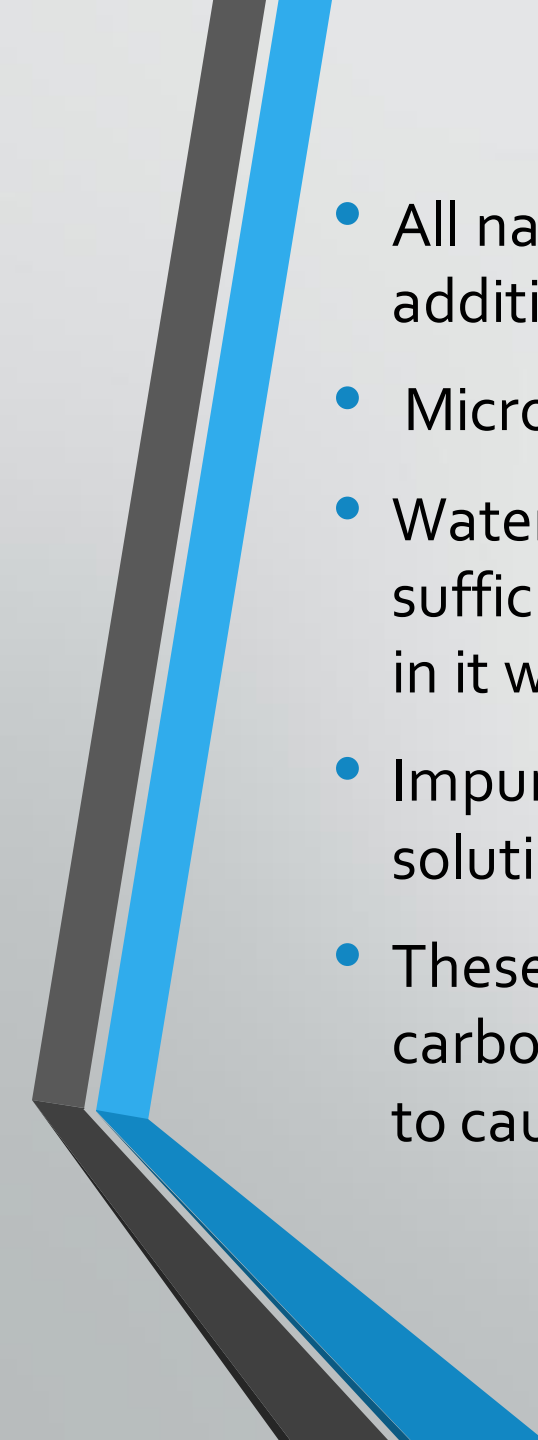
- Where a number of people are working together, handling, cooking and consuming food, the atmosphere gets heated up and polluted with carbon dioxide as a result of normal respiration. This creates conditions conducive to the growth of microorganisms.
- It has been estimated that if a man is breathing normally in a room containing 28.3m<sup>3</sup> of air, the air will contain 0.6 per cent carbon dioxide in 20 minutes.
- This is the maximum permissible limit beyond which the atmosphere would be considered polluted or unhealthy.
- Ventilation, therefore, takes on a very important role in clearing the hot air and bringing down the temperature as well as the carbon dioxide content.
- All kitchens must be provided with exhaust fans and extraction hoods above cooking ranges to remove steam and organic impurities.

# Lighting

- All areas should be well lighted to make dirt, grease and infestation easily detectable.
- Sometimes, for comfort in winter or to produce aesthetic effects coal or wood fires are lighted in some food service areas.
- The organic impurities given off in such atmospheres are more harmful than the carbon dioxide from normal respiration.
- If accompanied by poor ventilation it can lead to headache, giddiness, fainting and even vomiting.
- Long exposure to overcrowded and warm conditions affects general health, increases susceptibility to infections, produces lethargy and loss of appetite.
- Besides producing discomfort it also affects the efficiency of people at work.

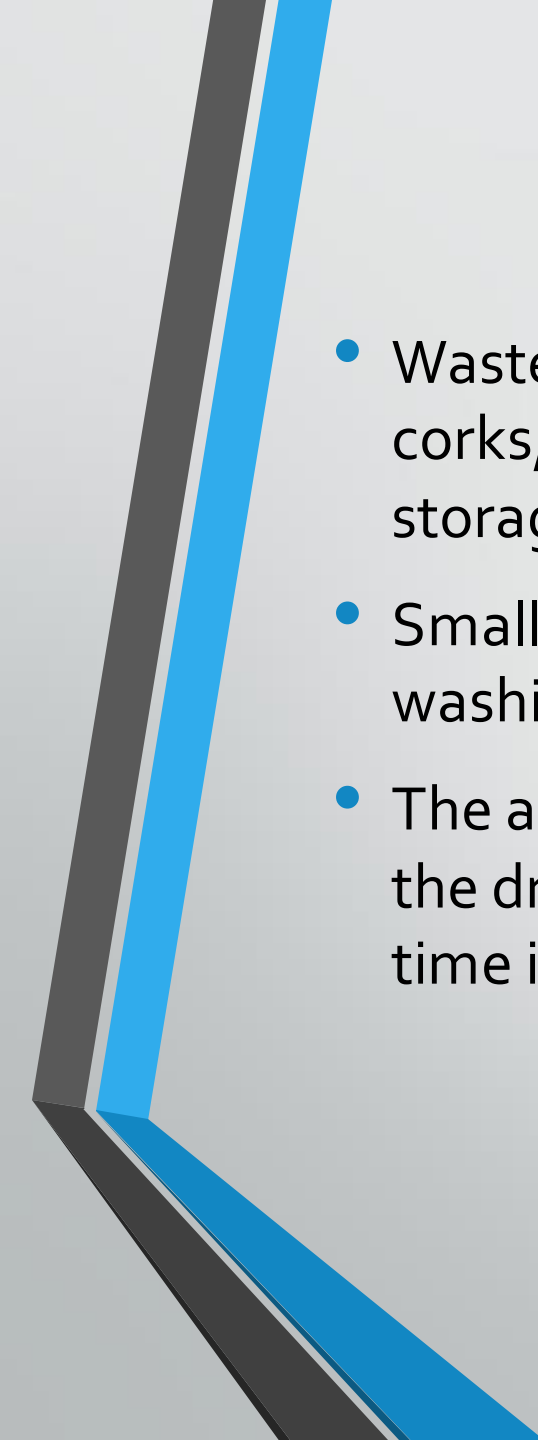
# Water Supply

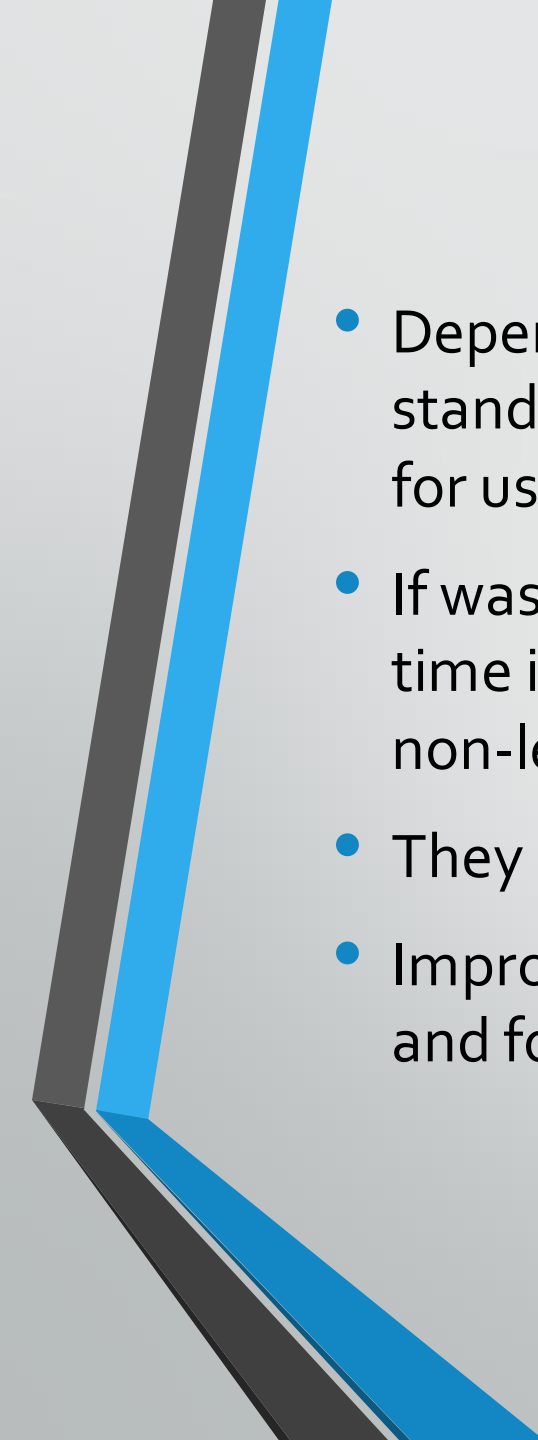
- The water supply to all catering establishments should be treated to ensure that it is fit for drinking, cooking, and washing of utensils.
- Although safe water supply is primarily the responsibility of the government water supply departments, in some areas due to lack of trained staff or facilities for testing the microbial count or level of dissolved impurities, the supply can become a source of contamination.
- This is then easily passed on to the customers through contaminated utensils and the food washed or cooked in them.
- It is, therefore, equally a responsibility of the catering authorities to ensure that good water is used for food production and service activities.
- The characteristics of water with which every caterer is concerned are colour, taste, corrosiveness, hardness and safety.

- 
- All natural water supplies contain mineral salts and organic materials in addition to dissolved gases from the air.
  - Microbial activity too, influences the colour, odour and taste of the water.
  - Water for food preparation purposes may be considered hygienic when it is sufficiently pure to have only very small quantities of substances dissolved in it which do not prove injurious to health.
  - Impurities in water may be present as fine suspensions or dissolved in true solution.
  - These may be in the form of salts of metals like lead, iron, zinc or others like carbonates, chlorides and sulphates of calcium and magnesium which tend to cause hardness in water.

# Waste Disposal

- Kitchen waste comprises peelings, trimmings, plate waste, spillage, empty cans, bottles, packing materials, etc.
- These must never be allowed to remain anywhere near the production, storage or service areas, because they can attract insects, flies, rodents and even stray dogs and other animals.
- All these then become agents of contamination for wholesome food. Arrangements must be established for collecting all waste materials at the end of the day and completely destroying them or removing them to garbage disposal centres in sealed, leakproof bags.
- If the establishment is a large one or the food service a supportive facility of a large organisation such as a hospital or an educational establishment, incinerators may be installed in the back yard away from the catering premises.
- All waste materials can be burnt up in this at the end of the day.

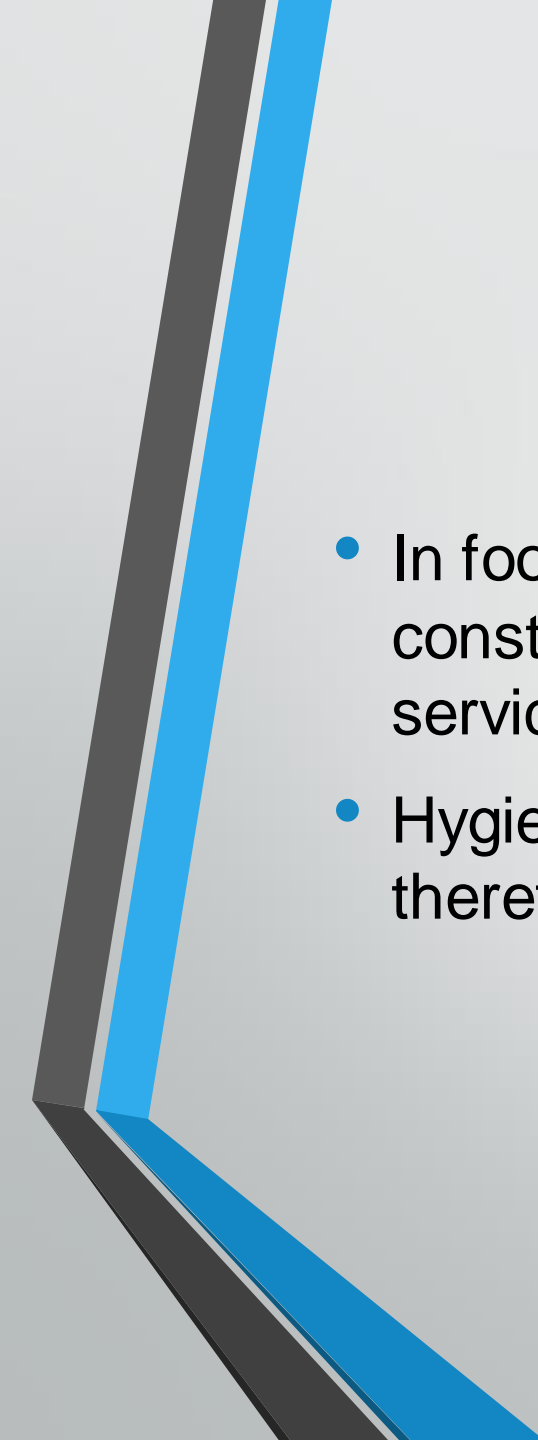
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- Waste compactors are also available which crush waste materials like cans, corks, lids of bottles and other disposals, reducing the volume of trash for storage until it is disposed of.
  - Small establishments can fit waste disposal units, into sinks used for washing equipment.
  - The advantage is that all kitchen wastes can be ground and passed through the drainage system so that it does not have to be held for any length of time in the food service environment.

- 
- Depending on the size of the establishment and requirement of menus, free standing disposal units are also available directly plumbed to water supply for use.
  - If waste material has to be stored in or outside the kitchen for any length of time it is advisable to use covered foot operated pedal bins made of durable, non-leaky, non-absorbent materials, which do not take up liquid or odours.
  - They can then be emptied out for disposal by waste collection staff.
  - Improper disposal can pollute water and through it contaminate equipment and food.



