

Basics of Food Production

BLOCK 1: INTRODUCTION TO HOTEL KITCHEN



“
*Education is something
which ought to be
brought within
the reach of every one.*
”

- Dr. B. R. Ambedkar

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Basics of Food Production



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ROLE OF SELF INSTRUCTIONAL MATERIAL IN DISTANCE LEARNING

The need to plan effective instruction is imperative for a successful distance teaching repertoire. This is due to the fact that the instructional designer, the tutor, the author (s) and the student are often separated by distance and may never meet in person. This is an increasingly common scenario in distance education instruction. As much as possible, teaching by distance should stimulate the student's intellectual involvement and contain all the necessary learning instructional activities that are capable of guiding the student through the course objectives. Therefore, the course / self-instructional material are completely equipped with everything that the syllabus prescribes.

To ensure effective instruction, a number of instructional design ideas are used and these help students to acquire knowledge, intellectual skills, motor skills and necessary attitudinal changes. In this respect, students' assessment and course evaluation are incorporated in the text.

The nature of instructional activities used in distance education self-instructional materials depends on the domain of learning that they reinforce in the text, that is, the cognitive, psychomotor and affective. These are further interpreted in the acquisition of knowledge, intellectual skills and motor skills. Students may be encouraged to gain, apply and communicate (orally or in writing) the knowledge acquired. Intellectual-skills objectives may be met by designing instructions that make use of students' prior knowledge and experiences in the discourse as the foundation on which newly acquired knowledge is built.

The provision of exercises in the form of assignments, projects and tutorial feedback is necessary. Instructional activities that teach motor skills need to be graphically demonstrated and the correct practices provided during tutorials. Instructional activities for inculcating change in attitude and behavior should create interest and demonstrate need and benefits gained by adopting the required change. Information on the adoption and procedures for practice of new attitudes may then be introduced.

Teaching and learning at a distance eliminates interactive communication cues, such as pauses, intonation and gestures, associated with the face-to-face method of teaching. This is particularly so with the exclusive use of print media. Instructional activities built into the instructional repertoire provide this missing interaction between the student and the teacher. Therefore, the use of instructional activities to effect better distance teaching is not optional, but mandatory.

Our team of successful writers and authors has tried to reduce this divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self-instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)



PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included many tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect.

All the best for your studies from our team!

Basics of Food Production

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Dr. Babasaheb
Ambedkar
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BLOCK 1: INTRODUCTION TO HOTEL KITCHEN

Introduction to the Block

The hospitality industry today is a major contributor to the economic development of the nation and is one of the fastest growing sectors in the corporate world. It has witnessed tremendous advancements in terms of services provided and product designing, mainly due to the cutthroat competition prevalent in the sector. Hence, this particular industrial sector has become one of the most sought after ones by today's young employable workforce. This is mainly because of a vast scope of the industry owing to its wide diversity and a number of employable sectors.

In the hospitality industry, there are various departments for smooth functioning of the hotel. The departments include food and beverage, food production, housekeeping and front office operations. The above-mentioned are the core departments in the hospitality sector that develop majority of the business by providing services to the guest. The hotel aims to provide quality food in order to satisfy the guest's needs.

The first unit in this block comprises of kitchen organisation, which includes the overall understanding and functioning of kitchen during the busy hours. In addition, we come to know the size of the kitchen, which depends on the size and type of organisation.

The second unit in this block helps to know the qualities of kitchen staff, which are very important in the hotel as the hygiene practices, are followed in the kitchen. The reason being if hygiene is not maintained then the quality of food will be affected and may also result in food poisoning. The duties of kitchen staff which are to be performed as well as how to maintain the co-ordination between departments in order to function the kitchen properly.

The third unit in this block comprises of Kitchen Equipment, which play a very important role in the kitchen, as food is prepared in bulk quantities for various outlets in the hotel. It also tells us about the care and maintenance of equipment. Classification of equipment, which include large, mechanical and small and may vary according to the requirement of the organisation.

UNIT 1 KITCHEN ORGANISATION

Structure

- 1.0 Objectives
- 1.1 Introduction
- 1.2 Kitchen Organisation
- 1.3 Kitchen Brigade
- 1.4 Layout of Kitchen
- 1.5 Sections of Kitchen
- 1.6 Let us sum up

1.0 OBJECTIVES

In this unit, we have discussed the hierarchy of the kitchen as well as the differences between small and large kitchen.

After working through this unit, you should be able to:

- Understand the hierarchy of the kitchen.
- Understand the difference between the small and large kitchens.
- Understand different areas of kitchen

1.1 INTRODUCTION

There is a wide difference between a commercial kitchen and the regular household kitchen. Thus, this section will consist of the most important thing that is the organisation of the commercial kitchen. Actually the kitchen is the wider area subdivided into various section where different activities are conducted so as to make the deal faster and the customer gets a service within no time or within the stipulated period. It is hence required by us to know how the kitchen functions and how many people are working into it. The sections are divided into departments like soups, sauces, garde-manger, roast, bakery etc. Each headed with the chef de parties and the chefs working under them according to the standard guidelines.

1.2 KITCHEN ORGANISATION

The organisation of kitchens will vary, mainly due to the size and the type of the establishment. Organisation depends on five factors

- The menu determines the tasks. So, organisation is based on the menu.
- Type of establishment
- Size of operation
- Physical facilities
- Human resources available

Obviously, where a kitchen has many Chefs preparing for banquets for up to 1000 people and a lunch and dinner service for 300-400 customers with a la carte menu, the organisation will be quite different from a small restaurant doing thirty table d'hôte lunches or a hospital diet kitchen preparing diets. Even when there are two kitchens of a similar nature, the internal organisation may vary, as each Chef de Cuisine will have his own way of running his kitchen. It has been found most satisfactory in organising the work of a kitchen to divide it into "Parties" or "corners". The parties system was perfected by Escoffier and it was the result of studying about the food production and the recipes allocating tasks to different specialists to help produce the more complex dishes regularly, efficiently and swiftly. The kitchen was divided into sections, each one of which was responsible for a particular contribution to the entire food production system. In this kind of kitchen Escoffier organised, the parties system reached the height of complexity because the end products had to be of the highest finish and yet be completed to order in rapid sequence for a substantial number of customers. A set pattern was made. The latest trend is to go with the size of operation. Volume of production determines how many staff are required to perform the job. In small organisations, one staff member can combine several jobs, e.g. curry making and tandoori dishes. The principles of kitchen organisation represent a standard practice though there are no set rules for deciding how many sections and how many staff a particular kitchen requires. Each catering establishment has different factors to be taken into consideration such as extent of menu, number of persons to be served and management policy. The latest trend is to go with the size of operation. Volume of production determines how many staff are required to perform the job. In small organisations, one staff member can combine several jobs, for example, curry making and tandoori dishes. The number of staff in a section is determined by the amount of work to be done

**Introduction to
Hotel Kitchen**

and importance of the contribution of the section to the menus and the skill of work. The base of different kitchen organisations is taken from the Traditional Kitchen Organisation that was pioneered by Auguste Escoffier, the instigator of the partie or corner system. He had many sections such as grill, roast, vegetable, fish, sauce, soup, larder patisserie etc. As everything was done manually it was necessary but now the sections have become fewer} because of labour-saving machines, convenience foods and combined catering equipment (microwave cum convection ovens etc.) and the changing of public taste, which seeks simpler menus and meals

Check Your Progress 1

1. What are the five factors on which the kitchen organisation depends?

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1.3 KITCHEN BRIGADE

Under this system, each position has a station and defined responsibilities. In smaller operations, the classic system is generally abbreviated and responsibilities are organised to make the best use of workspace and talents. A shortage of skilled personnel has also made modifications in the brigade system necessary. The introduction of new equipment has helped to alleviate some of the problems associated with smaller kitchen staffs.

The chef is responsible for all kitchen operations, including ordering, supervision of all stations and development of menu items. He or she also may be

known as the chef de cuisine or executive chef. The sous chef is second in command, answers to the chef, may be responsible for scheduling, fills in for the chef and assists the station chefs (or line cooks) as necessary. Small operations may not have a sous chef. The range of positions in a classic brigade also includes the following:

The sauté chef saucier is responsible for all sautéed items and their sauces. This position is often considered the most demanding, responsible and glamorous on the line.

The fish chef poissonier is responsible for fish items, often including fish butchering and their sauces. This position is sometimes combined with the saucier position.

The roast chef rôtiisseur is responsible for all roasted foods and related jus or other sauces.

The grill chef grillardin is responsible for all grilled foods. This position may be combined with that of rôtiisseur.

The fry chef friturier is responsible for all fried foods. This position may be combined with the rôtiisseur position.

The vegetable chef entremetier is responsible for hot appetisers and frequently has responsibility for soups, vegetables and pastas and other starches. In a full, traditional brigade system, soups are prepared by the soup station or potager, vegetables by the legumier. This station may also be responsible for egg dishes.

Larder Cook/Chef: The Larder cook is responsible for the Garde Manger and Butchery work.

Pastry Cook/Chef: The Pastry cook prepares various cakes, biscuits, tarts, breads, icings etc.

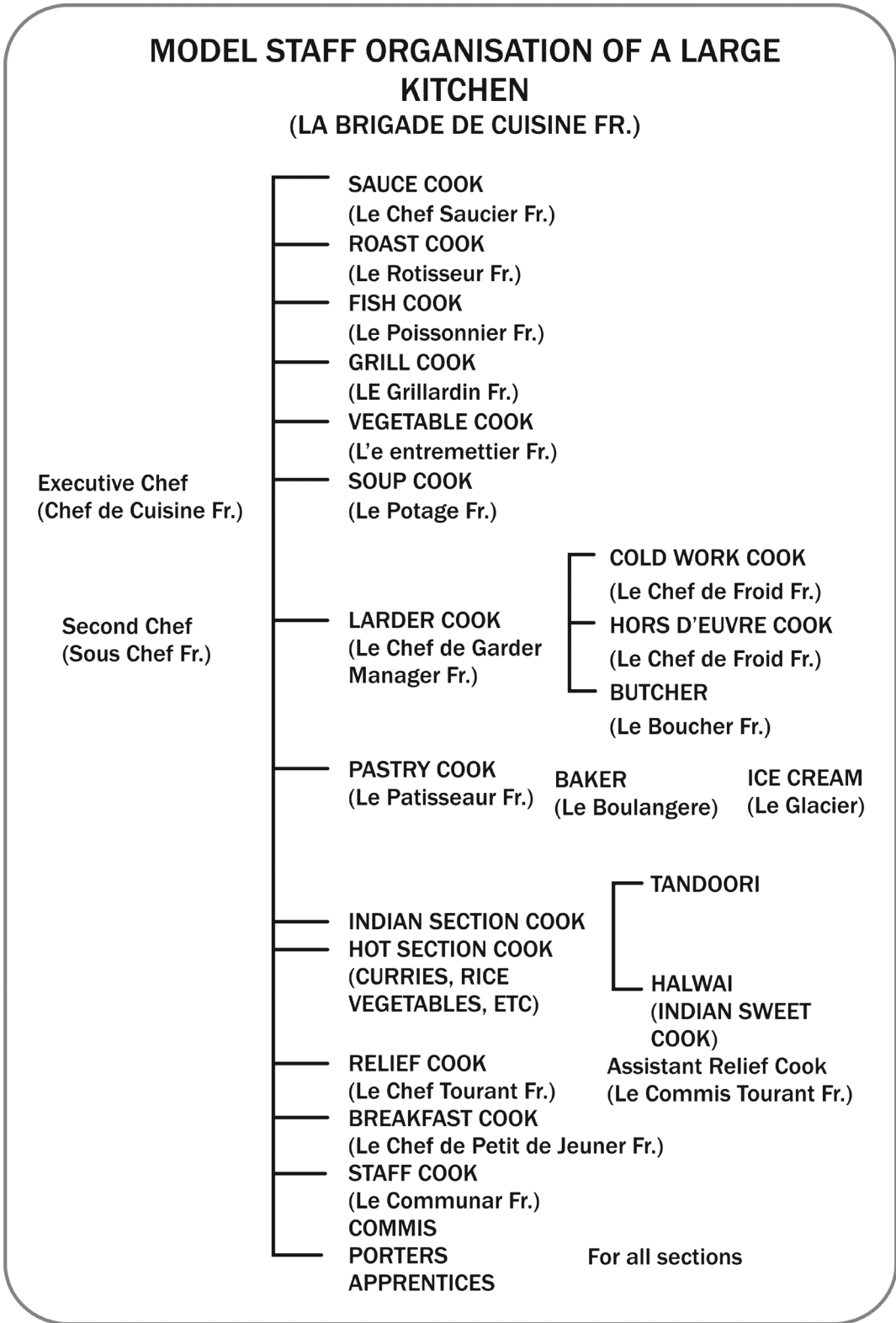
Indian Cook/Chef: The Indian cook/chef deals with the hot section preparation, which includes dal, rice, curries, vegetables etc. The other cooks deal with the preparation of sweet dishes.

Relief Cook/Chef: The Relief cook fills up the position where required during any absenteeism or leaves taken by the respective cooks of parties or other cooks.

Commis 1, 2, 3: The commis do the actual cooking. They are also responsible for the pre-preparation (mise-en-place) process.

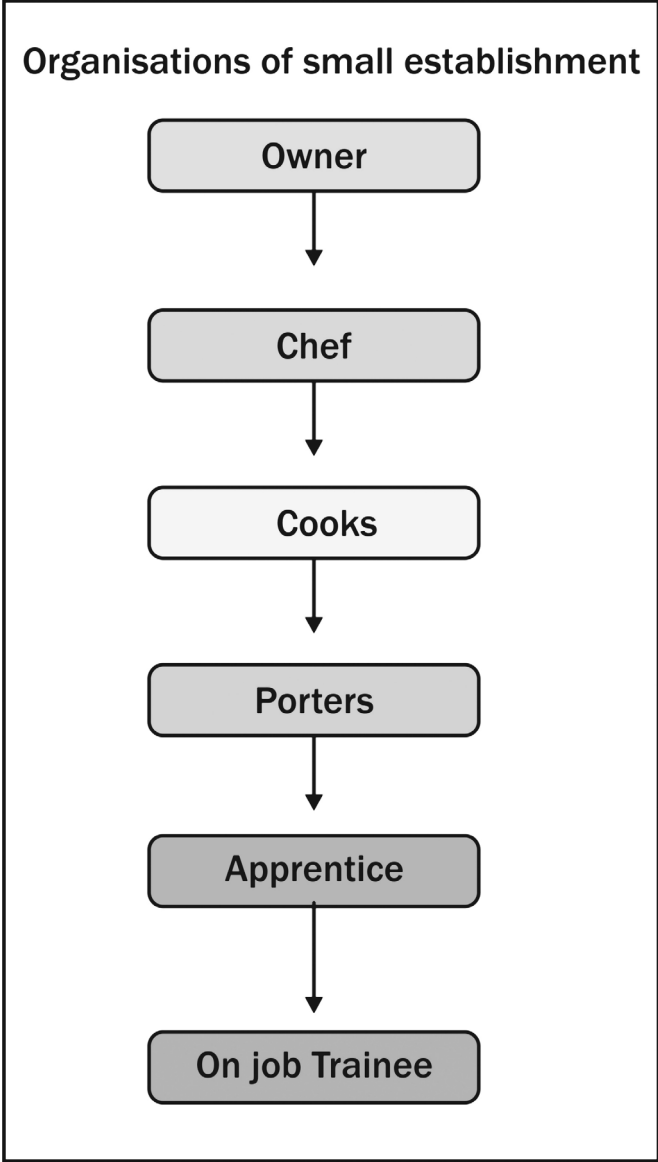
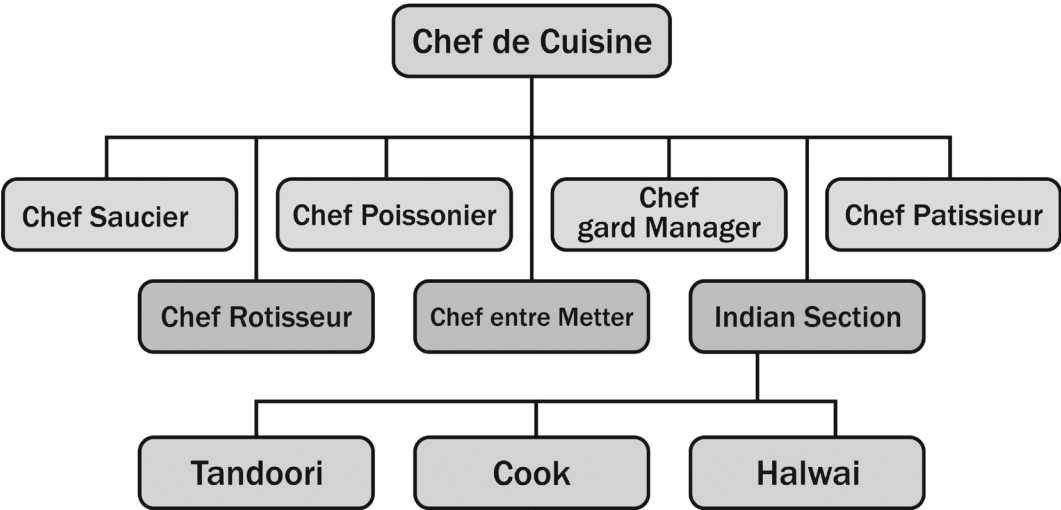
Staff Cook: The Staff cook is responsible for the preparation of food for all the staff. He prepares the food with the help of other commis and the food is prepared in bulk.

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Hotel Kitchen**

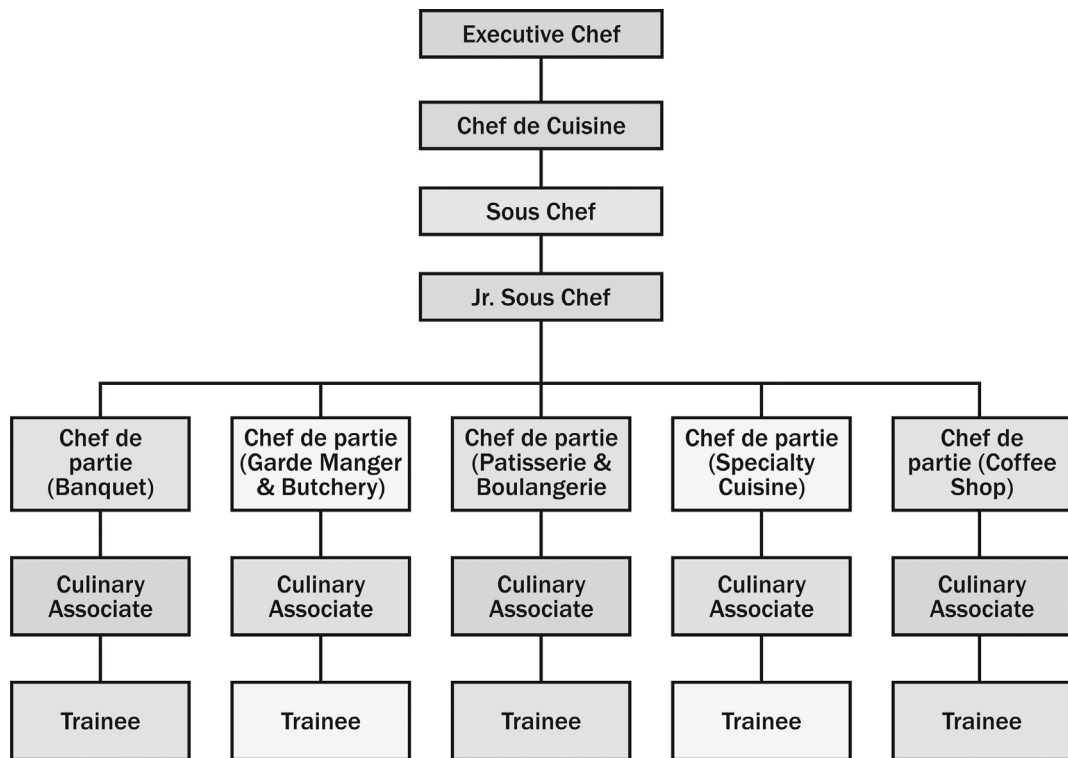


Organisation of Medium Kitchen

Kitchen Organisation



Modern Trends followed in the Kitchen



Check your progress 2

1. Draw a chart of a Model Staff Organisation of a large kitchen.

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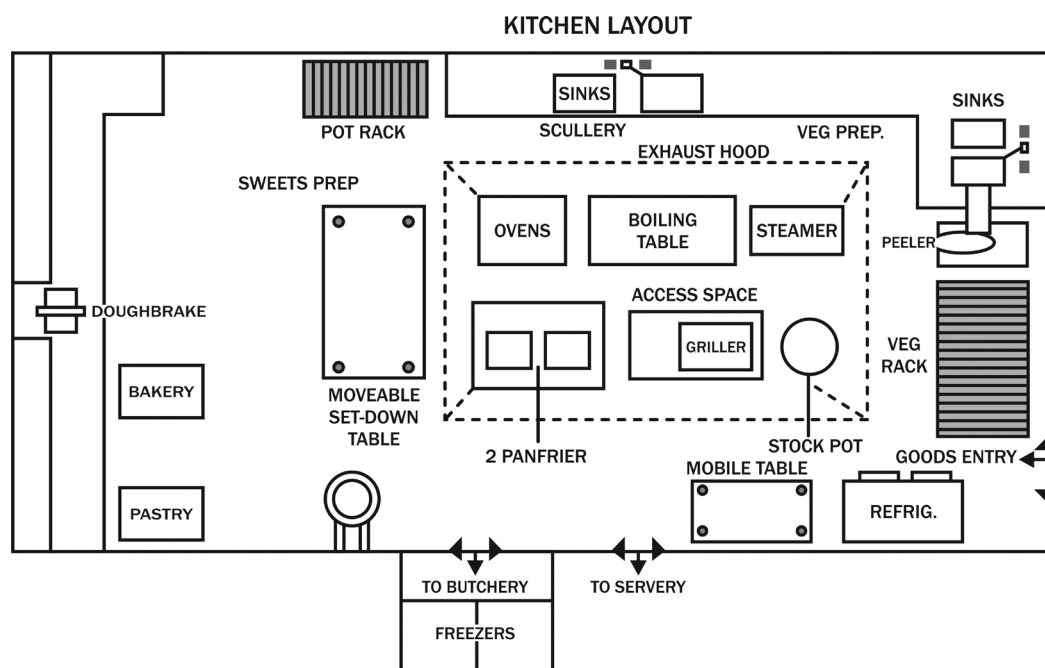
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1.4 LAYOUT OF KITCHEN

The heart of every F & B out lets is the kitchen. Here raw ingredients are processed, i.e. washed, peeled, cut and cooked for food service. For smooth operation, proper planning and designing of kitchen is an important task. Normally planning and designing of the kitchen is done by most qualified and experience chef. It is necessary to have a good design of the kitchen to meet the technical demands. There should be exhaust hood, ovens, boiling tables, steamers, working tables for vegetable and non-veg.raw materials, pan fryers, refrigerator/cold room, griller, separate area for sweet preparation, garde manger, pantry area etc. the kitchen should always be equipped with proper water supply and sanitary arrangements. Ideally kitchen should be plan on the basis of the menu it helps not only planning as well for purchasing equipment. Following diagram shows standard lay out for star hotel kitchen.



1.5 SECTIONS OF KITCHEN

Sauce Section

The sauce section is responsible for providing all meat, poultry, game and offal dishes with the exception of those that are plain roasted or grilled. All the meat dishes are cooked and garnished.

The partie will also provide all basic and finished sauces served hot, they are normally required by the various partie in the kitchen. Normally, one first commences

Introduction to Hotel Kitchen

early duty to cover the preparation and cooking of dishes as 'Plat de Jour' as these often require a cooking time of 3-4 hours. Braising, boiling, peeling is also done in this section. Mise-en-place for a banquet is also done here. The chef saucier does important work as he assembles the dishes, which have an impact on the customers. The sauce needs to be kept at an appropriate temperature, which ranges between temperatures 0-4 degree Celsius. The dressings required for salads are prepared by this section. They include vinaigrette and mayonnaise based dressings. Care should be taken that the sauces are "kleen wrapped" to avoid skin formation on the surface.

Roast Section

The roast section is responsible for providing all roast dishes of meat, poultry and game. It is responsible for all grill dishes of meat, chicken, offals and fish and this duty is often delegated to the grill cook. The section is also responsible for the preparation of the number of dishes and the deep-frying of food items. It also prepares and finishes any savories that are required.

Fish Section



This section is responsible for the provision of all fish dishes with the exception of those that are plain grilled or deep-fried. The cleaning, descaling, filleting crumbling is done by the fishmonger in larder.

Generally as a larger selection of fish are offered, an extensive mise-en-place is required.

At each service period, the following basic sauces are made ready for service: béchamel, white wine sauce, fish veloute, hollandaise and melted butter. Further, a number of garnishes are prepared in advance to part cooked stage. By this arrangement, a variety of fish dishes particularly the poached and meuniere types can be done. Grilling is done by the grill cook or commis.

Vegetable Section

An entremets course in French was the responsibility of the entremets of vegetables, who skillfully prepare and cook vegetables, which could be served as

a separate course. An entremets was originally something sent to the table between the courses in France.

Kitchen Organisation

During the period before service, each day various quantities of vegetables are prepared, cooked, refreshed and placed into refrigerator. Semi-skilled workers do peeling, cleaning and trimming. Limited quantities of certain potato dishes are cooked and finished to varying degrees, kept ready when service begins. Vegetable garnishes are prepared here and given to other sections.

The cooking of eggs forms an important part of the work in this section, particularly omelettes of various types, e.g. plain, garnished, stuffed and flat round omelettes. Italian pastas as well as noodles are also prepared in this section. Items like spaghetti, macaroni, rice may be sent to other sections for garnishes.

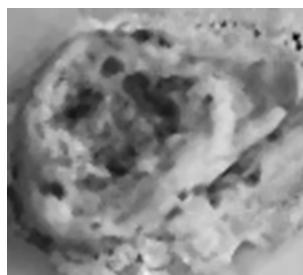
The mise-en-place is carried out according to menu requirements. By this method, the vegetable cook and senior commis are able to cope with the finishing and serving of a vast amount of different dishes. Management of cooking vegetable well for large numbers calls for particular knowledge, skill and judgment and should never be entrusted to an unskilled and disinterested cook.

Soup Section



It is the responsibility of this section to prepare soups such as consommés, creams, veloutes, purees, broths, bisques and many special international soups. All basic stocks are also prepared here. The cold soups are prepared and passed to the larder for service. The garnishes come from the larder and vegetable section.

Indian Section



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This section is responsible for the preparation of all Indian dishes. The work is subdivided into subsections such as Indian (bread and rice, pulaos, biryanis, chappaties, puries, bhaturas etc.), vegetables, (bhajeas, curries), meat, (including eggs and fish), tandoor (seekh kababs, tandoor chicken, boti kababs), Indian sweets (jalebis, rasgullas, rabri etc.)

Larder section: This section is divided into 2 sections: Butchery and Garde Manager.

1. **Butchery:** The Butchery section deals with the cleaning and jointing of fish, chicken, mutton etc. It is proportioned and stored at a very low temperature in the cold room (0 to -20^oc).
2. **Garde Manager:** The Garde Manger deals with the preparation of the cold items included in the horse-de-oeuvre, various salads, their dressings, cold dishes etc.

Pastry Section



The work of this section is normally separated from the main kitchen and is self-contained in the matter of cold storage. The function of this section is to prepare hot and cold sweets, for lunches, dinners and pastries for teatime and other occasions. It also prepares pastes like short and puff pastry, frying batters for making noodles for supply to other corners of the kitchen. Special Order Cakes are made for guests. It is the responsibility of the night chef to prepare muffins, croissants, bagels and baguette for breakfast. Sorbets and water ice like items are made in pastry section. The service of ices and those sweets, which are based upon ice cream, are prepared and assembled in patisserie. They also include the sweet omlette au surprise and soufflé surprise, melbas etc. The art of pastry includes work like coloured sugars to make flower baskets and similar decorative centrepieces, work with fondant and icing sugar, gum pastes, fashioning of praline into decorative objects. Where hotels operate a bakery section, the master baker carries out the responsibility.

Check your progress 3

1. Explain the following sections of the kitchen:

- a. Sauce
- b. Soup
- c. Indian

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1.6 LET US SUM UP

In this unit, we:

- Understood the hierarchy of the kitchen because of which the students come to know the organisation structure according to the size of the organisation
- Understood the difference between the small and large kitchens
- Understood different areas of kitchen in which the students come to know what is the key role of each department in the hotel

Check Your Progress: Possible Answers

Check your progress 1

Answer:

The organisation of kitchens will vary, mainly due to the size and the type of the establishment. Organisation depends on five factors

1. The menu as it determines the tasks; organisation is based on the menu.
2. Type of establishment
3. Size of operation
4. Physical facilities
5. Human resources available

Check your progress 2

See section 1.3

Check your progress 3

Answer:

Sauce Section

The sauce section is responsible for providing all meat, poultry, game and offal dishes with the exception of those that are plain roasted or grilled. All the meat dishes are cooked and garnished.

The partie will also provide all basic and finished sauces served hot, they are normally required by the various partie in the kitchen. Normally, one first commences early duty to cover the preparation and cooking of dishes as 'Plat de Jour' as these often require a cooking time of 3-4 hours. Braising, boiling, peeling is also done in this section.

Similar to the fish partie, extensive part of the dishes are cooked and a variety of cooked garnishes are also prepared. Mise-en-place for a banquet is also done here. The chef saucier does important work as he assembles the dishes, which have an impact on the customers

Soup Section

It is the responsibility of this section to prepare soups such as consommés, creams, veloutes, purees, broths, bisques and many special international soups. All basic stocks are also prepared here. The cold soups are prepared and passed to the larder for service. The garnishes come from the larder and vegetable section.

Indian Section

This section is responsible for the preparation of all Indian dishes. The work is subdivided into subsections such as Indian (bread and rice, pulaos, biryanis, chappaties, puries, bhaturas etc.), vegetables, (bhajees, curries), meat, (including eggs and fish), tandoor (seekh kababs, tandoor chicken, boti kababs), Indian sweets (jalebis, rasgullas, rabri etc.)

UNIT 2 QUALITIES OF KITCHEN STAFF

Structure

2.0 Objectives

2.1 Introduction

2.2 Duties of Kitchen Staff

2.3 Personal hygiene of Kitchen Staff

2.4 Co-ordination of Kitchen with other departments

2.5 Let us sum up

2.0 OBJECTIVES

In this unit, we have discussed about the duties of kitchen staff, the key role that each individual plays in the kitchen, personal hygiene to be followed in the kitchen and co-ordination of kitchen with other departments.

After working through this unit, you should be able to:

- Understand the Coordination of the kitchen with other departments.
- Understand the duties and responsibilities of the kitchen staff.

2.1 INTRODUCTION

The organisation requires manpower in order to run the business. In hotels, chefs play a major role for overall customer satisfaction. This includes preparation of various types of food requested by guests. Hence, in order to meet the demands the kitchen has to function properly. There should be proper co-ordination within the departments as well as other areas of the hotel.

2.2 DUTIES OF KITCHEN STAFF

Executive Chef: He supervises the food production in the kitchen.

- He is also responsible for preparation of food by his staff daily as outlined on the Food Production Worksheet or Banquet Event Order Sheet

- He makes sure that the kitchen is maintained as per the policies of the hotel. Safety and sanitation standards as directed by the local authority
- The Executive Chef assists with set-up, service and clean-up of food production
- He ensures proper sanitation and storage of kitchen equipment
- He plays an important part in training and recruitment of the employees.
- He prepares the report regarding food sales.
- He checks quality work through feedback and personal visit at the food preparation area.
- He assists in safety and training procedures in handling of food service equipment
- He ensures compliance with state local and regulatory agencies as it relates to Food Service
- The Executive Chef must be able to manage the staff. He also arranges meetings with the General Manager in order to formulate the budget for the day-to-day operations of the hotel.
- He controls food waste by using in proper areas to be distributed daily.

Chef de Cuisine: The Chef carries the full responsibility for his kitchen. He must be both cook and administrator, i.e. as well as being able to cook, an authority on culinary matters, he needs to be capable of ensuring quick service and maintaining discipline. He must have a strict sense of economy and efficiency. He should be fully acquainted with the prices, market trends, commodities in season and customer requirements. His principal function is to forecast plan, organise and supervise the work of the kitchen. He has to purchase, control cost, train and direct staff. He prepares a pre-determined percentage of profit and works in accordance with the policy of the establishment. He is responsible for staffing, selection and dismissal in consultation with the Personnel Department. If need be, he should train the trainee cooks.

Modern experts favour relieving the Chef from the details of purchasing so that he can concentrate on more important aspects of managing his kitchen and attending to the actual food production side. Purchasing is becoming specialised and is vital to the economic structure of the undertaking. It is done in consultation and cooperation with the Chef. The Chef is responsible for the staffing of the kitchen and for the organisation of duty rosters. The Chef concerns himself with the quality of food and its presentation. He is the departmental head and is responsible to the management.

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Sous Chef: The assistant head chef understudies the Head Chef in all his duties. The Sous Chef calls up the order from the kitchen and supervises the service. He is mainly responsible for the efficient day-to-day functioning of the kitchen. The Sous Chef supervises the practical kitchen activities. When the Chef is busy, he can make ad hoc staff changes during the working day to relieve pressure. In large establishments, there are a number of Sous Chefs, especially when there are separate kitchens like grillroom, restaurant, banquet

The Sous Chef briefs the entire staff during the break periods when the main kitchen is closed. He guides the employees regarding the improvement of quality of food, its standard proportion and the proper method of cooking.

Chef de Partie: For the different sections in the kitchen, there is a “Chef de Partie”, i.e. roast cook, larder cook etc. Each Chef de Partie is assisted according to the production load, by one or more commis cooks - first, second, third commis and trainees. It is sometimes the practice, where long operating hours apply, for the working period to be split up between the Chef de Partie and his first commis, though the Chef de Partie is entirely responsible for his partie throughout the working period. Alternatively, there may be two separate and complete “brigades” rotating upon an a.m. and p.m. basis. This system is very much favoured, since it does away with split duties. All the Chef de Parties may be regarded as supervisors or foremen of their sections as well as skilled craftsmen. Sometimes the chef de partie is responsible for ordering of ingredients for his department in order to relieve the Sous Chef if he/she is busy.

He is responsible for the quality check before the food is picked up to the service area. He checks the colour, taste, portion, consistency etc. of the food.

Chef Saucier (Sauce Cook): The sauce cook is usually the 'star' party because his job is most complex. The Chef Saucier will be Sous Chef in the making and will eventually rise to Chef de Cuisine. It is here that all the sauces, meat, poultry, entrees are prepared together with the necessary garnishes. He prepares his own mise-en-place, for many items he will receive such as steaks prepared from larder etc. The sauces prepared must be distinctive but not overpowering.

Chef Rottisseur (Roast Cook): He is responsible for the production of all roasts and grills of meat, poultry and game, grilled and deep fried fish, deep fried vegetables, potatoes and savouries. He prepares sauces, accompaniments and garnishes for roasts and grills. In large establishments, grilled items are the responsibility of the grillardin or grill cook. It is usual for the grill cook to work under the supervision of the roast cook.

Chef poissonnier (Fish Cook): The fish cook prepares all the fish entrees and the roast cook deals with all roasts and deep fried foods. The fish prepared comes from the larder and the Chef does the cooking, garnishing, saucing and the dishing of fish. The repertoire of fish dishes and their accompanying sauces is very challenging and extensive training and judgment are required from this Chef.

Chef Potager (Soup Cook): The soup cook prepares all types of soups and is responsible for the garnishes accompanying the soups. The Chef sometimes begins work early; the work of the potager is important as soup gives an impression of the meal to follow.

Chef Garde Manger (Larder Cook): The larder cook is the most spectacular and the busiest, because the work is never ending. Besides feeding the main kitchen with prepared foods for processing, he has to keep the cold buffet supply. It is a cold section and the storehouse of the kitchen where perishable foods are kept. He has a wide range of work to do, as the larder has various subsections such as hors d'oeuvre, a salad section and a butchery section. The cold buffet work, sandwiches, canapés are also his responsibility.