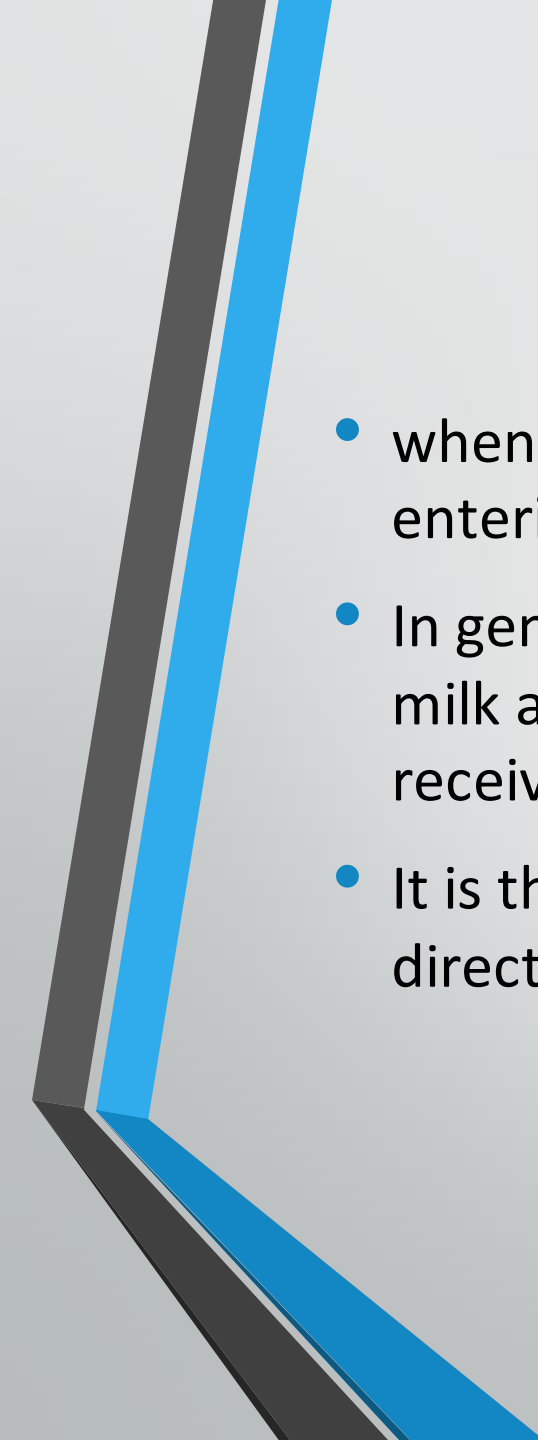


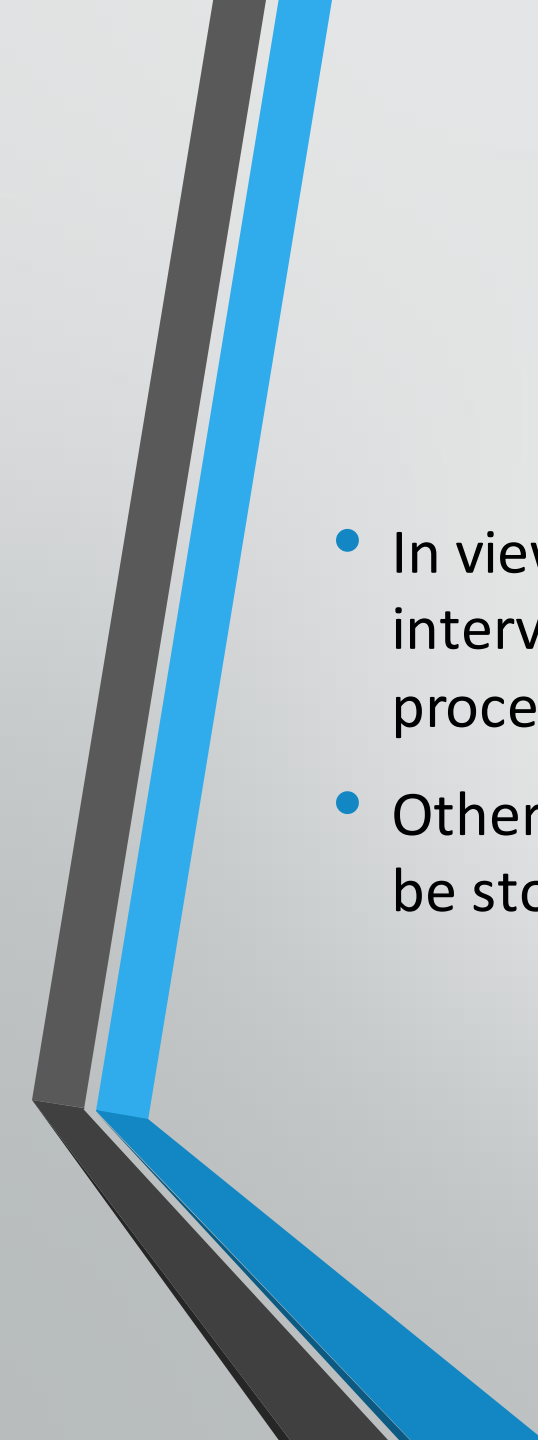
# **FOOD HANDLING PRACTICES**

- 
- In food services, the foods, materials and equipment are subject to constant handling by people, at every stage of the food production and service process.
  - Hygiene with respect to each activity of the production cycle is therefore important as discussed below.

# Receiving Food Materials

- The principles of hygiene and sanitation need to be applied right from the point of receiving food and other materials till the final product is cooked, served and tables cleared of waste or droppings.
- A strict check on the quality of the food received will go a long way to provide wholesome food to the customer.
- The quality particularly needs to be checked for each category of items, in terms of any signs for predisposing factors to contamination by microorganisms, accidental chemical additives due to pesticide residues or insect infestation.

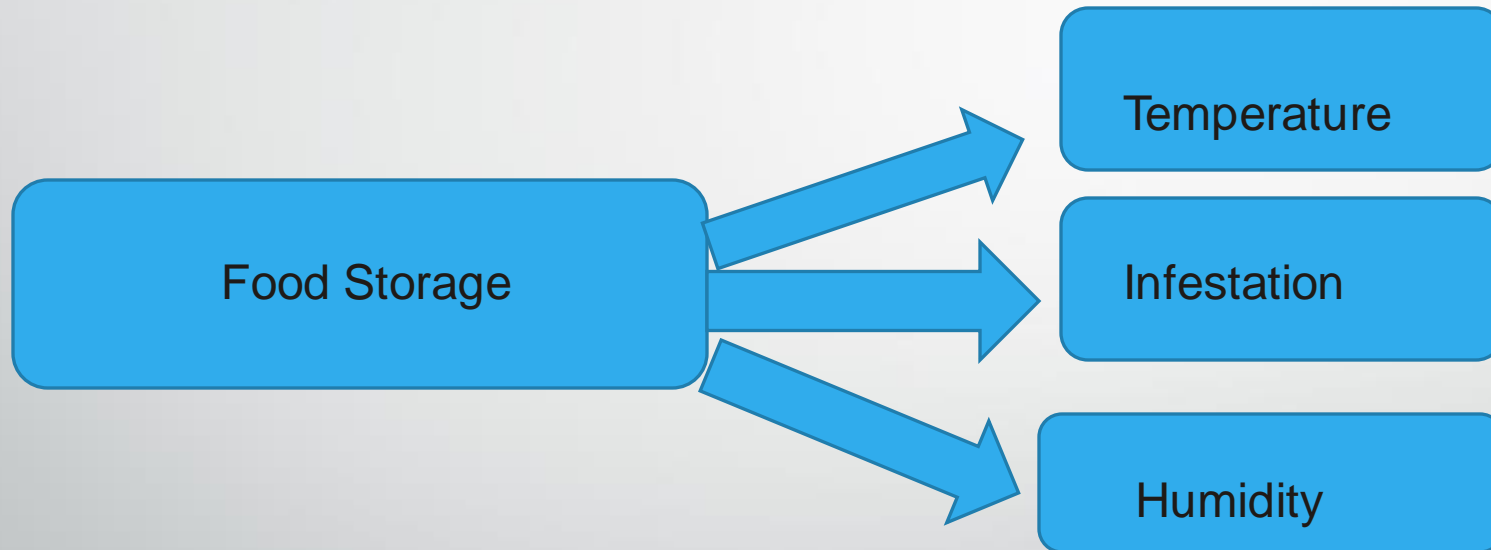
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- when receiving food materials to safeguard against health hazards from entering the production cycle.
  - In general, the handling of perishable foods such as fresh meat, fish, poultry, milk and milk products, fruits and vegetables, should be minimal while receiving these items.
  - It is therefore advisable to check weights and packings and send them directly for use to preparation areas, to be utilised as quickly as possible.

- 
- In view of this, it is wise to arrange deliveries of perishables at frequent intervals to prevent any risk of contamination through excess handling, in the process of having to store them.
  - Other products after thoroughly examining for signs of contamination may be stored till required.

# Storage

- The different types of food materials used by an establishment need separate storage conditions for maintaining their wholesomeness and expected shelf life.
- This is because foods vary in their moisture content, acidity and temperatures according to which they become susceptible to spoilage or remain wholesome.
- Storage conditions therefore need to ensure that foods do not become hazardous to health while in storage.

# ***FACTORS IMPORTANT IN FOOD STORAGE***



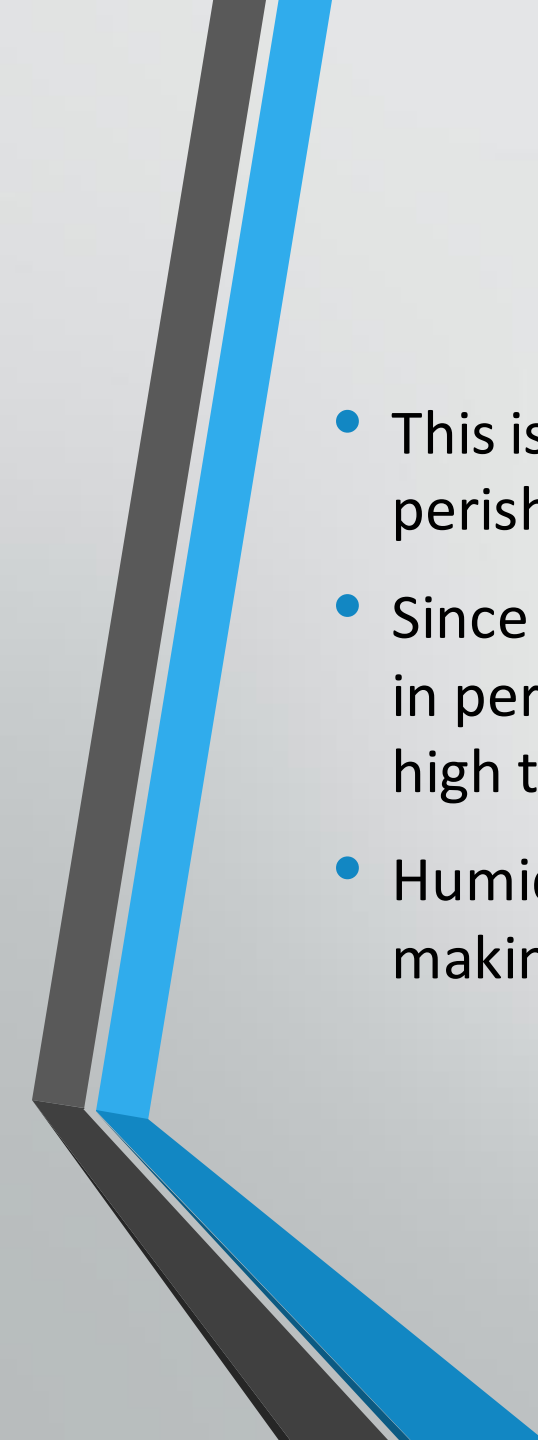
# *Temperature*

- The temperature to be maintained in a particular store will depend on the type of foods to be held and the period for which they have to be stored.
- In general, most bacteria are inactivated at freezing point *i.e.* 0°C and below.
- Between 1.7°C and 4.4°C they start becoming active but grow slowly.
- As the temperature rises the activity increases becoming optimum at 37°C which is the normal body temperature.