Chef Entremettier (Vegetable Cook): The vegetable cook is responsible for the production of vegetables and potatoes.

Chef Patisserie (Pastry Cook): The pastry cook has different status but certainly not less than the sauce cook and the larder cook. His work is specialised and he prepares hot and cold puddings, cakes, pastries, bread etc. He is also responsible for special display work and the supply to the main kitchen of items of pastry.

Chef de Banquet (Banquet Cook): In many of the large hotels with extensive banquet commitment, the brigade will have a Banquet Chef and one or two commis. The Banquet Chef is responsible for organising the service, coordinating with the Chef de Partie, the time and service, number for the arrival of various dishes to the service area. He further arranges, to what point the dishes are finished and make the necessary arrangements to carry out completion at the service. Sometimes this will mean his having to move his service from one service point to another, i.e. there may be an establish banquet service point in the larder, another in the pastry apart from the main service area in the kitchen allocated for purpose. The Banquet Chef will coordinate with the banqueting manager regarding times, service numbers, special dishes required and special instructions to the waiters concerned.

Chef Tourant (Relief Cook): He is relief Chef de Partie. He takes over a section when its Chef goes on leave or has an off day. Chef is usually a senior, capable commis as he has the knowledge of the various sections. He should be a

Introduction to Hotel Kitchen

versatile person who should be able to work in any shifts in any department; in short, he should be an all rounder.

Chef de Petit de Jeuner (Breakfast Cook): He commences his duty very early. He does not rank as a Chef de Partie but needs to be of good skill, within his limited field. He is responsible for the complete breakfast service. Afterwards he has to complete his miser-en-place for the following morning. Sometimes he assists the soup or vegetable cook.

Chef Communar (Staff Cook): In small establishments, the staff food is prepared by different Chefs de Partie. In large establishments, a separate section or a separate kitchen prepares the meals. Staff ordinarily prepares meals for lower or supervisory staff as the executives eat their meals in restaurants. Wholesome food and inexpensive meals are prepared. The menu should be cyclic; hence, he should have extensive knowledge of many dishes.

Kitchen Porters/Commis: The head porter controls the issue and collection of laundry to the kitchen personnel that is supplied by the establishment. Although many duties of the kitchen porter require little skill, by correct good training, they become most valuable members of the kitchen brigade.

Check your progress 1

1. Explain the duties of Chef de Cuisine.
2. What are the duties performed by Chef de Parties?

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2.3 PERSONAL HYGIENE OF KITCHEN STAFF

Self-respect is necessary in every food handler, because a pride on own appearance promotes a high standard of cleanliness and physical fitness

1. **Bathing:** Regular bathing is essential; otherwise, germs can be transferred on to the cloths and so on to foods.
2. **Hands:** Hands must be thoroughly washed frequently, particularly after using the toilet, before commencing work and during the handling of foods. Rings watches and jewelers should not be worn where food is handled. Jewellery should not be worn, since it may fall off into food.
3. **Finger nails:** Nails should always be kept clean and short as dirt can easily lodge under the nail and be dislodged when, for example, making pastry, so introducing bacteria into food. Nails should be cleaned with a nailbrush and nail varnish should not be worn.
4. **Hair:** Hair should be washed regularly and kept covered when food is being handled. Men's hair should be kept short, as it is easier to keep clean. Women's hair should be covered as much as possible. The hair should never be scratched, combed or touched in the kitchen.
5. **Nose:** The nose should not be touched when foods is being handled. If a handkerchief is used the hand should be washed afterwards. The nose is, where there are vast numbers of harmful bacteria, it is therefore very important that neither food, people nor working surfaces as sneezed over so spreading germs.
6. **Mouth:** There are many germs in the area of the mouth therefore coughing over foods and working areas should be avoided.
7. **Ears:** The ear-hole should not be handled while in the kitchen as again germs can be transferred.
8. **Feet:** They should be washed regularly and the toenails kept short and clean.
9. **Cut, burns, sores etc:** It is particularly important to keep all cuts burns, scratches and similar openings of the skin covered with a waterproof dressing.
10. **Clothing and cloths:** Clean whites and clean underclothes should be worn at all times. Dirty cloths enable germs to multiply and if dirty clothing comes into contact with food, the food may be contaminated.
11. **Cosmetics:** should be used in moderation. They should not be put on in the kitchen and the hands should be washed well afterwards.

**Introduction to
Hotel Kitchen**

12. Smoking: Must never take place where there is food, because, when a cigarette is taken from the mouth, germs from the mouth can be transferred to the fingers can so on to food. Ash on food is most objectionable and it should be remembered that smoking where there is food is an offence against the law.

13. Spitting: Spitting should never occur, because germs can be spread by this objectionable habit

Six stage handwashing technique



1. Palm to palm



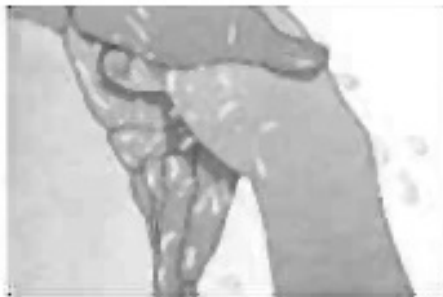
2. Backs of hands



3. Interdigital spaces



4. Fingertips



5. Thumbs and wrists



6. Nails

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Check your progress 2

1. Explain seven points followed for maintenance of personal hygiene in the kitchen.
2. Draw the basic layout of the kitchen.

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2.4 CO-ORDINATION OF KITCHEN WITH OTHER DEPARTMENTS

1. **Food and Beverage Service Department:** Food served by Food and Beverage service staff and prepared by kitchen department. Menu planning is the responsibility of Executive chef who consults with Food and Beverage manager for the same, so co-ordination with Food and Beverage service department is most important. It is quite important to have a close liaisoning during the bigger events for smooth functioning.
2. **Housekeeping Department:** Housekeeping department is responsible for the supply of fresh and dry cleaned Uniforms of staff as per the everyday requirements. They also inform the F & B department regarding. the VIPs in the house for better attention.

In this unit, we:

- Come to know how to develop a good working relationship with other staff.
- Understand the Coordination of the kitchen with other departments.
- Understand the duties and responsibilities of the kitchen staff.

Check Your Progress: Possible Answers

Check your Progress 1

Answer:

- 1. Chef de Cuisine:** The Chef carries the full responsibility for his kitchen. He must be both cook and administrator, i.e. as well as being able to cook, an authority on culinary matters, he needs to be capable of ensuring quick service and maintaining discipline.
 - He must have a strict sense of economy and efficiency. He should be fully acquainted with the prices, market trends, commodities in season and customer requirements
 - His principal function is to forecast plan, organise and supervise the work of the kitchen. He has to purchase, control cost, train and direct staff. He prepares a pre-determined percentage of profit and works in accordance with the policy of the establishment
 - He is responsible for staffing, selection and dismissal in consultation with the Personnel Department

Modern experts favour relieving the Chef from the details of purchasing so that he can concentrate on more important aspects of managing his kitchen and attending to the actual food production side. Purchasing is becoming specialised and is vital to the economic structure of the undertaking. The Chef is responsible for the staffing of the kitchen and for the organisation of duty rosters. The Chef concerns himself with the quality of food and its presentation. He is the departmental head and is responsible to the management.

Introduction to Hotel Kitchen

2. **Chef de Partie:** For the different sections in the kitchen, there is a “Chef de Partie”, i.e. roast cook, larder cook etc.

- Each Chef de Partie is assisted according to the production load, by one or more commis cooks - first, second, third commis and trainees. It is sometimes the practice, where long operating hours apply, for the working period to be split up between the Chef de Partie and his first commis, though the Chef de Partie is entirely responsible for his partie throughout the working period
- Alternatively, there may be two separate and complete “brigades” rotating upon an a.m. and p.m. basis. This system is very much favored, since it does away with split duties
- All the Chef de Parties may be regarded as supervisors or foremen of their sections as well as skilled craftsmen. Sometimes the chef de partie is responsible for ordering of ingredients for his department in order to relieve the Sous Chef if he/she is busy

Check your Progress 2

Answer:

1. Personal Hygiene of Kitchen Staff

Self-respect is necessary in every food handler, because a pride on own appearance promotes a high standard of cleanliness and physical fitness

- **Bathing:** Regular bathing is essential; otherwise, germs can be transferred on to the cloths and so on to foods.
- **Hands:** Hands must be thoroughly washed frequently, particularly after using the toilet, before commencing work and during the handling of foods. Rings watches and jewelers should not be worn where food is handled. Jewelers should not be worn, since it may fall off into food.
- **Finger nails:** Nails should always be kept clean and short as dirt can easily lodge under the nail and be dislodged when, for example, making pastry so introducing bacteria into food. Nails should be cleaned with a nailbrush and nail varnish should not be worn.
- **Hair:** Hair should be washed regularly and keep covered when food is being handled. Men’s hair should be kept short, as it is easier to keep clean. Women’s hair should be covered as much as possible. The hair should never be scratched, combed or touched in the kitchen.

- **Nose:** The nose should not be touched when foods is being handled. If a handkerchief is used the hand should be washed afterwards. The nose is, where there are vast numbers of harmful bacteria, it is therefore very important that neither food, people nor working surfaces as sneezed over so spreading germs.
- **Mouth:** There are many germs in the area of the mouth therefore coughing over foods and working areas should be avoided.
- **Ears:** The ear-hold should not be handled while in the kitchen as again germs can be transferred.

Check your Progress 3

Answer:

1. Co-ordination of Kitchen with other Departments

- **Food and Beverage Service Department:** Food served by Food and Beverage service staff and prepared by kitchen department. Menu planning is the responsibility of Executive chef who consults with Food and Beverage manager for the same, so co-ordination with Food and Beverage service department is most important.
- **Housekeeping Department:** Housekeeping department is responsible for the supply of fresh and dry cleaned Uniforms of staff as per the everyday requirements.
- **Maintenance:** Many types of equipment operated by electricity or manually require routine service repairs by skilled maintenance staff.
- **Purchase Department:** Perishables / non- Perishables are required by kitchen on daily basis so chefs. Must contact and consult to purchasing officer regarding quantity and quality of foodstuffs. Store department, Daily requisition of kitchen fulfilled by store department.
- **Sales Department:** The kitchen has to co-ordinate with the sales department in order to know the revenue generated from food items and also to know the customer preference. The reason is that the hotel can improve their quality of food.

UNIT 3 KITCHEN EQUIPMENT

Structure

3.0 Objectives

3.1 Introduction

3.2 Types of Kitchen Equipment

3.2.1 Large Equipment

3.2.2 Mechanical Equipment

3.2.3 Small Equipment

3.3 Sanitation and Safety precautions in Kitchen

3.4 Care and maintenance of Equipment

3.5 Let us sum up

3.0 OBJECTIVES

After working through this unit, you should be able to:

- Understand the type of equipment used in hotels
- Name specific equipment for various preparations and processes such as whisking, beating, grinding and kneading
- Specify sanitation and safety precautions to be followed in the kitchen
- State how to eradicate rodents and pests from the kitchen
- Explain the care and maintenance of kitchen equipment

3.1 INTRODUCTION

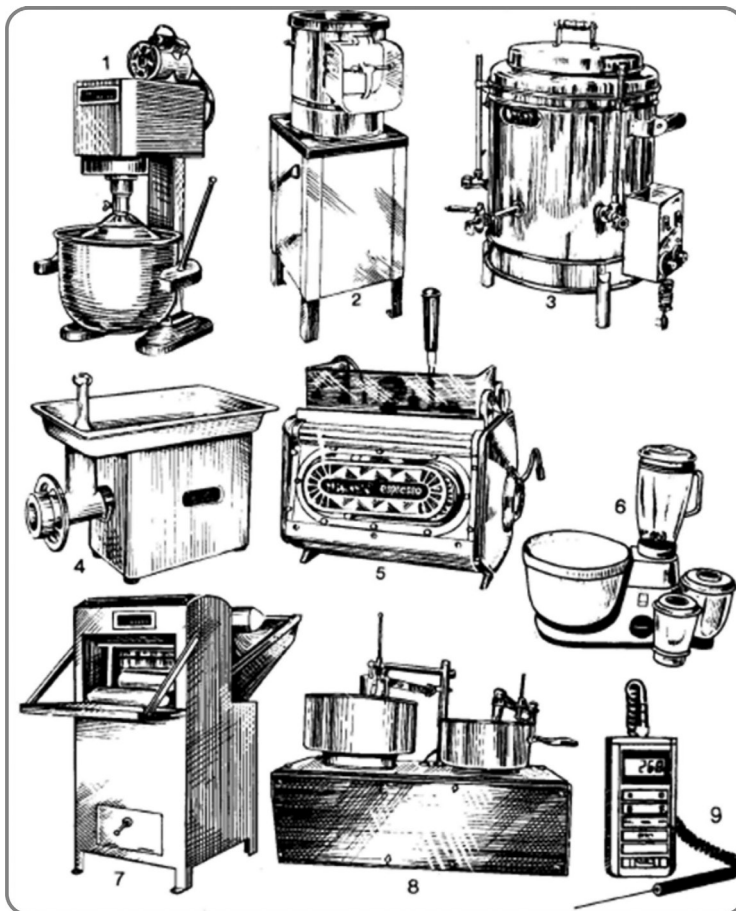
This unit will let us know about the various kitchen equipment used in the hotel. The equipment are classified into three categories as small, large and mechanical. The importance of usage as well as functions of equipment can be studied. Sanitation is very important in the kitchen because it prevents food contamination. Care and maintenance increases the life of the equipment.

3.2 TYPES OF KITCHEN EQUIPMENT

Equipment are time and labour saving devices. Kitchen equipment are expensive. Hence, also to justify the expense, it is essential that maximum use be made of it. This can be done only if the equipment works efficiently and this depends upon care and maintenance.

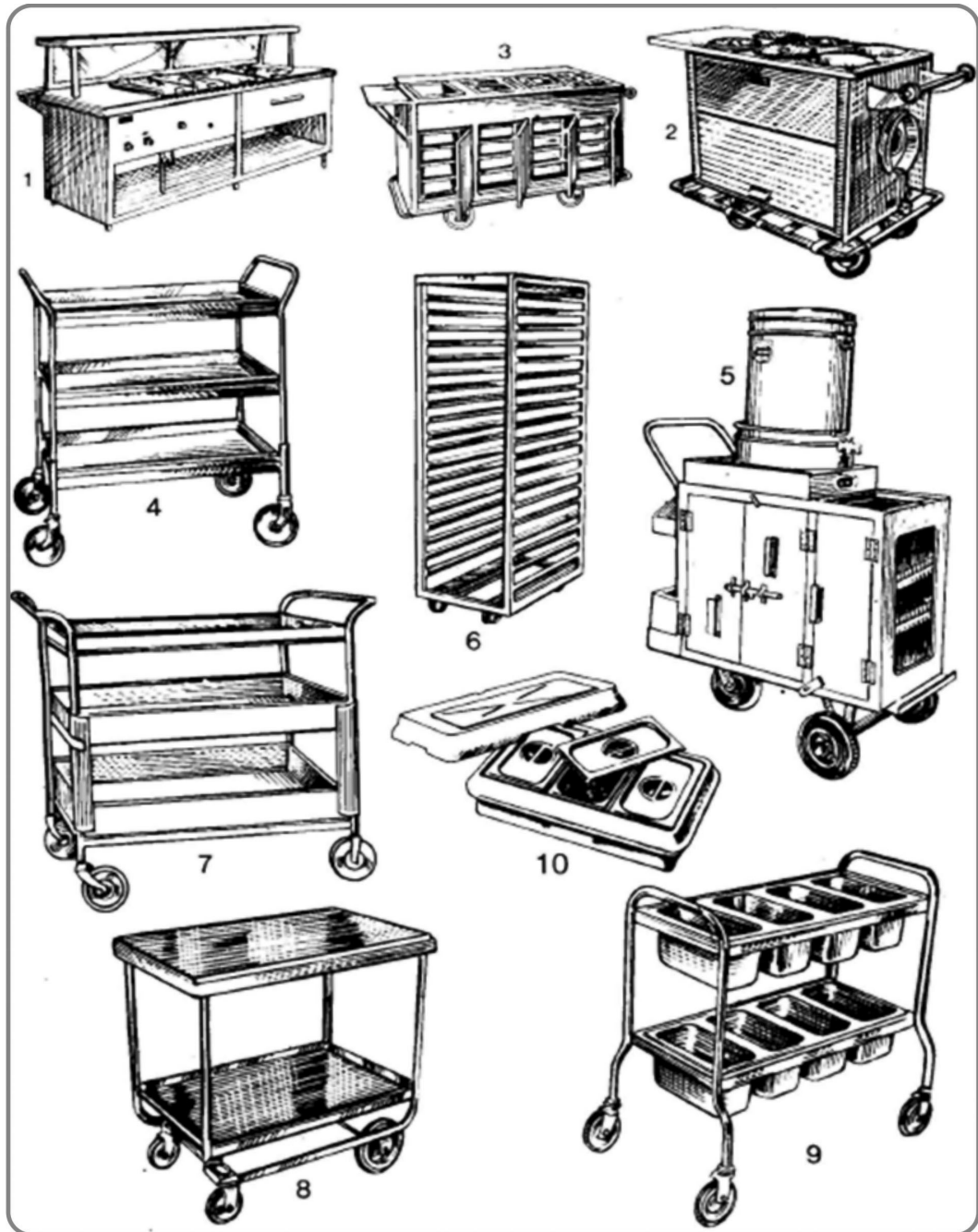
Kitchen equipment can be divided into three categories. These are as follows:

- a. **Large equipment:** ranges, steamers, boiling pans, fryers, sinks, table, etc
- b. **Mechanical equipment:** dishwasher, peelers, slicers, mincers, mixers, refrigerators,
- c. **Utensils and small equipment:** pans, palate knives, graters, pots, whisks etc.



Food preparation equipment-1. Dough moulding machine, with arrangement for shaping the dough; 2. Peeling machine handling 5-20 kg root vegetables at a time; 3. Boiler for tea or coffee, capacity 25-200 litres; 4. Chopper; 5. Espresso coffee machines of 50-400 cups capacity; 6. Mixer, grinder and beater; 7. Bread slicer; 8. Wet grinder; 9. Digital catering thermometer.

Introduction to Hotel Kitchen



Holding, service and clearing equipment- 1. Bainmarie holding and service counter; 2. Bulk food trolley; 3. Hot food service trolley; 4. Trolley; 5. Tea service trolley; 6. Tray carrier; 7. Collection trolley; 8. Clearing trolley and 9. Cutlery carrier. 10. Meal delivery container.



Plate 3 1. Micro wave oven. 2. Automatic egg boiler, 3. Burner cooking range, 4. Egg boiler for six, 5. Sandwich toaster.

Note: Some newer cooking equipment especially suitable for use in medium sized establishments are indicated in Plate 3

3.2.1 Large Equipment

Stoves

A large variety of stoves is available operated by gas, electricity, solid fuel, oil, microwave or microwave plus convection. Solid tops should be washed clean or wiped clean with a pad of sacking. When cool the stovetops can be more thoroughly cleaned by washing and using an abrasive. Emery paper can also be used if necessary. After any kind of cleaning, a solid top should always be lightly greased.

On the open type of stove all the bars and racks should be removed, immersed in hot water with a detergent, scrubbed clean, dried and put back in place on the stove. All gas jets should then be lit to check that none is blocked. All enamel parts of stoves should be cleaned while warm with hot detergent water, rinsed and dried.

The insides of ovens and even racks should be cleaned while slightly warm, using detergent water and a mild abrasive if necessary. In cases of extreme dirt or grease being baked on to the stove or oven, a caustic jelly may be used, but thorough rinsing must take place afterwards. Oven doors should not be slammed, as this is liable to cause damage.

Introduction to Hotel Kitchen

The unnecessary lighting or the lighting of ovens too early can cause wastage of fuel, which is a waste of money. This is a bad habit common in many kitchens. When a solid-top gas range is lit, the centre ring should be removed, but it should be replaced after approximately 5 minutes, otherwise unnecessary heat is lost.

Convention

These are ovens in which a circulating current of hot air is rapidly -forced around the inside of the oven by a motorised fan or blower. As a result a more even and constant temperature is created throughout the oven, which allows food to be cooked successfully in any part of the oven. This means that the heat is used more efficiently, cooking temperatures can be lower, cooking times shortened and overall fuel economy achieved.

Forced air convection can be described as fast conventional cooking: conventional in that heat is applied to the surface of the food, but fast since moving air transfers its heat more rapidly than does static air. In a scaled oven, fast hot air circulation reduces evaporation losses, keeping shrinkage to a minimum and gives the rapid change of surface texture and colour, which are traditionally associated with certain cooking processes. There are four types of convection oven:

1. Where forced air circulation within the oven is accomplished by means of a motor-driven fan, the rapid air circulation ensures even temperature distribution to all parts of the oven.
2. Where low velocity, high volume air movement is provided by a power blower and duct system
3. A combination of a standard oven and a forced convection oven designed to operate as either by the flick of a switch.
4. A single roll-in rack convection oven with heating element and fan housed outside the cooking area. An 18-shelf mobile oven rack makes it possible to roll the filled rack directly from the preparation area into the oven.

Microwave Cookers

Microwave is a method of cooking and heating food by using high frequency power. The energy used is the same as ray, which carries television from the transmitter to the receiver but is at a higher frequency. The waves disturb the molecules or particles of food and agitate them, thus causing friction which leaves the effect of cooking the whole of the food, whereas in the conventional method of cooking, heat faster cooking time, easy maintenance, hygienic, safe, improved working environment (less heat in the kitchen).

However, induction tops are expensive and special cooking utensils are required. Any non-magnetic material does not work and aluminum and copper are unsuitable. Stainless steel, enameled ware, iron and specially adapted copper pans are suitable. **Kitchen Equipment**

Steamers

There are two types of steaming ovens:

- a. Atmospheric steamer,
- b. Pressure steamer,
- c. High compression steamer,
- d. Pressure less convection steamer

The atmospheric steamer is pressure less. It has a boiling water bath in the bottom of the steaming compartment and a vent so that the steam does not rise above atmospheric pressure. For this reason, the door can be opened safely at any time, although some steam is lost. Heat source can be gas or electricity. The pressure steamer is constructed with a pressure safety valve, which only allows steam to escape on reaching a certain pressure. Foods cooked in this type of steamer cook quicker than in the atmospheric steamer. Care must be taken when opening the door, it should be opened slowly to allow pressure to go down and no one should be close to the escaping steam. When opening the door stand on the hinge side.

If the atmospheric and pressure-type steamers are operated by gas or electricity then an automatic water supply by half valve is provided to ensure a constant level of water in the steam-generating tank. It is important to see that the tap controlling the supply of water to the ball valve is working correctly and that the ball valve arm and washer are both in efficient working order. If these precautions are not taken, there is danger of the generating tank burning dry and becoming damaged. Some pressure steaming ovens heat source is from the main steam, supply. This type of equipment is fitted with a gauge, which registers the steam pressure being supplied and an overflow valve, which gives a warning whistle if pressure is allowed- to rise to a dangerous level. It is essential that a qualified engineer to ensure that they are working correctly check both the gauge and valve.

The high compression steamer is similar in principle to the pressure steamer but works at a higher pressure; therefore, the food cooks more quickly. This equipment is usually fitted with a timer and is designed to batch cook fresh or frozen vegetables in 1-5 minutes; however, it does not have a large capacity.

Introduction to Hotel Kitchen

Pressure less convection steamers cook at a low temperature with a convection fan in a pressure less air-free compartment. The steam generator is fitted under the steamer in a separate compartment and it generates purified steam under pressure, which is introduced into the cooking compartment.

Cleanliness of steamers is essential; trays and runners should be washed in hot detergent water. The water-generating chamber should be drained, cleaned and refitted and the inside of the steamer cleaned with detergent water and rinsed. Steamer door controls should be lightly greased occasionally and the door left open slightly to allow air to circulate when the steamer is not in use.

Bratt Pan



The bratt pan is the most versatile piece of cooking equipment in the kitchen because it is possible to use it for shallow frying, deep-frying, stewing, braising and boiling. Because of the large surface area, a bratt pan can cook many items of food at one time. A further advantage is that it can be tilted so that the contents can be quickly and efficiently poured out on completion of the cooking process. Bratt pans are heated by gas or electricity and several models are available incorporating various features to meet different catering requirements.

Boiling Pans / Steam-Jacket Kettle



Many types are available in different metals - aluminum, stainless steel, etc, in various sizes, 10, 15, 20, 30 and 40-liter capacity and they may be heated by gas. Electricity or steam from the main Steam supply. As they are used for boiling or stewing large quantities of food, it is important that they do not allow the food to burn. It is for this reason that the steam-jacket type boiler is the most suitable. Many of these boilers are fitted with a tilting device to facilitate the emptying of the content. After use, the pan and lid should be thoroughly washed with a mild detergent solution and then well rinsed. Any moving part should be greased occasionally and checked to see that they are in good working order.

Deep Fat Fryers / Furniture



These are among the items of equipment, which are used commonly in many catering establishments. The unskilled or careless worker can cause money to be lost by food or fat being-spilt through misuse of a 'deep fat-fryer'. Fryers are heated by gas or electricity and most incorporate a thermostatic control in order to save fuel and prevent overheating. There is a cool zone below the source of heat into which food particles can sink without burning and thus spoiling other foods being cooked. This form of heating also saves fat.

Pressure Fryers



Food is cooked in an airtight frying vat thus enabling food to be fried a lot faster and at a lower oil temperature.

Introduction to Hot Air Rotary Fryers Hotel Kitchen



These are designed to cook batches of frozen battered foods without any oil in 4-6 minutes. Computerised fryers are available which may be, programmed to control automatically cooking temperatures and times, on and off switches, basket lifting and product holding times. Operational information is fed from a super-sensitive probe which is immersed in the frying medium and passes information about temperature and rates of temperature change which may be caused by the initial fat temperature, amount of food being fried, fryer efficiency and capacity, fryer recovery rate, quantity and condition of fat, product temperature and water content.

With all the above information, the fryer computes exact cooking times and an automatic signaling device indicates the end of cooking period.

Deep fat-fryers should be cleaned daily after use by:

1. Turning off the heat and allowing the fat to cool
2. Draining off and straining the fat
3. Closing the stopcock, filling the fryer with hot water containing detergent and boiling for 10-15 minutes
4. Draining off the detergent water, refilling with clean water plus 1/8 liter of vinegar per 5 liters of water and re-boiling for 10-15 minutes
5. Draining off the water, drying the fryer, closing the stopcock and refill with clean fat

Hot-Cupboards and Bain-Marie

Hot-cupboards (commonly referred to in the trade as the hotplate) are used for heating plates and serving dishes and for keeping food hot. Care should be taken to see that the amount of heat fed into the hot-cupboard is controlled at a reasonable temperature. This is important; otherwise, the plates' arid food will be too hot or too cold and this could obviously affect the efficiency of the service. A temperature of 60°C-76°C is suitable for hot-cupboards and a thermostat is a help in maintaining this.



Hot-cupboards may be heated by steam, gas or electricity. The doors should slide easily and essential greasing may be necessary. The tops of most hot-cupboards are used as serving counters and should be heated to a higher temperature than the inside. These tops are usually made of stainless steel and should be cleaned thoroughly after each service

Bain-Marie are open walls of water used for keeping foods hot and are available in many designs, some of which are incorporated into hot-cupboards, some in serving counters and there is a type which is fitted at the end of a cooking range. They may be heated by steam, gas or electricity and sufficient heat to boil the water in the bain-marie should be available. Care should be taken to see that a bain-marie is never allowed to burn dry when the heat is turned on. After use the heat should be turned off, the water drained off, the bain-marie cleaned inside and outside with hot detergent water, rinsed and dried. Any drain-off tap should then be checked for any blockage and then closed.

Grills and Salamanders The salamander or grill heated from above by gas or electricity probably causes more wastage of fuel than any other item of kitchen equipment through being allowed to burn unnecessarily for long unused periods. Most salamanders have more than one set of heating elements or jets and it is not always necessary to have them all turned on full.

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Salamander bars and draining trays should be cleaned regularly with hot water containing a grease solvent such as soda. After rinsing, they should be replaced and the salamander lit for a few minutes to dry the bars.

For under-fried grills to work effectively they must be capable of cooking food quickly and should reach a high temperature 15-20 minutes after lighting and the heat should be turned off immediately after use. When the bars are cool they should be removed and washed in hot water containing a grease solvent, thoroughly rinsed, dried and replaced on the grill. Care should be taken with the firebricks if they are used for lining the grill, as they are easily broken.

Contact Grills



These are sometimes referred to as double-sided or infra-grills, have two heated surfaces arranged facing each other. The food to be cooked is placed on one surface and is then covered by the second. These grills are electrically heated and- are capable of cooking certain foods very quickly. Because of this, extra care is needed, particularly when cooks are using this type of grill for the first time.

Fry Plates, Griddle Plate

Kitchen Equipment



These are solid metal plates heated from below. They are used for cooking individual portions of meat, hamburgers, eggs, bacon etc. They can be heated quickly to a high temperature and are suitable for rapid and continuous cooking. When cooking is first commenced on the griddle plates, a light film of oil should be applied to the food and the griddle plate to prevent sticking. To clean griddle plates, warm the plate and scrape off food particles. Rub the metal with pumice stone or griddle stone, following the grain of the metal. Clean with hot detergent water, rinse with clean hot water and wipe dry. Finally reseason (prove) the surface by lightly oiling with vegetable oil.

Sinks

Different materials are used for sinks according to the purpose for which they are intended:

1. Heavy galvanised iron for heavy pot wash
2. Stainless steel for general purposes
3. Glazed earthenware for general light purposes

Tables

Wooden tables should be scrubbed clean with hot soda water, rinsed and wiped as dry as soon as possible to avoid warping. Formica or stainless steel topped tables should be washed with hot detergent water, rinsed with hot water and dried. Marble slabs should be scrubbed with hot water and rinsed. All excess moisture should be removed with a clean dry cloth. No cutting or chopping should be allowed on tabletops; chopping boards should be used. Hot pans should not be put on tables; triangles must be used to protect the table surface. The legs and racks or shelves of tables are cleaned with hot detergent water and then dried. Wooden table legs require scrubbing.

Introduction to Hotel Kitchen Butchers or Chopping Block

A scraper should be used to keep the block clean. After scraping, the block should be sprinkled with a few handfuls of common salt in order to absorb any moisture, which may have penetrated during the day. Do not use water or liquids for cleaning unless necessary, as water will be absorbed into the wood and cause swelling.

Storages Racks

All types of racks should be emptied and scrubbed or washed periodically.

3.2.2 Mechanical Equipment

If a piece of mechanical equipment can save time and physical effort and still produce a good end result then it should be considered for purchase. The performance of most machines can be closely controlled and is not subject to human variations so that it should be easier to obtain uniformity of production over a period of time. The caterer is faced with two considerations:

1. The cost of the machine, installation, maintenance, depreciation and running cost
2. The possibility of increased production and a saving of labor cost

The mechanical performance must be carefully assessed and all the manufacturer's claims as to the machine's efficiency thoroughly checked. The design should be foolproof, easy to clean and operated with the minimum effort.

When a new item of equipment is installed, a qualified fitter should test it before being used by catering staff. The manufacturer's instructions must be displayed in a prominent place near the machine. The manufacturer's advice regarding servicing should be followed and a record book kept showing when and what maintenance the machine is receiving. The following list includes machines typically found in catering premises, which are classified as dangerous under the Prescribed Dangerous Machines Order, 1964.

Power-driven machines of the following types:

1. Worm-type mincing machines
2. Rotary knife bowl-type chopping machines
3. Dough mixers

4. Food mixing machines when used with attachments for mincing, slicing, chopping and any other cutting operation or for crumbling
5. Pie and tart making machines
6. Vegetable slicing machines

Kitchen Equipment

The following machines whether power-driven or not:

1. Circular knife slicing machines used for cutting bacon and other foods (whether similar to bacon or not).
2. Potato chopping machines: Before cleaning, the machine should be switched off and the plug removed from the socket.

Potatoes - Peelers

1. Potatoes should be free of earth and stones before loading into the machine.
2. Before any potatoes are loaded, the water spray should be turned on
3. The abrasive plate is set in motion.
4. The interior should be cleaned out daily and the abrasive plate, Removed to ensure that small particles are not lodged below.
5. The peel trap should be emptied as frequently as required.
6. The waste outlet should be kept free from obstruction.

Refrigerators

In order to maintain a refrigerator at peak efficiency the following points should be observed:

1. Defrost weekly. If the refrigerator is not of the automatic defrosting type the control should be turned to defrost; the racks should be emptied and racks and interior surfaces washed, rinsed and dried. If the refrigerator is not defrosted regularly excess frost accumulates on the cooling system, acts as an insulator and causes the refrigerator motor to work longer than is necessary, thus shortening the life of the components.
2. The door or doors should be kept closed as much as possible, otherwise if too much warm air is allowed to enter, the refrigerator plant overworks and excess frost can accumulate on the cooling system.

Introduction to Hotel Kitchen

3. Food should be stored sensibly and in such a way that the cold air can circulate all round. Excessive packing of food into a refrigerator should be avoided.
4. A qualified service engineer should be called in at the first sign of any defect in the machinery operating a refrigerator.

Food Mixer

This is an important labors-saving, electrically operated piece of equipment used for many purposes, for example mixing pastry, cakes, mashing potatoes, beating egg whites, mayonnaise, cream, mincing or chopping meat and vegetables.

1. It should be lubricated frequently in accordance with manufacturer's instructions.
2. The motor should not be overloaded. Overloading can be caused by obstruction to the rotary components. For example, if dried bread is being passed through the mincer attachment without sufficient care the rotary cog can become so clogged with bread that it is unable to move. If the motor is allowed to run, damage can be caused to the machine.
3. All components as well as the main machine should be thoroughly washed and dried. Care should be taken to see that no rust occurs on any part. The mincer attachment knife and plates will rust if not given sufficient care.

Vertical High Speed Cutter Mixer

This is an extremely fast, versatile labour-saving machine, which can deal with a great amount of the repetitive, time consuming: work required in some kitchen operations.



Liquidiser

This is a versatile, labour-saving piece of kitchen machinery, which uses a high-speed motor to drive specially designed stainless steel blades to chop or blend foods efficiently and very quickly. As a safety precaution, food must be cooled before being liquidised.

Food-Slicer and Choppers

Food-slicers are obtainable both manually and electrically operated. They are labour-saving devices, which can be dangerous if not operated with care. Because of this, the working instructions should be placed in a prominent position near the machine.



1. Care should be taken that no material likely to damage the blades is included in the food to be sliced or chopped. It is easy for careless workers to overlook a piece of bone, which, if allowed to come into contact with the cutting blade, could cause severe damage.
2. Each section in contact with food should be cleaned and carefully dried after use.
3. The blade or blades should be sharpened regularly.
4. Moving parts should be lubricated, but oil must not come into contact with the food.

Kitchen Equipment

Chopper (Hand or Electric)

The manual type should be washed and dried after use. Care should be taken with the interior of the blades; they should be cleaned with a folded cloth. When chopping potatoes, pressure should be applied gradually to prevent damage to the cutting blades, which can be caused by violent jerking. The electric chopper should be thoroughly cleaned and dried after use. Particular attention being paid to those parts, which come into contact with food care should be taken that no obstruction prevents the motor from operating at its normal speed. Moving parts should be lubricated according to the maker's instructions.

Masher (Hand or Electric)

The hand type should be washed immediately after use, then rinsed and dried. The electric masher should have the removal sections and the main machine washed and dried after use, extra care being taken over those parts, which come into contact with food. The same care should be taken as with electric clippers regarding obstruction and lubrication.

Water Boiling Appliances for Tea and Coffee Making

There are two main groups of water boilers: bulk boilers from which boiling water can only be drawn when all the contents have boiled and automatic boilers, which provide a continuous flow of boiling water.

Bulk Boilers

These are generally used when large quantities of boiling water are required at a given time. They should be kept scrupulously clean, covered with the correct lid to prevent anything falling in and when not used for some time they should be left filled with clean cold water.

Introduction to Hotel Kitchen Automatic Boilers

These boilers have automatic water supply and can give freshly boiled water at intervals. It's important to see that the water supply is efficiently maintained, otherwise there is a danger of the boiler burning dry and being damaged.