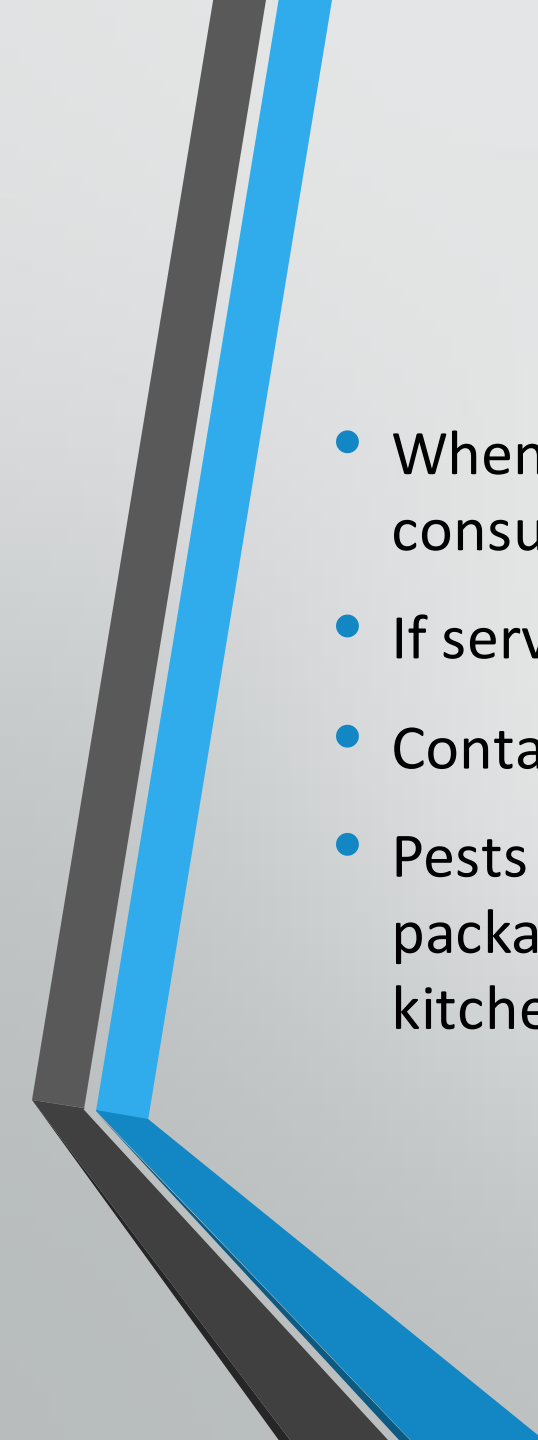
# *Humidity*

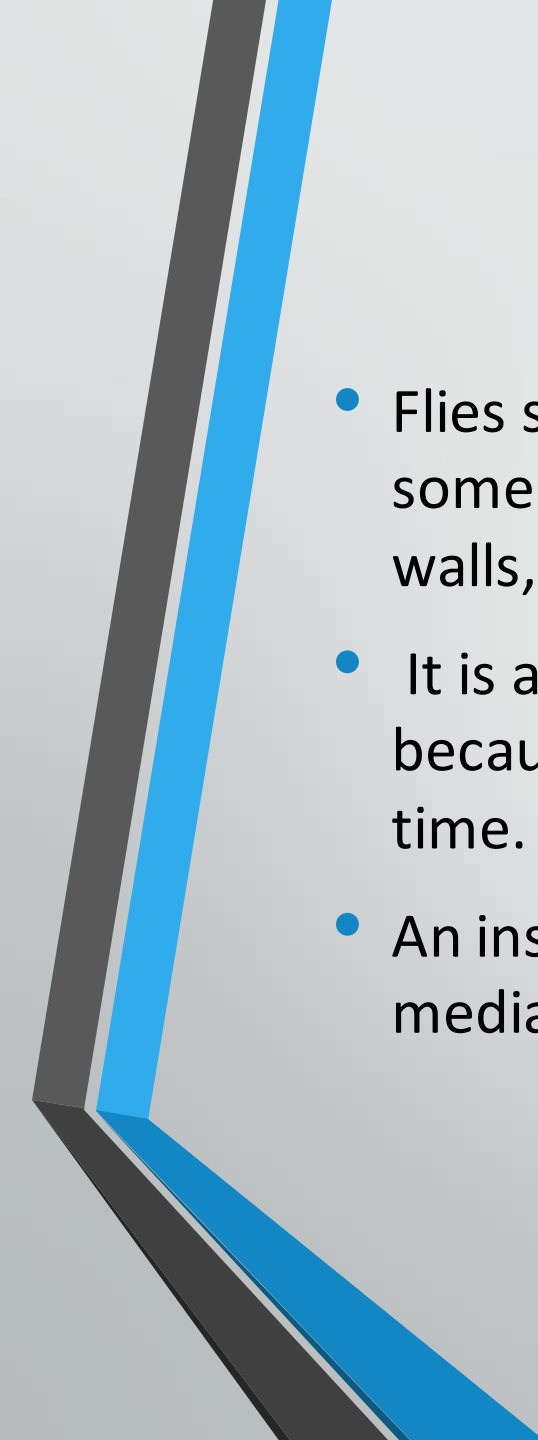
- The humidity in a room and thereby moisture content of the air around stored foods affects the rate of growth of various organisms.
- Foods that can be safely stored at higher temperatures are those which have a relatively low moisture content, like flours, sugar, spices, cereals, pulses and legumes.
- But these foods also have the ability to absorb moisture when exposed to it.
- In humid conditions of storage, therefore, and in the presence of air, microbial growth and insect infestation is prevalent.

- 
- This is due to the fact that when food absorbs moisture, it becomes more perishable and then requires a lower storage temperature.
  - Since the temperatures of dry storages cannot be changed with the change in perishability of foods, the existing temperatures become relatively too high to protect the foods against microbial attack.
  - Humidity also deteriorates the quality of foods through insect infestation making it relatively unfit for consumption.

# ***Infestation***

- The presence of infestation in or around a store can contaminate food in storage and make it unfit for human consumption, even though the principles of hygiene and sanitation may have been carefully adhered to in the preparation and service of the food.
- Of these, a substantial number of cases have been attributed to unsafe food, directly contaminated with microorganisms.
- Apart from these, the type of infestations due to the presence of insects, fleas, cockroaches, rodents, etc. are not uncommon.

- 
- When any of these pests come in contact with the food it becomes unfit for consumption.
  - If served to customers or consumed, it can lead to food poisoning.
  - Contamination by pests occurs through the droppings they leave behind.
  - Pests may find their way into food through defective drains, holes in food packages or bags, doors, and waste material storages outside or within kitchens.

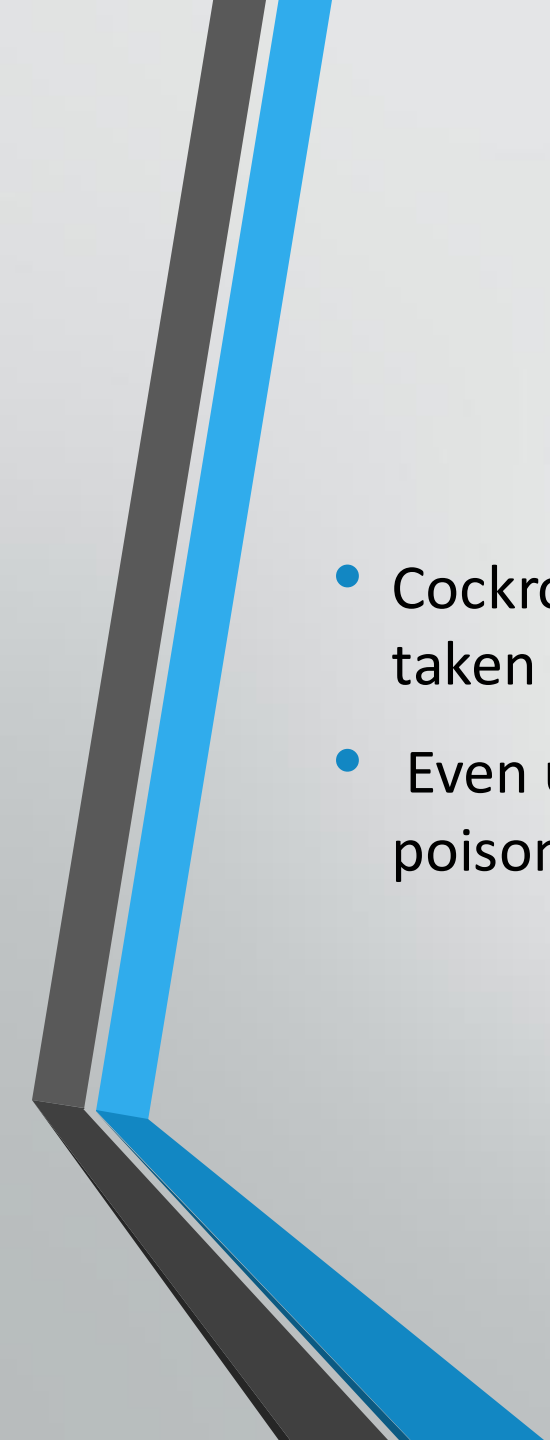
- 
- Flies settle on kitchen waste, in dustbins if they are not covered whereas some pests like cockroaches remain in dark, uncleaned corners, crevices of walls, backs of cupboards, under equipment and in drawers.
  - It is also difficult to locate a cockroach infestation unless it is very heavy, because cockroaches generally do not come out of their hideouts in the day time.
  - An inspection is therefore necessary at night. Plate 30.1 shows a collage of media reports indicating evidence of food poisoning.

# Prevention of Infestation

- Prevention of infestation is the most sensible approach for ensuring safe production and service of food.
- The general principle to adopt in any establishment is cleanliness.
- This can be practised best where there is enough light, proper ventilation and no overcrowding. In addition, surfaces, equipment design, method of work and people's habits play an important role in maintaining an environment free from dust, dirt, humid corners, etc.
- Which would harbour insects and attract rodents.

# Signs of Infestation

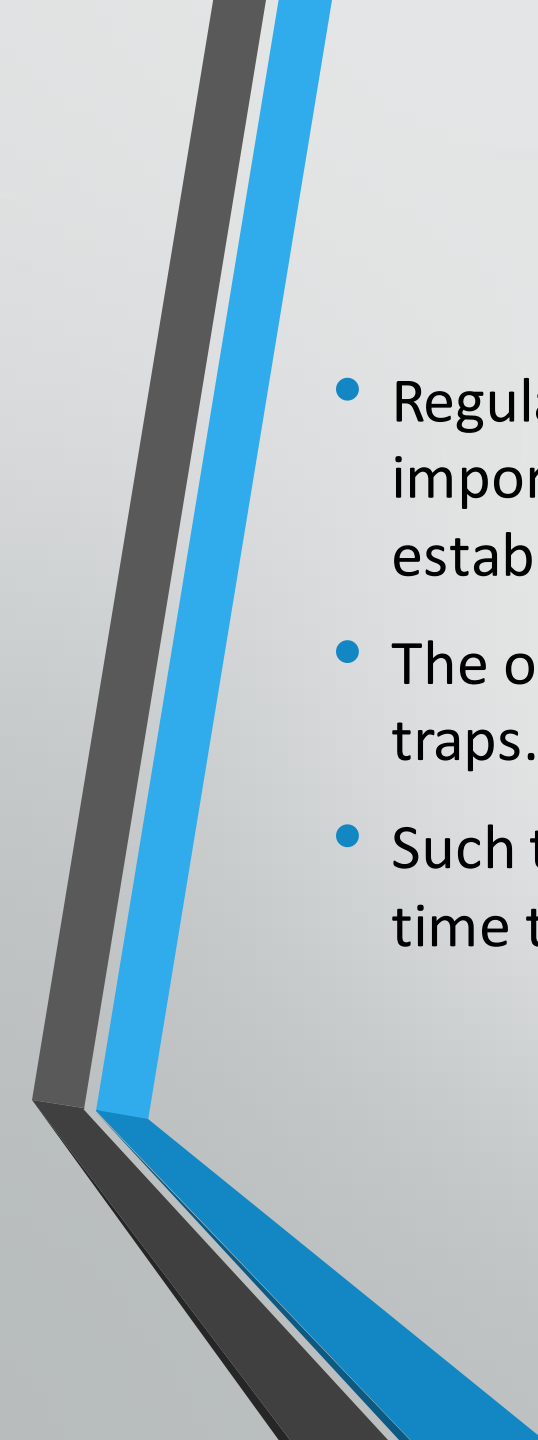
- Signs of the prevalence of an infestation vary with the type of pests.
- For instance, insects can be actually seen in certain foods such as cereal product like flour, rice, porridges and so on.
- Pulses and legumes may have holes in them indicating infestation.
- Sometimes grains can be seen to lump together in humid conditions, due to droppings in the food product.
- The odour of some foods change, sometimes being distinctly different at other times offensive.

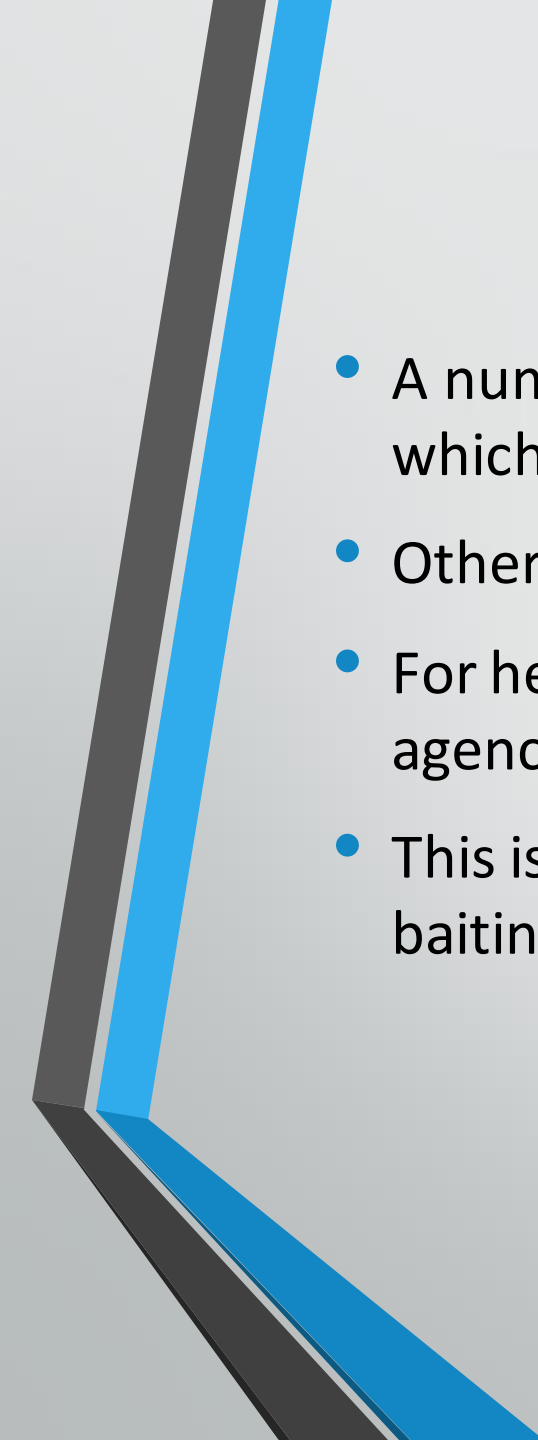
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- Cockroaches especially leave a persistent, objectionable smell which is easily taken on by equipment and food alike.
  - Even use of equipment which has been thus contaminated can cause food poisoning in spite of high temperatures used in the cooking of food.

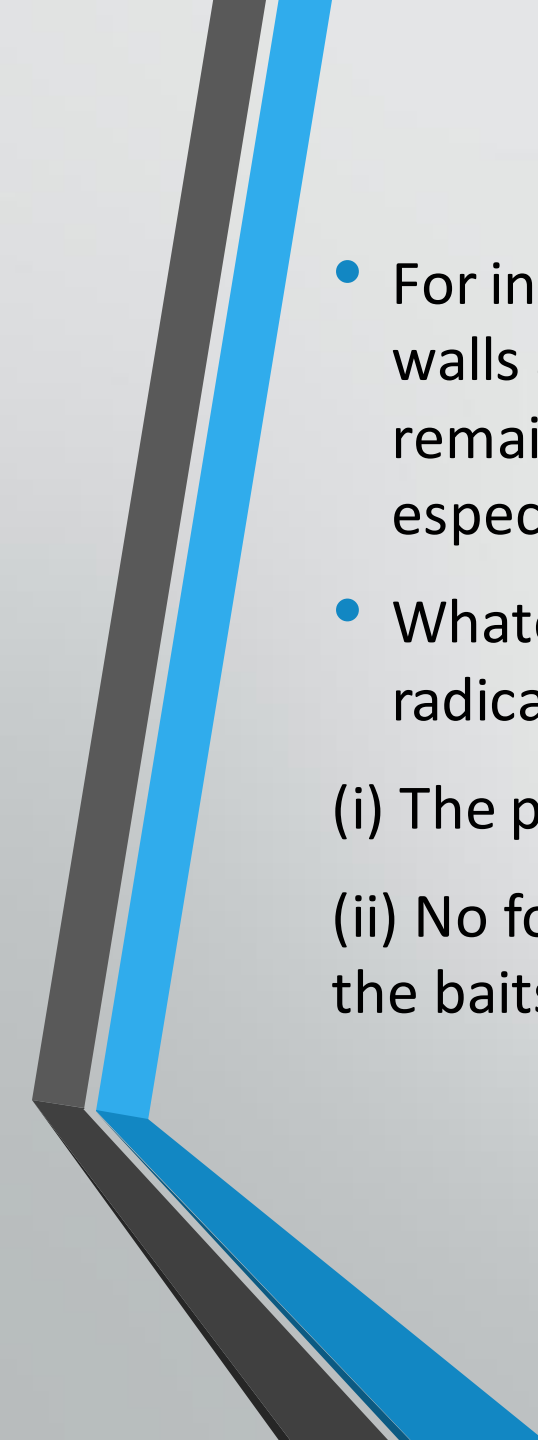


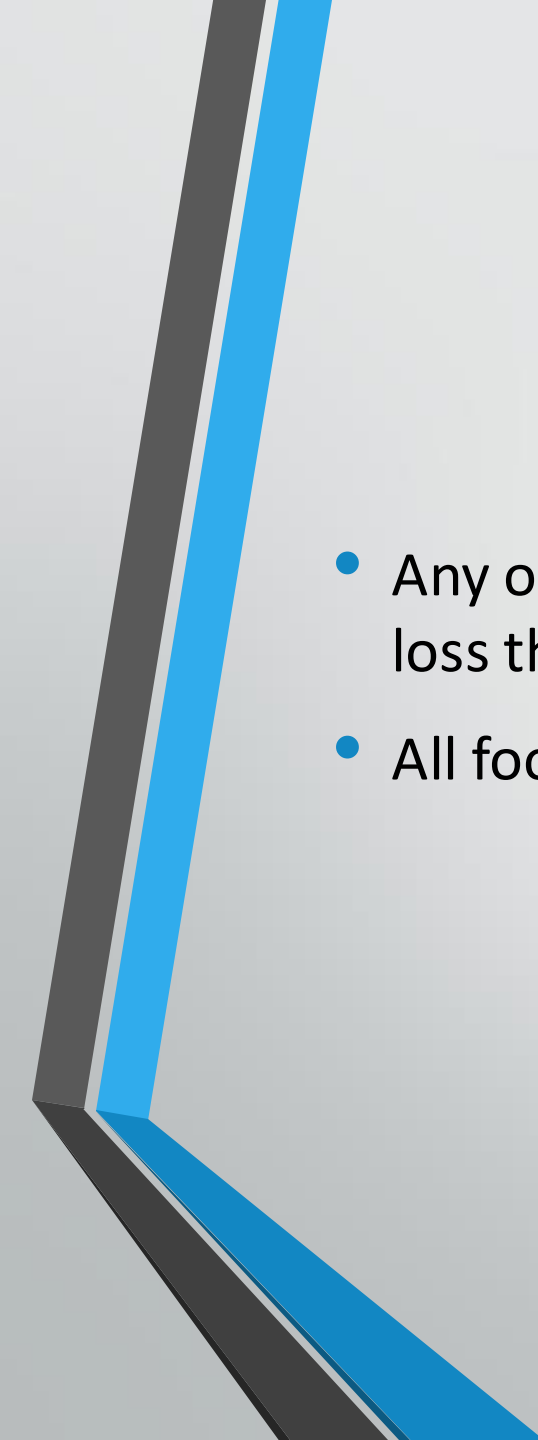
# Control of Infestation

- If an infestation is detected control measures must be taken immediately as insects and pests multiply very rapidly and are often not detected till they have reached dangerous proportions.
- The measures necessary vary with the type of pests.
- For rodents, all openings need to be sealed by covering with fine gauze.

- 
- Regular maintenance and cleanliness of areas surrounding the building is important, and any animal should be kept away from catering establishments.
  - The only way to get rid of a rodent infestation is to use poisoned baits or traps.
  - Such treatments have to be repeated at regular intervals for long periods of time till the infestation is completely eradicated.

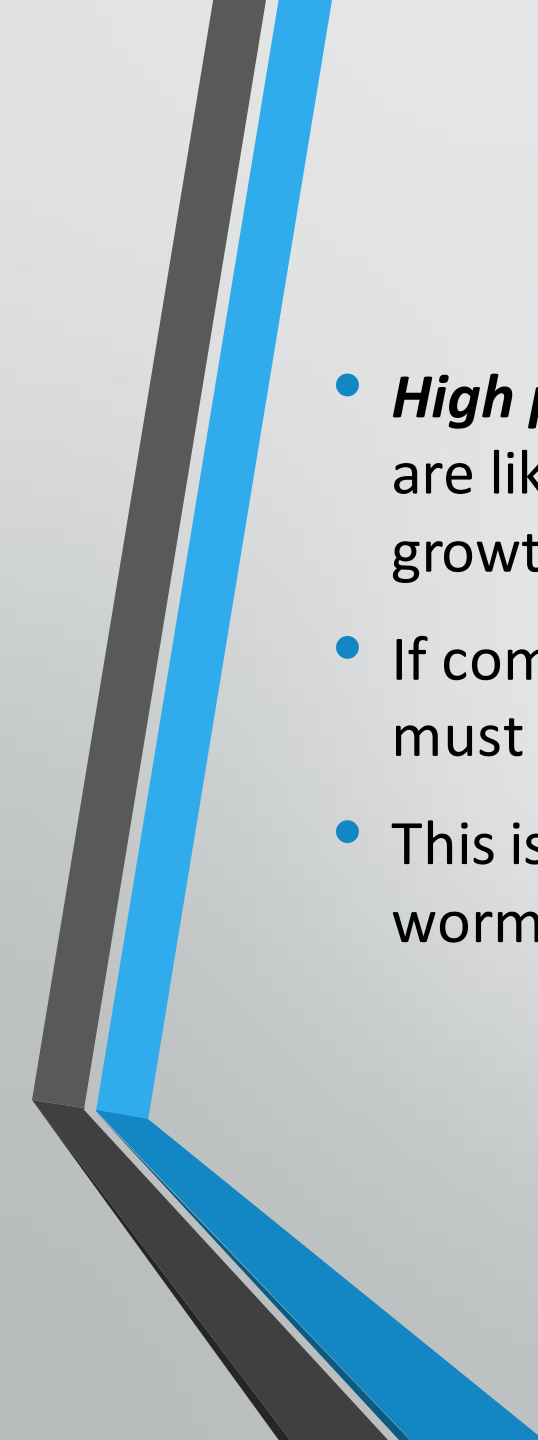
- 
- A number of different rodent poisons are marketed, the most popular of which is *Warfarin*.
  - Others containing zinc phosphide or arsenic are also formulated.
  - For heavy infestations it is desirable, however, to contract with pest control agencies to eradicate the rodents rather than buy and use the chemicals.
  - This is because the poisons are very harmful to people, and unless the baiting is done under strict supervision food can easily get contaminated.

- 
- For insect infestation sprays are available which leave an insecticidal film on walls and ceilings and prevent insects from settling on them. These films remain effective for 2–3 months and are useful for small establishments especially kiosks and roadside cafeterias, which are more prone to flies.
  - Whatever be the nature of an infestation, two factors to remember in eradication are:
    - (i) The process must not leave a single survivor.
    - (ii) No food handlers should be allowed to use the insecticide sprays or prepare the baits.

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- Any of these pests can cause serious food poisoning in addition to monetary loss through damage of foods.
  - All foods found infested must never be used for food production and service.

# Preparation

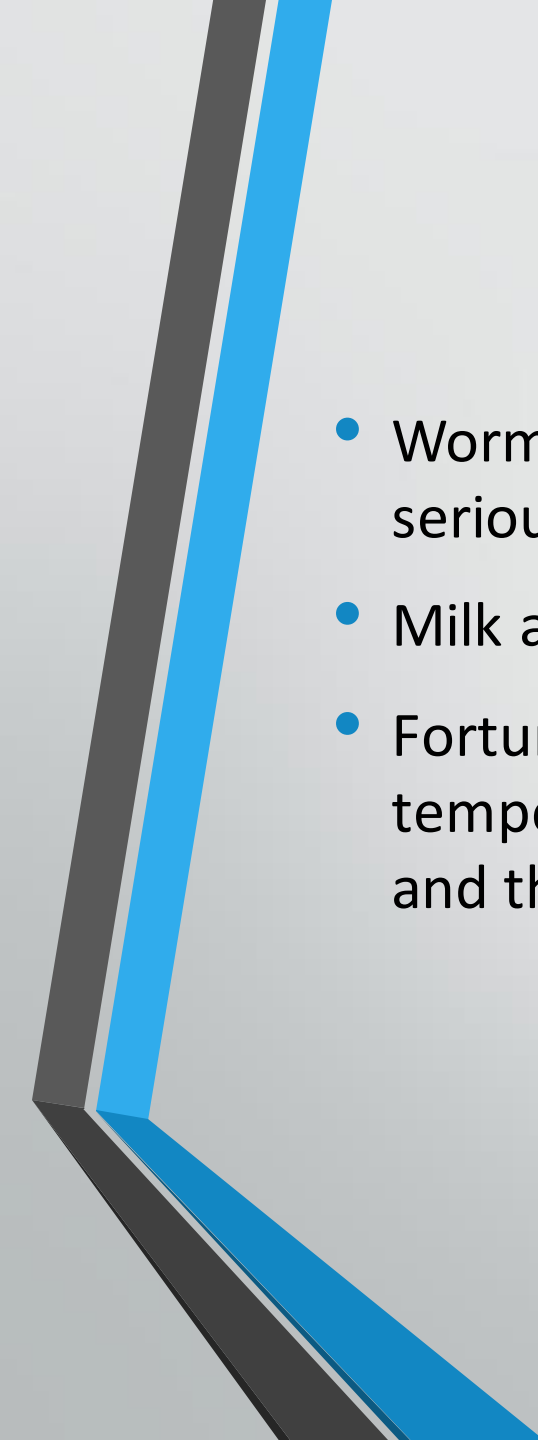
- Handling food at the stage of preparing for cooking is as important from the hygiene point of view as is receiving and storage.
- It is at this stage that contamination can take place easily even from one food to another, so every type of food requires special attention.
- ***Fresh fruits and vegetables***, especially roots and tubers which grow nearer the soil, need to be washed very thoroughly in plenty of water, to remove adhering soil or other particles.

- 
- ***High protein foods*** such as eggs, milk, meats must be kept separately as they are likely to take up microorganisms very fast, being excellent media for their growth.
  - If complete birds are being cleaned and prepared for cooking, the viscera must be removed and immediately sealed off for disposal.
  - This is because the intestines of birds and animals can be infested with worms or bacteria which can be passed on to other foods.

# Cooking

- Food should be cooked as quickly as possible after preparation, unless frozen for later use.
- Cooking meats requires high internal temperatures to make them safe for consumption. As a rule food should be served hot soon after preparation.
- Some customers who prefer their meats cooked rare or medium run a greater risk of infection.
- Pork, particularly, must be well done, more so in tropical countries where breeding of hogs for meat and manufacture of pork products, and quick freezing technology for their safe treatment, storage and transportation is still being developed.



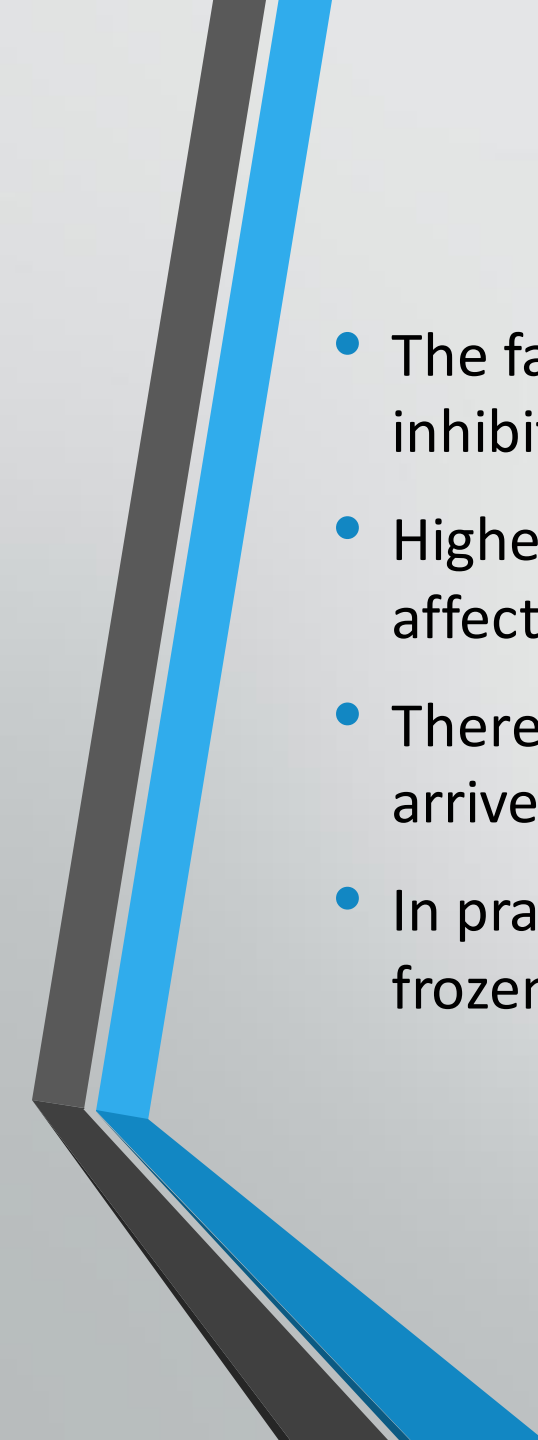
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- Worm infections can be passed on through improperly prepared pork with serious effects on the digestive and nervous systems.
  - Milk and milk products too are hazards to health if not handled properly.
  - Fortunately, viable bacteria are destroyed by pasteurization and cooking temperatures (70°C and above), but bacterial spores may survive cooking and then grow if cooked food is not stored correctly.

# Holding

- In most food service establishments cooked food needs to be held for sometime before it can be served, as all customers do not come at the same time.
- Also because of larger quantities involved, food has to be prepared and kept ready in advance for display and service when demanded.