Pressure Boilers

This is the type that operates many still sets, consisting of steam heating milk boilers and pressure boiler providing boiling water. Care should be taken with the pilot light to see that it is working efficiently. As with all gas-fired equipment, it is essential that gas company fitters carry out regular inspection and maintenance.

Coffee and milk heaters Water-jacket boilers are made for the storage of hot coffee and hot milk with draw-off taps from the storage chamber. Inner linings may be of glazed earthenware, stainless steel or heat-resistant glass. It is very important that the storage chambers are thoroughly cleaned with hot water after each use and then left full of clean cold water. The draw-off taps should be cleaned through regularly with a special brush.

Dishwashing Machines

For hygienic washing up, the generally recognised requirements are good supplies of hot water at a temperature of 60°C for general cleaning followed by a sterilising rinse at a temperature of 82°C for at least one minute. Alternatively, low-temperature equipment is available which sterilises by means of a chemical.

Dishwashing machines take over an arduous job and save a lot of time and labour, ensuring that a good supply of clean sterilised crockery is available.

There are three main types:

1. Spray types in which the dishes are placed in racks that slide into the machines where they are subjected to a spray of hot detergent water at 48°C- 60°C from above and below.
2. The racks move on to the next section where they are rinsed by a fresh hot shower at 82°C. At this temperature, they are sterilised and on passing out into the air, they dry off quickly.
3. Brush-type machines use revolving brushes for the scrubbing of each article in hot detergent water: the articles are then rinsed and sterilised in another compartment.
4. Agitator water machines in which baskets of dishes are immersed in deep tanks and the cleaning are performed by the mechanical agitation of the hot

detergent water. The loaded baskets are then given a sterilising rinse in another compartment.

5. Dishwashing machines are costly and it is essential that the manufacturer's instructions with regard to use and maintenance are followed at all times.

Food Waste Disposers

Food waste disposers are operated by electricity and take all manner of rubbish, including bones, fat, scraps and vegetable refuse. Almost every type of rubbish and swill with the exception of rags and tins is finely ground, then rinsed down the drain. It is the most modern and hygienic method of waste disposal. Care should be taken by handlers not to push waste into the machine with a metal object as this can cause damage.

3.2.3 Small Equipment

Small equipment and utensils are made from a variety of materials such as non-stick coated metal, iron, steel, copper, aluminum, wood etc.

1. **Sauteuse:** This is shallow, long –handled vessel with sloping slides and wide surface areas, made of tin –lined copper. It is predominantly used in the preparation of sauces in which reduction or rapid reducing is required .The wide surface ensures a speedy evaporation It is also used for re-heating vegetables in butter as sloping side facilitates 'tossing' of vegetables during this process and may be used for stove top stewing .It is available in various sizes, e.g. 20cm (8in) diameter 7cm deep.



2. **Plat a Sautér:** This is a shallow, long handled vessel made of tin -lined copper or aluminum with straight sides and wide surfaces area. It is ideal for use while preparing meat sautés where the food juices are incorporated as an integral part of finished product It is available in various sizes.



3. **Frying Pan:** Frying pans are solid based pans made of iron steel aluminum vitrified iron or stainless steel, with shallow sloping sides and a wide surface area to ensure even heat of frying foods. They are available in various sizes with long or side handles.



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4. **Fruitier:** Whether round or oval, single or double handled, a fruitier has a wire basket that fits into the pan can be used for all deep fat frying and batch frying small quantities.
5. **Stockpot:** This deep, lidded, double-handled pan has tap near bottom for 'letting off' stock and is made from heavy-duty aluminum. Stockpots are used on tops of stove only for making large quantities of stock.
6. **Stew Pan or Saucepan:** This type of aluminum pan is either single-handled type is used on top of stove only, whereas the double handled type is also used in the oven. Both types are used for all boiling and stewing.
7. **Boiling Pan:** This aluminum pan has two handles and a lid is available in wide range of sizes 2-65ltr (3.5-1145pints) and is used on top of stoves or on the oven for all boiling and stewing.
8. **Braising .pan:** This type of pan is as above, but shallower and available in a similarly wide range of sizes 11-30 ltr. It is used for braising vegetables or main meal items on top of stoves.
9. **Omelette pan:** Made from aluminum, copper or wrought steel, this type of pan is shallow, round and single handled. It is used only for Omelette and crepes.



Cooking Tins



1. Baking Sheets

These are used:

- For bakery and confectionary
- Under large and small containers to act as a drip tray
- To assist in the easy handling of batches of individual items

2 Pie Dishes

Usually made from aluminum, these dishes are available in the range of shapes they are used for all baking savoury and sweet pies or stewed items.

3 Pudding Sleeves

These aluminum cylinders are available in portion sizes. These are used for steamed sweets and savoury items.

4 Roasting Tins



These are used for open oven roasting as they do not have lids. Tin foil covering can be used to protect meat

Kitchen Knives

1. Boning Knife



This is used for the boning of raw or cooked meat. The carbon steel blade must be sharpened regularly.

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2. Cook's Knife, Vegetable Knife (103 or 155mm/4 or 6in)



This knife has a small shaped handle and a short carbon steel or stainless steel blade it is used for fine preparation, vegetable pairing and finishing.

3. Cook's knife (205mm / 8in)

Cook's knife are also available with longer heavier blade (305mm/10or12in) and are usually made from carbon steel ,but can be of stainless steel .they are used for all preparations and chopping. The knife is rocked, using the whole length of the blade, for effective chopping.

4. Filleting Knife



This knife has a long, flexible carbon steel stainless steel, 155mm (6in) blade. It is used skinning and filleting fish.

5. Palette Knife



Palette knives have either have carbon steel or stainless steel blades, 155, 205, 255 or 305mm long They are used for moving prepared food, turning cooked food and lifting cooked food from oven trays.

6. Steel

This is carbon steel bar with either a wooden or a polypropylene handle. It is used for sharpening all steel knives

Note: With steel knives, it is possible to achieve a very sharp edge on a steel knife, but it needs to be sharpened regularly, ideally after each use.

Wood, Rubber and Compound Materials

Wooden cutting boards are an important item of kitchen equipment, which should be kept in use on all table surfaces to protect the table and the edges of cutting knives. Wooden cutting boards will warp or splinter if the following points are not observed:

1. A strong, well-constructed board should be used.
2. After use, boards should be scrubbed with a bristle brush, using hot detergent water, rinsed with, clean water and dried as much as possible.
3. The boards should not be put over a stove or in a hot-cupboard. Excess heat and water cause wood to warp.
4. Heavy chopping should not occur on boards as this causes splintering. The place for heavy chopping is on the chopping block.

Wooden Cutting Boards do have the following Disadvantages

1. They are porous and therefore retain taste, smell, bacteria, grease and dirt.
2. They expand and contract when washed and allow small particles of food to become trapped.
3. The cut and scored surface also allow food particles and bacteria to become embedded.

Rubber

Cutting boards are also made of hard rubber and rubber compounds, e.g. rubber, styrene and clay. These are hygienic because they are solid, in one piece and should not warp, crack or absorb flavours. Scrubbing with hot water and then drying cleans them. Rolling pins, wooden spoons and spatulas: These items should be scrubbed in hot detergent water, rinsed in clean water and dried.

Rolling Pins Should not be scraped with a knife; this can cause the wood to splinter. Adhering paste can be removed with a cloth.

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Wooden Sieves and Mandolins: When cleaning, care of the wooden frame should be considered in the light of the previous remarks. The blades of the mandolin should be kept lightly greased to prevent rust (stainless steel mandolins are available).

Examples of wooden equipment

- 1. Chopping board
- 2. Sieve
- 3. Triangle
- 4. Salt box
- 5. Rolling pin
- 6. Spoon
- 7. Spatula
- 8. Mushroom
- 9. 12'ruler

Check your progress 1

- 1. Make lists of large and mechanical equipment.
- 2. What is a bratt pan? Discuss the uses of mechanical equipment in hotel kitchen.

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3.3 SANITATION AND SAFETY PRECAUTIONS IN KITCHEN

Good health is one of life’s most precious gifts. High standards of sanitation are strategic to good physical and mental health. The National Sanitation Foundation, a nonprofit organisation in Ann Arbor, Michigan, explains the importance of sanitation.

Basic Principles of Microbiology

Knowledge of the principles of microbiology is basic to an understanding of food sanitation. Microorganisms are living creatures so small that they can only be seen through a microscope. They consume food, give off waste and multiply. Some are harmless, some are beneficial and others are very dangerous. To prevent food-borne illnesses and food spoilage, it is the responsibility of management to develop and carry out educational programs for foodservice personnel emphasising:

- Effective control of food temperatures during storage, cooking and holding
- Protection of food from microorganisms, cockroaches, flies, rodents and pests
- Protection of food from harmful substances, such as chemicals and poisonous materials
- Good health, personal hygiene and safe food-handling practices

Check your progress 2

1. What are the safety precautions to be taken by an employee while working in the kitchen? Discuss in detail.

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3.4 CARE AND MAINTENANCE OF EQUIPMENT

Equipment - large or small, heavy or light - requires care in handling, use and storage in order to extend life to the maximum, minimise depreciation and maintain it in a reasonably attractive and efficient manner while in use. In small catering establishments, the care and maintenance is generally entrusted to those who operate the equipment, as the types invested on are generally small or medium duty pieces. In larger establishments, where heavy-duty equipment predominates, a maintenance department performs this function.

In the case of small pieces like cutlery, some metals need less care than others. Stainless steel is the non-corrosive and easy to-care for material, while plated cutlery tends to be scratched easily and with time requires replating.

With kitchen tools like the chef's knives, choppers etc. care is limited to iron blades by keeping them dry and covered. It is also common practice to rub them with a little cooking oil to protect them from rusting through contact with air. With whisks and beaters it is the rotating parts or the wiry ends which need special attention. It is good practice to wash or soak beaters and whisks immediately after use so as to prevent food materials from drying on the rotary and posing a cleaning problem.

With heavier and larger pieces of equipment, general cleanliness of the item and its environment is the aiding principle. The schedule below is a guide to the general care of most equipment.

Schedule for care of equipment

1. Keep all equipment clean.
2. Wash all removable parts of equipment with suitable detergent and hot water after each use. In tropical summers, this is not necessary, as the water in the taps is usually warm to hot, depending on the environmental temperature. After washing, wipe equipment completely dry before replacing.
3. All small equipment like cutlery, ladles, chopping boards, kitchen tools etc. should be washed after use as in (2) and replaced in drawers and racks built for the purpose and covered to prevent them from dust or dirt during storage.
4. Check that all pieces are in working order. Close supervision at work is necessary to ensure careful handling and to detect any deviations from effective operation, like an unusual sound or fusing of warning lights or ineffective thermostatic controls.

5. Repairs must be attended to immediately to prevent the equipment from giving way and disrupting work for any period.
6. A weekly, fortnightly or monthly programme for oiling or servicing the equipment to maintain movable parts or machinery in order is important. The service instructions provided by the manufacturer along with the equipment are a good guide to the service procedure that should be followed. It is useful to prepare an instruction card for every equipment carrying the manufacturer's instructions in very simple form. Then the operators of the equipment will understand the instructions. This card could be kept near each major piece of equipment.
7. All electrical inputs to the equipment should be checked periodically to ensure that proper electrical load is available for efficient functioning.
8. Insulations, plumbing and other connections need periodic checks to keep equipment running at optimum efficiency.
9. Make full use of warranty periods to help train organisation staff to learn regular maintenance procedures from the manufacturer's engineers.
10. Assign the care of each machine to one responsible person.

Money, time and effort spent on care helps to maintain equipment in continuous working order, while that spent on repair can mean interruption in work causing unnecessary strain on staff, in addition to extra costs.

It is beneficial to keep records of all amounts spent on care and maintenance of every large equipment. This helps to estimate the depreciation every year. Excessive costs shown through records for a particular year can help to draw attention to high maintenance costs, which weighed against the cost of the equipment may result in a decision to change the entire equipment for a more efficient one. Records can also help to detect inefficiencies in operation or defects in design or manufacture.

Every equipment must be analyzed for efficiency in use. Record forms can be maintained for each equipment for this purpose.

The cleaning schedules for some commonly used equipment in small food service establishments are given under their respective heads:

Cooking Equipment: Hot plates, gas stoves or ranges

1. Wipe the top daily while still warm, using wet cloth or sponge.
2. Any foods spilled and burnt while cooking may require the use of mild detergent or scouring pad.

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3. For open burners, a weekly boil in warm soapy water will help remove any food particles that may have been the cause of blockage leading to inefficient heating.
4. Wipe dry with slightly oiled cloth.

Ovens

1. Wash, rinse and outer surfaces daily, after every meal.
2. Use liquid wax for enamel finished parts.
3. Brush the inside to remove any sediment due to food particles charred during cooking. Any sticky areas may be wiped with a wet cloth after washing the even and them switching it off.
4. Clean all plastic knobs with wet cloth and wipe dry.

Refrigerators

1. The outside surfaces should be cleaned as for oven daily.
2. A weekly cleaning of the insides of a refrigerator is sufficient especially if the establishment is small. For this the machine should be disconnected, doors opened and the shelves removed and washed in warm water according to manufacturer's instructions.

Preparation Equipment

1. All removable parts should be cleaned after every use with light detergent.
2. Sharp edges should be carefully handled for cleaning, drying and replacing immediately for use.

Coffee Urn

1. Urns should be emptied after each meal and the insides cleaned with a hard brush using a solution of sodium bicarbonate.
2. Outer surfaces as for any other equipment

In general, it is good policy to follow manufacturer's instructions for care and maintenance of any equipment.

Maintenance Costs

The cost of maintaining any equipment should be determined based on the following factors:

- Cost savings in terms of fuel consumption, as compared with the fuel bill prior to the installation of the piece.
- Cost of servicing and regular cleaning which would involve the cost of cleaning materials and detergents.
- Rate of depreciation calculated over the expected life of the equipment.
- Any savings that the installation would have resulted in, in terms of better utilisation of raw materials and prevention of waste
- Any savings brought about due to elimination of daily wageworkers, as in the case of people being employed seasonally for peeling of vegetables for establishments, which function for a limited period in the year, as for school meals, college canteens.

Check your progress 3

1. Discuss the care and maintenance of equipment in detail.

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3.5 LET US SUM UP

In this unit, we:

- Came to know about the types of Kitchen Equipment used in the hotels, their importance and usage
- Understood the sanitation and safety precautions in the kitchen
- Came to know about the care and maintenance of equipment

Check Your Progress: Possible Answers

Check your Progress 1

Answers:

1. Refer Section 3.2.1 and 3.2.2
2. Bratt Pan: The bratt pan is the most versatile piece of cooking equipment in the kitchen because it is possible to use it for shallow frying, deep-frying, stewing, braising and boiling. Because of the large surface area, a bran pan can cook many items of food at one time. A further advantage is that it can be tilted so that the contents can be quickly and efficiently poured out on completion of the cooking process. Bran pans are heated by gas or electricity and several models are available incorporating various features to meet different catering requirements.

For information on uses of mechanical equipment, refer 3.2.2

Check your Progress 2

Answer: Refer 3.3

Check your Progress 3

Answer: Refer 3.4

SOME USEFUL BOOKS FOR THIS BLOCK

Kitchen Equipment

1. Cooking with Indian Masters, Gupta P.D. Prasad
2. Indian Food (A Historical Companion), Acharya K.T., Oxford University Press, 2003
3. Modern Cookery Vol-1, Thangam E. Philips, Orient Longman, 2005
4. Theory of Cookery, Krishna Arora, Ed. 5, Rank Bros & Co., 2005

ACTIVITIES FOR THIS BLOCK

Activity 1

- Create guidelines for the nature of work of all the staff working in the kitchen. Prepare a report.

Activity 2

- Write an interview of an Executive Chef and state the way he / she functions in the hotel, challenges faced and the way he / she overcomes the same ending with good results. (related to the various Kitchen Equipments.)

GLOSSARY

Beat	To mix air with food by vigorous motion; also used to make a mixture smooth and free from lumps. A wooden spoon is best for beating thick mixtures, an egg whisk for thin ones.
Béarnaise	A rich sauce, resembling a Hollandaise sauce, made from butter, egg yolk and vinegar and flavored with peppercorns, shallots, chervil and tarragon.
Béchamel	A rich white sauce.
Bisque	A rich, thick, cream soup, usually made from shellfish, e.g. lobster.
Bouillon	Unclarified broth or stock made from fresh meat.
Bortsch	Russian soup containing beetroot.
Bouquet garni	A small bunch of mixed herbs used for flavoring soups, stews etc. Ideally, this should consist of a sprig each of parsley, thyme, basil, marjoram, with a bay leaf and a strip of lemon peel, tied together with cotton. It must always be removed before the dish is served. When fresh herbs are unobtainable, dried herbs tied in a piece of muslin may be used instead.
Braising	This is a combined method of roasting and stewing in a pan with a tight fitting lid. For correct use, this method requires a special pan but a casserole dish or stew pan makes a good substitute.
Broil	To cook by exposing food directly to heat; used synonymously with “grill”.
Chaud-froid	A cold sauce used for coating meat, game or fish.
Congalaise	Garnish of poached oysters and shrimps cohered with Normande sauce.
Consomme	A light-coloured clear soup.
Court bouillon	Well-flavoured cooking liquor for fish.

Creaming	Softening of fat by friction with a wooden spoon, generally followed by the gradual incorporation of sugar as in cake making.
Croutons	Bread cut in small dice or fancy shapes and fried or toasted. Used as a garnish for serving with soup.
Crystallise	To form sugar- or honey-based syrups into crystals. The term also describes the coating.
Duxelle	A mixture of parsley, mushrooms and shallots used for flavouring sauces and purees or as forcemeat.
Estouffade	Brown stock.
Espagnole	A rich brown sauce.
Firm-ball stage	In candy making, the point where boiling syrup dropped in cold water forms a ball that is compact yet gives slightly to the touch.
Fry	To cook food in hot cooking oil, usually until a crisp brown crust forms.
Hard-ball stage	In candy making, the point at which syrup has cooked long enough to form a solid ball in cold water.
Hollandaise	A rich sauce of Dutch origin made with butter or cream, egg yolks and lemon or vinegar served hot or cold with many kinds of vegetables or fish.
Maitre d'hôtel Butter	A piquant sauce or butter flavored with parsley and lemon.
Minestrone	Italian soup with many vegetables and macaroni added.
Mulligatwny	A soup of eastern India that is flavored with curry prepared with a meat or chicken base.
Poele	Roast done entirely or almost entirely in butter. It is a simplified process of old Cookery. The joint or poultry is first fried and coated with a thick layer of matignon, wrapped in slices of pork fat covered with butter paper or aluminum foil and cooked in the oven. It is basted with melted butter during cooking.

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Panbroil	To cook a food in a skillet without added fat, removing any fat as it accumulates.
Pressure cooking	A cooking method that uses steam trapped under a locked lid to produce high temperatures and achieve fast cooking time.
Panfry	To cook in a hot pan with small amount of hot oil, butter or other fat, turning the food over once or twice.
Potage	A nourishing broth or soup.
Sauce	A pouring mixture, sweet or savoury, to serve with and to enhance the flavour of another dish.
Steam	To cook over boiling water in a covered pan; this method keeps foods' shape, texture and nutritional value intact better than methods such as boiling.
Stewing	Browning small pieces of meat, poultry or fish, then simmering them with vegetables or other ingredients in enough liquid to cover them, usually in a closed pot on the stove, in the oven or with a slow cooker.
Stir-Fry	The fast frying of small pieces of meat and vegetables over very high heat with continual and rapid stirring.
Stewing	Browning small pieces of meat, poultry or fish, then simmering them with vegetables or other ingredients in enough liquid to cover them, usually in a closed pot on the stove, in the oven or with a slow cooker.
Water bath	A gentle cooking technique in which a container is set in a pan of simmering water.

INDIAN CULINARY TERMS

Alu	Potato.
Amriti	A sweetmeat.
Atta	Whole meal flour.
Baffad	A curry with meat and radish from Goa.
Baghar	Tempering done after the dish has been prepared. Onions and a few spices or herbs are fried in a spoonful of fat and added to the cooked dish to improve flavour.
Baked hilsa	An oily fish considered a delicacy. Smoked slightly all bones removed and baked with anchovy essence, tomato sauce, salad oil, mustard, etc.
Balushai	A round ball made of dough, slightly flattened at the centre, Fried and dipped in sugar syrup.
Barfi	A fudge-like sweet
Basundi	Milk sweet
Bhujjia	A north Indian vegetable preparation
Bhaji	Another term for vegetable preparations
Bhaturas	Slightly leavened bread baked on a grid and then fried. Generally served with 'Chhole', a dish prepared out of whole chicken peas
Bhel puri	Crisp fried thin rounds of dough mixed with puffed rice, fried lentil, chopped onion, herbs and chutney.
Bhindi	Okra/gumbo, an Indian vegetable known as ladies fingers.
Bhurta	Vegetable boiled or roasted in charcoal, peeled, mashed and sautéed with a little chopped onion and chillies.
Biryani	A rich preparation of rice. Parboiled rice is put in layers with a rich meat or vegetable curry and the whole is baked till cooked.

Introduction to Hotel Kitchen	Black pepper	The berry of the pepper vine dried with the skin on.
	Bombay duck	A small, phosphorescent, gelatinous fish, abundant at the surface of the salt waters of Bengal and Bombay. It is prepared fresh or dried. When dried, it is toasted crisp and served.
	Bonda	Mashed potatoes, seasoned and formed into balls, dipped in batter and deep fried — a South Indian snack.
	Brinjal	Eggplant or aubergine. Called baingan in Hindi.
	Cardamom	A spice—the fruit of the cardamom tree. The seeds are found in a pod, which is dried. It has a pleasing taste and flavour.
	Cashewnut	The nut of the cashew fruit. It is found outside the fruit, enclosed in a kidney-shaped shell.
	Chapatti or phulka	Wheat bread made of unfermented dough, round in shape and paper thin. Resembles a tortilla.
	Charoli	An Indian nut.
	Cheera	Amaranth leaves.
	Chikkoo	A brown Indian fruit—a cross between a fig and a russet apple. Also known as sapota.
	Chiwda	A mixture of nuts, fried pressed rice, fried lentils, gram preparations and spices.
	Cocum	A sour fruit dried and used chiefly with fish. Acidic in taste. Coriander -A spice, the seed of a small herb. Cumin - A spice resembling caraway seeds.
	Curry powder	A mixture of various spices such as coriander, chillies, turmeric, cumin etc., roasted and powdered together.
	Custard apple	Resembles a leaf artichoke. A luscious custard-like fruit with hard black seeds inside.
	Dahi	Yoghurt or curd.
Dahibhalla	Ground lentil, made into fried balls and then steeped in seasoned beaten yoghurt. Served with pulao or as a snack.	

Dal - Lentil	There is a large variety of lentils in India.
Dhansak	Literally meaning “rice & vegetables”, a Parsi specialty. It is plain fried rice served with a curry rightly called “wide mouthed” as it contains an innumerable variety of ingredients—meat, lentils, vegetables, leafy vegetables, nuts and a variety of spices.
Doodh pak	Sweetmeat made of rice and milk.
Do pyaz	Literally “twice onion”. Ground and fried onion added to meat along with other spices. Hence Do (twice) and Pyaz (onion). It is not very hot and could form a tasty accompaniment to parathas and chapatties.
Dosa	A type of savoury pancake made with fermented batter of ground lentil and rice. Cooked on a griddle. A specialty of South India.
Dum	A process of cooking with heat from above as well as below with tightly covered pan.
Dum phukta	A dry rich meat dish prepared by cooking meat in pressurised steam.
Drumstick	A long type of bean with hard fibrous covering, resembling a drumstick.
Garam masala	A mixture of cloves, cinnamon, cardamom, pepper and cumin.
Gaujas	A fancy sweetmeat made of dough fried and dipped in sugar syrup. Ghee - Clarified butter or vegetable shortening processed to resemble clarified butter.
Groundnut	Peanut or monkey-nut.
Guava	A popular fruit used to make guava cheese, jelly and stewed fruit.
Gulab jamun	Khoa or Mawa (milk evaporated to remove all moisture) is kneaded and flavoured and made into balls, which are fried till golden brown and dropped immediately into hot sugar syrup.
Gustaba	Large meat balls (Kofta) in gravy of curd, mixed with ground poppy seeds, nuts and onion and lightly spiced.

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Hing	Asafoetida, a strong flavouring agent. It also acts as a carminative.
Hopper	A counterpart of the American hot cake. For making it, the batter is fermented by the addition of toddy, an alcoholic beverage. Cooked in seasoned earthenware pots. Its subtle and pleasing flavour would appeal to all palates. Eaten with stew.
Halwa	A sweet dish made of lentils, semolina or wheat or of vegetables such as beetroot, carrot and pumpkin, with butter, milk and sugar.
Idli	A fermented batter of ground lentil and rice steamed in moulds. A specialty of South India.
Jaggery	Refined and solidified molasses.
Jalebi	A golden-coloured, crisp sweet filled with sugar syrup, formed in rings.
Kababs	A savoury barbecue done on iron rods.
Kalia	A Bengali vegetable or fish dish with spices and yoghurt.
Kesari	A South Indian sweet dish made of vermicelli or semolina.
Kheema	Minced meat.
Kheer	A pudding-like preparation of milk with other ingredients such as rice or carrot.
Khoa	Milk is boiled down till all moisture is removed, used as a base for a large number of Indian sweets.
Khorma	Rich, thickened brown curry of chicken, mutton or vegetables. Poppy seeds and desiccated coconut are added along with other condiments for thickening. The meat itself is made tender by marinating in curd (yoghurt) before cooking.
Khichdi	Mixture of rice and lentils.
Kofta	Minced meatball.

Laddoo	A sweet ball made of gram or lentil flour, rice or semolina.
Lassi	A beverage made of beaten yoghurt diluted with water; sugar or salt may be added.
Lichi	A luscious Indian fruit. It looks like a bigger version of the strawberry and grows in Bengal, Dehra Dim and Delhi regions.
Lime	A smaller variety of lemon. Much sharper.
Loochi	Bengaji version of puri.
Macherjhal	A special Bengali fish curry where the fish is first fried and then curried. Mustard oil is the cooking medium used. Mackerels make excellent jhal.
Machhi	Fish
Maida	Refined flour
Maize	Indian corn.
Mango	A very luscious Indian fruit, which has several varieties—Dasehri, Chausa, Langara, Alfonso, etc.
Marinate	To steep in a mixture of yoghurt or vinegar to soften.
Masala	Indian condiments and spices.
Moilee	Fish or prawn cooked in plenty of coconut milk—lightly spiced.
Murgh musallam	A spicy chicken preparation.
Mattar	Peas.
Mutanjan	Spiced rice with mutton sweetened with sugar. It is a specialty of Kashmir.
Mulligatawny curry	Chicken or mutton curry with a flavour popularised in the West as Mulligatawny soup.
Nan	Indian bread made of slightly leavened dough, baked on the wall of a mud oven.

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Nargisi kofta curry

Minced meat, mixed with spices and egg, covers a hardboiled egg (like scotch eggs) and it is fried and dropped in a spiced curry. A non-fermented drink obtained from the coconut palm.

Pachadi

Seasoned yoghurt with vegetables—served in South India.

Palak mutton or Palak chicken

Meat or chicken cooked with spinach, lightly spiced and thick, without much gravy. The spinach is mashed and cooked with the meat.

Pani puri

A puff of dough fried and eaten with tamarind water and sprouted gram.

Panir

Cottage cheese made by curdling milk with lemon juice, curd etc. and the whey removed by straining and hanging in a muslin bag.

Papaya

A luscious Indian fruit; papaw or pawpaw.

Paratha

Fried bread made of unleavened wheat flour.

Payasam

A South Indian milk pudding made from cereal (such as rice or vermicelli) or pulse and sugar.

Phirnee

A creamy milk pudding made of rice flour.

Pomfret

A type of white fish very popular in Bombay.

Prawn malai curry

Prawns cooked in spiced cream and coconut cream and baked in a coconut.

Pulao

A rice dish. Rice is fried in fat and cooked in stock and water.

Pulao rice

A special type of rice used in pulao — thin and long and not as starchy as ordinary rice.

Pumpkin

A big, round vegetable of the squash variety.

Puri

Deep-fried round wheat bread. About 5 cm. or 2 inches in diameter and puffed.

Quabarga

A type of meat kabab.

Rabri	Sweet thickened milk.
Raita	Vegetable, raw or parboiled, mixed with beaten and seasoned yoghurt.
Rasam	A spicy soup made of lentils and tomatoes. Hot and sharp; served sometimes as an appetiser. A specialty of South India.
Rasgullas	Milk is curdled by the addition of curd and lime, the casein separated from whey, which is then kneaded, smooth and made into balls. A piece of sugar candy is usually kept in the centre. These balls are put into clarified simmering sugar syrup and cooked.
Rava	Semolina.
Reshmi chapatties	Unleavened bread resembling tortillas, but as thin as silk and about 20 to 25 cm. or 8 to 10 inches in diameter. Baked over an upturned dome-like iron vessel over live coal.
Rista	A minced meatball curry, a specialty of Kashmir.
Rogan josh	A red curry with a thin gravy made from the leg of mutton cut with bones into fairly large pieces. The distinct flavour is that of saffron and nutmeg. Saffron is added just before removing from the fire. The red colour is obtained by the addition of saltpetre and rattan jog, a red coloured bark.
Sambar	A preparation of lentils with one or more types of vegetables— served as a necessary accompaniment to rice in South Indian vegetarian food.
Samosa	A thin pastry cone filled with boiled or spiced vegetable or minced meat and deep fried Sandesh Sweetened milk, condensed to solid form by slow cooking and flavoured.
Seekh kabab	Minced meat and spices ground together bound with egg and fixed on to a skewer and grilled.
Sev	A fried savoury resembling vermicelli. It is made of gram flour dough passed through a mould and deep-fried till crisp.

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Shami kabab	Cutlets made with minced meat and lentil.
Shrikhand	Sweet yoghurt based dish with liquid removed by straining and flavoured with saffron and nuts.
Snake gourd/Bottle gourd	Vegetable with a long snake-like shape.
Tamarind	A sour fruit used for curries, chutneys, etc.
Tandoori Chicken or Fish	Spiced meat or fish barbecued in a specially designed tandoor oven.
Toddy	An alcoholic drink obtained from a variety of palm.
Turmeric	A yellow spice used for imparting a characteristic flavour and colour. The root of a plant belonging to the ginger family.
Uppuma	A savoury South Indian dish made out of semolina and lentils.
Vindaloo	A sharp and hot curry made of pork, prawn, chicken or mutton. Originated in Goa.
Wada or Pakora	A rissole of lentil or vegetable served as a snack.
Warkha	Thin foil of silver or gold which is edible.
Yellow rice	Rice flavoured and coloured with saffron or turmeric.
Zarda	A sweet pulao served at the end of a meal.

WESTERN CULINARY TERMS

Abats	Butcher's supplies such as heads, hearts, liver, kidney, etc.
Aiguillettes	Thin slices of breast of poultry cut lengthwise.
A la	in the style of.
A la broche	Roasted in front of a fire on a spit or in a Dutch oven.
A la Carte	Opposite of table d'hote, meaning that each dish is ordered and priced individually.
A la diable	The French way of saying "devilled", in other words, any very hot or highly seasoned dish.
A la francaise	Dishes that are prepared in the French way.
Aperitif	A cocktail or other drink served before a meal to stimulate the appetite.
Appetiser	A titbit served before a meal or as the first course. A drink such as sherry, cocktail etc.
Aspic	A transparent savoury jelly generally made of seasoned meat stock. It is used to garnish meat or fish or to make moulds of meat, fish or game.
Au bleu	Applied to fish cooked in fish stock with wine added.
Au four	Baked in the oven.
Au gras	Rich. Applied to dishes with meat in rich gravy.
Au gratin	Any dish covered with sauce, breadcrumbs or cheese and afterwards baked or grilled. The food is served from the dish in which it is cooked.
Au maigre	Opposite of au gras. Applied to meatless or Lenten dishes.
Au naturel	Simply cooked food or food served raw, such as oysters.
Baba	A light yeast cake, usually soaked in rum or spirit.

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Bain-Marie	A large shallow pan to hold water in which several small sauce pans can be heated without their contents boiling, an alternative to the double saucepan, but often used to keep cooked food warm.
Bake	To cook by dry heat, usually in an oven.
Barbecue	Meat basted with a highly- seasoned sauce, e.g. lamb basted with hot redcurrant sauce.
Barquette	A boat-shaped pastry tartlet, filled with chicken, vegetables, oyster, fish mayonnaise, etc.
Baste	To spoon melted fat or liquid over food during cooking to keep it moist.
Batter	A mixture of flour and liquid such as milk, egg, etc., of such consistency that it can be beaten or stirred. Used to coat foods for frying or as pancakes, etc. May be sweet or savoury.
Bearnaise	A rich sauce, resembling a Hollandaise sauce, made from butter, egg yolk and vinegar and flavoured with peppercorns, shallots, chervil and tarragon.
Beat	To mix air with food by vigorous motion; also used to make a mixture smooth and free from lumps. A wooden spoon is best for beating thick mixtures; an egg whisk for thin ones.
Bechamel	A rich white sauce.
Beignets	Pancake batter fried in deep fat or fritters of different kinds.
Beurre noir	Browned butter.
Beurre mannie	Equal quantities of flour and butter used for thickening sauces.
Bisque	A rich, thick, cream soup, usually made from shellfish, e.g. lobster.
Blanch	Literally to whiten, but used here to mean dipping food into boiling water for a few moments and then into cold, to remove skin. To blanch almonds, boiling water is poured on them to whiten them and to remove the skins.

Blend	To combine two or more ingredients.
Bombe glacee	A mould lined with one kind of ice cream and then filled with ice cream of a different flavouring.
Bonbon	Sugar confectionery — sweets.
Bouchees	Small patties of light pastry sufficient for one mouthful.
Bouillon	Unclarified broth or stock made from fresh meat.
Bortsch	Russian soup containing beetroot.
Bouquet garni	A small bunch of mixed herbs used for flavoring soups, stews, etc. Ideally, this should consist of a sprig each of parsley, thyme, basil, marjoram, with a bay leaf and a strip of lemon peel, tied together with cotton. It must always be removed before the dish is served. When fresh herbs are unobtainable, dried herbs tied in a piece of muslin may be used instead.
Brioche	Very light French rolls.
Broil	To cook by exposing food directly to heat; used synonymously with “grill”.
Browning	A substitute added to stews and gravies to darken them.
Brunoise fashion	Cut into small dice.
Brush	A thin, even coating of beaten egg or milk applied to pies, buns, etc., immediately before they are put in the oven. It gives the pastry or bun a glossy appearance and helps it to brown more quickly and deeply. Pastry brushes are sold for this purpose. Dried egg is especially useful for brushing, as a very small quantity can be mixed instead of beating a whole egg.
Cafe au lait	Coffee with milk; white coffee.
Canapes	Small pieces of toast, fried bread or pastry on which light savouries are served.
Carte du jour	Menu for the day.
Canneloni	Small pasta rolls filled with mince (Italian).

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Capon	A castrated male chicken. It grows large and has tender meat.
Caramel	A substance made by heating sugar until it turns dark brown. Used for coating moulds, flavouring dishes, etc.
Caramelise	To heat sugar until it turns brown.
Casserole	A baking dish with a well-fitting lid used for cooking stews etc. in the oven. Usually made of fireproof earthenware or glass or of heavy enamel. The food is usually served from the casserole.
Cassolette	A kind of hot hors d'oeuvre moulded to the shape of a small drum.
Caviare	Salted roe of sturgeon or similar fish.
Cèpes	A kind of mushroom.
Cereals	Grains such as wheat, including semolina, oats, barley, rye, rice etc.
Charlotte	A sweet made of alternate layers of fruit and either breadcrumbs or slices of bread and butter.
Charlotte russe	Generally a mould lined with sponge cake or sponge fingers and filled with a mixture of cream and fruit and jelly.
Chartreuse	Mould of fruit, jelly or savoury mixture.
Chateaubriand	Head of the fillet of beef.
Chaud-froid	A cold sauce used for coating meat, game or fish.
Cheese fondue	Grated cheese melted in white wine, seasoned with pepper and flavoured at the last minute with a little kirsch.
Chiffonnade	Mince of sorrel, lettuce etc. Wash the leaves, remove veins, roll and cut into fine strips with a sharp knife.
Chinois	A conical strainer.
Chipolata	A kind of small sausage.