# Safe Zones

- Holding temperatures for foods must therefore be carefully watched to prevent them from coming within the *danger zones* of 10°C to 62°C, as microorganisms multiply very rapidly at various temperatures depending on the nature of the foods.
- A holding temperature of 59°C for all cooked food is safe.
- This is because in all Indian cooking some amount of fat and oil is used in addition to acids through use of tomatoes, vinegar, curds and spices.

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- The fats limit contact of food with air while the acids bring down the pH, inhibiting microbial activity.
  - Higher holding temperatures than necessary, are not advisable because they affect the quality of the food.
  - Therefore temperatures that will maintain both quality and safety have to be arrived at for each kind of food.
  - In practice, hot foods should be held above 63°C; cold foods below 10°C and frozen food below 0°C.

# Serving

- While serving food, care is necessary to ensure that all serving equipment is clean, and the server is not in any way contaminating the food.
- All tableware must also be kept clean at all times, washing in enough hot water with a detergent to ensure that microorganic load is minimized after use.
- Where sterilisation is possible as in the use of dishwashing machines, the expense is worth it in terms of hygiene.

# Clearing Up

- While clearing up is not a very interesting activity, it is a vital part of serving food as far as hygiene and sanitation are concerned.
- This activity has the greatest potential for spreading infection.
- Care is therefore necessary in the removal of used and unused plates from tables.
- A system in which different people remove used and unused items and dishes from the table while clearing up, minimizes the chances of cross-contamination of food.
- All plate waste should be emptied into covered pedal bins

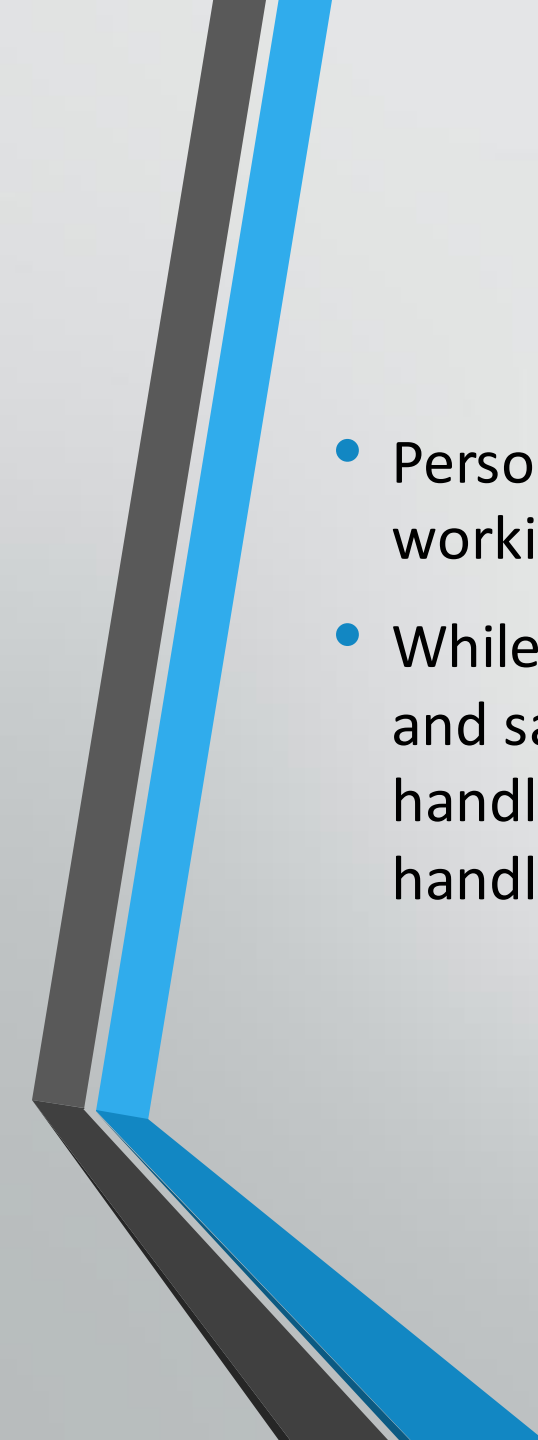
# Disposal

- All table wastes should be emptied into the garbage collection bin placed covered outside kitchens; or in leakproof sealed polythene bags.
- These can then be removed from the premises by the municipal authorities and burnt in an incinerator away from the establishment.
- Methods of disposal depend also on the methods of service adopted by establishments.
- In the case of trolley service for meals or snacks, disposal arrangements are necessary at the site of service.
- In case of mobile catering, provision is necessary in the form of covered bins which can be placed outside the vans, where they park for service.
- In all cases waste food and raw or cooked materials should not be transported open through any spaces to safeguard the health of people doing the job or customers.



# **PERSONNEL HYGIENE**



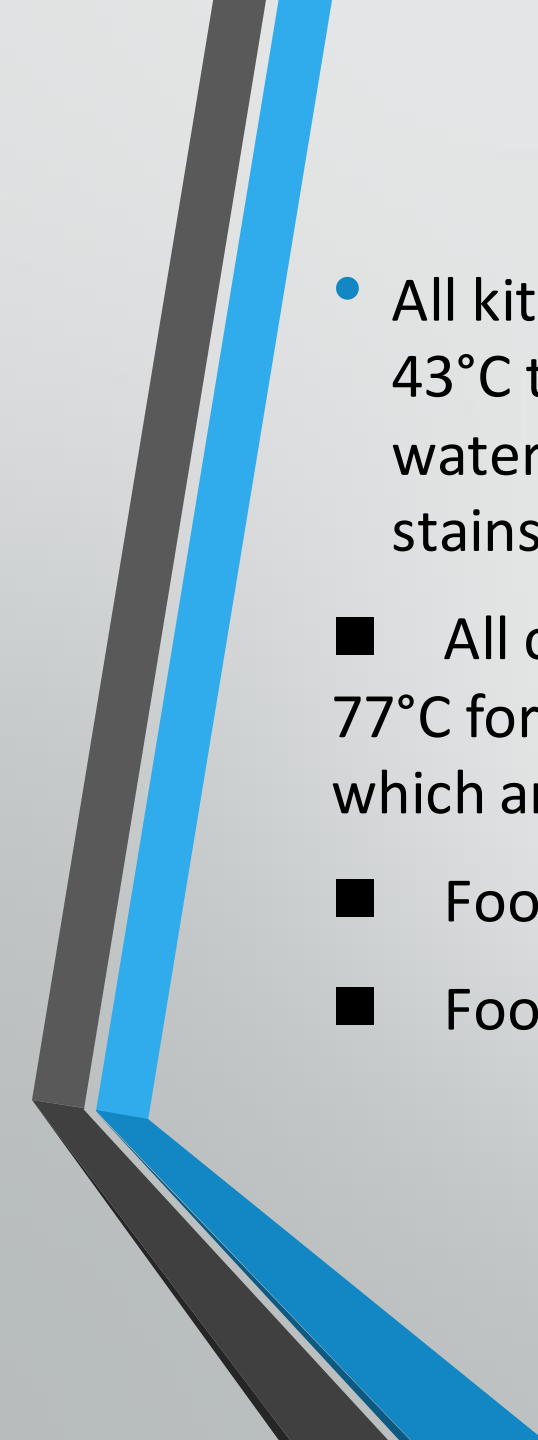
- 
- Personnel hygiene refers to the general health, personal grooming and working habits of all people who work in a food service establishment.
  - While it is important to adopt regular procedures for maintaining the hygiene and sanitation of the environment and the processes through which food is handled in any establishment, all these efforts would be in vain if the staff handling the food are the cause of the contamination.

To safeguard this a few general rules will act as a guide, which all persons handling food should

follow strictly:

- All staff reporting on duty must be fresh, well groomed and clean, not half asleep, or unkempt in appearance.
- They must change into fresh, clean overalls and those working in kitchens and service areas should wear head covers to protect food from loose hair falling into it.
- Fingernails should be short and clean, with no nail lacquers.
- Hands should be washed well with soap before starting work and after using toilets. Extra care is necessary to clean nails properly.
- All cuts must be covered with waterproof dressings.


- Infection is easily transferred from hair, nose and mouth, therefore:
  - combs should be kept out of kitchens.
  - spitting or smoking in the kitchen or service areas should be strictly prohibited.
  - when sneezing, while handling food, the face should be turned away from food and a handkerchief or tissue used.
  - People with colds, sore throat, boils, diarrhoea or any other gastrointestinal disorder, should not handle food.
  - Leaning or sitting on the work table is an objectionable habit.
  - All peels, etc. should be thrown into a covered container and not kept lying around on the work table near the prepared food. The containers should be emptied into covered bins as soon as the work is done.

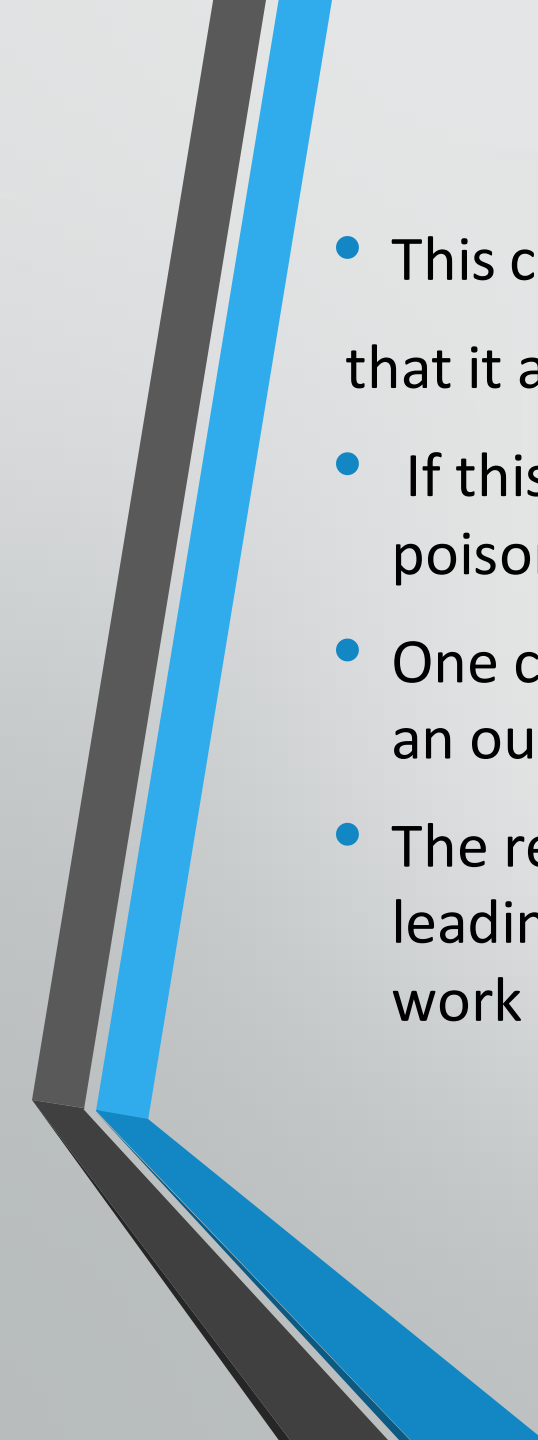
- 
- All kitchen cloths and equipment must be washed in hot water preferably at 43°C to 45°C with a suitable detergent. A grease layer on the surface of the water means the detergent is not enough to be effective. Ensure that all stains are removed from equipment and cloths.
  - All crockery and cutlery should preferably be immersed in hot water at 77°C for over two minutes, and then air dried, to prevent contact with clothes which are often used for wiping these dry.
  - Food should be kept covered and maintained either ice-cold or piping hot.
  - Food must be handled as little as possible.

# CODE FOR FOOD HANDLERS

An eleven-point code is suggested for everyone handling food at any point in the production and food service cycle.

1. Always wash hands before touching food.
2. Always wash hands after using toilets or other facilities.
3. Cover cuts and bruises with water-proof dressings.
4. Wear clean working clothes.
5. Never smoke in kitchens or food service areas.

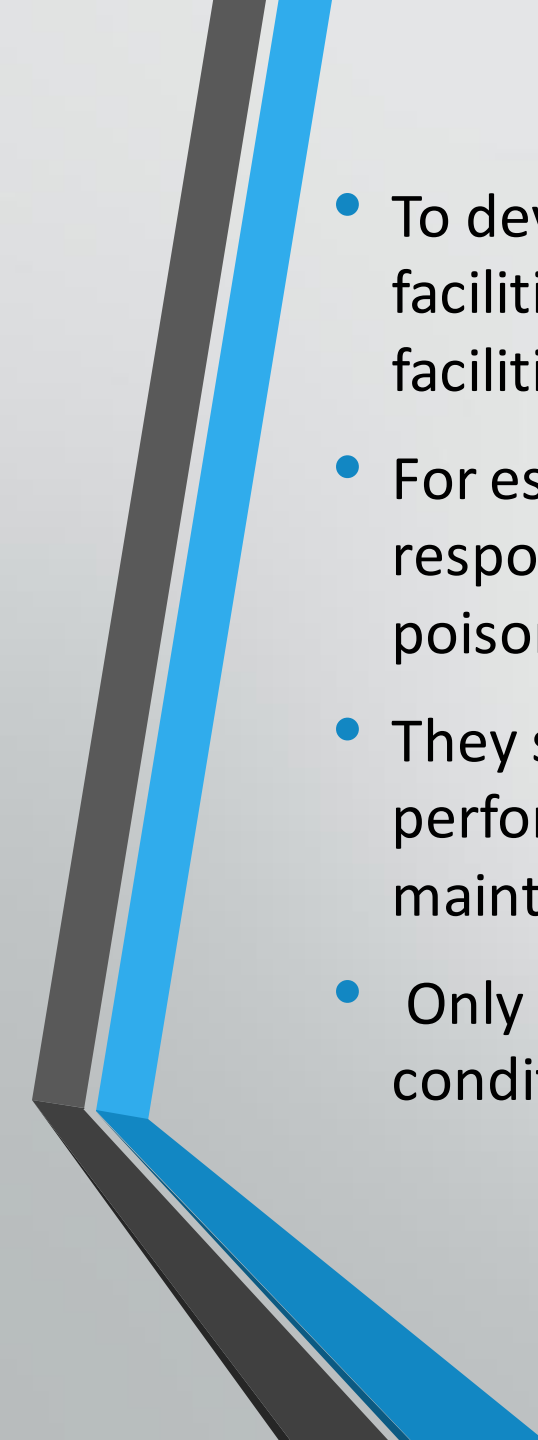
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6. Do not sneeze or cough over food.
  7. Keep kitchen and utensils clean at all times.
  8. Keep all food clean, covered and at safe temperatures.
  9. Handle food as little as possible.
  10. Keep hands off hair, nose, eyes while working with food.
  11. Keep dust and waste bins covered.

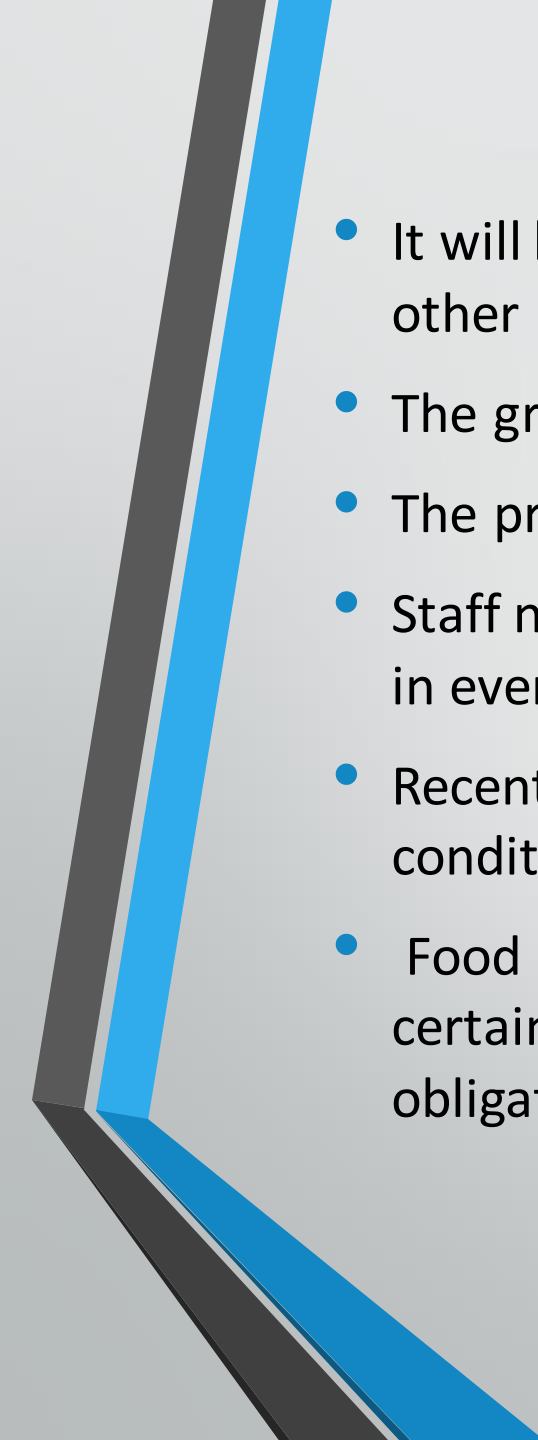
- 
- This code should be written out in bold letters and pasted in every area so that it acts as a reminder for every worker to follow.
  - If this is not implemented strictly, there is always the lurking danger of food poisoning for all who partake food.
  - One careless slip by a food handler in an otherwise perfect kitchen can cause an outbreak of poisoning.
  - The results are detrimental not only to the reputation of an organization leading to drop in customers, but also to productivity, if staff have to be off work due to illness, and thereby profits.

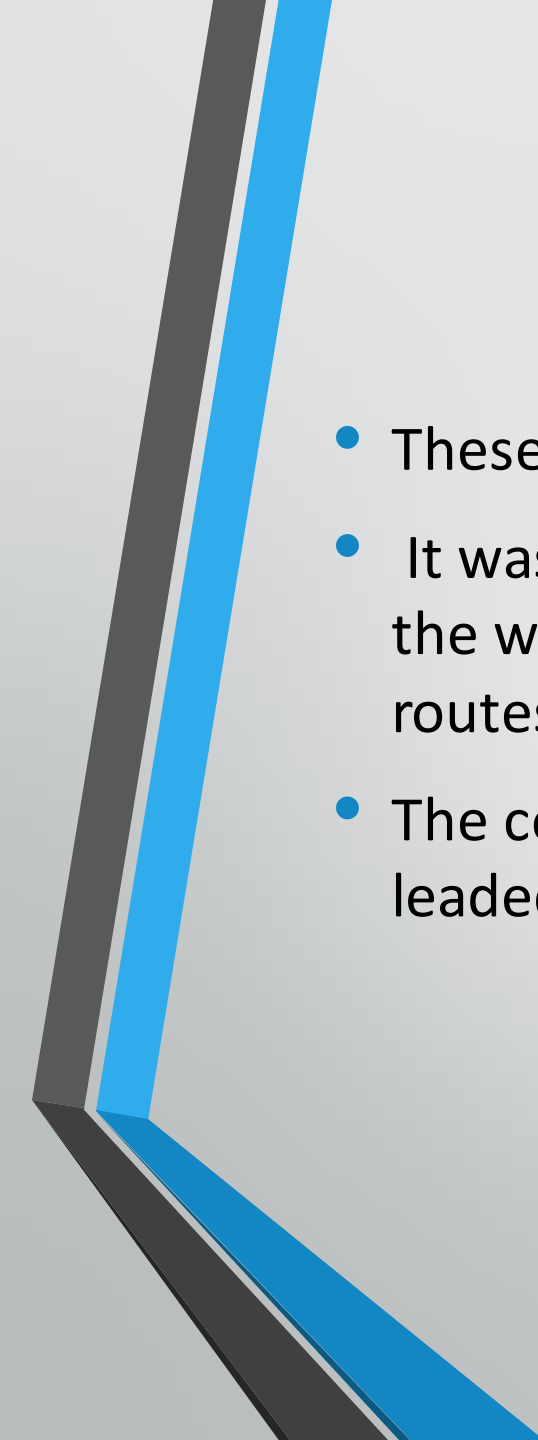
# FOOD POISONING OUTBREAKS

- Food poisoning outbreaks can be caused just by lack of proper supervision and training in personnel hygiene.
- Besides inculcating hygienic habits, all catering staff need to be periodically put through a medical check-up to ensure that they are not suffering from worms, T.B. and skin or other infections that can be transmitted.



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- To develop the hygiene habit it is also necessary to provide flyproof toilet facilities; clean water, antiseptic or germicidal soap, towels and hand washing facilities.
  - For establishing and maintaining a food service free of harmful agents, those responsible for the health of others must have knowledge of how food poisoning is caused.
  - They should also be able to convey the same to the staff handling food and performing related activities of washing up, storing leftovers, cleaning and maintaining the premises and so on.
  - Only then will every person involved, be able to detect unhealthy or risky conditions and take necessary preventive action.

- 
- It will be noticed from the table that food poisoning may be caused by bacteria and other microorganisms in foods, and occasionally by chemical contaminants.
  - The growth of bacteria can be slowed down or stopped by cold conditions.
  - The practice of hygiene and sanitation requires vigilance in all areas of food service.
  - Staff need to be trained so as to develop an awareness of the hazards that can occur in every possible situation.
  - Recent years have seen a growing concern in countries like India, about the conditions in which food is prepared and served.
  - Food hygiene regulations place a heavy responsibility on every caterer to maintain certain standards, expecting him to fulfil not only moral and social but also legal obligations

- 
- These are usually degraded products of lead added to petrol.
  - It was however interesting to note that the vineyards in which the grapes for the wine were grown were situated at the junction of two heavily used auto routes.
  - The concentration of lead in wines followed the consumption pattern of leaded petrol.

<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
PEOPLE Carriers	People can be carriers of pathogenic microorganisms without themselves showing any symptoms of communicable disease. Transmitted through hands, breath, etc. to food.	Vomiting, diarrhoea, giddiness and even fevers, typhoid
Infected persons	Same as for (i) except through persons actually suffering from infections. Showing signs and symptoms.	As for (i)

<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
FOOD (i) <i>Bacterial infections</i>	Pathogenic strains transmitted through poor sanitary conditions in which water supply gets contaminated with sewage, etc. Also passed on to food through human excreta when hands are not washed well before touching food.	
a) <i>Salmonella</i> organisms	Insanitary conditions and habits of food handlers. Infection transmitted through food.	Enteric fevers which occur endemically.

<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
(b) <i>Staphylococcus aureus</i>	Toxin causing poisoning through aureus stale custards, cream filled baked goods, meat, poultry, gravies, sauces with cream, sandwiches and dairy products	Nausea, vomiting, diarrhoea, sweating cold extremities, abdominal cramps.
(c) <i>Clostridium perfringens</i>	Toxins through poorly cooked meats, fish, poultry.	Nausea, abdominal pain and diarrhoea.
(d) <i>Salmonella</i> bacteria	Infections through meat products, warmed up leftovers, salads, meat pies, etc.	Abdominal pain with fever, shivering, headache.

<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
FOOD (i) <i>Bacterial infections</i>	Pathogenic strains transmitted through poor sanitary conditions in which water supply gets contaminated with sewage, etc. Also passed on to food through human excreta when hands are not washed well before touching food.	
a) <i>Salmonella</i> organisms	Insanitary conditions and habits of food handlers. Infection transmitted through food.	Enteric fevers which occur endemically.

<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
(b) <i>Shigella</i> microorganisms	In tropical climates, passed through flies feeding on excreta and then settling on food. Transmitted also through poor hygiene of people handling food.	Dysentery.
(c) <i>Streptococcal</i> infections	Hemolytic strains and others spread through milk and milk products, contaminated drinking water.	Diarrhoea and other gastric disturbances.



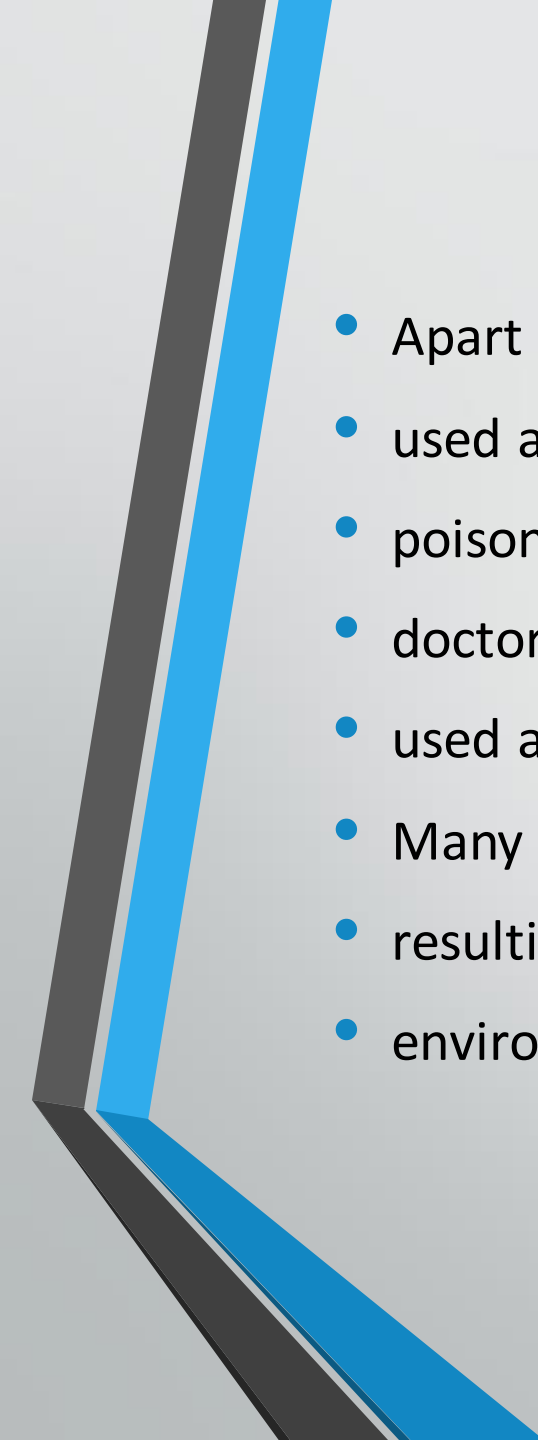
<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>	<i>Agent</i>
(ii) <i>Spirocheates</i> (a) <i>Leptospiraicterohaemorrhagiae</i>	Transmitted by rodents, skin and mucous membranes.	Hepatitis.	(ii) <i>Spirocheates</i> (a) <i>Leptospiraicterohaemorrhagiae</i>
(iii) Worms (a) <i>Taenia solium</i> (b) <i>Taenia saginata</i>	Infested pork.  Through meat infested with tapeworm.	Form cysts in the brain.  Loss of appetite, palor, weakness.	(iii) Worms (a) <i>Taenia solium</i> (b) <i>Taenia saginata</i>
(c) <i>Diphyllobothrium latum</i>  (d) <i>Ascaris lumbricoides</i> . (roundworm)	Through sea fish.  Through people, food and water.	Results in Vitamin B <sub>12</sub> deficiency.  Abdominal pain, palor, cramps	(c) <i>Diphyllobothrium latum</i>  (d) <i>Ascaris lumbricoides</i> . (roundworm)

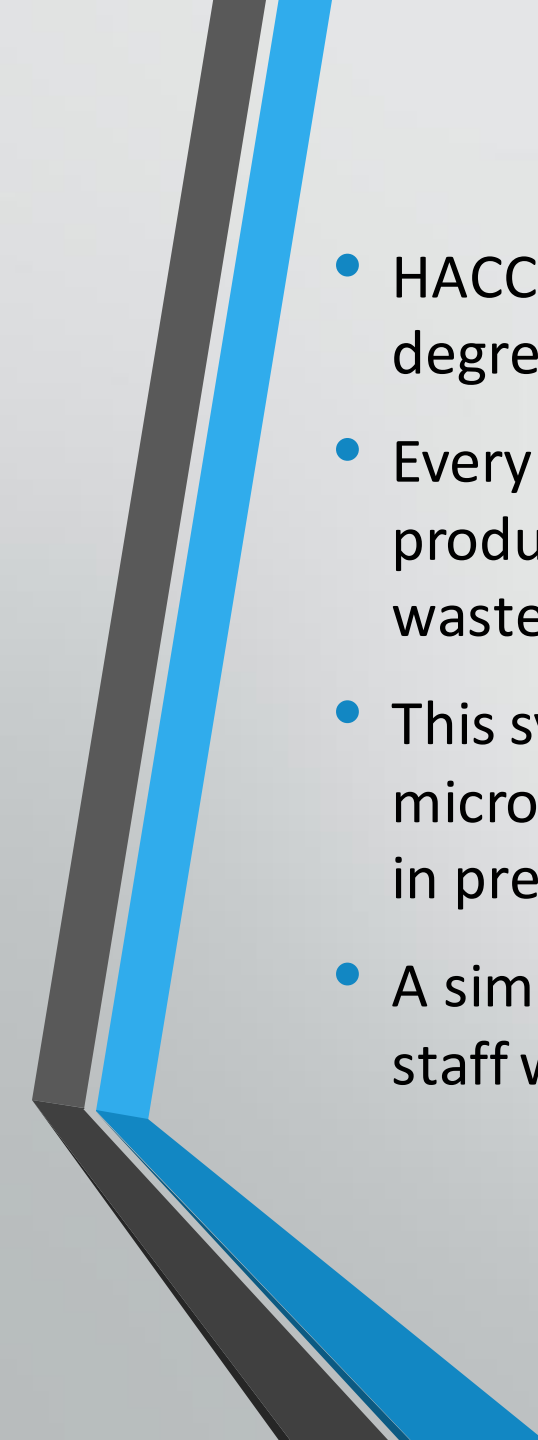
<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
(e) <i>Trichinella spiralis</i>	Fine worm transmitted through infested pork meat and its products.	Nervous system gets affected, sweating, acute pains, loss of appetite, may also lead to severe conjunctivitis.
(f) Threadworms	Through food infected with human faeces. Generally infects the lower bowel.	Anal irritation.
(iv) Viral infections	In areas of poor sanitation, therefore a serious health hazard in under-developed countries.	Yellow fever, hepatitis or viral jaundice.