Choux	A kind of pastry used for such things as cream buns and eclairs.
Chowder	An American soup made with pickled pork, shellfish, fish, potatoes and other vegetables.
Cisel	Finely chopped vegetables.
Coat	To cover with a thin layer.
Cochineal	A red colouring matter
Compote	Fruit stewed in syrup.
Concass	To chop roughly, e.g. concassed tomatoes.
Condiments	Spices and seasonings.
Confiture	Jam or fruit preserves.
Conglaise	Garnish of poached oysters and shrimps cohered with Normande sauce.
Consistency	The thickness or texture of mixture, such as a cake or batter mixture.
Consomme	A light-coloured clear soup.
Cotelettes	Cutlets.
Coupe	A cream or water ice served with fruit.
Court bouillon	Well-flavoured cooking liquor for fish.
Crackling	The rind of roast pork.
Cream fat	To beat fat with a wooden spoon until it is light and fluffy.
Crecy (a la)	Dishes containing carrots.
Creme	Anything of a creamy consistency can be described thus.
Croissants	Crisp and light French rolls
Croquettes	Leftover meat, fish, poultry or game, finely minced and rolled into small sausage shapes. These are coated with egg and bread crumbs and fried to golden brown.

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Croutes	Ovals or rounds of fried bread.
Croutons	Bread cut in small dice or fancy shapes and fried or toasted. Used as a garnish for serving with soup.
Cuisse	Leg, e.g. cuisses de volailles, cuisses de grenouilles.
Custard	A cooked or baked mixture made of milk and eggs; it may be sweetened for dessert or it may be flavoured with cheese, fish, etc., as an entree.
Cut and fold	To mix flour very gently into a mixture.
Cutlet	A small piece of meat cut usually from rib of veal or pork, mutton or lamb, usually grilled or fried.
Dariole	A small cup-shaped mould.
Darne	The middle slice of a fish.
Devilled	The same as 'à la diable', that is, any highly seasoned dish. Often this seasoning is done with some form of curry powder.
Dice	To cut into small even cubes. Cut food first into slices 1/2 in. thick, then into strips the same width and finally hold strips together and cut into cubes. Use a chopping board and a sharp knife.
Dieppoise	A garnish for fish consisting of shrimp's tails, mussels and mushrooms.
Dissolve	To melt a solid food in a liquid.
Dot	To put small bits of butter, cheese, cream, etc., over the surface of a dish.
Dough	A mixture of a liquid, flour, etc., kneaded together into a stiff paste or roll.
Dredge	To cover with a thin sprinkling.
Dust	To sprinkle lightly with fine sugar, dried milk or flour.
Duxelle	A mixture of parsley, mushrooms and shallots used for flavouring sauces and purees or as forcemeat.

Ecarlate	Salted meat is said to be a l'ecarlate when it is covered with a coat of red jelly.
Eclair	Choux pastry filled with custard or cream. Can be coated with chocolate.
Emince	Finely sliced or shredded.
Entree	A dish served in the first part of a dinner, usually a made-up dish with sauce. It can also be the main dish of a less formal meal.
Entremets	Hot or cold sweets.
Escalopes	Thin slices of meat dipped in egg and breadcrumbs and then fried.
Estouffade	Brown stock.
Espagnole	A rich brown sauce.
Failles	Potato straws.
Farci	Any kind of stuffing.
Fennel	A fragrant herb used for flavouring sauces (saunf in Hindi).
Fillets	Fish with bone removed. Undercuts of veal or beef. Slices from the breast of a bird.
Fillet	To bone fish, etc. and cut into fillets.
Flan	A pastry case made in a flat tin and afterwards filled with a sweet or savoury mixture.
Flute	A long crisp roll of bread (French) used to garnish soups or to serve with soup.
Foie gras	Liver of a fat goose.
Fondant	Sugar boiled to 112°C (234°F) and then beaten to a 'fudge-like' smoothness. It can be used as an icing on any kind of sweet.
Fool	A summer sweet made with sieved fruit and whipped into a frothy mixture and served with cream or custard.

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Forcemeat	Savoury stuffing.
Frangipane	Confectioner's custard.
Frappe	Sweetened fruit juice, half frozen.
Fricadelles	Braised game or meat in very small pieces.
Fricassee	A stew generally made with chicken, veal, rabbit or lamb thickened with white sauce to which milk has been added.
Fritters	Fruit, meat, vegetables or fish coated with batter and fried, usually in deep fat.
Frosting	A cooked or uncooked sugar icing used to cover and decorate cakes, etc.
Fry	To cook food in very hot fat in an open frying pan.
Fumet	A kind of essence extracted from fish, game, etc.
Galantine	Cooked meat that has been boned, pressed into a mould with jelly and served cold.
Galette	A large quoit made from puff pastry or short pastry.
Garnish	To decorate.
Garniture	Decoration.
Gateau	This can be a cake, an ice cream or anything made in the shape of a cake and lavishly decorated.
Gelatine	A product made from refined cows' hoofs. Used for jellies. Sold either granulated or in sheets. The strength varies with each brand. Allow ½ oz. to ¾ oz. to each pint of liquid.
Genoise	A rich butter sponge used as a base for gateaux and as a base for savoury fingers, etc.
Giblets	The heart, liver and gizzard of poultry used to make gravies, soups and pies.
Gild, gilding	(i) to cover an object with beaten eggs by means of a brush, (ii) To give a golden sheen to objects by means of heat.

Glace	Ice, ice cream, icing, to make smooth or glossy with icing or jelly. Also crystallised or frozen foods.	Western Culinary Terms
Glaze	Meat glaze is made by reducing (by boiling) stock or gravy to the consistency of jelly. It is used for improving the appearance of cold meats, etc. Sugar and water glaze is brushed over fruit pies, buns, etc., when they are taken from the oven, to improve their surface appearance. Egg-and-water glaze is brushed on to savoury pies, buns, etc., before they are put in the oven.	
Goulash	Hungarian meat stew, flavoured with paprika.	
Haggis	A kind of bag pudding, made in Scotland, from liver, sheep's head, etc., finely minced and mixed with oatmeal, herbs, etc.	
Haricot	A type of stew, literally, "beans".	
Hash	A made-up dish of meat that has been diced or minced. Usually a way of using leftovers.	
Hollandaise	A rich sauce of Dutch origin made with butter or cream, egg yolks and lemon or vinegar served hot or cold with many kinds of vegetables or fish.	
Hors d'oeuvre	Small savoury titbits, usually cold, served as an appetiser at the beginning of a meal.	
Indienne	A dish served in the Indian manner.	
Infusion	The liquid extraction derived from steeping a substance such as coffee, tea, herbs, etc., in boiling water.	
Jardiniere	Garnish of vegetables.	
Julienne	Food cut into long strips. A clear soup of this name contains finely shredded vegetables.	
Junket	Milk coagulated by the addition of rennet. This makes a very light and digestible sweet. It can be served with fruit and is a valuable nursery food.	
Jus	Gravy.	

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Kebab	Small pieces of meat fixed on a skewer, braised or curried.
Kedgeree	Indian dish of cooked fish, often salted or smoked, with rice, eggs etc., sometimes curried.
Kirsch	A favorite Continental drink is cafe kirsch; this is made with half a cup of black coffee and half a cup of cherry brandy, also a cherry cordial.
Knead	To work dough lightly by bringing the outside of the dough into the centre, using the knuckles of the hand.
Kromeskies	Croquettes dipped in a yeast batter and fried.
Langoustine	A small variety of spiny lobster.
Liaison	Mixture of eggs and cream used for thickening white sauces and soups.
Larding	To place strips of fatty substance such as fat bacon on top of lean meat or on the breast of a dry bird. To run strips of fat bacon through lean meat with a larding needle.
Macaroni	Italian pasta made of flour forced through a tube.
Macaroons	Small cakes made from almond paste, coconut, etc.
Macedoine	A mixture, usually consisting of vegetables or fruit.
Maitre d'hotel Butter	A piquant sauce or butter flavoured with parsley and lemon.
Marinate	To soak meat or fish in a marinade.
Marjoram	A lemon-scented herb.
Marzipan	A sweet or icing made of almonds ground to a paste with egg.
Mask	To coat a dish with sauce or line a mould with jelly.
Matignon	A mixture of finely minced carrot, celery, onion, ham, thyme and bay leaf used to cover joints or poultry before being roasted or cooked to impart a good flavour.

Mayonnaise	A thick sauce made of egg yolks, oil and vinegar, mustard, etc. Used as a dressing for salads of all kinds.	Western Culinary Terms
Menu	List of fare.	
Meringue	A mixture of stiffly beaten egg white and sugar, often used as a garnish when browned in the oven. It can be made into small sugar cakes and afterwards filled with cream.	
Mignonette pepper	White peppercorns, coarsely ground.	
Minestrone	Italian soup with many vegetables and macaroni added.	
Mirepoix	Roughly cut onions, carrots, celery and a sprig of thyme and bay leaf.	
Mise-en-place	A general name given to the elementary preparation area, which is constantly resorted to during the various stages of most culinary operations.	
Mocha	A flavouring usually made with a coffee infusion.	
Mousse	A light spongy dish, made with sweetened and flavoured cream, then whipped and frozen. Can also be made with a mixture of meat, vegetables, etc., mixed with gelatin.	
Mousseline	Same as above but moulded in small quantities. Enough for one person at a time.	
Muffin	A drop batter baked in small individual moulds and eaten hot with butter.	
Navarin	Mutton or lamb stewed with turnips.	
Noodles	Flour pasta served in small fancy shapes or in thin string-like tubes. Often fried in Chinese fashion.	
Nougat	A sweet of a fairly rich kind made with almonds, sugar, nuts, cherries and honey.	
Panada	A thick paste of flour and liquid or flour and butter with a little liquid used to bind together ingredients, which would fall apart, by themselves.	

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Paner	To coat in egg and breadcrumbs.
Papillote	Paper frills placed on chops for decorations. It also means food cooked in paper casings.
Parboil	To boil food until only partly cooked.
Pare	To peel.
Parfait	Ice cream served in a tall glass and decorated with a variety of nuts and fruits.
Parmesan	A very hard cheese made in Italy from cow's milk. Used mainly for cooking.
Pate	Pie, pastry or raised pie or a paste.
Paysanne	To cut into even, thin pieces, triangular or round or square.
Pimento	Red or green pepper pods used in salads or often as a colourful garnish.
Piquante	Sharply flavoured. Usually the word is applied to mustard or a sharp sauce.
Pistachio	Green-coloured nut kernels. Used as a garnish.
Plat du jour	Special dish of the day. Pluck To removes feathers from poultry and birds.
Poach	To cook just below boiling point in hot liquid in an open pan.
Poele	Roast done entirely or almost entirely in butter. It is a simplified process of old Cookery. The joint or poultry is first fried and coated with a thick layer of matignon, wrapped in slices of pork fat covered with butter paper or aluminum foil and cooked in the oven. It is basted with melted butter during cooking.
Potage	A nourishing broth or soup.
Pot-au-feu	A beef soup made with vegetables and poured over French bread or toast.
Pot-pourri	A stew of various meats and spices.

Praline	Burnt almond flavouring.
Pulses	Vegetables that grow in pods, e.g. peas, beans, lentils, etc.
Puree	A smooth mixture obtained by rubbing cooked fruit, vegetables, etc., through a sieve.
Quenelles	Force meat or meat, fish, game or poultry, pounded, rubbed through a sieve and formed into balls, then poached or fried.
Ragout	Well-flavoured meat stews. Thick, well-seasoned and rich.
Raising agents	Substances which produce a gas when acted on by heat or other substances and make flour mixtures rise, e.g. baking powder, baking soda, yeast.
Ramekins	Individual small baking dishes.
Raspings	Very fine breadcrumbs obtained by grating stale or over-dried bread on a fine grater.
Ratafia	Tiny biscuits for trifles, etc., flavoured with almonds.
Ravioli	A savoury meat mixture enclosed in dough and cooked in boiling water.
Rechauffe	Re-heated dish.
Sabayon	Yolks of eggs and a little water cooked until creamy.
Saffron	The dried stigma of the crocus flower, used for adding colour and flavour.
Salmi	Partly roasted game made into a rich stew.
Sauce	A pouring mixture, sweet or savoury, to serve with and to enhance the flavour of another dish.
Saute	Tossed and lightly browned in shallow fat.
Scallop	Food baked in layer with sauce and breadcrumbs.
Score	To make light cuts in a surface such as the outside of a fat piece of pork before roasting.

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Seasoned flour	Flour flavoured with salt and pepper.
Sherbet	Frozen mixture of fruit juice, egg whites, sugar, milk or water.
Shortening	Fat suitable for baking is sometimes called this.
Shredded	Cut in fine strips.
Simmer	To cook a liquid or food in a liquid, at a temperature just below boiling point.
Singe	To brown or colour.
Skewer	A long pin of wood or metal used to secure meat or poultry while cooking.
Sorbet	A half frozen water ice, served in the middle of a long dinner.
Souffle	Very light baked or steamed pudding, savoury or sweet, usually puffed up with egg whites.
Souse	Fish such as herring, pickled in vinegar and spices.
Spaghetti	Italian pasta, finer than macaroni, coarser than vermicelli.
Steam	to cook in steam.
Steep	To soak in a hot or cold liquid.
Stew	To cook by simmering in a little liquid.
Supreme	A name given to the fillet of fish breast of fowl or game.
Table d'hote	A set meal at a fixed price.
Tartare	A cold, sharp, savoury sauce with a base of mayonnaise served with fried fish or a meat dish.
Terrine	A baked, savoury meat or game mould, which is cooked in the oven, usually in an earthenware dish.
Timbale	A cup-shaped mould usually made from meat, fish and vegetables, added to a custard mixture and finely decorated.

Tranche	A slice.
Trancon	A slice of flat fish on the bone.
Truss	To tie up or skewer a bird ready for the oven after plucking and drawing.
Tutti-frutti	mixed fruit.
Vanilla	A flavouring generally used for cakes, ices & puddings.
Veloutes	A rich creamy smooth sauce.
Vermicelli	Very fine Italian pasta.
Vol-au-vent	Creamed game, meat, fish served in a pastry case.
Walewska	Garnish for fish or collops of lobster, slices of truffles.
Whisk	To beat cream or eggs until a stiff froth is obtained.
Zest	Thin outer skin of oranges and lemons.

COOKING TERMS

Aerate	A synonym for sift; to pass ingredients through a fine-mesh device to break up large pieces and to incorporate air into the ingredients to make them lighter. Al dente "To the tooth," in Italian. The pasta is cooked just enough to maintain a firm, chewy texture.
Bake	To cook in the oven. Food is cooked slowly with gentle heat, causing the natural moisture to evaporate slowly, concentrating the flavor
Baste	To brush or spoon liquid fat or juices over meat during roasting to add flavor and to prevent it from drying out.
Batter	A mixture of flour, fat and liquid that is thin enough in consistency to require a pan to encase it. Used in such preparations as cakes and some cookies. A batter is different from dough, which maintains its shape.
Beat	To smoothen a mixture by briskly whipping or stirring it with a spoon, fork, wire whisk, rotary beater or electric mixer.
Bias-slice	To slice a food crosswise at a 45-degree angle.
Bind	To thicken a sauce or hot liquid by stirring in ingredients such as eggs, flour, butter or cream.
Blackened	A popular Cajun-style cooking method in which seasoned foods are cooked over high heat in a super-heated heavy skillet until charred.
Blanch	To boil briefly to loosen the skin of a fruit or a vegetable. After 30 seconds in boiling water, the fruit or vegetable should be plunged into ice water to stop the cooking action and then the skin easily slices off.
Blend	To mix or fold two or more ingredients together to obtain equal distribution throughout the mixture.
Boil	To cook food in heated water or other liquid that is bubbling vigorously.
Braise	A cooking technique that requires browning meat in oil or other fat and then cooking slowly in liquid. The effect of braising is to tenderise the meat.

Bread	To coat the food with crumbs (usually with soft or dry bread crumbs), sometimes seasoned.	Cooking Terms
Broil	To cook food directly under the heat source.	
Broth or stock	A flavorful liquid made by gently cooking meat, sea-food or vegetables (and/or their by-products, such as bones and trimming) often with herbs, in liquid, usually water.	
Brown	A quick sautéing, pan/oven broiling or grilling method done either at the beginning or end of meal preparation, often to enhance flavor, texture or eye appeal.	
Brush	Using a pastry brush, to coat a food such as meat or bread with melted butter, glaze or other liquid.	
Bundt pan	The generic name for any tube-baking pan having fluted sides (though it was once a trademarked name).	
Butterfly	To cut open a food such as pork chops down the center without cutting all the way through and then spread apart.	
Caramelisation	Browning sugar over a flame, with or without the addition of some water to aid the process. The temperature range in which sugar caramelises is approximately 320° F to 360° F (160° C to 182° C).	
Chiffon	Pie filling made light and fluffy with stabilised gelatin and beaten egg whites.	
Chop	To cut into irregular pieces.	
Clarify	Remove impurities from butter or stock by heating the liquid, then straining or skimming it.	
Coat	To evenly cover food with flour, crumbs or a batter.	
Coddle	A cooking method in which foods (such as eggs) are put in separate containers and placed in a pan of simmering water for slow, gentle cooking.	
Combine	To blend two or more ingredients into a single mixture.	
Confit	To slowly cook pieces of meat in their own gently rendered fat.	

Introduction to Hotel Kitchen

Core	To remove the inedible center of fruits such as pineapples.
Cream	To beat vegetable shortening, butter or margarine, with or without sugar, until light and fluffy. This process traps in air bubbles, later used to create height in cookies and cakes.
Crimp	To create a decorative edge on a piecrust. On a double piecrust, this also seals the edges together.
Crisp	To restore the crunch to foods; vegetables such as celery and carrots can be crisped with an ice water bath and foods such as stale crackers can be heated in a medium oven.
Crush	To condense a food to its smallest particles, usually using a mortar and pestle or a rolling pin.
Crystallise	To form sugar- or honey-based syrups into crystals. The term also describes the coating.
Curdle	To cause semisolid pieces of coagulated protein to develop in food, usually as a result of the addition of an acid substance or the overheating of milk or egg-based sauces.
Cure	To preserve or add flavor with an ingredient, usually salt and/or sugar.
Custard	A mixture of beaten egg, milk and possibly other ingredients such as sweet or savory flavorings, which is cooked with gentle heat, often in a water bath or double boiler. As pie filling, the custard is frequently cooked and chilled before being layered into a pre-baked crust.
Cut in	To work vegetable shortening, margarine or butter into dry ingredients.
Dash	A measure approximately equal to 1/16 teaspoon.
Deep-fry	To completely submerge the food in hot oil.
Deglaze	To add liquid to a pan in which foods have been fried or roasted, in order to dissolve the caramelised juices stuck to the bottom of the pan.

Devil	To add hot or spicy ingredients such as cayenne pepper or Tabasco sauce to a food.	Cooking Terms
Dice	To cut into cubes.	
Direct heat	A cooking method that allows heat to meet food directly, such as grilling, broiling or toasting.	
Dot	To sprinkle food with small bits of an ingredient such as butter to allow for even melting.	
Dough	A combination of ingredients including flour, water or milk and sometimes, a leavener, producing a firm but workable mixture for making baked goods.	
Dredge	To sprinkle lightly and evenly with sugar or flour. A dredger has holes pierced on the lid to sprinkle evenly.	
Drizzle	To pour a liquid such as a sweet glaze or melted butter in a slow, light trickle over food.	
Drippings	Used for gravies and sauces, drippings are the liquids left in the bottom of a roasting or frying pan after meat is cooked.	
Dust	To sprinkle food lightly with spices, sugar or flour for a light coating.	
Egg wash	A mixture of beaten eggs (yolks, whites or whole eggs) with either milk or water. Used to coat cookies and other baked goods to give them a shine when baked.	
Emulsion	A mixture of liquids, one being a fat or oil and the other being water based so that tiny globules of one are suspended in the other. This may involve the use of stabilisers, such as egg or mustard. Emulsions may be temporary or permanent.	
Entrée	A French term that originally referred to the first course of a meal, served after the soup and before the meat courses. In the United States, it refers to the main dish of a meal.	
Fillet	To remove the bones from meat or fish for cooking.	

Introduction to Hotel Kitchen

Filter	To remove lumps, excess liquid or impurities by passing through paper or cheesecloth.
Firm-ball stage	In candy making, the point where boiling syrup dropped in cold water forms a ball that is compact yet gives slightly to the touch.
Flambé	To ignite a sauce or other liquid so that it flames.
Flan	An open pie filled with sweet or savory ingredients; also, a Spanish dessert of baked custard covered with caramel.
Flute	To create a decorative scalloped or undulating edge on a piecrust or other pastry.
Fold	To cut and mix lightly with a spoon to keep as much air in the mixture as possible.
Fricassee	Usually a stew in which the meat is cut up, lightly cooked in butter and then simmered in liquid until done.
Fritter	Sweet or savory foods coated or mixed into batter, then deep fried (also, in French, beignet).
Frizzle	To cook thin slices of meat in hot oil until crisp and slightly curly.
Fry	To cook food in hot cooking oil, usually until a crisp brown crust forms.
Ganache	A rich chocolate filling or coating made with chocolate, vegetable shortening and possibly heavy cream. It can coat cakes or cookies and be used as a filling for truffles.
Garnish	A decorative piece of an edible ingredient such as parsley, lemon wedges, croutons or chocolate curls placed as a finishing touch to dishes or drinks.
Glaze	A liquid that gives an item a shiny surface. Examples are fruit jams that have been heated or chocolate thinned with melted vegetable shortening. Also, to cover a food with such a liquid.

Gluten	A protein formed when hard wheat flour is moistened and agitated. Gluten is what gives yeast dough its characteristic elasticity.
Grate	To shred or cut down a food into fine pieces by rubbing it against a rough surface.
Gratin	To bind together or combine food with a liquid such as cream, milk, béchamel sauce or tomato sauce, in a shallow dish. The mixture is then baked until cooked and set.
Grease	To coat a pan or skillet with a thin layer of oil.
Grill	To cook over the heat source (traditionally over wood coals) in the open air.
Grind	To mechanically cut a food into small pieces.
Hard-ball stage	In candy making, the point at which syrup has cooked long enough to form a solid ball in cold water.
Hull (also husk)	To remove the leafy parts of soft fruits, such as strawberries or blackberries.
Infusion	Extracting flavors by soaking them in liquid heated in a covered pan. The term also refers to the liquid resulting from this process.
Jell (also gel)	To cause a food to set or solidify, usually by adding gelatin.
Jerk or Jamaican jerk seasoning	A dry mixture of various spices such as chilies, thyme, garlic, onions and cinnamon or cloves used to season meats such as chicken or pork.
Julienne	To cut into long, thin strips.
Jus	The natural juices released by roasting meats.
Knead	To work dough with the heels of your hands in a pressing and folding motion until it becomes smooth and elastic.
Larding	Inserting strips of fat into pieces of meat, so that the braised meat stays moist and juicy.

Introduction to Hotel Kitchen

Leavener	An ingredient or process that produces air bubbles and causes the rising of baked goods such as cookies and cakes.
Line	To place layers of edible (cake or bread slices) or inedible (foil or wax paper) ingredients in a pan to provide structure for a dish or to prevent sticking.
Loin	A cut of meat that typically comes from the back of the animal.
Marble	To gently swirl one food into another.
Marinate	To combine food with aromatic ingredients to add flavor.
Marzipan	A paste (of ground almonds, sugar and egg whites) used to fill and decorate pastries.
Mash	To beat or press a food to remove lumps and make a smooth mixture.
Medallion	A small round or oval bit of meat.
Meringue	Egg whites beaten until they are stiff, then sweetened. It can be used as the topping for pies or baked as cookies.
Mince	To chop food into tiny, irregular pieces.
Mix	To beat or stir two or more foods together until they are thoroughly combined.
Moisten	Adding enough liquid to dry ingredients to dampen but not soak them.
Mull	To slowly heat wine or cider with spices and sugar.
Panbroil	To cook a food in a skillet without added fat, removing any fat as it accumulates.
Panfry	To cook in a hot pan with small amount of hot oil, butter or other fat, turning the food over once or twice.
Parboil	To partly cook in a boiling liquid.
Parchment	A heavy, heat-resistant paper used in cooking.

Pare	To peel or trim a food, usually vegetables.
Peaks	The mounds made in a mixture. For example, egg white that has been whipped to stiffness. Peaks are "stiff" if they stay upright or "soft" if they curl over.
Pesto	A sauce usually made of fresh basil, garlic, olive oil, pine nuts and cheese. The ingredients are finely chopped and then mixed, uncooked, with pasta. Generally, the term refers to any uncooked sauce made of finely chopped herbs and nuts.
Pinch	Same as "dash."
Pipe	To force a semisoft food through a bag (either a pastry bag or a plastic bag with one corner cut off) to decorate food.
Pit	Using a sharp knife to take out the center stone or seed of a fruit, such as a peach or a mango.
Poach	To simmer in liquid.
Pressure cooking	A cooking method that uses steam trapped under a locked lid to produce high temperatures and achieve fast cooking time.
Proof	To let yeast dough rise.
Purée	To mash or sieve food into a thick liquid.
Ramekin	A small baking dish used for individual servings of sweet and savory dishes.
Reconstitute	To take a dried food such as milk back to its original state by adding liquid.
Reduce	To cook liquids down so that some of the water evaporates.
Refresh	To pour cold water over freshly cooked vegetables to prevent further cooking and to retain color.
Render	To melt down fat to make drippings.
Roast	To cook uncovered in the oven.
Roux	A cooked paste usually made from flour and butter used to thicken sauces.

Introduction to Hotel Kitchen

Sauté	To cook food quickly in a small amount of oil in a skillet or sauté pan over direct heat.
Scald	Cooking a liquid such as milk to just below the point of boiling; also to loosen the skin of fruits or vegetables by dipping them in boiling water.
Score	To tenderise meat by making a number of shallow (often diagonal) cuts across its surface. This technique is also useful in marinating, as it allows for better absorption of the marinade.
Sear	Sealing in a meat's juices by cooking it quickly under very high heat.
Season	To enhance the flavor of foods by adding ingredients such as salt, pepper, oregano, basil, cinnamon and a variety of other herbs, spices, condiments and vinegars. Also, to treat a pot or pan (usually cast iron) with a coating of cooking oil and baking it in a 350° F oven for approximately 1 hour; this process seals any tiny rough spots on the pan's surface that may cause food to stick.
Seize	To form a thick, lumpy mass when melted (usually applied to chocolate).
Set	Let food become solid. (See also "Jell.")
Shred	To cut or tear into long narrow strips, either by hand or by using a grater or food processor.
Sift	To remove large lumps from a dry ingredient such as flour or confectioners' sugar by passing it through a fine mesh. This process also incorporates air into the ingredients, making them lighter.
Simmer	Cooking food in a liquid at a low enough temperature that small bubble begins to break the surface.
Skim	To remove the top fat layer from stocks, soups, sauces or other liquids such as cream from milk.
Springform pan	A two-part baking pan in which a spring-loaded collar fits around a base; the collar is removed after baking is complete. Used for foods that may be difficult to remove from regular pans, such as cheesecake.

Steam	To cook over boiling water in a covered pan, this method keeps foods' shape, texture and nutritional value intact better than methods such as boiling.
Steep	To soak dry ingredients (tea leaves, ground coffee, herbs, spices, etc.) in liquid until the flavor is infused into the liquid.
Stewing	Browning small pieces of meat, poultry or fish, then simmering them with vegetables or other ingredients in enough liquid to cover them, usually in a closed pot on the stove, in the oven or with a slow cooker.
Stir-Fry	The fast frying of small pieces of meat and vegetables over very high heat with continual and rapid stirring.
Thin	To reduce a mixture's thickness with the addition of more liquid.
Toss	To thoroughly combine several ingredients by mixing lightly.
Truss	To use string, skewers or pins to hold together a food to maintain its shape while it cooks (usually applied to meat or poultry).
Unleavened	Baked goods that contain no agents to give them volume, such as baking powder, baking soda or yeast.
Vinaigrette	A general term referring to any sauce made with vinegar, oil and seasonings.
Water bath	A gentle cooking technique in which a container is set in a pan of simmering water. (See also "Coddle.")
Whip	To incorporate air into ingredients such as cream or egg whites by beating until light and fluffy; also refers to the utensil used for this action.
Whisk	To mix or fluff by beating; also refers to the utensil used for this action.
Zest	The thin, brightly colored outer part of the rind of citrus fruits. It contains volatile oils, used as a flavoring.

SOME USEFUL TERMS:

Bain marie	Hot water bath or well in which smaller containers may be set in order to cook food items slowly or to keep them warm/ hot in readiness to service.
Basmati rice	Aromatic long grained rice used in Indian cuisine.
Beer	Term broadly covering lagers, ales and stouts, an alcoholic beverage made from fermented malted barley or other cereals and flavoured with hops.
Chowder	Creamy thick soup or stew made from shellfish, especially clams and vegetables.
Croissant	Crescent shaped roll made from a yeast based Danish pastry dough.
Dujour	A French menu term literally meaning 'of the day', e.g. carte du jour, which lists an establishments daily menu.
Evian	Brand of spring water from France
Gosht	Indian term indicating meat.
Haldi	Indian term for turmeric
Kulfi	Indian ice-cream made form condensed milk.
Mineral water	Water containing various minerals and said to promote health. May be still & sparkling
Mise-en-place	French term meaning to put in place. Refers to preparation before hand, this includes all the tasks that have to be completed to get the food service area or kitchen ready for service.
Murgh:	Indian term for chicken
Naan	Flat but puffy and light leavened bread that may accompany curry.
Pakora	Indian term indicating a deep fried vegetable fritter.
Pappadum	Very fine thin and crisp wafer like pan cake made from lentil flour, deep fried or grilled and served with curry.

Some Useful Terms

Raita	Yoghurt based side dish of Indian origin.
Roti	Indian origin and denoting bread. Usually a circular, flat unleavened bread similar to chappati.
Samosa	Small pastry coated food item with a spicy meat or vegetable filling and deep fried.
Service cloth	Cloth approximately the size of a table napkin used by food service staff as a protection against heat and to assist in handling equipment and in the service of food.
Tamarind	Fruit pods of African origin that have been used in India. Pods contain a very sour juice used in some Indian curries. Fruit of the tamarind tree is dried, ground and used in flavouring curries.
Tandoor	Open topped clay oven originating in Northern India.
Tandoori	Food that has been cooked in a charcoal fired tandoor, e.g. tandoori chicken.
Tarka	Indian method of tempering spices in hot oil.
Tartare	Cold mayonnaise based sauce with finely chopped capers, gherkins and fine herbs added.
Tikka	Marinated pieces of fish, meat or poultry. Indian origin.
Wok	Large basin shaped frying pan that concentrates the heat in a small area. Used in east Asian cuisine, especially for stir fry dishes.
Boti	Chunks of meat, as in a mutton boti
Brinjal	Egg-plant or aubergine. Also called baigan
Chaat	Hot and sour fruit and cooked vegetables
Chat-pata	Spicy
Neera	A non-fermented drink obtained from the coconut palm
Papri	As in “Saunth papri chat”. Similar to pani puri, not puffed. Served with yogurt sauce.

Enrolment No.

1. How many hours did you need for studying the units?

Unit No	1	2	3	4
Nos of Hrs				

2. Please give your reactions to the following items based on your reading of the block:

Item	Excellent	Very Good	Good	Poor	Give specific example if any
Presentation Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Language and Style	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Illustration used (Diagram, tables etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Conceptual clarity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Check your progress Quest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Feed back to CYP Question	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

3. Any Other Comments

Basics of Food Production

BLOCK 2: COOKING TECHNIQUES - I



“
*Education is something
which ought to be
brought within
the reach of every one.*
”

- Dr. B. R. Ambedkar

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Basics of Food Production



Basics of Food Production



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ROLE OF SELF INSTRUCTIONAL MATERIAL IN DISTANCE LEARNING

The need to plan effective instruction is imperative for a successful distance teaching repertoire. This is due to the fact that the instructional designer, the tutor, the author (s) and the student are often separated by distance and may never meet in person. This is an increasingly common scenario in distance education instruction. As much as possible, teaching by distance should stimulate the student's intellectual involvement and contain all the necessary learning instructional activities that are capable of guiding the student through the course objectives. Therefore, the course / self-instructional material are completely equipped with everything that the syllabus prescribes.

To ensure effective instruction, a number of instructional design ideas are used and these help students to acquire knowledge, intellectual skills, motor skills and necessary attitudinal changes. In this respect, students' assessment and course evaluation are incorporated in the text.

The nature of instructional activities used in distance education self-instructional materials depends on the domain of learning that they reinforce in the text, that is, the cognitive, psychomotor and affective. These are further interpreted in the acquisition of knowledge, intellectual skills and motor skills. Students may be encouraged to gain, apply and communicate (orally or in writing) the knowledge acquired. Intellectual-skills objectives may be met by designing instructions that make use of students' prior knowledge and experiences in the discourse as the foundation on which newly acquired knowledge is built.

The provision of exercises in the form of assignments, projects and tutorial feedback is necessary. Instructional activities that teach motor skills need to be graphically demonstrated and the correct practices provided during tutorials. Instructional activities for inculcating change in attitude and behavior should create interest and demonstrate need and benefits gained by adopting the required change. Information on the adoption and procedures for practice of new attitudes may then be introduced.

Teaching and learning at a distance eliminates interactive communication cues, such as pauses, intonation and gestures, associated with the face-to-face method of teaching. This is particularly so with the exclusive use of print media. Instructional activities built into the instructional repertoire provide this missing interaction between the student and the teacher. Therefore, the use of instructional activities to effect better distance teaching is not optional, but mandatory.

Our team of successful writers and authors has tried to reduce this divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self-instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)



PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included many tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect.

All the best for your studies from our team!

Basics of Food Production

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Basics of Food Production

BLOCK 2: COOKING TECHNIQUES I

UNIT 1

INTRODUCTION TO COOKERY 2

UNIT 2

METHODS OF COOKING FOOD 20

BLOCK 2: COOKING TECHNIQUES - I

Introduction to the Block

Food preparation is a modern term in professional cookery. It denotes preparation and cooking. It follows a pattern, which includes purchasing and selection of materials, their handling, processing and the ultimate presentation of the dishes to the guest.

Emphasis on classical cooking and current scientific theories provides the student with a solid understanding of food chemistry and cooking techniques. When proper cooking techniques are used for the right ingredients, such as grilling method used for meats, food taste best.

Cooking is the process of preparing food by use of heat. Cooking techniques and ingredients vary widely across the world, reflecting unique environmental, economic and cultural traditions. Cooks themselves also vary widely in skill and training.

There are numerous ways of cooking food, but the principal processes are boiling, stewing, steaming, braising, roasting, baking, grilling, broiling, frying and poaching.

UNIT 1 INTRODUCTION TO COOKERY

Structure

1.0 Objectives

1.1 Introduction

1.2 Aims and Objectives of Cooking Food

1.3 Foundation Ingredients

1.4 Classification of Raw Materials and their Functions

1.4.1 Fats and Oils

1.4.2 Hydrogenation of Oils

1.4.3 Rendering of Fat

1.4.4 Classification of Fat

1.5 Preparation of Ingredients

1.6 Let Us Sum Up

1.0 OBJECTIVES

After working through this unit, you should be able to:

- Judge the importance of cooking
- Enlist the functions of the foundation ingredients and their effect towards heat
- Enumerate various functions of the raw materials used in cookery along with their uses
- Chalk out the plan of work in the kitchen and a systematic approach towards the end product after cooking
- Explain various ways of cooking food in the right technical method

1.1 INTRODUCTION

In this unit, you will understand the various methods of identifying the characteristics of the raw materials and the uses of these ingredients in the professional cuisine. By knowing the characteristics of these materials, you will be technically correct in using these materials in practice.