<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
AIR (i) Yeasts	Through air causing fermentation in foods, giving them a sour taste, and fermented odour.	Acidity and gastric disorders.
(ii) Droplet infections	Through sneezing, coughing, speaking loudly or shouting.	Cholera, typhoid, fevers, etc.
(iii) Molds	Through air and moulds settling on moist foods like fruits, breads, on foods. etc.	Fuzzy, cotton-like appearance Causes gastrointestinal disturbances.

<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
<p>WATER</p> <p>(i) Viruses</p>	Through water polluted with sewage, the viruses, however,, only multiply in living cells and not in food.	Varied symptoms—hepatitis, polio, infections etc.
(ii) Protozoa	Through water in insanitary conditions. Becomes active only in the intestinal tract.	Amoebic dysentery and other intestinal disorders.
<p>CHEMICALS</p> <p>Antimony, arsenic, lead, zinc, cadmium (from enameled utensils)</p>	Chipping of coatings on equipment into food, careless use of rat and insect powders, insecticidal sprays, storage of detergents or insecticides near foods like starches, flours, baking soda, etc. which can be mistaken for food. Pollution through wines.	Diarrhoea and digestive disorders.

<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
<b>NATURAL TOXINS</b> In plants or plant products, sea foods (mussels, clams, poisonous alkaloid)	Foods of toxic varieties like mushrooms, rhubarb, greens, snake root, etc. Some fish develop poisons during breeding seasons.	Gastrointestinal symptoms, enteric fevers, allergies.
<b>FOOD ADDITIVES</b> In all processed foods.	Soft drinks, canned and dehydrated foods, spices, cereal products.	Long term effects on health, additives having different effects.

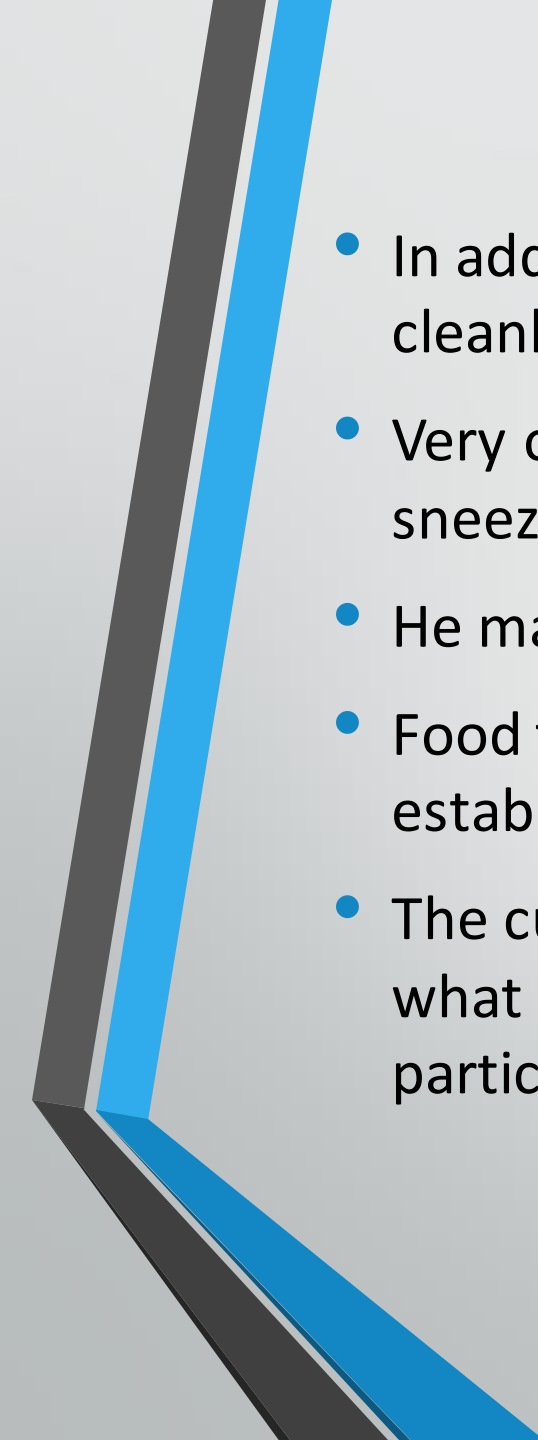
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- Apart from cases of unintentional chemical poisoning, food has often been
  - used as an easy vehicle for intentional adulteration with the objective of
  - poisoning consumers. A classic case was reported in 1941 of poisoning among
  - doctors eating conference lunches supplied to them in Pune. The food was
  - used as a sabotage tool or for political mileage. As usual no evidence was found.
  - Many cases of food poisoning in epidemic form are reported from time to time
  - resulting from careless handling of food or unhygienic food production
  - environment and eating habits.

- 
- HACCP has thus evolved as a management technique for achieving higher degree of assurance on food safety.
  - Every manager therefore needs to, identify their CCP's throughout the food production cycle followed in their establishments right from receiving to waste management.
  - This system provides immediate feedback from the chef in contrast to microbiological testing, the results of which are too late for the actual meal in preparation.
  - A similar system devised for Indian conditions by food managers and their staff will prove a very useful tool in preventing outbreaks of food poisoning.

# THE CUSTOMER'S ROLE

- The customer's own perceptions of hygiene both personal and environmental to a large extent affect the food service environment as far as hygiene and sanitary practices are concerned.
- It is his expectations and demands that a food service
- will strive to fulfil.



- 
- In addition the customer's own eating habits and behaviour will affect the cleanliness, hygiene and sanitation status of his eating environment.
  - Very often a customer may be the cause of infection to food when he is sneezing, or coughing while eating.
  - He may also be a carrier of infection.
  - Food therefore should be well covered and guarded by screens especially in establishments offering self services to customers.
  - The customer therefore, has a prominent and crucial role to play in terms of what food quality and service he accepts from others, when he chooses a particular food service for meals.



# FOOD SAFETY

## **SAFETY**

- Safety implies a concern for providing conditions at work, which will protect
- people from infection, injury and theft.
- It also includes the protection of premises, equipment and food resources from infestation, damage and destruction providing premises and people with a sense of safety and security.
- Safety may be viewed basically from three angles namely, physical, mental and emotional, and the third and most important to a food service institution is food safety.

## Physical Safety

- This refers to the safety of buildings with respect to being designed in a structurally sound manner so as to withstand natural as well as man-created stress, which the catering environment imposes, by rough and often overuse.
- It is needless to add that a safe and secure environment motivates people to work more efficiently, while providing a harmonious environment for customers as well.
- Physical safety can only be ensured if all members of an establishment are aware of the causes of accidents and work towards preventing them.
- Every establishment therefore, needs to develop a safety and security policy which ensures protection to property, equipment, materials and people within the establishment at all times, whether staff or customers.

## Causes of accidents

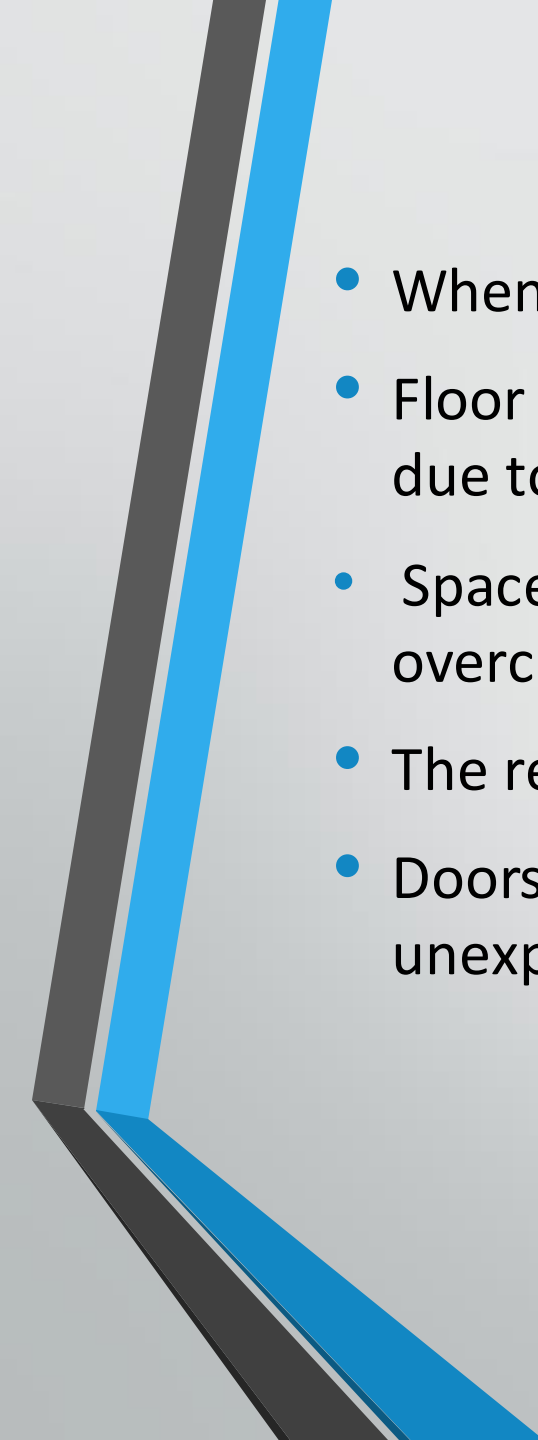
- While attention to safety is important in all areas of an establishment, the one most vulnerable to accidents and therefore injuries is the kitchen.
- This is because it is the centre where a variety of fuels are used and a number of people with different mental and physical abilities work together.
- Besides, they handle large volumes of food often at steaming temperatures, lift heavy equipment, use sharp tools and often work under pressure especially during peak periods.
- Accidents may result from a number of causes leading to falls, cuts, shocks, burns and collision at work. These may be categorized as:
  - ❖ Physical
  - ❖ Psychological
  - ❖ Environmental

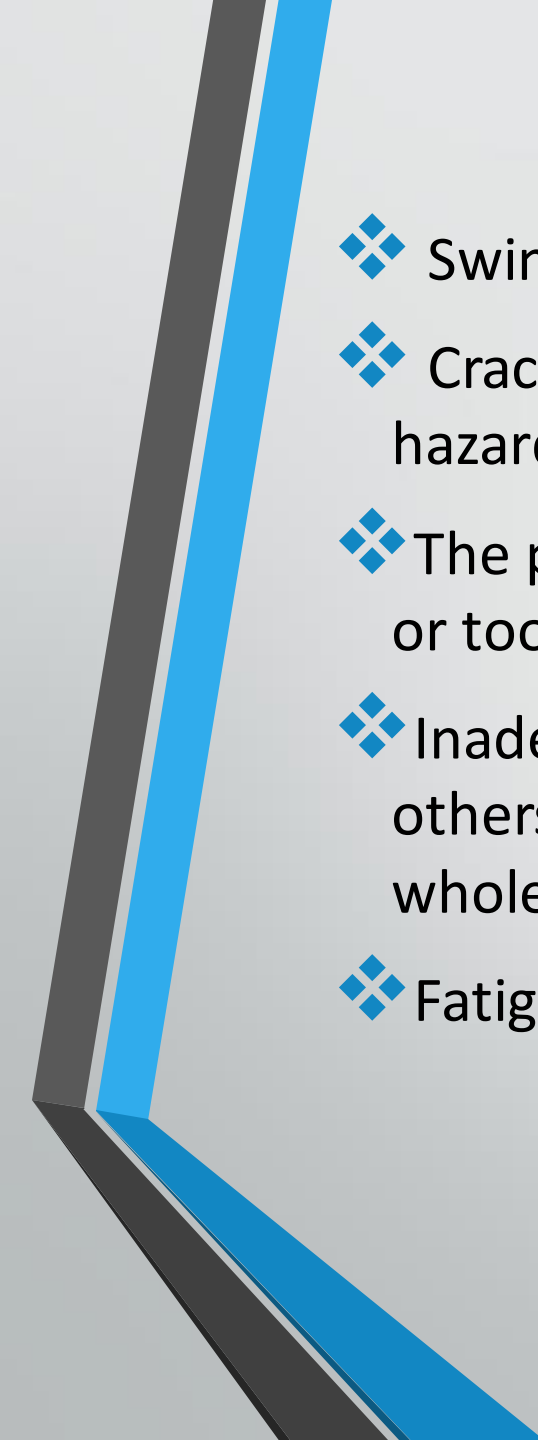
## Physical Causes

- These include the presence of inadequacies in the structural design of the establishment, improper installation and placement of equipment and related physical facilities

## *Structural Inadequacies*

- All structural designing should aim at a smooth work flow in every area of an establishment.
- Accidents generally occur when this cannot be maintained for some reasons, or when due to negligence safety factors are overlooked in the design of the establishment.
- Given below are some of these factors which can jeopardize safety at work:
  - The presence of blind corners or cross-traffic aisles increasing the chances of accidents by collision.