Thus, this unit will let you know how to handle the ingredients before the actual cooking process. The pre-preparation is of utmost importance, as it is this stage where you know how to handle the ingredients in the right manner, right sizes and standard proportions in weight as well. Later we are told how to mix the ingredients properly so that the final products are free of faults from any undesirable textures, consistencies, color changes etc. To have healthy and right food, it is essential for us to know about the mechanism or the fundamentals of the food.

1.2 AIMS AND OBJECTIVES OF COOKING FOOD

1. Cooking partly sterilises food. Above 40°C (104°F), the growth of bacteria falls off rapidly and in general, it ceases above 45°C (113°F). Non-sporing bacteria are killed at temperatures above 60°C (140°F) for varying periods of time, e.g. to make milk safe, it is pasteurised at 63°C (145°F) for 30 minutes or at 72°C (161°F) for 15 seconds. Boiling kills living cells, with the exception of spores, in a few seconds. Spore-bearing bacteria take about 4 to 5 hours boiling to be destroyed. To destroy them in a shorter time higher temperatures must be used.
2. Cooking helps to make food more digestible. Complex foods are often split into simpler substances during cooking. This helps the body to absorb and utilise the food more readily than if consumed in its raw form.
3. Cooking increases palatability.
4. Cooking makes food more attractive in appearance and therefore, more appetising.
5. Cooking introduces variety. Many different types of dishes can be prepared with the same ingredient. Cooking helps to provide a balanced meal. Different ingredients combined together in one dish make it easier to provide a balanced meal

Check your progress 1

1. Explain the aims and objectives of cooking food.

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1.3 FOUNDATION INGREDIENTS

Every dish has a foundation ingredient on which the other ingredients are based. The foundation ingredient can be a liquid or a solid, e.g. flour in bread, meat in roast, milk or stock in soups. When examining a recipe for proportions, all foods, which serve the same purpose, should be reckoned together. It is not only necessary to know the proportions of various ingredients but also the composition of the different ingredients and the action of heat on these. Heat may not affect the whole material but only certain constituents.

Food is composed of the following five constituents:

1. Carbohydrates
2. Fats
3. Proteins
4. Minerals
5. Vitamins

Check your progress 2

1. What do you understand by foundation ingredients?

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1.4 CLASSIFICATION OF RAW MATERIALS AND THEIR FUNCTIONS

Raising Agents: The function of the raising agent is to leaven the food so that it spreads and rises, thus making it light and not close and heavy. The tiny air spaces caused by the raising agents are retained during the process of cooking. The leavening of the flour mixture is accomplished by the expansion of incorporated air and by the internal production and expansion of water vapour and carbon dioxide. When the product is heated, the air expands and part of the water vapourises. The formation of carbon dioxide requires the presence of suitable microorganisms or chemical agents. During the first part of heating, gas production is accelerated and the gas formed expands as the temperature rises. Gluten, a substance found in flour, develops when moisture is added and helps to keep the raising agent within, till the food sets, thus helping to make the food light. Gluten is a sticky, elastic substance, which stretches as the air or gas expands and prevents these from escaping. The air

Cooking Techniques - I

or gas trapped in the mixture expands further when heated and makes the cooked food light. Too much raising agent raises the food too rapidly, breaks the surface and allows the gas produced to escape and as a result, the product sinks and becomes heavy.

Air as a Raising Agent

Air is incorporated by sifting flour, by creaming shortening, by beating eggs or by beating the mixture itself.

Water Vapour as a Raising Agent

Water vapour is formed in quantities sufficient to raise the mixture when liquid and flour are in equal volumes

Chemicals as Raising Agents

Chemicals such as sodium bicarbonate cream of tartar, baking powder, ammonium carbonate etc. are added to mixtures to make food light. In each case, the result is the production of carbon dioxide.

Baking powders are mixtures of sodium bicarbonate with some suitable acid such as cream of tartar, diluted with corn flour to give a product the desired strength. The corn flour also serves to separate the acid and the base, thereby increasing the stability of the mixture during shelf life. General proportions used are 1-2 tsp. baking powder per 450 gm of foundation. The richer the mixture, the less the baking powder required. When the mixture is of an acidic nature, (as when sour milk, buttermilk, treacle, vinegar or jams made from acids fruits are used) the addition of cream of tartar or tartaric acid is not necessary, since the soda will act upon these other foods and cause the required gas to be given off. 4 tsp. baking powder are equal to approximately 1 tsp. of soda in a carbon dioxide yield. In certain flour mixtures variations from neutrality are deliberately sought by including a reaction with either soda or cream of tartar, e.g., to get the dark, rich colour in chocolate cakes which many people prefer, sodium bicarbonate is used.

By the Addition of Yeast

Carbon dioxide is produced either from sugar by yeast or from a carbonate, usually sodium bicarbonate, by action of an acid, Yeast consists of microscopic, unicellular plants, which are capable of rapid multiplication when conditions are favourable and which obtain energy by breaking down sugars to carbon dioxide and alcohol. This process is known as fermentation and is brought about by the

enzyme zymase found in yeast. Yeast also produces enzymes, which are able to split disaccharide sugars.

Dried Yeast

This is a mixture of yeast with corn flour or cornmeal; pressed into cakes and dried. The yeast continues to live but in an inactive state. When furnished with warmth and moisture, it begins to develop and multiply, but this process is slow. Dried yeast has to be soaked in lukewarm water and mixed with very soft dough (sponge) for a preliminary period of development before all the other ingredients are added.

Activated Dry Yeast

This develops more rapidly than dried yeast and is the type now available. It can be used in straight dough mixing. It is less perishable than compressed yeast. The shelf life of both dried yeast and activated dried yeast is longer at refrigerated temperatures than at room temperature.

Compressed Yeast

This is a moist mixture of yeast plants and starch. The yeast remains active and will grow and multiply rapidly when added to dough. It has to be kept at refrigerated temperatures, however and keeps wet for only a few days. If held in the freezing compartment, it retains its activity for a longer period.

Eggs

Although hens' eggs are the most popular for consumption, eggs of turkeys, guinea fowls, ducks and geese are also used. Eggs are used in various forms in cookery:

1. As a leavening by foam formation to make the dish light, as in soufflés or meringues
2. For binding, as in egg croquettes
3. To improve flavour and colour, as in cakes
4. To add to the nutritive value:

The protein of eggs is unexcelled in quality and is used as a standard against which other food proteins are measured.

Cooking Techniques - I

- a) Eggs make a substantial contribution of vitamins A and D and contain a small amount of B complex vitamins and minerals.
 - b) The essential fatty acids are more finely emulsified in eggs than in any other food thus assuring easy, complete digestibility and ready utilisation.
5. To decorate and garnish dishes
 6. To enrich a mixture as in the case of rich cakes
 7. As a thickening, as in custards and cooked salad dressings
 8. For emulsification, as in mayonnaise sauce

Salt

Salt, although used in small quantities, is an essential ingredient for both sweet and savoury dishes. Salt helps to bring out the flavour of other ingredients. If too much is added, food becomes inedible and too little makes food insipid. Adding the right amount of salt comes through experience. It adds to the nutritive value of food by providing the essential mineral, sodium chloride.

Salt has physical effects on the gluten of flour. In reasonable quantities, it strengthens gluten and increases its resistance to the softening effects of fermentation. Too much salt on the other hand will remove the power of gluten to hold gas. Salt also acts as a preservative; it speeds up coagulation of eggs and lowers the freezing point of food.

Salt is available in three Forms:

1. Table salt (fine) containing phosphate,
2. Coarse freezing salt for culinary purpose;
3. Celery Salt: It is a blend of celery root and ordinary salt and is purchased in a ready to prepare form. It is used for flavouring certain dishes as an alternative to fresh celery or celery seed.

Uses of Salt

- Use of the correct amount of salt improves the flavour of the savory dishes and when a little is added to sweet dishes, it enhances the flavour.
- It has a physical effect on the gluten of flour. It strengthens gluten and increases its resistance to the softening effect of fermentation.

- Act as disinfectant e.g. when cauliflower is added to salt water the worms are easily killed.
- It has a controlling effect on the activity of yeast in bakery product. It controls fermentation and hence it has market effect on crumb, crust and color of baked product.
- Salt, when added to water for cooking green vegetables, helps in colour retention and enhances the taste.
- Salt is essential for good health

Liquid

Liquid is necessary to bind dry ingredients together, to dilute food, to act as a cooking medium and to thin down a gravy or sauce. Milk, water, stock and fruit juices are the most commonly used, liquids. Eggs may be used for binding. Water and milk are used for preparing poaching liquor (court bouillon) soups, sauces, gravies cakes pastry mixture and kneading of dough etc. Buttermilk is used for curries, Kadi etc

Stock is a liquid containing soluble nutrients and flavours. Which are extracted by prolonged and gentle simmering (except fish stocks –20 mins.) they are used as the foundation for the soups, sauces, gravies, curries poaching liquors and many important kitchen preparation. When too little liquid is added, the food is not cooked or as in the case of cakes, it retards the action of raising agents, resulting in a hard, heavy cake. Gravies or soups containing insufficient liquid are 'stodgy'. Too much liquid results in a watery product, or, as in the case of cakes and puddings, makes them soggy.

Flavouring and Seasonings

The taste and acceptability of food depend largely on the correct amounts of flavourings and seasonings. These are variable ingredients and the types and amounts necessary for different dishes must be carefully studied. To add just enough and no more should be the aim of every cook. Those, which combine taste and smell such as essences, cardamom, nutmeg, basil, thyme etc. are called flavourings. Those, which enhance taste only, are seasonings, e.g., red chilies, mustard, pepper etc.

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Sweetening Agents

This is not a necessary ingredient as salt is. The lack of it will not affect the texture of the food or the lightness of a dish. A bad cook generally adds too much sweetening to cover other faults. The type of sweetening used is: (i) Sugar, (ii) Treacle, (iii) Jaggery or molasses, (iv) Syrups such as golden syrup, corn syrup, maple syrup etc. (v) Jams, (vi) Honey, (vii) Fruit juices if too much sweetening is used, food becomes cloying and if too little is used, sweet dishes become tasteless.

Functions

1. Sugar speed up the effectiveness of bakers yeast by providing an immediate, nourishment for its growth thus hastening the leaving process.
2. The ability of sugar to crystallise gives a delightful Variety in the cookery.
3. Sugar gives puddings bread, buns and bread rolls a good flavour (caramel), the characteristic golden brown color and even texture.
4. Fermentation is aided by sugar in brewing, winemaking and in the distillation of spirits.
5. Sugar has long been used as a preservative; it is an effective preservative and can dissolve in water at very high concentration.
6. It is an energy food and can be stored for long time without being spoilt.

Thickenings Agents

Thin foods such as milk, soups, gravies, curries etc. are often improved by the addition of a thickening agent. The thickening used also increases the nutritive value. Starchy foods and eggs are commonly used as thickening but sugar will thicken syrup and gelatin will set a thin liquid if chilled. Ground onion, coconut and poppy-seeds are used for thickening curries in Indian cookery.

1.4.1 Fats and Oils

Fats are solid at normal temperatures and melt when heated. Those used in cooking are butter, margarine, lard, suet, dripping and hydrogenated fat. Oils are liquid at normal temperatures but solidify at lower temperatures. The commonly used cooking oils are coconut oil, sesame oil, cottonseed oil, olive oil, peanut oil, mustard oil, corn oil and sunflower oil.

Butter and Margarines are used for spreads. They are also used as Shortening agents-they shorten the gluten strands-surround them and make them more easily

broken(short), when added to breads it gives a bit of tenderness, richness and a sheen to the crumb. Dals, curries, rice dishes, etc are tempered using fats and oils. The oils are also used in preparing some salad dressing.

1.4.2 Hydrogenation of Oils

Whale oil, cottonseed oil, Soya bean oil, peanut oil etc. are sold as shortenings of varying consistencies. A process known as hydrogenation brings about the conversion of oil into fat. This consists of treating oil under pressure and at a suitable temperature with hydrogen, in the presence of a catalyst, usually nickel. Under these conditions, the unsaturated fatty acids present in the oil combine with the hydrogen. This chemical process brings about a physical change, the liquid oil becoming a solid fat. The unsaturated fatty acids are chiefly those of the oleic type but when hydrogenated, are converted into stearic acid which is solid. The varying consistencies are due to the process of hydrogenation being stopped at different stages. Fats are used in cooking either as shortening agents or as frying media.

Fats are used in confectionery to enrich the food and to impart to them shortening qualities. Collectively they are referred to as shortening agents. Their effect is to break down or destroy the toughness of gluten, so that instead of being hard and tough to eat, foods containing fat break off short and readily melt in the mouth.

The factors to look for in shortenings are:

- Creaming value: This affects the cake volume.
- Shortening value: The shortness or shortening power it gives to the result. Shortness is necessary for the baking of biscuits, cookies, wafers and pastries.
- Stability: It means keeping quality. If the stability is not good, the keeping quality of the product will be decreased.
- Consistency: Hardness or softness depending on purpose, e.g. hardness is needed for puff pastry, softness for cake making.
- Water absorption power: Correlated to emulsification value of shortening.

As shortening agents, fats add to the nutritional and satiety values of flour mixtures and contribute to characteristic flavour and texture. The type of fat and the way in which fat is incorporated affect the texture, as in shortcrust pastry, flaky pastry and puff pastry. As heat melts fat, cooking must be done at the correct temperatures so that the flour can absorb the fat as it melts. If the heat is insufficient, the fat runs out of the mixture and is wasted, besides leaving the food tough and dry.

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Fat, which has been broken up into very fine particles, as in creaming, is more easily absorbed than fat left in large pieces. In general, the richer the pastry the hotter the oven and the richer the cake the cooler the oven.

Fat as a frying medium functions in three ways. It serves to transfer heat to the articles to be fried, it adds to the nutritive value of the food and it contributes to the flavour of the foods. Fat used as a frying medium should have a high smoke point, low congealing point, low moisture content, high stability and acceptable flavour.

1.4.3 Rendering of Fat

Rendering of fat is the process of melting to extract fat from fatty tissues. A good supply of dripping can be obtained by rendering down suet (fat surrounding the kidney of a cow or sheep) and pieces of fat from meat. This can be done in two ways:

1. Cut the fat into small pieces and place in a baking tin in a slow oven until the fat has melted and there are only crisp brown pieces of tissue left. Strain through a fine cloth into a clean basin pressing the tissues to squeeze out all fat.
2. Cut the pieces of fat as for above method. Place in a pan without a lid and with very little water. Boil until the water has evaporated and then heat very gently until the fat melts and leaves only crisp brown pieces of tissue. Strain as before.

In both cases, the temperature should not be too high or else the fat will decompose.

1.4.4 Classification of Fat

This is a method of cleaning used fat. For this process, put fat in a pan with enough water to cover it. Bring to boil without covering. Strain and cool. Lift off the cake of fat floating on top, turn it upside down and scrape off any foreign particles sticking to the bottom. The fat is then heated gently till it stops bubbling, to remove all water particles.

Check your progress 3

1. What are fats? Write a short note on hydrogenation of oil.
2. What are sweetening agents? Give the functions in detail.
3. What are raising agents?

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1.5 PREPARATION OF INGREDIENTS

Solid foods, which are to be mixed, have to be reduced into mixed have to be reduced into sizes, which will allow them to combine readily. A certain amount of preparation is thus necessary.

Washing

This is done to remove superficial dirt. Wash vegetables, meat and fish in cold water before any preparation is done. If they are soaked for a long period or washed after cutting there is greater loss of water-soluble minerals and vitamins.

Peeling and Scraping

Spoilt, soiled and inedible portions are removed. Either peeling or scraping removes skins of vegetables like potatoes, carrots etc. or of fruits. When peeling, remove as little of the fleshy part as possible.

Cooking Techniques - I

Paring

Remove surface layers by cutting as in paring an apple. A circular motion is used.

Cutting

Reducing to small parts by means of a knife or scissors: When a chopping knife or a food chopper it is known as chopping does the reduction. Cutting into even sized cubes is called dicing. Cutting into very fine pieces is mincing. Shredding is cutting into fine long pieces with a knife or shredder. Slicing is also cutting into thin long pieces, but these are not as fine as in shredding.

Grating

Reducing to fine particles by rubbing over a rough, sharp surface.

Grinding

Reducing to small fragments by crushing in a mill, a grinding stone or an osteriser

Mashing

This is a method of breaking up soft foods such as cooked potatoes or vegetables.

Sieving

Passing through a mesh to remove impurities, to break down to even portions or to enclose air

Milling

Used for cereals, to remove husks etc.

Centrifuging

Promotion of separation through the application of a whirling force, e.g., separating cream from milk.

Emulsification

Blending one liquid in another in which it is insoluble, e.g., oil and egg yolk in mayonnaise.

Evaporation

Removal of excess moisture by heating.

Introduction to Cookery

Homogenisation

Subdivision of large drops into smaller ones by forcing them through a small opening under great pressure, e.g. fat in cream.

Check your progress 4

1. Explain the activities included in the preparation of ingredients.

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1.6 LET US SUM UP

In this unit, we:

- Judge the importance of cooking.
- Know about the functions of the foundation ingredients and their effect towards heat.
- Know the various functions of the raw materials used in cookery along with their uses.
- Understand the various ways of cooking food in the right technical method.

Check Your Progress: Possible Answers

Check your Progress 1

Answer: Refer 1.2

Check your Progress 2

Answer : Refer 1.3

Check your Progress 3

Answer 1: Fats are solid at normal temperatures and melt when heated. Those used in cooking are butter, margarine, lard, suet, dripping and hydrogenated fat.

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Answer 3: Refer 1.4

Check your Progress 4

Cooking Techniques - I

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Evaporation

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Homogenisation

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UNIT 2 METHODS OF COOKING FOOD

Structure

- 2.0 Objectives**
- 2.1 Introduction**
- 2.2 Action of heat on the nutrients**
- 2.3 Textures of Food**
- 2.4 Methods of Mixing Food**
- 2.5 Methods of Cooking Food**
- 2.6 Let us sum up**

2.0 OBJECTIVES

After working through this unit, you should be able to:

- Understand the various methods of cooking food and their effects in terms of imparting flavour to the dish.
- Understand the action of heat on the nutrients.
- Understand the various methods of mixing food.

2.1 INTRODUCTION

Food imparts colour and flavour to the dish. But the main reason is to maintain the nutritional value. Especially meats, which include steaks and chicken supreme, should be grilled whereas leaner meats should be stewed to retain their juices. In this unit, we also come to know the various methods of mixing as well as the action of heat on the nutrients.

Before cooking, the methods used for mixing also play a key role because finally the finished product obtained should be meet the standards of the hotel.

Action of Heat on Carbohydrate

Generally, starch swells up and becomes softer. Starch is enclosed within granules. These starch granules cannot be easily digested but on heating, they swell up and then burst and release the starch. Starch itself becomes gelatinised. Sugar is changed into invert sugar (by a process where sucrose is broken down into glucose and fructose) when heated with fruit juices or other weak acids. In the presence of invert sugar, the solubility of sucrose is increased and it tends to recrystallise more slowly. Inversion raises the boiling point and lowers the freezing point of a sugar solution. Invert sugar is slightly more easily digested and absorbed.

When Sugar is boiled, it passes through regular stages until it becomes caramelised at 163°C (325°F). The following are the stages through which it passes:

- Small thread 102°C 216°F
- Large thread 103°C 218°F
- Pearl 106°C 222°F
- Soft ball 114°C 237°F
- Hard ball 120°C 247°F
- Soft crack 143°C 290°F
- Hard crack 156°C 312°F
- Caramel 163°C to 177°C 325°F to 350°F

Action of Heat on Protein

Protein coagulates or sets when heated. The white of an egg is a good example. The coagulation process helps in keeping the nourishment within the food; it is sealed in by the formation of a coat on the outside. Hence, when boiling protein foods such as meat and fish, put them in hot water. When roasting meats, put it in an oven, which is at a high temperature and then reduce the heat. Another action of heat on meat is the softening of the muscle fibers. Normal cooking methods cause the elastic in the connective tissue to shrink. The collagen is converted into gelatin by heat in the presence of water and as a result, the muscle fibers separate and meat becomes tender. This is done more satisfactorily at a medium temperature than at a

Cooking Techniques - I

high temperature. Meat also shrinks during cooking. The higher the temperature, the greater the shrinkage. Cooking at medium temperatures renders protein foods more digestible. The myoglobin in the muscle tissues and haemoglobin in the capillaries give meat its red colour. Both these decompose on heating causing a brown colour, which is generally found in cooked meat. The change takes place at a temperature of 65°C (149°F). At high temperatures the protein-itself gets denatured thus making it less nutritive.

Action of Heat on Minerals:

There is no appreciable loss of minerals due to cooking, excepting when cooking liquor is thrown out. Some minerals are made more readily available by cooking.

Action of Heat on Vitamins:

Vitamin C is the only vitamin, which becomes unstable when heated, although careful cooking helps to retain some of it. Vitamin A and D are not destroyed by the ordinary methods of cooking. Vitamin B may be destroyed during cooking when cooked at high temperatures (e.g. baking of biscuits and manufacture of breakfast cereals), by the addition of baking soda or when cooking liquor is thrown away.

Check Your Progress 1

1. Explain the action of heat on carbohydrates.
2. Give the stages of sugar.

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Texture is the term used to describe the characteristics of a finished food product. The order in which the ingredients are added, the way of mixing and the method of cooking affect the resulting product. A good cook should not only be able to distinguish between one texture and another but also be able to produce what he or she wants. Only by observation, experience and perseverance will a person be able to know what the correct texture of a particular product should be. A brief description of some commonly found textures and their correct occurrence is given below, but it must also be borne in mind that the difference between one texture and another is very fine.

Firm and Close

The air bubbles made by the raising agents are many but small and the mixture is not in the least spongy. The fat included prevents the mixture from being too hard, e.g., in biscuits or plain short pastry.

Short and Crumbly

This is similar to firm and close, but more fat is added, e.g., in shortbread or nankhatais.

Spongy

A soft and elastic texture showing inclusion of air, e.g., Swiss rolls sponge cakes and idlis.

Light and Even

Holes are plentiful and of a fair size. The food is firm but not hard or tough. It is neither as short as pastry nor as spongy as sponge cakes, e.g., Madeira cake, Queen cake.

Flaky

This is caused by the method of adding fat. Thin crisp layers are formed, separated by air pockets. The flakes themselves should not be tough, e.g., flaky and puff pastry, chiroti etc.

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Coarse

Holes are large and uneven and the food is sunken in the centre. This is brought about by the addition of too much raising agent or too little liquid.

Tough

Course mixtures are also tough. Toughness is caused by too much liquid or through incorrect mixing. This will also result if too little fat is added.

Hard

A bad fault brought about by the addition of too much liquid or too much pressure while mixing.

Check your progress 2

1. Explain the following texture in short
 - a. Firm and close texture
 - b. Short and crumbly texture

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- **Beating:** This method can be used with thin mixtures or liquids. This should be done carefully with an aim of enclosing air. This term is used synonymously with whipping, e.g., beating of eggs.
- **Blending:** Mixing two or more ingredients thoroughly
- **Cutting in:** Usually the incorporation of fat in flour and other sifted ingredients with a knife. This method produces a relatively coarse division of the fat and does not result in blending, e.g. cutting fat into pastry mixture.
- **Creaming:** Softening of fat by friction with a wooden spoon, generally followed by the gradual incorporation of sugar as in cake making
- **Folding:** Mixing mixtures by a careful lifting and dropping motion. The edge of the spoon is used and the mixture is lifted, turned completely and gently replaced. All the movements in this method, though deft, should be so gentle that the different ingredients are almost coaxed together.
- **Kneading:** Manipulating by alternating pressure with folding and stretching. The food is pressed with the knuckles. The dough is brought from the outside of the bowl to the centre and at the same time, the bowl is moved so that a different section is kneaded each time. This ensures a thorough distribution of ingredients. E.g., bread dough, chapatti dough etc.
- **Rubbing:** Rubbing fat into flour using the tips of the fingers and thumb and lifting the hand out of the basin as in the case of short crust pastry Rub until the mixture looks like breadcrumbs.
- **Rolling in:** Rolling butter or fat in soft dough, e.g., puff pastry
- **Pressing:** This is done to shape foods like cutlets and sometimes as a method of subdivision to separate liquids from solids by weights or mechanical pressure, as for paneer.
- **Stirring:** Mixing foods with a suitable tool such as a spoon by a circular motion in contact with the pan. Generally, this is a gentle movement but changed to suit different dishes, as when used to prevent sticking or burning in halwas and toffees. If used too vigorously, it tends to drive out air or other gas previously enclosed as a raising agent.

Check your progress 3

1. Explain any eight methods of mixing food?

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2.5 METHODS OF COOKING FOOD

While the correct preparation of ingredients and correct mixing are necessary, greater skill is needed in the actual cooking of-the food. The different methods of cooking are:

- (i) Roasting; (ii) Baking; (iii) Frying
- (iv) Boiling; (v) Poaching; (vi) Steaming
- (vii) Stewing; (viii) Braising, (ix) Broiling
- (x) Grilling

Sr. No.	COOKING METHODS	COOKING MEDIA
1	BAKING	DRY
2	BROILING	DRY
3	ROASTING i) Spit, II) Tandoor III) POT IV) Oven	Very Little Fat
4	GRILLING I) Open Fire, ii) Salamander	FAT
5	FRYING I Deep , ii) Shallow frying	FAT
6	BRAISING	Fat & Liquid
	STEWING	Liquid (Water)
	BOILING	Liquid (Water, Stock etc.)
	POACHING	Liquid (Water, Stock etc.)
7	STEAMING i) Direct ii) Indirect	Liquid (Water)

Roasting Spit Roasting:

The food to be cooked is brought in direct contact with the flame of a clear, bright fire. The food is basted with fat and is also turned regularly to ensure even cooking and browning. This method, known now as spit roasting, is not often used, as only good quality meats are suitable for it. Roast meats, however, have a very good flavours and are still served in large hotels and in special restaurants and hotels, e.g., as barbecued meat.

Oven Roasting

This has now taken the place of spit roasting, because of its convenience, although only first class meat, poultry and vegetables are thus cooked. This is cooking in a closed oven with the aid of fat. The joint is raised out of the fat by means of bones or a trivet to prevent the meat from frying and becoming hard. Frequent basting, however, is essential. The food is put into a fairly hot oven for

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5 to 10 minutes and the temperature is lowered to allow the joint to be cooked through. Cooking in a moderate oven for a longer time produces a better-cooked joint than cooking at high temperature for a shorter period. There is less shrinkage also. Therefore, more portions can be obtained. Aluminum foil is now used in oven roasting. The joint is larded or browned in fat. Matignon [finely minced 2 medium carrots, 2 onions, 2 sticks of celery (heart), 1 tbsp. ham, 1 sprig thyme, a bay leaf crushed stew in butter may or may not be used to cover the joint which is then wrapped tightly in aluminum foil and cooked in the oven till done. This method is an improvement on oven roasting as the meat retains its moisture and flavour.

Pot Roasting:

This method is used to cook small joints and birds if no oven is available, but a thick heavy pan is essential. Enough fat is melted to cover the bottom of the pan. When the fat is hot, the joint is browned. It is then lifted out and 2 or 3 skewers are put into the pan, on which the joint is placed. This is to prevent the joint from sticking to the pan. The joint should just touch the fat. The pan is then covered tightly with a well fitting lid and cooked over a very slow fire. The joint could be basted if lean and turned occasionally to ensure even cooking. Prepared root vegetables and potatoes can also be cooked around the meat. Little stock could be added so that more flavour is extracted from the vegetables and meat.

Baking

The food to be cooked is surrounded by hot air in a closed oven. The action of dry heat is modified by the steam, which arises from the food whilst cooking. Bread, cakes, pastry, puddings, vegetables and potatoes may be cooked by this method. Cooking temperatures should be maintained according to the products to be baked.

Frying

This is a method of cooking whereby the food to be cooked is brought into contact with hot fat. Food cooked in this way is said to be indigestible, but if the method is correctly and carefully carried out, the food is quite suitable for normal people.

The advantages of frying are:

- Fried food is very appetising.
- It is a quick method of cooking.

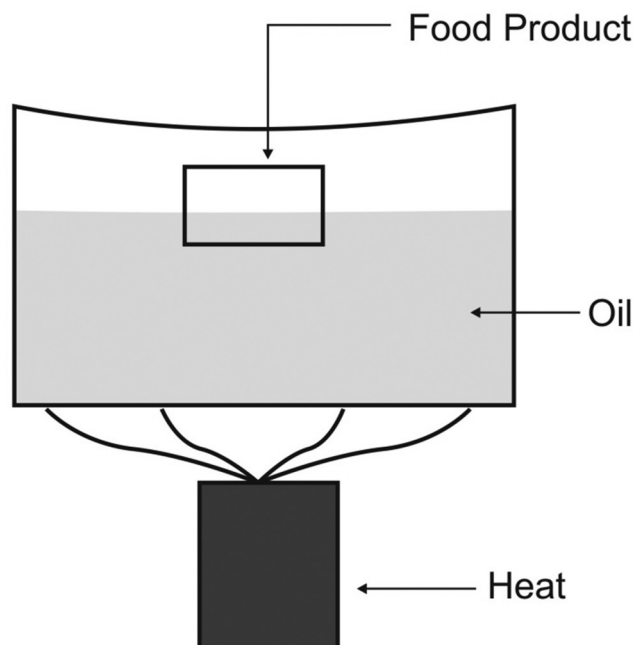
- The keeping quality of fried food is strengthened. It is however, an expensive **Methods of Cooking Food** method of cooking meat as only the best parts are suitable (chops, liver etc.). For other foods and for reheating of food, frying is a good means of providing variety.

There are Two Types of Frying:

- Shallow fat frying
- Deep fat frying

Shallow Fat Frying

Only a little fat is used and the food is turned over in order that both sides may be browned. Generally, this method is applied to pre-cooked food unless the food takes very little time to cook (omelette, liver etc.). Some foods contain sufficient fat in themselves (e.g., bacon, sausages etc.) and additional fat is not necessary although some cooks prefer to use a little fat. Fat absorption is greater when food is shallow fried than deep-fried.



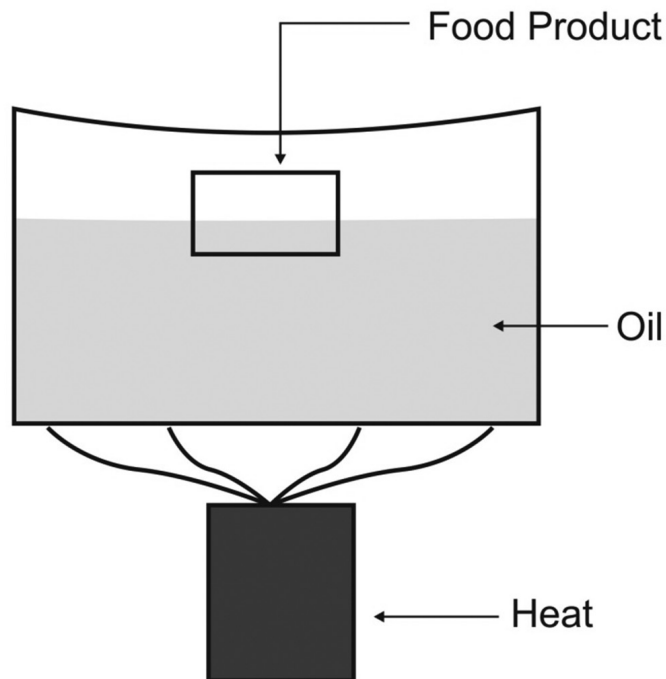
Deep Fat Frying

This is a quick method of frying.

The food is completely immersed in hot fat and, therefore, a large quantity of fat is required. The quantity of fat requires some time to heat. Special care must be taken to prevent overheating of fat, as this spoils both the food and the fat. The fat decomposes at high temperatures. If the fat is not hot enough the food breaks up

Cooking Techniques - I

and absorbs extra fat thus making the product unfit for consumption. Use a frying basket wherever possible to remove fried foods easily. Almost all foods require coating before frying, since not only are the juices and flavour of the food to be kept in, but the fat must be kept out. The holding temperature range for deep fryer is 90°C-110°C.



Coating Materials used are:

- Eggs and breadcrumbs
- Flour and milk (not suitable for deep fat frying)
- Batter (flour, milk and eggs)
- Thinly rolled pastry
- Oatmeal or vermicelli
- Lamb or pig's caul
- Besan (gram flour or chickpea flour) batter

Both sweets and savouries may be cooked by this method without the flavour affecting the fat or the food, provided correct principles are applied. Food cooked by deep fat frying has a much better appearance than that cooked by shallow fat frying as it is evenly browned.

General rules for frying

- Have the fire clear and hot.
- Make the food into suitable sizes and shapes and see that it is free from cracks.
- Apply coating evenly. The breadcrumbs used should not be coarse. Remove any excess and firmly press on loose crumbs.
- When frying chicken dry off all moisture before dipping in flour.
- Use fat with a high smoke point. The fat must be quite still and at the right temperature required, before the food is put in.
- Do not put in too much food at the same time, as this will lower the temperature
- See that the temperature is not increased for increased output.
- Follow a time and temperature chart.
- Fry to a golden brown on both sides turning over the food if necessary.
- Drain well on absorbent paper and serve attractively.
- Cover fats left in the fryer between frying periods and maintain at a temperature not higher than 200°F.
- Once fat has been used for frying, strain and store in cans in a refrigerator.
- Replenish the original volume with fresh fat after each frying period.
- Fat begins to thicken, getting to be what is known as gummy or syrupy, with continuous use. This condition is known as polymerisation and such fats are more viscous than fresh fat. Since there are no known food additives for inhibiting this condition, fat that has reached this stage is no longer fit for use.
- Fats that are used for frying should have high stability. Normally fats themselves do not get rancid during the frying process but rancidity in the finished product affects the keeping quality and acceptability of the product. For commercial purposes, fat of any pieces of over 100 hrs stability is desired for continuous trouble-free frying.
- Cooking at too high a temperature, which carbonises loose breadcrumbs and small particles of fried food, causes darkening of the fat. Such fat should be strained and replenished with fresh fat before being used again.

Cooking Techniques - I

Boiling

Food is cooked by surrounding it with boiling or simmering liquid (stock or water). Just sufficient liquid should be used to cover the food to be cooked. To retain nourishment and flavour in food, plunge into boiling liquid. Allow to reboil and then to simmer. The liquid thus obtained is known as 'Pot Liquor and contains some nourishment and flavour. This should not be wasted. It could be used as a substitute for stock when stock is not available or cooled and used to prepare stock. If a well-flavoured stock is required, vegetables and meat should be put into cold water and allowed to cook gently. Salted or pickled meats should always be started in cold water.

Vegetables grown above the ground are cooked in boiling salted water and vegetables grown below the ground are started in cold salted water with the exception of new potatoes and new carrots. Dry vegetables are started in cold water. Salt is added only after the vegetables are tender. Fish should be put into hot liquid and allowed just to simmer. Scum should be removed during boiling.

Poaching

Poaching is cooking slowly in a minimum amount of liquid, which should never be allowed to boil but should be just off boil. Fish, fruits and eggs are poached. When poaching eggs, a little vinegar and salt are added to the liquid to help in quicker coagulation and thus prevent disintegration. Food should be completely immersed in liquid.

Steaming

The food to be cooked is surrounded by plenty of steam from fast boiling water directly or by having the food in a basin or other dish placed in steam or boiling water. This is a slow process of cooking and only easily cooked food can be prepared by this method

Advantages of Steaming

- Food cooked by this method is easily digested.
- All nourishment and flavour are kept in the food.
- Food cannot be easily overcooked.
- Pudding basins and other containers need not be filled to the top, thus allowing room for food to rise, making food light.

General Rules for Steaming

- Prepare the vessel and have the water boiling fast.
- If a basin is to be used as a container inside the steamer, see that it is greased and that it is covered with a well-fitting lid or with greaseproof paper. This is to prevent condensed moisture from falling on the food.
- Keep a kettle of boiling water handy so that the water in the steamer can be replaced as it boils away. Frequent refilling however, should be avoided as this causes a draught on food.
- Never allow the water in the steamer to go off the boil, except when preparing dishes with eggs as the main ingredients, such as custard. For this, water must be kept at simmering point or else the custard will curdle.
- Dish food quickly and serve hot. An appropriate sauce must accompany steamed food to make it appetising, as steamed food is generally bland.
- Green vegetables are not suitable for steaming.

Stewing

This is a very gentle method of cooking in a closed pan using only a small quantity of liquid. The food should never be more than half covered with the liquid and the food above this level is thus really cooked by steam. As the liquid is not allowed to boil during cooking, the process is a slow one. . . ,

Advantages of Stewing

- Cheap cuts of meat, old fowls and tough or under-ripe fruits may be prepared by this method as the slow, moist method of cooking softens fibres, rendering the food tender.
- Meat and vegetables may be cooked and served together, making an appetising dish, while saving fuel and labour.
- Stewed food may be cooked in the oven after other food is cooked or it may be cooked on the side of the fire or on a very small gas or oil flame, thus again saving fuel.
- All nourishment and flavour are retained; hence, the food is very appetising.

Cooking Techniques - I

General Rules for Stewing

- Have ready a pan with a well-fitting lid.
- Prepare the food and cut into pieces convenient for serving,
- Use tepid liquid and only sufficient to half cover the food,

Bring just to boiling point and then simmer very gently until the food is perfectly tender. Never allow a stew to boil for “a stew boiled is a stew spoilt’.

Braising

This is a combined method of roasting and stewing in a pan with a tight fitting lid. For correct use, this method requires a special pan but a casserole dish or stew pan makes a good substitute. The meat should be sealed by browning on all sides and then placed on a lightly fried bed of vegetables (generally root). Stock or gravy is added which should come to two-thirds of the meat. The flavourings and seasoning are then added. The lid is put on and it is allowed to cook gently on the stove or in the oven. When nearly done the lid is removed and the joint is frequently basted to glaze it. This latter process is always done in the oven.

Broiling

Broiling is cooking by direct heat and is used synonymously with grilling. In pan-broiling, the food is cooked uncovered on hot metal such as a grill or a frying pan. The pan or grill is oiled slightly to prevent sticking. Excess fat accumulated while cooking should be poured off.

Grilling

Used synonymously with broiling. This is cooking by dry heat. The food is supported on a griddle iron over the fire or on a grid placed in a tin under a gas or electric grill or between electrically heated grill bars.

Grilling Over the Heat

This is cooking on greased grill bars with the help of fat over direct heat. Only first class cuts of meat, poultry and certain fish can be prepared this way. The grill bars are brushed with oil to prevent food sticking and can be heated by charcoal, coke, gas or electricity. The bars should char the food on both sides to give the distinctive flavour of grilling. The thickness of the food and the heat of the grill determine the cooking time. Grills are typical a la carte dishes and are ordered by the customer to the degree of cooking required, such as rare, medium rare, medium or well done.

Grilling Under the Heat-Salamander:

This is cooking on grill bars or on trays under direct heat. Steaks, chops etc. are cooked on the bars but fish, tomato, bacon and mushroom are usually cooked on trays. This method can also be used in the preparation of foods au gratin and when glazing is required.

Grilling between Heats

Food is cooked between electrically heated grill bars.

Infrared grilling: This is cooking by infrared radiation. This method reduces cooking time considerably, e.g., a steak can be grilled in one minute.

Check your progress 4

- 1. Write short notes on:
 - a. Stewing
 - b. Roasting
 - c. Grilling
 - d. Frying
 - e. Baking

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2.6 LET US SUM UP

In this unit, we:

- Learnt various methods of cooking food, their advantages and disadvantages
- Understand the action of heat on nutrients
- Described the textures of food
- Described the methods of mixing
- Described various methods of cooking food

Check Your Progress: Possible Answers

Check your Progress 1

Answer: Action of Heat on Carbohydrate

Generally, starch swells up and becomes softer. Starch is enclosed within granules. These starch granules cannot be easily digested but on heating, they swell up and then burst and release the starch. Starch itself becomes gelatinised. Sugar is changed into invert sugar (by a process where sucrose is broken down into glucose and fructose) when heated with fruit juices or other weak acids. In the presence of invert sugar, the solubility of sucrose is increased and it tends to recrystallise more slowly. Inversion raises the boiling point and lowers the freezing point of a sugar solution. Invert sugar is slightly more easily digested and absorbed.

Answer:

When Sugar is boiled, it passes through regular stages till it becomes caramelised at 163°C (325°F). The following are the stages through which it passes:

- Small thread 102°C 216°F
- Large thread 103°C 218°F
- Pearl 106°C 222°F
- Soft ball 114°C 237°F

- Hard ball 120°C 247°F
- Soft crack 143°C 290°F
- Hard crack 156°C 312°F
- Caramel 163°C to 177°C 325°F to 350°F

Check your Progress 2

Answer: a)

Texture is the term used to describe the characteristics of a finished food product. The order in which the ingredients are added, the way of mixing and the method of cooking affect the resulting product. A good cook should not only be able to distinguish between one texture and another but also be able to produce what he or she wants.

Firm and Close:

The air bubbles made by the raising agents are many but small and the mixture is not in the least spongy. The fat included prevents the mixture from being too hard, e.g., in biscuits or plain short pastry.

Answer: b) Texture is the term used to describe the characteristics of a finished food product. The order in which the ingredients are added, the way of mixing and the method of cooking affect the resulting product. Only by observation, experience and perseverance will a person be able to know what the correct texture of a particular product should be.

Short and Crumbly:

This is similar to firm and close, but more fat is added, e.g., in shortbread or nankhatais.

Check your Progress 3

Answer: Refer 2.4

Check your Progress 4

Answer: Refer 2.5

SOME USEFUL BOOKS FOR THIS BLOCK

1. Cooking with Indian Masters, Gupta P.D. Prasad
2. Indian Food (A Historical Companion), Acharya K.T., Oxford University Press, 2003
3. Modern Cookery Vol-1, Thangam E. Philips, Orient Longman, 2005
4. Theory of Cookery, Krishna Arora, Ed. 5, Rank Bros & Co., 2005

ACTIVITIES FOR THIS BLOCK

Activity 1

- Collect specimens of some flavourings and seasonings, some raising agents, thickenings and write at least five names of the products in which they are used.

Activity 2

- Write a report on the observation of effect of heat on the various food constituents by practically observing the changes.

GLOSSARY

Comprehensive Glossary is placed at the end of Block 1.

Enrolment No.

1. How many hours did you need for studying the units?

Unit No	1	2	3	4
Nos of Hrs				

2. Please give your reactions to the following items based on your reading of the block:

Item	Excellent	Very Good	Good	Poor	Give specific example if any
Presentation Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
Language and Style	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
Illustration used (Diagram, tables etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
Conceptual clarity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
Check your progress Quest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____
Feed back to CYP Question	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ _____

3. Any Other Comments

Basics of Food Production

BLOCK 3: COOKING TECHNIQUES - II



“
*Education is something
which ought to be
brought within
the reach of every one.*
”

- Dr. B. R. Ambedkar

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Basics of Food Production



Basics of Food Production



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ROLE OF SELF INSTRUCTIONAL MATERIAL IN DISTANCE LEARNING

The need to plan effective instruction is imperative for a successful distance teaching repertoire. This is due to the fact that the instructional designer, the tutor, the author (s) and the student are often separated by distance and may never meet in person. This is an increasingly common scenario in distance education instruction. As much as possible, teaching by distance should stimulate the student's intellectual involvement and contain all the necessary learning instructional activities that are capable of guiding the student through the course objectives. Therefore, the course / self-instructional material are completely equipped with everything that the syllabus prescribes.

To ensure effective instruction, a number of instructional design ideas are used and these help students to acquire knowledge, intellectual skills, motor skills and necessary attitudinal changes. In this respect, students' assessment and course evaluation are incorporated in the text.

The nature of instructional activities used in distance education self-instructional materials depends on the domain of learning that they reinforce in the text, that is, the cognitive, psychomotor and affective. These are further interpreted in the acquisition of knowledge, intellectual skills and motor skills. Students may be encouraged to gain, apply and communicate (orally or in writing) the knowledge acquired. Intellectual-skills objectives may be met by designing instructions that make use of students' prior knowledge and experiences in the discourse as the foundation on which newly acquired knowledge is built.

The provision of exercises in the form of assignments, projects and tutorial feedback is necessary. Instructional activities that teach motor skills need to be graphically demonstrated and the correct practices provided during tutorials. Instructional activities for inculcating change in attitude and behavior should create interest and demonstrate need and benefits gained by adopting the required change. Information on the adoption and procedures for practice of new attitudes may then be introduced.

Teaching and learning at a distance eliminates interactive communication cues, such as pauses, intonation and gestures, associated with the face-to-face method of teaching. This is particularly so with the exclusive use of print media. Instructional activities built into the instructional repertoire provide this missing interaction between the student and the teacher. Therefore, the use of instructional activities to effect better distance teaching is not optional, but mandatory.

Our team of successful writers and authors has tried to reduce this divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self-instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)



PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included many tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect.

All the best for your studies from our team!

Basics of Food Production

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BLOCK 1: INTRODUCTION TO HOTEL KITCHEN

UNIT 1 KITCHEN ORGANISATION

Objectives, Introduction, Kitchen Organisation, Kitchen Brigade, Layout of Kitchen, Sections of Kitchen

UNIT 2 QUALITIES OF KITCHEN STAFF

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UNIT 1 STOCKS

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UNIT 2 FISH COOKERY

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UNIT 4 MEAT COOKERY

Objectives, Introduction, Structure & Composition of Meat, Beef, Lamb, Pork, Poultry



Dr. Babasaheb
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Basics of Food Production

BLOCK 3: COOKING TECHNIQUES II

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BLOCK 3: COOKING TECHNIQUES - II

Introduction to the Block

In this block you will learn the technical knowledge about certain stocks, which come up as the foundation of many dishes, may it be the sauces, soups, main courses and many more. Thus, the stocks are of greater importance to our diet as it plays a very important role in all the preparations. The sauces as it is been told are the backbone in the Western culinary preparations as well as in the Indian preparations as it improves the taste of the food as well as the nutritional value, Thus various derivatives will be highlighted as we are supposed to know the ins and outs of sauces for further preparation of dishes.

Soup is a food that is made by combining ingredients such as meat and vegetables with stock, juice, water or another liquid. Hot soups are additionally characterised by boiling solid ingredients in liquids in a pot until the flavor is extracted, forming a broth. Soup is often very nutritious. Cold soups are also prepared.

Sauces are liquids and semi liquid mixtures. A keen sense of smell delicate sense of smell delicate sense of taste, a light, strong hand for the blending all contributes to the perfect sauce. It provides moisture, colour and shine to food.

Stock is a liquid in which meat or meat bones, fish or fish bones and various vegetables have been cooked to extract flavours. Fonds de Cuisine is a Kitchen stock. The stocks are liquids, which are nutritious, aromatic, strongly flavored liquids. Stocks are used for preparing various dishes such as soups, sauces, gravies, stews, curries etc. Stocks are used for making glazes in order to provide coating to the meat and poultry. The main aim is to retain juices and prevent the meat from losing moisture. If glazes are used it imparts flavour and improves the appearance of the dish.

UNIT 1 STOCKS

Structure

- 1.0 Objectives
- 1.1 Introduction
- 1.2 Stocks
- 1.3 Classification of Stocks
- 1.4 Preparation of Stocks
- 1.5 Let Us Sum Up

1.0 OBJECTIVES

After working through this unit, you should be able to:

- Classify Stocks
- To know preparation of stocks
- Storage temperature of stocks

1.1 INTRODUCTION

It is a liquid, in which is meat or meat bones, fish or fish bone and various vegetables have been cooked to extract favors. Fonds de Cuisine is a Kitchen stock. The stocks are liquids, which are nutritious, aromatic, strongly flavored liquids. Stocks are used for preparing various dishes such as soups, sauces, gravies, stews, curries etc.

After cooking, it is properly stored for a day when it ripens and gives a fuller flavour.

Stocks are used to improve the tastes of various Indian dishes like the pulaos, biryanis, some gravies etc.

The stocks can be further classified as white fish stock, white chicken stock, brown veal stock, brown mutton stock, brown game stock, brown beef stock (Estouffade), white beef stock, white veal stock, white mutton stock.

1.2 STOCKS

Stock is an important ingredient and hence utmost care has to be taken while preparing the stocks:

- Before preparing the stocks, the fats should be removed.
- Marrow should also be removed and used for other purposes such as garnishing the soups etc.
- While preparing the stocks, care should be taken that it should only be simmered.
- Bouquet garni should be immersed or it should be tied to a handle of a stockpot.
- Scum should always be discarded.
- The stock should always be strained; no fat should be allowed to remain on the surface. If the fat remains on the surface the heat is prevented from escaping and may cause the stock to turn rancid i.e. become sour.
- Stock should be stored in a refrigerator or cold room.
- Stocks turn cloudy, if it is boiled too rapidly.

Check your progress 1

1. Explain the precautions to be taken while preparing stocks.

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1.3 CLASSIFICATION OF STOCKS

Stocks give colour and flavour to the dish. Therefore, it is important that the stocks used blend together with the dish.

There are different kinds of stocks:

- White Beef Stock
- White mutton stock
- White veal stock
- White chicken stock
- Fish stock
- Brown beef stock
- Brown mutton stock
- Brown veal stock
- Brown game stock

1.4 PREPARATION OF STOCKS

White Beef/Veal/Mutton stock (1 litre)

Ingredients	Quantity
Beef bones	500gms
Carrots	50gms
Onions	25gms
Bouquet Garni	
Leeks	25gms
Celery	25gms
Parsley stalks and roots	5gms
Bay leaf	1-2
Thyme	1 sprig
Water	2 litres
Lemon (Wedges)	5 nos

Method

Stocks

Cut the bones and remove the marrow if present. Place in a stockpot with water, bring to a boil, skim off the scum, add the vegetables and the bouquet garni, allow the stock to simmer for around 5-6 hours. Remove the vegetables after 3 hours. Pass through a muslin, reboil and place aside to cool.

White Chicken Stock	(1 litre stock)
Ingredients	Quantity
Chicken bone (Fat Removed)	500gms
Carrots	70 gms
Onions	35gms
Leeks	25gms
Celery	10gms
Parsley stalks	5gms.
Thyme	1-2
Water	1.5 lit.

The method is same as beef stock; cooking time is around 2 hours.

The white chicken or meat stocks are used for the preparation of white soups, sauces stews etc.

White Fish stock (for 1 lit.)

Butter	15 Gms
Finely sliced onions	50gms
Bay leaf	1 no.
Peppercorns	1-2
Parsley stalk	4-5gms
Fish bones	300-400gms.
White mushrooms	3gms
Juice of lemon	¼
Cold water	1.25 lit.

Cooking Techniques II

Method

Place the aromatics in the saucepan on top of blanched shredded onions.

Add the fish trimmings along with the lemon juice, add the water and allow to boil initially then simmering for around 15-20 mins. Strain through the muslin cloth, reboil and cool and use as required. Care should be taken as the fish stocks become cloudy more easily.

Brown stock

Ingredients	1 Litre
Beef Bones	500 Gm
Hambone	40 Gm
Carrots	75 Gm
Onions	25 Gm

Bouquet garni.

Celery	12 Gm
Parsley	6 Gm
Bay leaf	½ No
Thyme	½ Sprig
Water	1 ½ Liter
Beef Fat	A Little to Brown the bones

Method

1. Cut or break the bones into 3 to 4 inch pieces and place with fat in a roasting tray.
2. Roast the bones or trimming until rich brown in a hot oven Place bones in a stockpot.
3. Cover with water and bring to boil and skim off.
4. Add the fried carrots and onions the bouquet garni and the ham bone.
5. The stock should simmer for 6 hours, skimming from time to time.
6. Strain, reboil and use as required.

Glazes

Stocks

A glaze is a French word and it refers to a stock which has been reduced by three-fourths or more until it coats the back of a spoon. Glazes are used for enhancing the flavour of the sauces, any sautéed or grilled meats or for decorating any finished goods whether hot or cold.

The common glazes are Meat glaze, chicken glaze, fish glaze.

Meat Glaze:

Brown stock is put in a large stew-pan on an open fire and reduced, the stock is reduced and it is then strained through a muslin cloth, the wooden spoon should be used to check for the consistency of the glaze. The chicken glaze is also made in the same way whereas in the case of the fish glaze-the stock is reduced which in term is called as fish fumet. The storage temperature for stocks is 1°C – 4°C.

Bone stock

Use any kind of bones, cooked or uncooked. Place in a pan. Cover with cold water, add a little salt and bring to boil. Simmer gently to allow the scum to form on the surface, which should be gently removed. A little cold water could be added occasionally to accelerate the process. Skim well and for each 600 ml. of liquid add one onion, one carrot and a bouquet garni. Put the lid on and simmer very slowly for at least 2 to 3 hours. Strain and cool quickly and use.

Meat and bones not only contribute flavour but body. Body is largely made up of gelatin and other soluble products extracted from meat and bones.

Depending on the size of the bones and the way they are cut, stock from meat bones is simmered from 4 to 10 hours and poultry from 2 to 6 hours.

Best bones to use for stock are those from young animals. These contain more gelatins and the marrow contains more flavouring ingredients. Shin and knucklebones are best with neck bones next. The bones are best cut into 4 lengths and split.

To make 5 liters of good stock use 2 kg. of meat bones, 6 liters water, 12 kg. flavorings vegetables (mirepoix).

In a brown stock, the meat, bones and vegetables are first browned.

In a white stock, they are not browned. Highly coloured vegetables such as carrots, beans etc. are avoided.

Cooking Techniques II

Vegetable stock

Use any mixture of vegetables, the outside leaves of cabbage, curd, cauliflower stalks, carrot base, celery stalks and leaves, onions, whole garam masala etc. All these must be washed thoroughly to free them of grit, sand and worms. Shred vegetables and add to cold water. Cover and boil for 20 to 30 minutes. Strain and use.

Emergency stock

Dissolve meat or yeast extract in boiling water or in pot liquor.

Pot liquor is the water in which meat, poultry, fish, vegetables, macaroni etc. have been boiled for the table where the purpose is to retain as much nourishment and flavors in the solids as possible. Putting the solids into hot water does this but still some nourishment and flavors escape into the liquid. This liquid (pot liquor) can be used as a substitute for stock.

No stock will keep for very long. Because stock is a good medium for bacterial growth, great care must be taken in its preparation and storage. In hot climates, stock should be stored in a refrigerator and boiled to prevent spoilage. Cool quickly by emptying into shallow and clean bowls. Stock, which contains starchy foods, should not be used after 12 hours.

Check your progress 2

1. Classify the stocks.
2. Give the recipe and method for White Chicken Stock.
3. Give the recipe and method for brown stock.

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1.5 LET US SUM UP

In this unit, we:

- Explained the classification of stocks
- Learnt the preparation of stocks
- Stated the importance of stocks for preparation of soups and sauces
- Learnt the precautions to be taken while preparing stocks

Check Your Progress: Possible Answers

Check your Progress 1

Answer: Refer 1.2

Check your Progress 2

Answer 1: Refer 1.3

Answer 2: Refer 1.4

Answer 3: Refer 1.4

UNIT 2 SOUPS

Structure

2.0 Objectives

2.1 Introduction

2.2 Soups

2.2.1 Classification of Soups

2.2.2 Various Garnishes for Soups

2.3 Let Us sum up

2.0 OBJECTIVES

After working through this unit, you should be able to:

- Classify soups
- Know the various garnishes for soups
- Know what a soup is
- Understand how good stocks flavour the soups

2.1 INTRODUCTION

Soup is a liquid food consisting of meat, seafood, vegetable, cereals and poultry. They play an important role on the menu and are regarded as they stimulate appetite for the heavier foods to follow.

A traditional way to start a meal is with a soup or a starter, carefully selected to complement the rest of the meal.

The key to good soup is making your own stock to form a basis for your soups. Ready-made stock cubes or granules often contain large quantities of salt, flavorings and preservatives, which may not be good for your health. In addition, they do not produce the exciting flavours of fresh herbs, meat, fish and shellfish skillfully blended.

2.2 SOUPS

Soups such as consommés, creams, veloutes, purees, broths, bisques and many special international soups and all basic stocks are prepared here. The cold soups are prepared and passed to the larder for service. The garnishes come from the larder and vegetable section.



Soups are similar to stews; in some cases, there may not be a clear distinction between the two. However, soups generally have more liquid than stews. Evidence of the existence of soup can be found as far back as about 6,000 BC. Boiling was not a common cooking technique until the invention of waterproof containers (which probably came in the form of clay vessels or pouches made of animal skin) about 9,000 years ago. Soup can be made out of broth or a form of liquid.

The word soup comes from French soupe ("soup", "broth"), which comes through Vulgar Latin suppa ("bread soaked in broth") from a Germanic source, from which also comes the word "sop", a piece of bread used to soak up soup or a thick stew.

Aim of Soup Making

The aim of soup making is to prepare an appetising, economical and easily digestible dish by extracting nourishment and flavor from the solid to the liquid.

Stock is the foundation of all good soups. Stock is made by putting solid food into cold water and by a long slow process of cooking extracting the nourishment into the liquid. "The best stocks are made from meat and bones together, e.g., white consommé. Since this is expensive for household purposes as well as institutional feeding, bones and leftovers are used.

2.2.1 Classification of Soups

1. **Thin Soup:** Most of the thin soups are clear, flavored, nutritious liquid and are prepared without the use of starch. The soup is a thin liquid with garnish or with small, daintily cut food items floating in it. Example: - Alexandra, Bretonne, Carmen, Colbert.
 - a. **Consommé:** A clear soup prepared from beef, chicken or game stock, garnished with a variety of ingredients. This can be served hot or chilled. Consommé takes its name generally from the garnish, e.g., Consommés Julienne — consommé garnished with boiled matchstick-like strips of Vegetables such as carrots, beans, turnips etc. Con-Somme, Royal — consommé garnished with savory custard cubes.

Cooking Techniques II

- b. Broth:** A good stock (beef, mutton or chicken) cooked with diced meat, vegetables and rice or barley and served with the solids. Some of the nourishment is retained in the solids by putting them into tepid liquid. Broths are also different from ordinary soups in having the thickening (rice, barley, macaroni etc.) put in at the beginning and cooked with the other ingredients. Examples: scotch broth, minestrone, escudella-catalina etc.
- 2. Thick Soup:** They are passed thick soups and in this category are purees, Cream, Veloutes, Bisques and Chowders.
- a. Purees:** Starchy vegetables such as potatoes or cereals when pureed in soups usually act as self-thickening ingredient. The cooked soup is strained through a sieve. The consistency of the soup is thick. E.g. Compiegne, conti, lamballe. These are generally served with croutons (fried bread cubes).
- b. Cream Soup:** They are composed of a puree of vegetables, fish or meat, thickened with béchamel sauces or given a cream finish. Milk is used to dilute and achieve correct consistency. E.g. Tomato soup, Cream of chicken soup, Cream of lentil soup
- c. Veloutes:** Veloutes as soups are similar to other veloutes, but differ from purees, as they require a thickening element and a roux. Veloute is made by preparing roux and adding stock and pureed vegetables or meat. Hot milk is blended in to produce a smooth soup. E.g. Veloutes Celetis, Veloutes Indienne
- d. Chowder:** An American soup resembling a stew made of meat, fish or vegetable with milk, salt pork and various seasonings. Crackers are generally added just before serving. Examples: prawn chowder, oyster chowder, pork chowder, vegetable chowder. They are thick heavy soups.
- e. Bisques:** It is made from shellfish and fish stock and thickened with cream with diced fish served in it, e.g. bisque de homard.
- The value of any soup will depend on the ingredients used. Clear soups are of value only to stimulate the appetite at the beginning of a meal while thick soups such as cream, veloute and puree, chowders, broths etc. are nourishing as well as appetising.
- 3. Cold Soup:** Chilled soups include soups that are jellied by the natural gelatin in the meat stock or by adding gelatin powder or those that are thickened with a starch or puree. E.g. Gelee De, Volaille, Napolitaine, Vichyssoise, Consomme, Madrilene, Borscht.

4. International Soups

Soups

Name of Soups	Origin
Minestrone	Italy
French onion soup	French
Cock a leekie	Scotland
Mulligatawny	India
Gazpacho	Spain
Manhattan clam chowder	America
Camaro	Brazil
Paprika	Hungary
Bouillabaisse	French

2.2.2 Various Garnishes for Soups

Croutons: dices or other shapes made from bread, toast, pastry

Cereals: rice or barley

Cheese: Cheese balls or grated Parmesan served with Croutons on one side

Cream: unsweetened whipped cream or sour cream

Meats: usually small dices or juliennes

Poultry: same as meat

Sea food: diced or flaked

Pastas: noodles, spaghetti

Vegetables: cut in various sizes and shapes

Check your progress 1

1. What are soups? What is aim of soup making?
2. Classify soups.
3. Give eight international soups along with their origin.
4. What are thick soups? Explain purees and veloutes in detail.
5. List various garnishes for soups.

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2.3 LET US SUM UP

In this unit, we:

- Understood the importance of soup in our diet
- Understood the classification of soups
- Described various garnishes of soups
- Discussed International soups

Check Your Progress: Possible Answers

Check your progress 1

Answer 1: Refer 2.2

Answer 2: Refer 2.2.1

Answer 3: Refer 2.2.1

Answer 4: Refer 2.2.1

Answer 5: Refer 2.2.2

UNIT 3 BASIC SAUCES

Structure

- 3.0 Objectives**
- 3.1 Introduction**
- 3.2 Sauces**
- 3.3 Importance of Sauces**
- 3.4 Basic Sauces**
- 3.5 Methods of preparing sauces**
- 3.6 Let Us Sum Up**

3.0 OBJECTIVES

After working through this unit, you should be able to:

- Explain what a sauce is
- Discuss basic Mother Sauces and their preparation
- State the importance of sauces

3.1 INTRODUCTION

A sauce refers to a thickened flavored liquid, which is primarily used to enhance the flavour of food items it accompanies. Sauces are liquids and semi liquid mixtures. A keen sense of smell delicate sense of smell delicate sense of taste, a light, strong hand for the blending all co contributes to the perfect sauce. It provides moisture, colour and shine to food.

3.2 SAUCES

Sauces are the most important in Western Culinary. The word "sauce" is a French word that means a relish to make our food more appetising. Sauces are liquid or semi-liquid foods devised to make other foods look, smell and taste better and hence be more easily digested and more beneficial. Because of the lack of

refrigeration in the early days of cooking, meat, poultry, fish and seafood did not last long. Sauces and gravies were used to mask the flavor of tainted foods. **Basic Sauces**

3.3 IMPORTANCE OF SAUCES

The importance of sauces in the food preparation is as follows:

- Sauces help to enhance flavours
- Some sauces helps in digestion. E.g. mint sauce with roast lamb and cranberry sauce with roast turkey.
- It gives moistness to the food. E.g. White sauce adds creaminess to firm and dry food.
- Dresses and compliments food that need some additional quality and makes the food more palatable. E.g. Chaudfroid sauce is used to coat various food items and gives a good appearance.
- Gives tartness and contrasts or balances a bland food. E.g. Devil sauce served with eggs give appealing tartness. Thickening agents or liaisons that are used to thicken sauces are:
 - Roux
 - Starch
 - Beurre Manie
 - Yolks of Eggs
 - Blood
- Sometimes it gives the name to the dish. E.g. Madeira wine when added to the brown sauce, it is called sauce Madeira.
- Sauces add colour to the food. Hollandaise sauce served on a vegetable adds colour. Tomato sauce goes with Fish a l'orly.

Check your progress 1

1. What is a sauce?
2. What are the importances of sauces in food preparation?

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3.4 BASIC SAUCES

The basic sauces are as follows:

- Béchamel Sauces
- Hollandaise Sauces
- Veloute Sauces
- Espagnole Brown Sauces
- Tomato Sauce
- Mayonnaise Sauce

Check your progress 2

1. List the basic sauces in the Western Culinary.

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3.5 METHODS OF PREPARING SAUCES

Béchamel Sauces



Ingredients	Quantity
Flour	90gms
Butter	90gms
Milk	1 liter
Onions studded with	1
Clove and bay leaf	1 No.

Cooking Techniques II

Method:

1. Bring milk to boil with studded onions and set aside.
2. Melt butter in a thick-bottomed pan.
3. Add flour stir and cook the roux over a gentle fire without coloring. Pour milk into the roux stirring with spoon to avoid lumps. Simmer gently for half an hour. Remove the studded onion and pass through a fine strainer, cover with butter to prevent the formation of a skin.



Hollandaise Sauce: It is a warm, yellow and rich sauce.

Ingredients	Quantity
Butter	200 gms
Egg yolk	2 no.
Crushed peppercorns	5 no.
Vinegar	15 ml
Lemon juice	few drops

Method:

1. Melt butter and keep aside
2. Place crushed peppercorns and vinegar in a pan and reduce completely.
3. Add 1 tablespoon of water and cool.
4. Add egg yolk and whisk.
5. Place the pan in a double boiler and whisk the egg yolks till a sabayon is formed. Then gradually add the melted butter until it is blended and forms smooth sauces. Add lemon juice.

6. Strain through a fine strainer.
7. Add seasoning.

Veloute: It is a basic bland sauce.

Ingredients	Quantity
Butter	90gms
Flour	90gms
Stock	1 Litre
Mushroom Trimmings	25gms

Method

1. In a thick-bottomed pan, prepare a blond roux.
2. Add cold stock in to the roux; stir vigorously to avoid lumps.
3. Add mushroom trimmings.
4. Simmer gently for 1 hour, stirring frequently with a wooden spoon.
5. Pass through a fine strainer and cover with butter to prevent formation of skin.

BROWN SAUCE: It is prepared by brown roux and brown stock or glaze of brown stock.



Ingredients	Quantity
Fat	60 Gms
Flour	70gms
Tomato Puree	30gms
Brown Stock	1lt

Cooking Techniques II

Carrot	70gms
Onions	70gms
Bacon Trimmings	30 gms
Bay Leaf	3 gms
Celery and Parsley	

Method

1. Prepare a brown roux in a heavy bottomed pan and cool.
2. Add tomato puree.
3. Mix in hot stock, stirring vigorously to blend well.
4. Add sautéed vegetable to the sauce.
5. Simmer gently for 4 to 6 hrs.
6. Strain and cover with a thin layer of butter.

Tomato Sauce



Ingredients	Quantity
Flour	80gms
Butter	70gms
Dices of Bacon	40gms
Onions	80gms
Carrots	80gms
Celery	40gms
Bay Leaf	1 Nos
Garlic	2nos

Basic Sauces

Tomato Purees	100gms
Tomatoes Chopped	50gms
Brown Stock	450ml
Sugar	10gms
Salt	3gms

Method

1. Melt butter in a pan.
2. Add roughly chopped vegetables, garlic and sauté till slightly brown.
3. Mix in flour and fry till it gets sandy texture and gets light brown colour.
4. Add tomato puree and chopped tomato and stir.
5. Add cold stock.
6. Add seasoning and cook for 1hr 30 min.
7. Strain and cover with butter.

Mayonnaise: It is a cold sauce.



Ingredients	Quantity
Salad Oil	1 litre
Egg Yolk	8 no.
French Mustard	1 gms
Vineger	25 ml
Lemon	1 ml
Seasoning	To taste

Cooking Techniques II

Method

1. Place an egg yolk, vinegar, seasoning in a clean bowl and whisk well.
2. Add oil slowly, a little at a time, whisking continuously, until all the oil is incorporated.
3. Finish the sauce by adding the juice of lemon and warm water

Derivatives of Basic Sauces:

Espanole or Brown Sauce:

Name of the sauce	Ingredients	Foods with which cooked or served
Demi Glaze	50% of brown stock + 50% of brown sauce reduced to half	Used for the preparation of other sauces
Chasseur	Minced mushrooms, sautéed chopped shallots +white wine reduced + demi- glaze+ butter + chopped parsley	Poultry, eggs, grilled or sautéed meat
Charcutiere	Robert sauce, garnished with juliennes of gherkins	Grilled pork chops
Bercy	Demi glaze+ meat glaze+ minced shallots+ white wine + sliced bone marrow	Grilled meat, fish
Chaufroid	Demi-glaze+ aspic jelly + essence of truffles + Madeira	Poultry, meat, cold dishes

Béchamel Sauce:**Basic Sauces**

Name of the sauce	Ingredients	Foods with which cooked or served
Scotch Egg Sauce (Escossaise)	Thin Béchamel sauce, mixed with hard-boiled yolk sieved, garnished with white of eggs cut into strips	Poached fish or boiled fish, eggs, lamb
Mornay	Béchamel + Parmesan and Gruyere + cream+ egg yolks	Fish, eggs and vegetables
Parsley	Béchamel+ Fresh Cream+ butter + chopped and blanched parsley	Vegetables, calf's head and boiled fish

Veloute: Fish/ Meat / Chicken

Name of the sauce	Ingredients	Foods with which cooked or served
Allemande	Chicken Veloute+ egg yolks+ Mushroom trimmings+ cream + juice of lemon	Poached Chicken
Aurore	Chicken Veloute+ tomato sauce + butter	Poached chicken, boiled chicken, poached eggs
Ivory	Sauce Supreme+ meat glaze	Poached chicken, boiled chicken. Used for preparing chaufroid sauce.
Curry Sauce	Dices of onions +apples sautéed in butter+ curry powder+ coconut milk+ add veloute strain	Eggs, Fish and Chicken
Caper	Mutton veloute+ capers	Boiled leg of mutton
Poulette	Allemande sauce+ mushroom essence+ lemon juice+ chopped parsley	Boiled meat, eggs
Nantua	Fish Veloute+ fried mirepoix fish in crayfish butter	Fish, shellfish

Cooking Techniques II

Tomato Sauce:

Name of the sauce	Ingredients	Foods with which cooked or served
Barbecue	Tomato sauce +ketchup+ vinegar+ sugar. Chilli sauce or Worcester sauce can also be used for creating variation	Barbecued meats. It is an American Sauce.
Bretonne	Tomato sauce + sautéed chopped onions + white wine reduced, strained + butter + chopped parsley	Haricots
Tomated Chaudfroid	Tomato Sauce + Aspic Jelly	Cold Chicken, Eggs
Provencale	Thin Tomato sauce sautéed sliced mushrooms chopped+ parsley+ garlic+ tomato concasse+sugar	Eggs, fish and shellfish cold sauce is served with cold meat hors d'oeuvres

Hollandaise:

Name of the sauce	Ingredients	Foods with which cooked or served
Mousseline	Hollandaise sauce mixed with stiffly whipped cream	Fish, eggs, vegetables and meat
Noisette	Hollandaise + nut brown cooked butter	Poached salmon and trout
Foyot	Bearnaise sauce + meat glaze	Grilled and sauteed meat
Choron	Bearnaise sauce+ tomato puree	Grilled or sauteed meat
Bearnaise	Hollandaise sauce + chopped chervil + chopped tarragon	Grilled meats and fish

Mayonnaise:**Basic Sauces**

Mayonnaise	Ingredients	Foods with which cooked or served
Tartare	Mayonnaise+ hard yolk of eggs, garnished with finely chopped onions and chives	Fried fish and shellfish
Cocktail	Mayonnaise+ tomato ketchup+ Worcester sauce + tobasco+cream+lemon juice	Shellfish
Vincent	Half Tartare sauce + half green sauce mixed together	Cold fish, shellfish
Gribiche	Mayonnaise+ chopped hard boiled eggs + mustard, garnished with chopped gherkins, capers, chervil, tarragon	Calf's head and cold fish
Thousand Island Dressing	Mayonnaise+ hard boiled eggs+ tomato ketchup+ chopped gherkins+ onions + pimentos, olives+ paprika powder	Cold Meat
Gloucester	Mayonnaise+ sour cream+ lemon juice+ chopped fennel+ Worcestershire sauce	Cold Meat

A class of their own:

Name of the sauce	Ingredients	Foods with which cooked or served
Roast Gravy	It is not a sauce, but is an accompaniment to roasts. Essence of roast meat+ brown stock.	All roast items of meat, game and poultry.
Bread Sauce	Flavored milk with onions+ breadcrumbs+ butter+ cream+ seasoning	Roast poultry and roast feathered game.
Curry	Blond roux+ garlic+ chopped apple, onions+ coconut powder+ curry powder+ tomato puree+ stock+ sultanas	Rice, prawns, vegetables and eggs
Cranberry	Cranberries+ sugar+ water	Roast Turkey

**Cooking
Techniques II**

Butter sauces:

Name of the sauce	Ingredients	Foods with which cooked or served
Parsley Butter	Butter + lemon juice+ chopped parsley+ seasoning	Grilled meats, fish and fried fish
Colbert	Parsley Butter+ dissolved pale meat glaze + chopped tarragon	Fish Colbert
Shrimp Butter	Half of finely pounded shrimp and half butter sieved	Shellfish
Garlic Butter	Soften butter; add garlic paste and lemon juice.	Grilled Steaks
Brown Butter	Brown the butter on gentle heat and get an even brown colour, pour over the food immediately	Fish Meuniere

Check your progress 3

Explain:

- a. Butter Sauces: Parsley Butter, Brown Butter, Garlic Butter
- b. Mayonnaise: Tartare, Thousand Island Dressing, Cocktail Dressing
- c. Hollandaise: Mousseline, Noisette, Foyot, Choron

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3.6 LET US SUM UP

In this unit, we:

- Understood the basic preparation of sauces
- Understood the derivatives of sauces
- Understood the accompaniments of sauces and their derivatives

Check Your Progress: Possible Answers

Check your Progress 1

Answer 1: Refer 3.2

Answer 2: Refer 3.3

Check your Progress 2

Answer: Refer 3.4

Check your Progress 3

Answer: a.