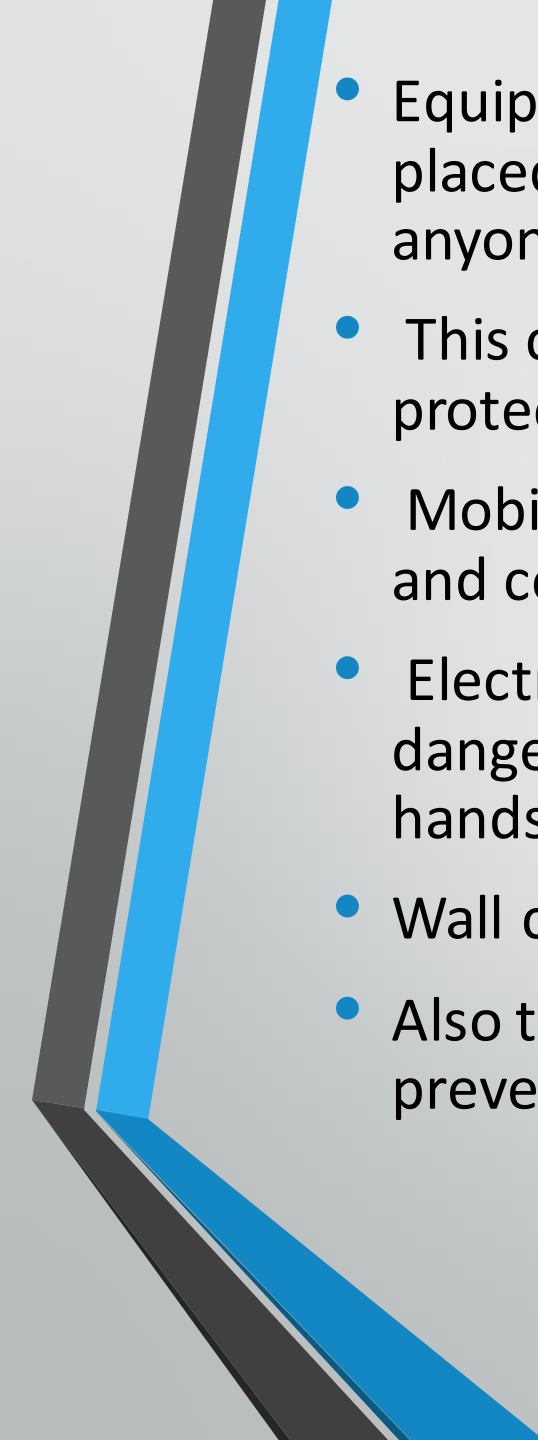
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- When the level of floors is uneven, causing people to trip and fall.
  - Floor coverings not fixed properly provide crevices and cracks causing falls due to tripping. Too smooth or shiny a flooring can also cause slips.
  - Spaces too small for the activities to be performed in them, lead to overcrowding, noise and confusion, as well as physical and mental stress.
  - The results can be collision, injury through breakages and much more.
  - Doors opening on to work areas can hit people at work, if opened unexpectedly.

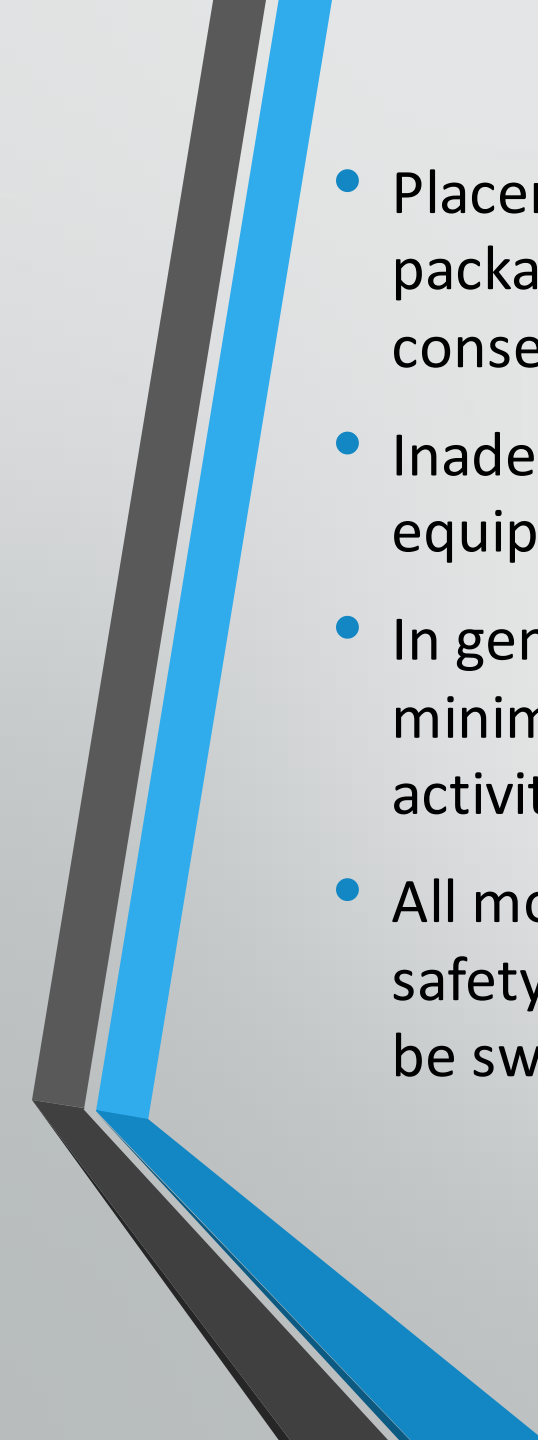
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- ❖ Swinging doors are particularly dangerous if opened too forcefully.
  - ❖ Cracked, chipped or broken window panes in work areas are a safety hazard.
  - ❖ The positioning of switches, electric or gas, are sometimes placed too high or too low in wall sockets for comfort.
  - ❖ Inadequate lighting may produce glare in certain areas and shadows in others affecting visibility and causing injuries, and compromising wholesomeness and quality of food.
  - ❖ Fatigue can also set in when spaces become congested or overcrowded.



## ***Improper Equipment Placement***

- Equipment placement in work areas is an aspect on which the manufacturers or suppliers of equipment do not advise the user.
- The following examples will throw some light on the placements that can become hazards at work:
  - An electric hot plate placed between two work tables can cause burns even when it is switched off, because the appearance of the plate when off, does not indicate it is hot. People can therefore, accidentally touch it.
  - This could be avoided if it was placed in a separate area only used for cooking, so that people only approached it for the purpose of using a hot plate.

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- Equipment with exposed sharp edges like chopping and slicing machines placed with their sharp edges towards a traffic aisle increases the chances of anyone placing their hand on it accidentally.
  - This can be avoided by placing the blade side in a manner, that it is protected by a wall.
  - Mobile equipment like trolleys placed in traffic lanes can cause congestion and collision.
  - Electric switches placed near sinks and on walls behind hot plates, are dangerous arrangements. They can lead people to touch switches with wet hands and suffer shocks; or be the source of fire in case of short circuiting.
  - Wall cupboards too close to cooking ranges can provide a grave risk of fire.
  - Also the floor space below cupboards must be fitted with a unit so as to prevent people from banging their heads against the cupboard.

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- Placement of mops, brooms, loosely placed cartons, crates and other packages in traffic areas cause obstruction to work, tripping, falls and consequent injuries.
  - Inadequate provision of and improperly placed fire fighting and other safety equipment, can cause delay in reacting to emergencies.
  - In general, the placement of equipment should allow a smooth work-flow, minimise cross traffic and provide adequate space around it for intended activities.
  - All motorised equipment should be sealed, pressure equipment must have safety valves, and all switches need to be labeled and located where they can be switched off by anyone in an emergency.

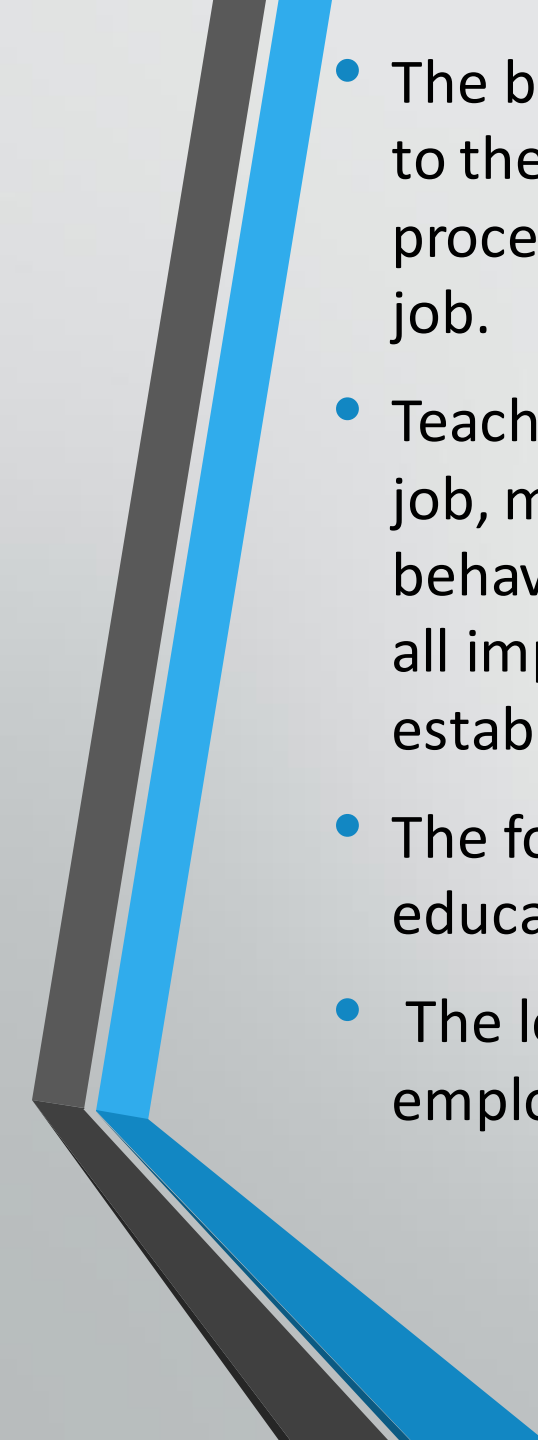


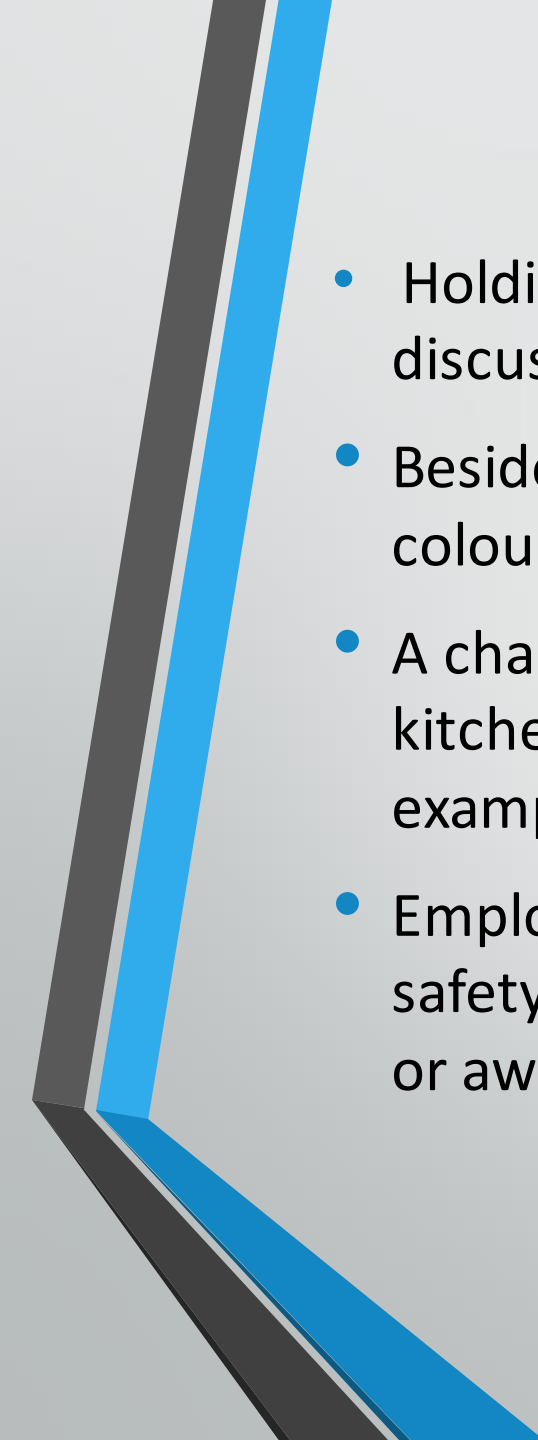
## **Mental and Emotional Safety**

- A food service establishment is people intensive and therefore it is of utmost importance to ensure their mental and emotional health.
- This feature enables all persons associated with the establishment for work or leisure to feel, safe, free from hazards and happy.
- In such conditions staff absenteeism and turnover too can be substantially reduced.

## ***Safety Education***

- Safety programmes and policies can only be effective if the staff are trained to think and act safely at work. For this, educating them in the following areas is necessary:
- Teaching safe methods, with particular emphasis on areas of potential dangers, and how these can be guarded against.
- Demonstrating the use of safety equipment installed in the establishment, and location and use of first aid material.
- Inculcating in people the ability to recognise the signs of hazards around them, in colleagues and equipment, e.g. a particularly tired person at work, or an unusual sound from an equipment, and so on.
- Teaching staff the legal implications of non-adherence to safety procedures.

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- The best time to start educating an employee in safety is during his induction to the establishment, so that every new employee is well versed in the safety procedures and policies of the establishment before he actually starts his job.
  - Teaching safe methods of performing different tasks particularly while on the job, making people aware of the dangers of careless and irresponsible behaviour at work, and the ways in which to tackle emergency situations, are all important to the safety of people at work, and the safety of the establishment.
  - The formation of safety committees has been found very effective in safety education, because of the participation of all staff in a department.
  - The legal and financial implications of accidents must be taught to all employees.

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- Holding audio visual sessions every week taking up certain issues for open discussion helps to make staff hear and think of safety.
  - Besides these general information on bulletin boards with illustrative colourful charts are a good way to remind people of safety
  - A change of these representing a weekly safety theme like accidents in kitchens may be put up for view and impact created by highlighting statistics, examples and methods of prevention.
  - Employees should be encouraged to come up with ideas for inculcating safety into methods, and best ideas should be put into practice and praised or awarded.