Parsley Butter	Butter + lemon juice+ chopped parsley+ seasoning	Grilled meats, fish and fried fish
Brown Butter	Brown the butter on gentle heat and get an even brown colour, pour over the food immediately	Fish Meuniere
Garlic Butter	Soften butter; add garlic paste and lemon juice.	Grilled Steaks

Cooking Techniques II

b.

Tartare	Mayonnaise+ hard yolk of eggs, garnished with finely chopped onions and chives	Fried fish and shellfish
Thousand Island Dressing	Mayonnaise+ hard boiled eggs+ tomato ketchup+ chopped gherkins+ onions + pimentos, olives+ paprika powder	Cold Meat
Cocktail	Mayonnaise+ tomato ketchup+ Worcester sauce + tobasco+cream+lemon juice	Shellfish

c.

Mousseline	Hollandaise sauce mixed with stiffly whipped cream	Fish, eggs, vegetables and meat
Noisette	Hollandaise + nut brown cooked butter	Poached salmon and trout
Foyot	Béarnaise sauce + meat glaze	Grilled and sautéed meat
Choron	Béarnaise sauce+ tomato puree	Grilled or sautéed meat

SOME USEFUL BOOKS FOR THIS BLOCK

1. Cooking with Indian Masters, Gupta P.D. Prasad
2. Indian Food (A Historical Companion), Acharya K.T., Oxford University Press, 2003
3. Modern Cookery Vol-1, Thangam E. Philips, Orient Longman, 2005
4. Theory of Cookery, Krishna Arora, Ed. 5, Rank Bros & Co., 2005

ACTIVITIES FOR THIS BLOCK

Activity 1

- Visit a 5-star Hotel or any similar category of catering unit. Observe the preparations of making of stocks, soups and sauces. Note down the care taken while preparing these. Also observe how these sauces are used for preparing various dishes. Observe various soups and list their names along with their garnishes. Also observe the colour, consistency, texture and overall appearance of the soups and sauces.

GLOSSARY

Comprehensive Glossary is placed at the end of Block 1.

Enrolment No.

1. How many hours did you need for studying the units?

Unit No	1	2	3	4
Nos of Hrs				

2. Please give your reactions to the following items based on your reading of the block:

Item	Excellent	Very Good	Good	Poor	Give specific example if any
Presentation Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Language and Style	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Illustration used (Diagram, tables etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Conceptual clarity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Check your progress Quest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Feed back to CYP Question	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

3. Any Other Comments

Basics of Food Production

BLOCK 4: PRINCIPLES OF FOOD PRODUCTION



“
*Education is something
which ought to be
brought within
the reach of every one.*
”

- Dr. B. R. Ambedkar

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Basics of Food Production



Basics of Food Production



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ROLE OF SELF INSTRUCTIONAL MATERIAL IN DISTANCE LEARNING

The need to plan effective instruction is imperative for a successful distance teaching repertoire. This is due to the fact that the instructional designer, the tutor, the author (s) and the student are often separated by distance and may never meet in person. This is an increasingly common scenario in distance education instruction. As much as possible, teaching by distance should stimulate the student's intellectual involvement and contain all the necessary learning instructional activities that are capable of guiding the student through the course objectives. Therefore, the course / self-instructional material are completely equipped with everything that the syllabus prescribes.

To ensure effective instruction, a number of instructional design ideas are used and these help students to acquire knowledge, intellectual skills, motor skills and necessary attitudinal changes. In this respect, students' assessment and course evaluation are incorporated in the text.

The nature of instructional activities used in distance education self-instructional materials depends on the domain of learning that they reinforce in the text, that is, the cognitive, psychomotor and affective. These are further interpreted in the acquisition of knowledge, intellectual skills and motor skills. Students may be encouraged to gain, apply and communicate (orally or in writing) the knowledge acquired. Intellectual-skills objectives may be met by designing instructions that make use of students' prior knowledge and experiences in the discourse as the foundation on which newly acquired knowledge is built.

The provision of exercises in the form of assignments, projects and tutorial feedback is necessary. Instructional activities that teach motor skills need to be graphically demonstrated and the correct practices provided during tutorials. Instructional activities for inculcating change in attitude and behavior should create interest and demonstrate need and benefits gained by adopting the required change. Information on the adoption and procedures for practice of new attitudes may then be introduced.

Teaching and learning at a distance eliminates interactive communication cues, such as pauses, intonation and gestures, associated with the face-to-face method of teaching. This is particularly so with the exclusive use of print media. Instructional activities built into the instructional repertoire provide this missing interaction between the student and the teacher. Therefore, the use of instructional activities to effect better distance teaching is not optional, but mandatory.

Our team of successful writers and authors has tried to reduce this divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self-instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)



PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included many tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect.

All the best for your studies from our team!

Basics of Food Production

Contents

BLOCK 1: INTRODUCTION TO HOTEL KITCHEN

UNIT 1 KITCHEN ORGANISATION

Objectives, Introduction, Kitchen Organisation, Kitchen Brigade, Layout of Kitchen, Sections of Kitchen

UNIT 2 QUALITIES OF KITCHEN STAFF

Objectives, Introduction, Duties of Kitchen Staff, Personal hygiene of Kitchen Staff, Co-ordination of Kitchen with other departments

UNIT 3 KITCHEN EQUIPMENT

Objectives, Introduction, Types of Kitchen Equipment, Large Equipment, Mechanical Equipment, Small Equipment, Sanitation and Safety precautions in Kitchen, Care and maintenance of Equipment

BLOCK 2: COOKING TECHNIQUES - I

UNIT 1 INTRODUCTION TO COOKERY

Objectives, Introduction, Aims and Objectives of Cooking Food, Foundation Ingredients, Classification of Raw Materials and their Functions, Preparation of Ingredients

UNIT 2 METHODS OF COOKING FOOD

Objectives, Introduction, Action of heat on the nutrients, Textures of Food, Methods of Mixing Food, Methods of Cooking Food

BLOCK 3: COOKING TECHNIQUES - II

UNIT 1 STOCKS

Objectives, Introduction, Stocks, Classification of Stocks, Preparation of Stocks

UNIT 2 SOUPS

Objectives, Introduction, Soups

UNIT 3 BASIC SAUCES

Objectives, Introduction, Sauces, Importance of Sauces, Basic Sauces, Methods of preparing sauces

BLOCK 4: PRINCIPLES OF FOOD PRODUCTION

UNIT 1 VEGETABLE COOKERY

Objective, Introduction, Classification of Vegetables, Importance of vegetables in our diet, Preparation of Vegetables, Effect of Cooking on Vegetables, Indian & Continental Vegetables, Potatoes, Classification of Fruits, Salads and Salad Dressings, Introduction to Herbs and Spices

UNIT 2 FISH COOKERY

Objective, Introduction, Structure and Composition of Fish, Classification of Fish, Preparation of Fish, Methods of Cooking Fish

UNIT 3 EGG COOKERY

Objective, Introduction, Structure and Composition of Egg, Principles of Egg Cookery, Methods of Cooking Egg, Nutritive Food Value of an Egg

UNIT 4 MEAT COOKERY

Objectives, Introduction, Structure & Composition of Meat, Beef, Lamb, Pork, Poultry



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Basics of Food Production

BLOCK 4: PRINCIPLES OF FOOD PRODUCTION

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BLOCK 4: PRINCIPLES OF FOOD PRODUCTION

Introduction to the Block

In this block, you will learn technical knowledge of vegetable and fruit cookery, fish cookery, egg cookery and meat cookery. Here we will go through various vegetables, their classification, cooking techniques for vegetables, fruit and fruit classification, salads and salad dressings, various herbs and spices. After learning the vegetable cookery, you will know of many techniques of cooking vegetables, understanding the changes, which take place after cooking vegetables.

You will also be learning about Potatoes and various Indian and Continental vegetables, which make up an essential part in all the cuisines around the world.

When you learn about vegetables, it is also important to learn the nutritional aspects of the same for today's health-conscious approach to food and cuisines around the world.

In addition, you will also be learning about fruits and their classification along with various Herbs and Spices. By learning about vegetables, fruits, herbs and spices, you will get an idea of how much importance each of these groups imparts into cookery.

In addition to above, you will also be learning about meat, fish and egg cookery where you would be learning about effects of heat on meat proteins and will learn the basic technical knowledge about selection, classification, segregation, pre-preparation and actual preparation or cooking of meat, fish and eggs.

Each of these protein groups vary in texture, flavour, size and cooking characteristics. Each of these items behaves differently when exposed to heat. That is what exactly you will be learning in this block. It is important to know and understand this protein cookery as it is considered the backbone of all cuisines.

Fish is a high protein food, supplying on an average a little more than 5 gms of protein per edible ounce. Many attractive & satisfying dishes are prepared from the fish. Fish could be got from lakes, rivers or seas. Fresh water fish are quite superior in flavour as compared to the salt-water fish. The fish that has fat is superior in flavour and eating qualities to lean fish because of their fat, which keeps them from drying during cooking. The lean fish can be poached very nicely, they can also be boiled or steamed, as their flesh is firm and holds

together during the cooking period. Both types of fish can be sautéed or fried to give excellent results.

Fish could be accompanied with various vegetables as well as salads or salad dressings, the sauces here play a very important role. Thus, it is interesting to learn about the fish of various types. The larder department also has a very important role to play in accordance with the fish. You learn the various cuts of fish in this department and that is an art. Many renowned dishes are prepared out of the fish fillets. You need to have a greater skill in knowing how to prepare the fish dishes using the various methods of cooking.

The most popular and widely used eggs are of hens in India, although turkeys, guinea fowls, ducks and geese are also used.

The colour of eggshells and egg yolks varies with the breed of hen and the food value. They are rich in protein and contain valuable amounts of iron and vitamins A & D. Eggs are nourishing and easily digestible; therefore, they are given to invalids and infants. The ideal storage temperature for eggs is 2°C-5°C.

Eggs are essential to all kinds of cooking, not only in the preparation but also as a food in their own right. And with a minimum of waste, they are economical in price. By the terms eggs, we mean those of the domestic hen, but these are not the only edible eggs. There are those of the ducks, geese, turkeys, also wild birds such as plovers and gulls. Other eggs eaten as food are a variety of fish i.e. (roe) herrings and sturgeon (caviars).

Eggs are prepared in various ways. It is an art of cooking eggs up to the right mark. Hence, the various methods of cooking eggs are to be reviewed for the same. Egg is important for its nutritive value. Invalid people can also consume the eggs in various ways. Eggs can be used in the cookery for various purposes. They can be used mostly as leavening, thickening & binding agents & in many ways further.

The meats include lamb, beef, veal and pork. Cow's meat is known as beef and flesh from baby cows still on milk is called veal. Flesh from pigs is known as pork, whereas flesh of sheep and baby sheep is termed as mutton and lamb. The composition of meats has both physical and chemical characteristics. The physical characteristics are muscle tissue and fibrous connective tissue; adipose tissue (commonly termed as fat and bone (skeletal) tissue).

Meat is a muscle tissue. It is composed of the following:

- Water (75 % of muscle tissue) Too much moisture loss means dry meat, loss of weight and less profit
- Protein (20 % of muscle tissue): Protein coagulates when heated. It becomes firmer and loses moisture. When protein is coagulated to the required degree it is considered to be done
- Fat (5 % of Muscle tissue) A certain amount of FAT is desirable for 3 reasons
- Juiciness: Surface Fat protects the meat from drying out
- Tenderness: Marbling separates muscle fibers making them easier to chew
- Flavour: It is the main source of flavour in a meat
- Carbohydrate: When you brown meat, you are in part caramelising the carbohydrate.

UNIT 1 VEGETABLE COOKERY

Structure

- 1.0 Objectives**
- 1.1 Introduction**
- 1.2 Classification of Vegetables**
- 1.3 Importance of vegetables in our diet**
- 1.4 Preparation of Vegetables**
- 1.5 Effect of Cooking on Vegetables**
- 1.6 Indian & Continental Vegetables**
- 1.7 Potatoes**
- 1.8 Classification of Fruits**
- 1.9 Salads and Salad Dressings**
 - 1.9.1 The structure of a Salad
 - 1.9.2 Salad Dressings
- 1.10 Introduction to Herbs and Spices**
- 1.11 Let us Sum up**

1.0 OBJECTIVES

After working through this unit, you should be able to:

- Classify and select vegetables, fruits, herbs and spices
- Understand nutritional contents in vegetables
- Understand how vegetables are affected by application of heat
- Understand and see various continental vegetables
- Work with potatoes and understand cooking of potatoes
- Classify salads and salad dressing

- Pre-prepare the vegetables for cooking
- Importance of vegetables in our diet

1.1 INTRODUCTION

Many plants or plant parts are eaten as food. There are around 2,000 plant species, which are cultivated for food and many have several distinct cultivars.

Seeds of plants are a good source of food for animals, including humans, because they contain the nutrients necessary for the plant's initial growth, including many healthy fats, such as Omega fats. In fact, the majority of food consumed by human beings is seed-based foods. Edible seeds include cereals (maize, wheat, rice), legumes (beans, peas, lentils) and nuts. Oilseeds are often pressed to produce rich oils - sunflower, flaxseed, rapeseed (including canola oil), sesame etc.

Seeds are typically high in unsaturated fats and, in moderation, are considered a health food, although not all seeds are edible. Large seeds, such as those from a lemon, pose a choking hazard, while seeds from apples and cherries contain a poison (cyanide).

Fruits are the ripened ovaries of plants, including the seeds within. Many plants have evolved fruits that are attractive as a food source to animals, so that animals will eat the fruits and excrete the seeds some distance away. Fruits, therefore, make up a significant part of the diets of most cultures. Some botanical fruits, such as tomatoes, pumpkins and eggplants, are eaten as vegetable.

Vegetables are a second type of plant matter that is commonly eaten as food. These include root vegetables (potatoes and carrots), leaf vegetables (spinach and lettuce), stem vegetables (bamboo shoots and asparagus) and inflorescence vegetables (globe artichokes and broccoli).

1.2 CLASSIFICATION OF VEGETABLES

Vegetables could be classified in two ways for culinary purpose:

1. Parts of a Plant

- a. The gourd family: cucumber, winter and summer squashes, pumpkin, chayote
Seeds and pods: beans, peas, corn, okra
- b. Other tender-fruited vegetables: avocado, eggplant, sweet and hot peppers, tomato

Principles of Food Production

- c. Roots and tubers: beet, carrot, celery root, parsnip, radish, turnip, rutabaga, Jerusalem artichoke, potato, sweet potato, jícama
- d. The cabbage family: cabbage, broccoli, cauliflower, Brussels sprouts, kohlrabi, bok choy
- e. The onion family: onion, scallion, leek, garlic, shallot
- f. Leafy greens: spinach, beet greens, lettuces, endive and chicory, Swiss chard, sorrel
- g. Watercress, collards, kale, turnip greens (the last three are also members of the cabbage family)
- h. Stalks, stems and shoots: globe artichoke, asparagus, celery, fennel, fiddlehead ferns, bamboo shoots
- i. Mushrooms

2. Broad classification

- a. Root vegetables
- b. Leafy vegetables
- c. Other vegetables

Selection of vegetables

1. **Root & Tubers:** The quality of root vegetables is determined by their firmness and absence of blemishes. The skin should be smooth and not wrinkled for carrots. The potatoes should be of regular size and free from earth.
2. **Bulbous roots:** The vegetables should be heavy for their size. Onions should have thin shiny skin and no signs of sprouting.
3. **Leafy vegetables:** These should be crisp, fresh and with fresh green colour. If the ends of the stems are broken, they should snap off easily and leaves should not be limp.
4. **Flower vegetables:** These vegetables like Cauliflower, Cabbage should be compact and be heavy for their size.
5. **Fruit vegetables:** Tomatoes should be bright red, firm regular shape and shiny skin. Beans should not be stringy and break crisply under pressure. Pea pods should be plump. Brinjals should be light for their size.
6. **Stem vegetables:** These should be very crisp and should snap off easily when applied pressure.

Check your progress 1

1. Explain the classification of vegetables

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1.3 IMPORTANCE OF VEGETABLES IN OUR DIET

Vegetables play an important role in the human diet. Properly chosen and eaten, cooked or raw, they make an invaluable contribution toward the supply of vitamins and minerals. Root vegetables are good sources of carbohydrates and pulses (peas, beans, lentils etc.) of vegetable proteins. A good balance of ingredients essential for growth and maintenance in human beings is more easily attained by a diet made up of both plant and animal life. Vegetables also provide variety in a meal, help to make a meal attractive by introducing colour and furnish roughage.

Mushrooms have been found to contain one or more antibiotics, one of which is effective against tuberculosis and germs, which cause boils. Mushrooms, which have always been a food favorite, are rich in vitamins and low in calories. Seven average sized mushrooms have only 12 calories. Whenever possible at least two vegetables should be served in addition to potatoes. Salads should be made popular and should be served at both meals.

The Following chart shows the importance of vegetables in our diet.



Fig. 1.1: Importance of Vegetables in our diet

Check your progress 2

1. Explain the importance of vegetables in our diet.

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1.4 PREPARATION OF VEGETABLES

They should be washed before peeling. A knife or a peeler may be used. The purpose of cutting is to ensure uniformity of size and even cooking. The types of cutting used for vegetables are dicing, chopping, grating, slicing, shredding, cutting into rings, mincing etc. The object of preparation is to remove spoilt, soiled and indigestible parts.

Saving of nutrients during the preparation & cooking of vegetable is important, & following are the ways to preserve nutrients:

- Do not let vegetables soak in water unnecessarily.
- Cook or bake vegetables in their skin.
- Vitamin rich vegetables should be covered while cooking, do not stirring vegetable unnecessary, cutting of vegetables just before cooking.
- Uses as little water as possible in cooking, to preserve vitamins, minerals, flavour, colour & texture of food.
- Do not use baking powder while cooking vegetable.
- When preparing frozen vegetables, place them directly in to boiling water.

Basic Vegetable Preparation:

1. Slicing

Two basic slicing techniques are illustrated in Figures 1.2 and 1.3. When carrots and similar items are cut into round slices as shown, the cut is called rondelle.

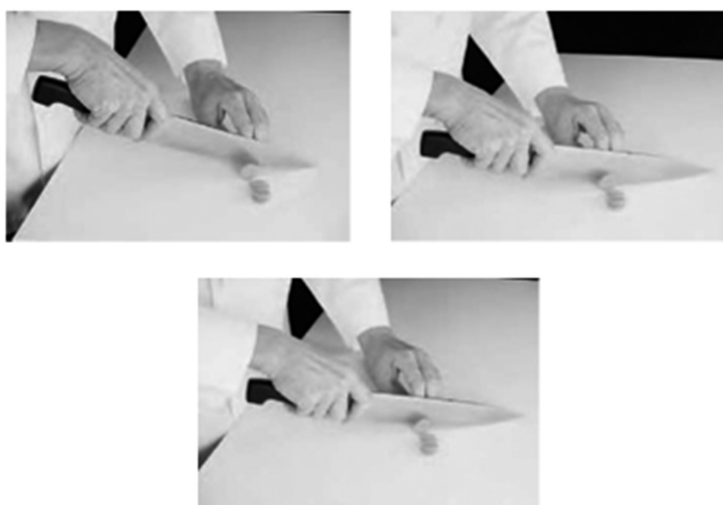


Fig. 1.2: Slicing Technique 1

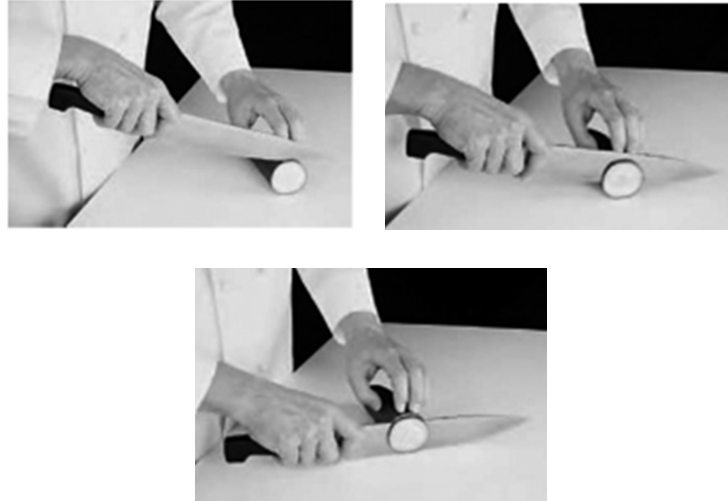


Fig. 1.3: Slicing technique 2

2. Cutting dice, brunoise, batonnet, allumette and julienne

Figure 1.4 shows the steps in dicing a product, using a potato to illustrate. Note in Figure 1.4c that the process of cutting dice first requires that you cut stick shapes, such as batonnet. Thus, this illustration demonstrates the method used to cut not only dice and brunoise (fine dice) but also batonnet, allumette and julienne.



Fig. 1.4: Dicing a potato

- Square off the peeled, eyed potato by cutting a slice from all sides. Use the trimmings for mashed potatoes or soup.
- Cut the potato into even slices of the desired thickness. Here we are making a 1/4-in. dice, so the slices are 1/4 in. thick (metric equivalent: 6 mm).
- Stack the slices and again slice across the stack in even 1/4-in. slices. You now have batonnet potatoes, slightly smaller than regular French fries. Slices 1/8 in. thick would give you allumette potatoes.

- Looking from this angle shows how the slices have been stacked up.
- Pile the batonnets together and cut across in slices 1/4 in. apart. You now have perfect 1/4- in. dice.

3. Cutting paysanne

Paysanne are thin square or roughly square, cuts. The procedure begins the same as for cutting medium dice. However, in the last step, cut the 1/2- inch (12 mm) -thick sticks into thin slices rather than into dice. Figure 1.5 illustrates



Fig. 1.5: Cutting paysanne

Cut the vegetable into sticks 1/2 inch (12 mm) square. To cut the sticks into paysanne, cut them crosswise into thin slices.

4. Cutting lozenges

This is a diamond-shape cut, as illustrated in Figure 1.6.



Fig. 1.6: Cutting lozenges

To cut lozenges, first cut the vegetable into thin slices, then cut these slices lengthwise into strips about 1/8 inch (1 cm) wide. Cut the strips at an angle to form diamond shapes.

5. Dicing an onion

Dicing an onion presents a special problem for cutting because its form is in layers, not a solid piece. This technique is illustrated in Figure 1.7

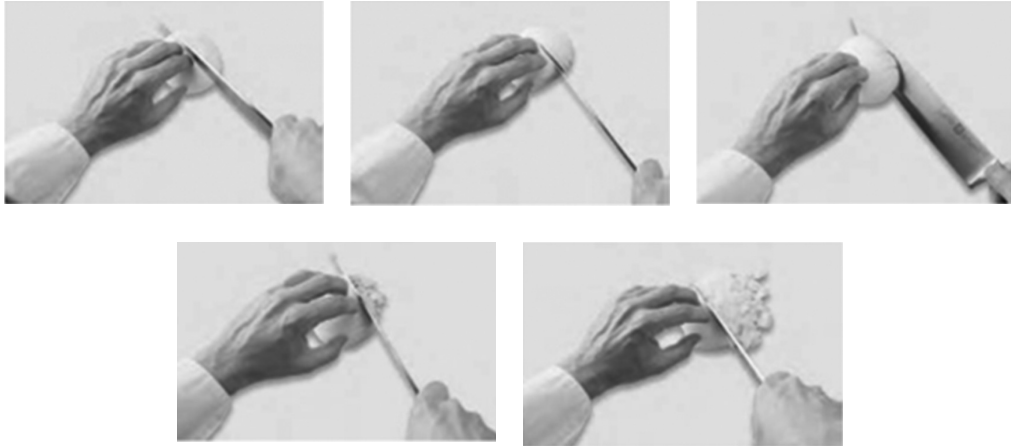
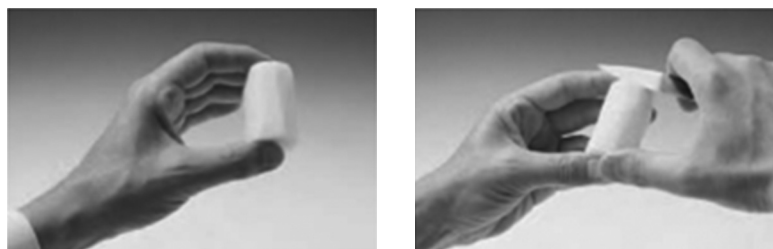


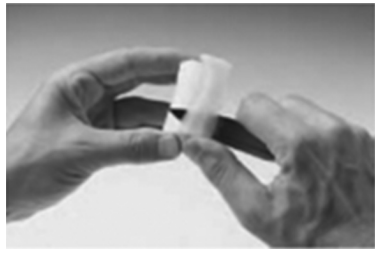
Fig. 1.7: Dicing an onion

- Cut the peeled onion in half lengthwise, through the root end. Place one-half on the cutting board, cut side down.
- With the root end away from you, make a series of vertical lengthwise cuts. Do not cut through the root end. The closer together you make the cuts, the smaller the dice will be.
- Holding the onion carefully at the top, make a few horizontal cuts toward but not through the root end, which is holding the onion together.
- Finally, slice across the onion to separate it into dice. Again, the closer together the cuts, the smaller the dice
- Continue making slices almost to the root end. The root end may be rough-cut for mirepoix, to be used for stocks, sauces and roasts.

6. Cutting tournéed vegetables

To tourné a vegetable is to cut it into a neat seven-sided oval shape, as illustrated in Figure 1.8 Many root vegetables, such as carrots and turnips, are cut this way. When potatoes are tournéed, they are named according to their size. Cocotte potatoes are about 1 1/2 inches (4 cm) long. Château potatoes are about 2 inches (5 cm) long.





- Cut the potatoes roughly into pieces slightly larger than the final size desired. Cut off the top and bottom of each piece so they are flat and parallel.
- Hold the potato between the thumb and forefinger and place the paring knife against the top edge as shown and the thumb of the cutting hand firmly against the potato. Your hand should be far enough up on the blade to maintain steady control.
- Cut downward toward your thumb with a curving movement of the blade.
- Turn the potato slightly (one-seventh of a full turn, to be exact) and repeat the motion.
- The finished product: If perfectly done, the potato has seven sides (but customers rarely count them).

Check your progress 3

1. Explain the basic vegetable preparation. Write and explain in brief Cutting, Slicing, Brunoise, Tourné and Dicing.

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1.5 EFFECT OF COOKING ON VEGETABLES

Vegetables are cooked for various reasons such as improving their palatability and digestibility. In the case of certain foods, flavours are improved and preserved longer by cooking.

Certain changes occur during cooking as:

Cellulose

It disintegrates and becomes soft and mastication is facilitated.

Flavour

A flavour is affected during cooking and over-cooking adversely affects flavour. A covered pan increases the intensity of flavour.

Pigments

The colour pigments of fruit and vegetables are chlorophyll, carotenoids, flavones and anthocyanins.

Green vegetables because of their chlorophyll when cooked, for a long period at high temperature, tend to lose their colour. The green coloured vegetables are cooked in an alkali medium, to preserve the loss of colour, but certain nutrients are lost—carotene of carrots while cooking is not lost: in fact, it brightens the colour. Anthocyanins, in red and purple coloured vegetables like red cabbages, beetroots that are highly soluble in water and high temperature, bleach them. Flavones are found in white onions, cauliflower etc. Their white colour could be improved by cooking them in water to which limejuice or vinegar has been added. The changes in carbohydrates take place as the heat partially or completely gelatinise starch. Swelling of the starch grains occur during cooking of vegetables and, in some circumstances, the sugar caramelises.

Proteins are negligible in vegetables except for legumes: heat coagulates completely or partially.

Cooking losses occur through the solvent act of water or the chemical decomposition, which may be caused by the reaction of the cooking water or by heat. Other common cooking losses are through oxidation or by volatilisation.

Vitamin C is lost because of high temperature. Vitamin A, Vitamin B and Niacin are heat stable.

Colour Changes Chart

Vegetable Cookery

Cooking Media	Salt/ Neutral	Acid	Alkali	Overcooking
White / flavones	Yellowish	White	Yellow	Greyish
Red/ anthocymes	Fades	Bright red	Blue	Greenish
Green/ Chlorophyll	Bright	Olive	Bright but mashy	Olive
Orange or Yellow/ carotenoids	Fades lightly No change	Same	Same but loss of nutrients	Fades

Check your progress 4

1. Explain the effect of heat/ cooking on vegetables. Explain with the help of a chart.

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1.6 INDIAN & CONTINENTAL VEGETABLES

Aubergine (Egg plant, Baigan or Brinjal): It is available all round the year. The colour is from light purple to blackish purple. Used as a vegetable course and as a garnish. Used widely for Indian dishes, in the form of curries, bharva baigan, kachadi (slices dusted with atta and shallow fried), in sambar, bhartas etc.

Cabbage (Bandh Gobi): They are rich in Vitamin C, widely used in Western menu for salads, as a vegetable and in soups. The Indian dishes are bhajees, foogaths, thorans etc.

Cauliflower (Phool Gobi): It is a high-class vegetable according to Western standards and is used in soups, as a garnish and as a hors d'oeuvre. The Indian dishes for cauliflowers are pakodas, tahari, cauliflower sabzi, bhujia etc.

Cucumber (Kheera): It should be tender without seeds. Used for hors d'oeuvres, cold soups, indispensable with salmon and fish dishes as garnishes. Doria is a keyword here, also used for cooked vegetables and savouries. In India dishes, cucumber is used for kachumbers, raitas etc.

Lettuce (Salad ka Patta): There are different types of lettuce—Romaine or Cos lettuce. Widely used as hors d'oeuvres, soups, garnishes, hot vegetable, accompaniment and salads.

Marrow (Lauki): Member of the gourd family, it has high water content and has little food value. Mainly used as vegetable, raitas, halwas etc.

Peas (Matar): It is a popular vegetable used in hors d'oeuvres, soups, garnishes and as a vegetable dish. It is also used in salads. The Indian dishes are matar chawal, matar keema, matar paneer, sookha matar etc.

Pumpkin (Kaddu): If the pumpkin is green, then it is prepared with the skin and if it is yellow, the skin is removed. It contains 90% water. It is used as a vegetable, pumpkin pie or halwa.

Spinach (Palak): It is a nutritious green leaf vegetable. Extensively used as a garnish and as a vegetable, mutton palak, pakodas etc.

Tomatoes: Very popular vegetable and used in various forms—purees, sauces or paste. It is extensively used in hors d'oeuvres, soups, fish dishes, sauces, vegetables, salads, savouries, curries, chutneys, pulaos, raitas etc.

Capsicum (Shimla Mirch): It has a very good flavour and is used in hors d'oeuvres, garnishes, stuffed or sauteed as a vegetable and salad. In the West, there is a variety of the capsicum family. The large ones are called pimentos, which could

be green or red. When dried and powdered, it is called paprika powder. The smaller ones, the green and red peppers are more pungent and are called chillies. Used for sauces, stews and pickles, curries, subzi etc. When dried and ground, it is called cayenne pepper. **Vegetable Cookery**

Rhubarb: It is a vegetable and consists of a leaf stalk with a pleasing flavour. Used mainly for stewed pies and puddings. In India, rhubarbs are pickled.

Mustard Leaves (Sarson ka Sag): Extensively used in the north of India. For the Punjabis, it is a specialty dish.

Horseradish (Mooli): It has a pungent flavour, is used in hors d'oeuvres, decoration for cold buffets, salads. It is used in India for bhajees, parathas,

Turnips (Shalgum): It is a common root vegetable. Main use of the turnip is as flavouring vegetable, for garnishing and as a subzi.

Beetroot (Chukander): The sugar beet goes to sugar manufacturers, the common beetroot to the kitchen. Leaves can be used to prepare vegetables. Boiled beetroots are used for hors d'oeuvres, soups, as a hot vegetable and salad.

Carrots (Gajar): Contains sugar, mineral salts and certain vitamins. It is used for hors d'oeuvres, soups, sauces, garnishes, hot vegetables and salads, gajar ka halwa, pulaos etc.

Onions (Pyaz): These are available all the year round. Probably the most used vegetable in the kitchen.

French beans: They should be firm, green and should break easily.

Broad beans: They should be plump with tender skin.

Beetroots: They should be firm, small, round with fresh leafy top.

Corn: They should be moist and green husk, grain milky, cob well filled.

Mushrooms: They should have white cap, firm short stem.

Okra, Gumbo, Bhindi: They should be small, bright green, tips easily breakable.

Parsley: They should be bright green and crisp, no moisture.

Green Pepper/Capsicum: Bright green, shiny, no soft spots.

Red and White Radish: They should be firm, tender and crisp, good shape and colour.

Potatoes: Vegetables should have dry skin, smooth, thin skin, no soft spots. Firm, no black eyes.

Principles of Food Production

Storing of vegetables: Vegetables are very fragile. Lack of moisture makes them shrinkable, excess makes them rot.

Shelf life: Conservation duration is very short. 1 day for leafy vegetables, 2-3 days for fruit vegetables. Bulb and root vegetables keep better because their skin protects them. Flower vegetables will fade and turn yellow (cauliflower).

Continental vegetables

Artichoke



It is cultivated for its flowering head—used for high-class hors d'oeuvres, garnishes and a vegetable course. The fleshy base is the part usually eaten. Tips are also eaten.

Asparagus



Agential asparagus is very popular. The part that is eaten is the young shoot. It is usually served with butter or sauce and is available in India. It is used as a vegetable course or as a garnish. It is delightful when cold and served with vinaigrettes or cut and reheated in butter as a garnish.

Endive

Vegetable Cookery



Belgian chicory (endive) is the best. Green endive leaves are very bitter. Therefore they are blanched to pale yellow colour to make them palatable. Cold preparations are served as a hors d'oeuvre. It is also used as a vegetable and for salads.

Leeks



A leek resembles hara pyaz (spring onions), but is bigger and has a lighter shade of green. They are used as a hors d'oeuvre. It is also used as a vegetable and for salads.

Celery



A vegetable that has a good flavour and is rich in mineral salts and Vitamin C. It is used as a hors d'oeuvre, soup, in sauces, garnishes, salads and served with cheese course.

Kale



The leaves are purplish or light red in colour. It resembles a wild cabbage. It is boiled and has a nutty, slightly bitter flavour.

Parsnip



Widely used in England and it is like turnips and yellowish in colour. It is used in soups, as garnish or as a vegetable dish.

Swede



Often called the Swedish turnip. It has yellowish coloured flesh. Mainly used as a vegetable.

Cardoon



A Plant common to the celery of which the stalk leaves are eaten as a vegetable. Stalks are crisp and tender. It is similar to celery from which it takes its culinary uses.

Check your progress 5

1. Name any 10 Indian and Continental vegetables.

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1.7 POTATOES

Potatoes play an important part in the general diet of the population today. No menu seems complete until potatoes have been used, in the form of hors d'oeuvres or as an accompaniment to the main dish. For Indian menus, potatoes are used in the form of curries, subzis, raitas and taharis etc.

Pre-preparation of Potatoes

Those potatoes should be selected that do not have deep eyes, irregular shape and do not have any discolouration during peeling and trimming. The green colour frequently seen immediately beneath the skin indicates the presence of chlorophyll. Greening in potatoes is undesirable because of its association with a bitter taste.

The potatoes with thin skin should be scrubbed, scraped and cooked in their skins and the ones with thicker skin should be peeled. To prevent the potatoes from discolouring after they have been peeled, they should be kept in water.

TYPES

Potatoes are classified according to their starch content. The amount of starch determines the use for which they are usually considered most suitable. Keep in mind that these categories are only general. Within each group is a range of starch and moisture content. For example, different varieties of waxy potatoes have different moisture content, depending not only on the variety of potato but also on the growing and storage conditions.

1. Waxy potatoes

- High moisture content, high sugar content, low starch content.
- Usually small and round in shape, but some varieties can be large and some may be elongated. Flesh is white, yellow or even blue or purple.
- Skin is white, red, yellow or blue.
- Hold shape well when cooked.
- Firm, moist texture.
- Use for boiling whole, for salads, soups, hashed browns and any preparation where the potato must hold its shape.
- Do not use for deep-frying.
- High sugar content will cause dark streaks and poor texture.



Waxy potatoes, clockwise from top left:

Small and large red-skinned potatoes, white potatoes, large and small yellow potatoes.

2. Mature or starchy potatoes

High starch content, low moisture and sugar.

Light, dry and mealy when cooked.

- Russets or Idahos

Long, regularly shaped potatoes with slightly rough skin.

Ideal choice for the traditional baked potato.

Best potato for French fries because the high starch content produces an even, golden colour and good texture.

Also, the regular shape means little trimming loss.

May be mashed, but is generally too expensive for that purpose.

Sizes are indicated by count per 50-pound carton, e.g. 100s average 8 ounces each.

- All-purpose (sometimes called chef potatoes).

Not as dry and starchy as russets

Irregularly shaped, less expensive than russets.

Suitable for most purposes, but not usually used for baking because of irregular shape. Especially useful for puréeing or mashing or any preparation in which the shape of the whole potato is not important.

Note: Very knobby potatoes are wasteful when pared in a mechanical peeler.



Starchy potatoes, left to right: russet potatoes, all-purpose or chef potatoes.

Checking for Quality

Look for these signs of high-quality potatoes:

1. Firm and smooth, not soft or shriveled
2. Dry skin
3. Shallow eyes
4. No sprouts - sprouting potatoes are high in sugar.
5. No green colour - Green areas develop on potatoes stored in light. These areas contain a substance called solanine, which has a bitter taste and is poisonous in large quantities. All green parts should be cut off before cooking.
6. Absence of cracks, blemishes and rotten spots

Storing and Handling

Keep in a cool, dry, dark place, ideally at 55°–60°F (13°–16°C). If they will be used quickly, you may keep them at room temperature. Do not refrigerate. Temperatures below 45°F (7°C) convert potato starch to sugar. Refrigerated potatoes must be stored at 50°F (10°C) for two weeks to change the sugar back to starch. New potatoes do not keep well. Purchase only one-week's supply at a time. Potatoes begin to turn brown as soon as they are peeled. To prevent browning, place potatoes in cold water as soon as they are peeled. Potatoes may be peeled in advance and stored a short time under water, although some nutrients will be lost. Remove all green parts when peeling potatoes.

Methods of cooking potatoes

Potato Dishes Baked In Their Jackets

Baked Potatoes—(Pommes au Four Fr.) Wash and wipe equal size potatoes, place on a bed of salt and bake in the oven. When cooked, make slits—cross and open by given pressure on either side. Place a dot of butter and sprig of parsley and serve hot.

Macaire Potatoes—Bake the potatoes and mash them, season, add butter, make the balls and flatten, dust with flour and sauté in butter.

Byron: Prepare as above, hollow the top, sprinkle with Chester cheese and cover with cream.

Robert: To Macaire potato mixture, add chopped onions and chopped hard-boiled eggs and cook the same way

Bhurta: Bake/roast potatoes on gas or charcoal. When cooked, remove the skin and mash the potatoes. Heat butter and chopped onions, green chilies, tomatoes, sauté and add seasoned potato mixture and sauté.

Steamed/Boiled

Steamed Potatoes: (Pommes all anglaise, Fr.) Shape the potatoes, cook in a steamer and season.

Menthe: Same as above, add leaves of mint.

Maitre d'hôtel: Same as cream potatoes with the addition of chopped parsley.

Jacquettes Potatoes (Pommes Jacquette): Wash and cut the skin in a spiral method and cook in steamer.

Parsley (Pommes Persillies Fr.): Same as anglaise, season, sauté in melted butter and chopped parsley.

Cream (Pommes Crème): Cook the potatoes in water, peel and slice, moisten with milk, add butter, season and bring to the boil, add cream before serving.

Shallow Fried/Sauté

Allemande: Cook potatoes in their jackets, peel and cut into thick rounds and well buttered.

Brune: Cook potatoes, peel, chop, shallow fry in butter till crisp.

Provencale: As sauté, with addition of chopped garlic to the butter at last minute.

Lyonnaise: Slice potatoes and sauté them and then sauté the sliced onions and mix together, season, place in a tray and finish in the oven.

Aloo Chat: Parboil potatoes and shallow fry, sprinkle chat masala and limejuice and toss.

Tikkies: Parboil potatoes, mash and grind, add seasoning, prepare small flat cakes and shallow fry till golden brown on both sides and serve with tamarind chutney.

Oven Cooked

Anna: Potatoes should be cut into cylindrical shape, sliced in rounds, wash and dry and place the slices in layers in an Anna mould (round pan with lid sliding in the slot with handles on either side) with clarified butter, till the top of the pan,

Principles of Food Production

compress and close the lid, cook in the oven. When half done, turn for colour on both sides.

Boulangier: Slice potatoes and onions and sauté, season, add stock and cook in the oven.

Chateaux: Turn the potatoes to the shape of a large olive, blanch, sauté in butter and place in the oven for finishing the cooking.

Cocotte: Same as chateau, but smaller in size.

Fondants: Turn the potatoes into drum shape (egg size), sauté in butter and place in a tray; add stock and seasoning and finish the cooking in the oven.

Flamende: Cook button onions, turned carrots, mix with potatoes.

Hongroise: Chop onions, sauté in butter and sprinkle paprika, add tomato concasse and large roundels of potatoes add stock, cook and then place in oven and finish off cooking. Sprinkle chopped parsley and serve hot.

Deep Fried/Shallow Fried

Straw Potatoes: (Alumette Fr.) cut potatoes, matchstick shape, fries in deep fat, add salt just before serving.

Battelle: Cut in dices, deep fry.

Bordelaise: Deep fry ½" dices, add fried finely chopped garlic, add chopped parsley before serving.

Frites: cut potatoes 2" length and ¾" square. Deep fry.

Chips: Cut slices of potatoes, very thin, deep fry till golden brown.

Mignonette: Cut potatoes double of matchsticks and deep fry.

Parmentier: Cut ½" dices and deep fry.

Puree/Mashed Potatoes

Berny: Mash potatoes and egg yolk, butter, nutmeg and seasoning, stir well till it leaves sides of the pan (appareil duchesse), add chopped truffles, shape like an apricot, egg and coat with sliced almonds and deep fry.

Brioche: Prepare appareil mixture as above, prepare flat rounds and place a small ball of mixture in the centre, egg wash and gratinate.

Croquettes: Prepare appareil duchesse (mashed potatoes, nutmeg, butter, egg yolk, seasoning). Make cylindrical shape (2") egg and breadcrumbs and deep fry.

Duchesse: Pipe the appareil mixture into rosettes, brush egg and gratinate.

Marquise: (1) Take Duchesse mixture and mix with thick tomato Sauce and shape like flat cakes. (2) Take Duchesse mixture and pipe two three rounds leaving a hollow in the centre, put sautéed tomato concasse in butter in the centre, brush with egg and gratinate.

Oven Cooked

Anna: Cut potatoes in cylindrical shape into slices $\frac{1}{16}$ " thick. Put butter in an Anna mould.

Arrange slices overlapping the bottom lid slides in sides. Season and fill the mould up to the lid. It should be compressed and put in the oven and cooked. When cooked, remove the lid; clear the top by putting it back in the oven. De mould and serve

Voisin: Same as Anna after the mould has been lined, add grated Parmesan cheese. Cook and serve as for Pommes Anna.

Darphin: Proceed as for Pommes Anna, using coarse julienne of potato in place of sliced potatoes.

Check your progress 6

1. Explain the different types of Potatoes and its selection criteria.

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1.8 CLASSIFICATION OF FRUITS

A fruit can be defined as the nurtured ovary of a flower. The Fleshy portion is the edible part and at some times the stone can also be eaten. There are different types of fruits

1. Simple fruit - One fruit from one flower e.g. Orange
2. Aggregate fruits – Many fruits from one flower e.g. berries
3. Pomes - fruits having a central Core e.g. apple
4. Drupes – Fruits having a center stone e.g. apricot

Fruits can be classified into

1. Fleshy fruit – Apples, bananas, pineapple
2. Stone fruit – Mangoes, Apricots, Peaches
3. Citrus fruit – Have sweet and sour taste like orange, grapefruit, tangerines
4. Berry fruits – include strawberries, raspberries, mulberries and gooseberries
5. Nuts: Walnuts, hazelnuts etc

Cooking with fruit

Although most food is edible raw, cooking is often necessary to soften the cellulose of the fruit as well as to cook the starch in unripe or very hard fruits. They are cooked to provide variety in eating and a lot of fruit is canned or frozen to provide all year supply.

Cooking Changes

Texture: cooking will soften the tissues and fibers. If an alkali or soda is present, the fruit will quickly become mushy. Acids, Calcium salts will strengthen the fiber. For stewed and poached fruits use sugar syrup flavoured with lemon to retain shapes

Colour: Due to chemical changes, colour of some fruits will change.

Flavour: Overcooking, soaking and steeping of fruits leads to loss of flavour.

Nutritive Value: The greatest loss is to the nutritive value. A lot of it is present under the skin and is lost during peeling

Baking, Stewing and Poaching, Sautéing are the most common methods of cooking. Cooking aids digestibility. Firm fresh fruits are ideal and best for stewing. Cooked fruit should be served soon after cooking. Fruit-based sauces and pies are most palatable and delicious if served shortly after preparation.

Check your progress 7

1. Explain the classification of fruits and give two examples of each.

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1.9 SALADS AND SALAD DRESSINGS

There is no doubt that in the past ten years or so the availability and service of all kinds of salads in every type of catering establishment has gained a now long overdue importance. Modern catering, with an emphasis on healthier eating and the desire for lighter, more balanced meals, has made the service of salads at all meal times very popular.

Particularly in the early part of the year, when most fresh vegetables are not yet available or very expensive, many types of salads could and should take the place of vegetables as an accompaniment to all types of hot and cold dish. It would be ridiculous to serve frozen vegetables at that time of the year when fresh salads could take their place, often at a fraction of the cost. The variety of salads available almost all the year round is considerable. If we then vary their dressings and presentations we can satisfy the taste of most of our guests without much repetition.

Basically Salads are of two types: Plain or Simple salads and Compound or Composite salads.

Simple Salads: These can be sub-divided into green salad or salad in season, consisting of single kind of vegetable as a base. One or two ingredients in small quantities are used for decoration or as a garnish. Examples of some of these simple salads are Tomato salad, Beetroot salad, Cucumber salad.

The Compound salads: consists of more than one ingredient. They are thus divided into Vegetable based salad, fish based salad, Poultry, game or meat based salad & fruit based salad.

1.9.1 The Structure of a Salad

A plated salad may have as many as four parts: base, body, dressing and garnish. All salads have body and most have dressing, but base and garnish are parts of only some salads, as you will see in the following discussion. Of course this discussion refers only to individual plated salads. When we use the term salad to refer to a bulk mixture, as in “two pounds of potato salad”, references to the four parts of a salad do not apply.

Base or under liner

A scoop of potato salad looks bare when served by itself on a salad plate as a side dish. Placing it on a bed of lettuce leaves makes it more appealing and emphasises its identity as a salad. Although most tossed green salads and many composed salads are presented without an under liner, bound salads and some other vegetable salads may be more attractive and appetising when served on a bed of leafy greens. Cup-shaped leaves of iceberg or Boston lettuce make attractive bases. They give height to salads and help confine loose pieces of food. A layer of loose, flat leaves (such as romaine, loose-leaf or chicory) or of shredded lettuce may be used as a base. This kind of base involves less labor and food cost, as it is not necessary to separate whole cup-shaped leaves from a head.

Body

This is the main part of the salad and, as such, receives most of our attention in this chapter. The salad could be vegetable- or meat-based. The salad here gets its name by the main ingredients used.

Garnish

A garnish is an edible decorative item that is added to a salad to give eye appeal, though it often adds to the flavour as well. It should not be elaborate or dominate the salad. Remember this basic rule of garnishing: Keep it simple. Garnish should harmonise with the rest of the salad ingredients and, of course, be edible. It may be mixed with the other salad ingredients (for example, shreds of red cabbage mixed into a tossed green salad) or it may be added at the end. Often, the main

ingredients of a salad form an attractive pattern in themselves and no garnish is necessary. In the case of certain combination salads and other salads with many ingredients or components, there may be no clear distinction between a garnish and an attractive ingredient that is part of the body. In general, if a salad is attractive and balanced without an added garnish, do not add one. Nearly any of the vegetables, fruits and protein foods, cut into simple, appropriate shapes, may be used as garnish.

Dressing

Dressing is a seasoned liquid or semi liquid that is added to the body of the salad to give it added flavour, tartness, spiciness and moistness. The dressing should harmonise with the salad ingredients. In general, use tart dressings for green salads and vegetable salads and use slightly sweetened dressings for fruit salads. Soft, delicate greens like Boston or Bibb lettuce require a light dressing. A thick, heavy dressing will turn them to mush. Dressings may be added at service time (as for green salads), served separately for the customer to add or mixed with the ingredients ahead of time (as in potato salad, tuna salad, egg salad and so on). A salad mixed with a heavy dressing, like mayonnaise, to hold it together is called a bound salad. Remember: Dressing is a seasoning for the main ingredients. It should accent their flavour, not overpower or drown them.

Arranging the salad

Perhaps even more than with most other foods, the appearance and arrangement of a salad are essential to its quality. The colourful variety of salad ingredients gives the chef an opportunity to create miniature works of art on the salad plate.

Unfortunately, it is nearly as difficult to give rules for arranging salads as it is for painting pictures because the principles of composition, balance and symmetry are the same for both arts. It is something you have to develop an eye for, by experience and by studying good examples.

1.9.2 Salad Dressings

A good salad needs a good dressing to bring out the best flavour and in the list below we find one or more suitable to any salad we care to produce. To help with this, we differentiate between four basic dressings types, with many variations on the basic theme.

These four are:

Vinaigrette and its variation

Mayonnaise-based dressing and its variations

Acidulated cream and its variations

Scandinavian sweet and sour dressing

Most, but not all of the variations of dressing are based on the vinaigrette, others on mayonnaise. Some are based on cream, sour cream or latterly crème fraîche and yoghurt. Even the sweet and sour Scandinavian dressing is getting very popular, as it adds a distinctive new taste to salads.

Ingredients of a salad Dressing

1. Oils
2. Vinegar
3. Lemon Juice
4. Egg Yolk
5. Seasonings and Flavourings

Emulsions in salad dressings

As you know, oil and water do not normally stay mixed but separate into layers. Salad dressings, however, must be evenly mixed for proper service, even though they are made primarily of oil and vinegar. A uniform mixture of two unmixable liquids is called an emulsion. One liquid is said to be in suspension in the other.

1. Temporary emulsions

A simple oil and vinegar dressing is called a temporary emulsion because the two liquids always separate after being shaken. The harder the mixture is beaten or shaken, the longer it takes for it to separate. This is because the oil and water are broken into smaller droplets, so the droplets take longer to recombine with each other so the oil and water can separate. When a mixture of oil and vinegar is mixed in a blender, the resulting mixture stays in emulsion considerably longer.

2. Permanent emulsions

Mayonnaise is also a mixture of oil and vinegar, but the two liquids do not separate. This is because the formula also contains egg yolk, which is a strong emulsifier. The egg yolk forms a layer around each of the tiny droplets and holds them in suspension. The harder the mayonnaise is beaten to break up the droplets, the more stable the emulsion becomes. All emulsions, whether permanent or temporary, form more easily at room temperature, because chilled oil is harder to break up into small droplets.

3. Oil and vinegar dressings

Basic vinaigrette, the first recipe in this section, is a simple mixture of oil, vinegar and seasonings. It can be used as is, but it is usually the base for other dressings, such as the variations that follow. The ratio of oil to vinegar in a basic vinaigrette is 3 parts oil to 1 part vinegar, i.e. French Dressing. 1:1 parts oil and vinegar is called American Dressing, while 1 part oil and 2 parts vinegar is called English Dressing. This is not a divine law, however and the proportions may be changed to taste. Some chefs prefer a 2:1 ratio, while others prefer a 4:1 or even 5:1 ratio. Less oil makes the dressing tarter, while more oil makes it taste milder and oilier. Very strong vinegar, more than 5 percent acid, may have to be diluted with water before being measured and added to the recipe.

Check your progress 8

1. Explain structure of a salad.
2. Explain salad dressings and different types of dressings.

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1.10 INTRODUCTION TO HERBS AND SPICES

Down through the ages India has been known as the land of spices. Sweet or pungent, aromatic and seductive spices have played a special part in the life, legend and ritual of the country. With the march of time, although there have been several changes in the use of spices, their qualities for enhancing food still reign supreme.

The primary function of spices in Indian food is to improve the flavour of the dish. Many spices such as cloves, coriander, cumin seeds, cinnamon etc. because of their volatile oil contents, impart various flavours to the food. These appeal to the sense of smell and render the food more palatable. The primary quality the common man looks for in a food product is its organoleptic quality (or the sense of taste), rather than its nutritive value. As a result even highly nutritious food is not accepted unless it is adequately spiced. It is only where pleasure to the eye and palate meet that food becomes fully acceptable. The best chefs of the world consider flavourings and seasonings absolute necessities for achieving this objective. The success of cooking depends largely on their aid. However, spices must be used with skill and, above all, sparingly. All palates do not crave highly spiced foods, yet most people demand that food should be adequately spiced, for the flavour of insipid food can be improved very much by the use of some suitable spice. Even the people of the West, particularly the English and Americans, who have a tradition of bland food, are now introducing a variety of spices into their dishes and appreciating the added piquancy of the food. Western palates, however, are sensitive and therefore can appreciate the subtle flavours more readily than we do, as unfortunately, owing to the continuous consumption of over spiced foods, we have lost this power. Whenever possible, only such spices should be used as bring out the natural flavours of the main ingredient, rather than imparting a new one. Intelligence, carefulness, thorough, sound judgment, a steady hand and a keenly perceptive palate are qualifications every cook must possess in order to prepare food that is appetising and pleasant to the taste.

Besides enhancing the flavour and aroma of food, spices have a physiological action beneficial to our system. They act as a stimulus to the digestive system and help digestion in many ways.

Every spice used in the making of a curry is a preservative. All have some antiseptic value and many are carminatives, i.e. they tend to reduce flatulence as in the case of omum (ajwain) water given to babies. The traditional combination of spices used for certain dishes must have been made with this factor in mind, e.g. the use of ginger or mint with peas. Peas are flatulence-forming and ginger or mint

counteracts this effect. Asafoetida commonly used with pulses (dals) of various types functions in a similar manner.

Some spices are used to give colour to food, to improve eye appeal, e.g. turmeric in yellow rice, red chilies in vindaloo, rattanjog in roganjosh etc. Spices also serve as a thickening agent in the preparation of curries, e.g. onion and poppy seeds.

The therapeutic value of spices is well known. Spices and herbs play a very important role in some of the simple but effective home remedies. Almost every spice has medicinal properties. Investigations are being conducted scientifically to elucidate the therapeutic properties of the various spices. Many have already been accepted and are being used today, e.g. aniseed (saunf), which has been used from prehistoric times as flavouring for cough mixtures and as herb tea to soothe the nervous system and induce sleep. Scientists have recently probed the effect of cloves on the digestion. Studies of clove oil have shown that it stimulates the flow of gastric juices and is non-injurious to the lining of the stomach. Garlic has been accepted in both India and China as one of the treasured spices and medicinal agents. It has been indicated in the treatment of numerous diseases such as haemorrhoids, rheumatism, dermatitis, abdominal pains, coughs, loss of appetite etc. Although garlic is claimed to be useful in the treatment of such a variety of diseases, it is not popular because of its strong smell and pungency. Research has now made it possible to administer the active principle of garlic in a fairly concentrated form. Ginger tea is used commonly to ease an ailing stomach. Nutmeg is used medicinally to cure biliousness, diarrhea and headaches. The ancients prized the seeds of fenugreek because of its stimulating effect on the digestive system.

To enhance the flavour and aroma of foods, spices may be used whole or in pieces, as in pulaos and biryanis or in powdered or ground form. Indian cooks are artists in the use of spices. Money may limit the variety of spices used by some, but others are limited only by their own creative imagination. While freshly ground masalas (mixed curry spices) are preferred to powdered masalas, owing to the shortage of domestic labour there is a definite trend today towards using spices mainly in powdered form. Many combinations of spices to suit different tastes are marketed today as various forms of curry powders. When using spices in powdered form it is essential that the powders be extremely fine. Coarse powders do not blend well with the rest of the ingredients; this causes a separation thus allowing the spices to float. The fine powders should be mixed into a paste with vinegar or water and then fried well before meat or vegetables are added. Besides curry powders, practically all the dry spices such as coriander, turmeric, cumin, fenugreek, cloves, cinnamon, mustard etc. can be cleaned, dried and powdered.

Principles of Food Production

As a result of modern techniques, moist spices such as onion, garlic and ginger are now obtainable in powdered form. This process, while retaining the original flavours, improves the keeping quality of spices and makes transportation more economical and easy. Onion powder is used commercially in the manufacture of processed meats and sausages and for flavouring vegetables and meat. Garlic powder has many commercial uses and is also now being used by the housewife who wants a clean and convenient method of using this popular flavour. All powdered spices, however, must be kept in airtight containers to prevent spoilage and deterioration in aroma and flavour, caused by the evaporation of volatile oils. Ground masalas are also available in the market today. They are packed in plastic bags and sold, but the keeping quality of these is poor as they are susceptible to spoilage.

The liquid spices now available in the market as straight liquid spices, such as liquid red chillies, green chillies, ginger, coriander, cumin, garlic, nutmeg, cinnamon, cloves, cardamom, asafoetida, saffron, curry leaves etc. or as ready-to-use compounds such as liquid masala for curries, pulao, mutton, fish etc. have revolutionised the use of spices. These liquid spices are extracts of indigenous natural spices and are the result of years of research. By the separation of the active principles from the residual matter, concentrations are prepared. These are easy to use and are being used widely in the commercial manufacture of sauces, fruit juices, ketchups, salad dressings, tinned pulaos, curries etc. They have a better keeping quality than curry powders and mix readily with the rest of the ingredients, thus bringing a uniformity of colour and flavour to the food. They are clean, compact, suitable for transportation and storage and are available in glass bottles with droppers, ranging from 15 ml ($\frac{1}{2}$ oz) to 500 ml (1 lb). They impart original flavours and colours. Thickening agents such as ground onion, poppy seeds, coconut and coconut milk should still be added to maintain the desired texture of the food. For those spices where flavour is the primary function as in cardamom, cloves, cinnamon, nutmeg etc. the liquid form can be used most effectively. It also makes it possible to be able to use out-of-season flavours. For example, when ginger or green chillies are not available, as in the summer months, the same flavours can be readily obtained by using liquid spices. Provided they are used carefully, liquid spices do not in any way increase costs, while at the same time they save labour and time.

Check your progress 9

1. Explain different types of herbs and spices.

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1.11 LET US SUM UP

In this unit we:

- Understand the Classification; Importance and Preparation of vegetables
- Understand the Effect of Cooking on vegetables, Various Indian & Continental vegetables
- Understand the Potatoes and its types
- Understand the Classification of fruits.
- Learned Salads & Salad Dressings and Introduction to herbs and spices

Check Your Progress: Possible Answers

Check your Progress 1

Refer 1.2

Check your Progress 2

Refer 1.3

Check your Progress 3

Refer 1.4

Check your Progress 4

Refer 1.5

Check your Progress 5

Refer 1.6

Check your Progress 6

Refer 1.7

Check your Progress 7

Refer 1.8

Check your Progress 8

Answer 1: Refer 1.9.1

Answer 2: Refer 1.9.2

Check your Progress 9

Refer 1.10

UNIT 2 FISH COOKERY

Structure

- 2.0 Objectives**
- 2.1 Introduction**
- 2.2 Structure and Composition of Fish**
- 2.3 Classification of Fish**
- 2.4 Preparation of Fish**
- 2.5 Methods of Cooking Fish**
- 2.6 Let Us Sum Up**

2.0 OBJECTIVES

In this unit, we have discussed the different types of fish, different preparation techniques and the methods of cooking fish.

After working through this unit, you should be able to:

- Classify and select fish and shellfish
- Understand structure of a fish
- Prepare fish
- Understand and learn different methods to cook food

2.1 INTRODUCTION

Seafood cuisine is a much-preferred cuisine and since it has a vast variety, it is a popular choice of diners. Different types of fish and the variety of cooking methods make this a favourite choice of seafood lovers. However, these are difficult to cook, owing to their delicate texture and perishability. There are different varieties of fish available and it is important to study the selection techniques and the composition of fish in order to have a better understanding of this particular cuisine type. Different ways of cooking fish is also studied in this unit and it gives an insight into the wide varieties of dishes possible with the proper application of cooking techniques under each cooking type.

2.2 STRUCTURE AND COMPOSITION OF FISH

The edible flesh of fish and seafood, like that of meat and poultry consists of water, proteins, fats as well as small amounts of minerals, vitamins and trace elements. The fish have very little connective tissue as compared to meat and poultry. Therefore, care has to be taken while cooking fish:

1. Fish cook very quickly, even at low heat, since all that is required is sufficient heat to coagulate the proteins.
2. Fish is naturally tender and if it becomes tough in cooking, it is not due to connective tissue, but to the extended exposure of the proteins to the heat.
3. Cooked fish must be handled carefully or it will fall apart.
4. Unlike in the preparation of meat and poultry, moist heat cooking is used not to create tenderness, but to preserve moisture and promote variety.

Check your progress 1

1. Explain the structure and composition of a fish.

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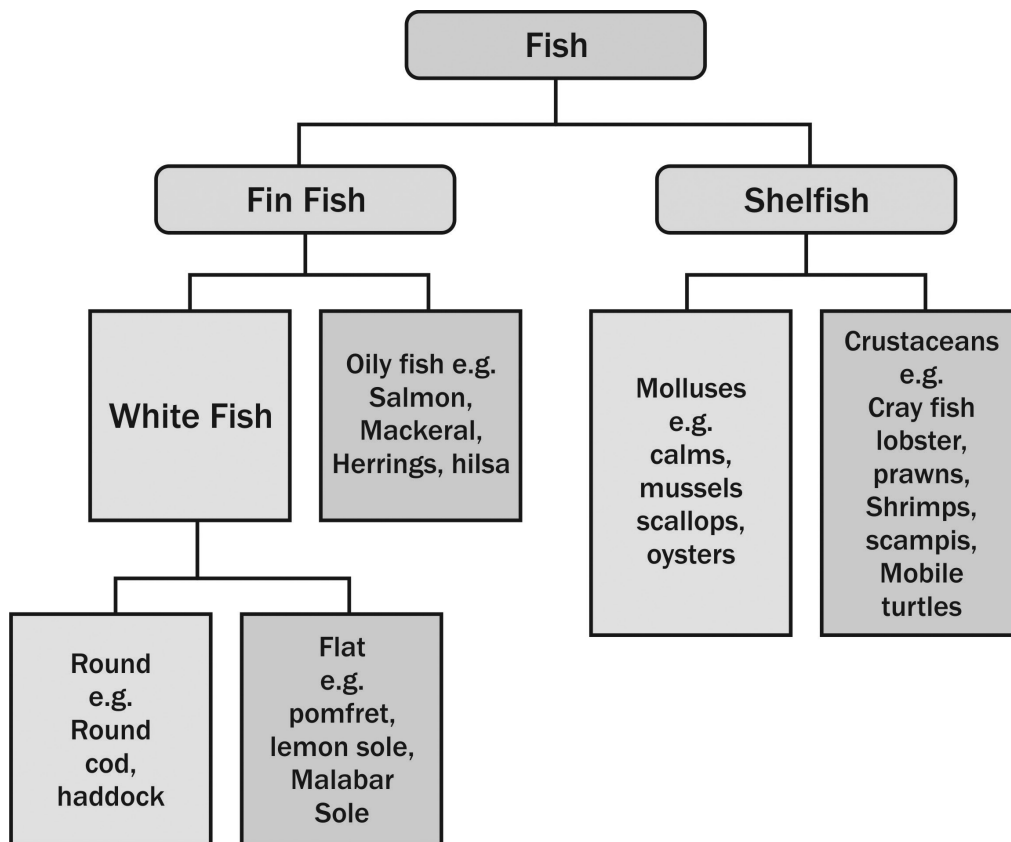
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Fish and seafood may be grouped into categories by both their structure and the preparation techniques and methods used for cooking them. They can be categorised in sixteen major groupings:

Types and Categories

- Small Flat fish: Dover sole, lemon sole, flounder etc.
- Large flat fish: Turbot, brills, halibut and John Dory etc.
- Ray and skate
- Shark and sturgeon
- Meaty fish: Tuna, swordfish and marlin
- Monkfish or anglerfish
- Firm white fish: snapper, grouper, orange roughy and mahi-mahi
- Flaky white fish: Bass, mullet, drum and croker

**Principles
of Food
Production**

- Cod family: Cod, haddock, hake and Pollock
- Thin- boiled fish: Jacks, pompano and sea bream
- Bony fish: Gurnard, scorpion and rockfish
- Salmon and trout
- Fresh water fish: Carp, pike, grass pickerel, catfish, perch
- Rich, oily, dark-fleshed fish: Herring, sardines, shad, mackerel and blue fish
- Long- boiled fish: Eel and elvers
- Shellfish: Crustaceans (lobsters, crayfish, crab, shrimp, prawns), Molluscs

(Snails, conch, abalone, oysters, clams, mussels), Cephalopods (squid, octopus, cuttlefish) Conger eel, Octopus, Brill Halibut Squid Salmon trout, salmon, Mackerel, Sardine, Trout, Herring, Whitebait, Salmon trout, Salmon, Mackerel, Sardine, Trout, Herring, Whitebait

Check your progress 2

1. Explain the classification of fish and give two examples of each.

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2.4 PREPARATION OF FISH

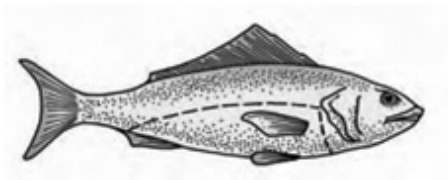
Market Forms

Fish are available in several forms, as illustrated in Figure 10.1 or they may be cut by the cook into these forms, depending on how they are to be cooked.

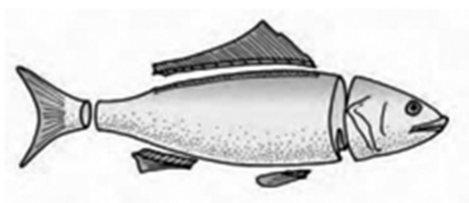
a. Whole or round: completely intact, as caught



b. Drawn: viscera removed



c. Dressed: viscera, scales, head, tail and fins removed



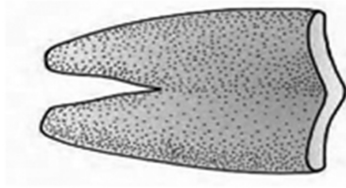
d. Steaks: cross-section slices, each containing a section of backbone



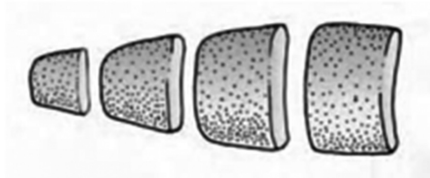
e. Fillets: boneless sides of fish, with skin on or off



f. Butterflied fillets: both sides of a fish still joined, but with bones removed



g. Sticks or tranches: cross-section slices of fillets



Cuts of fish

The common cuts are:

Paupiette, Meuniere, Goujons, Darne, Farce, Troncon, filets.

Court Bouillon

To preserve and enhance the delicate flavours of fish, the liquors in which they are poached are prepared with care. The poaching liquor is called court bouillon.

You will find different types of court bouillon: White Court Bouillon, Ordinary Court Bouillon, White Wine Court Bouillon, Red Wine court Bouillon.

Check your progress 3

1. Explain the cuts of fish.

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2.5 METHODS OF COOKING FISH

Method of cooking fish

Fish could be prepared in various possible ways as under:

- Boiling
- Steaming
- Poaching
- Baking
- Frying
- Shallow frying
- Grilling
- Stewing

Accompaniments served with the fish dishes

- With fried or grilled fish-boiled, fried, sautéed potatoes, coleslaw, green peas or beans, sautéed carrots, grilled tomatoes, grilled/ oven baked onions, hollandaise, tartar, caper, tomato sauces.
- With Boiled or steamed fish- boiled or mashed potatoes, grilled or tossed vegetables, hollandaise-cheese-horseradish and chutney-parsley-anchovy-lemon sauces.
- Baked fish- baked/boiled/sautéed potatoes, green salad, tossed vegetables, cucumber salad, hollandaise,-mustard-anchovy- cucumber- tomato- caper-tartar- brown sauce- parsley or butter sauces.

Checklist for fish Freshness

	Characteristics	Fresh fish	Stale fish
1	Odor	Fresh & Mild	Strong fishy Odor
2	Eyes	Clear, Shiny bulging	Cloudy & Sunken
3	Gills	Red or Pink	Gray / Brown
4	Texture of flesh	Firm Elastic	soft dents easily
5	Scales	Shiny tight on skin	Loose not shiny Shellfish

Handling and storage

Fish and shellfish are some of the most perishable foods you will handle. It is especially important to store them carefully and use them quickly. The fishy taste that turns many people away from fish is actually a sign of decomposition. Fresh fish should taste and smell sweet and fresh.

Storing fresh fish

Objectives

1. To maintain temperature of 30° to 34°F (–1° to 1°C)
2. To keep the fish moist
3. To prevent fish odors and flavours from being transferred to other foods
4. To protect the delicate flesh from being bruised or crushed

Method

1. On crushed ice—the preferred method. Use drip pans to allow for drainage of melted ice. Change ice daily. Cover container or store in separate box away from other foods. Whole fish should be drawn as soon as possible because the entrails deteriorate quickly. Whole or drawn fish are not wrapped. Cut fish (fillets, steaks, portions) should be wrapped or left in original moisture-proof wrap.
2. In refrigerated box at 30° to 34°F (–1° to 1°C)—if crushed ice storage is not available or practical. Wrap all fish or leave in original moisture-proof wrap.

Storage Time

Fresh fish may be stored for 1 or 2 days. If it must be kept longer, you may (1) wrap and freeze it immediately or (2) cook and then refrigerate it for later use in recipes calling for cooked fish. Check stored fish for freshness just before you use it. Even if it was fresh when received, it may not be fresh after a few days in storage.

Thawing and Handling

1. Frozen raw fish:

- Thaw in refrigerator, never at room temperature. Allow 18 to 36 hours, depending on size. Alternative method, if pressed for time: Keep in original moisture-proof wrapper and thaw under cold running water.

- Small pieces (fillets, steaks, portions) up to 8 oz (250 g) can be cooked from frozen state to make handling easier and to prevent excessive drip loss. Large fish should be thawed for more even cooking from surface to interior.
 - Fillets or other portions that are to be breaded or prepared in some other way before cooking may be partially thawed (for example, for a few seconds in a microwave), then prepped and cooked. They will be easier to handle than if fully thawed.
 - Handle thawed fish as you would fresh fish.
 - Do not refreeze.
- 2. Breaded and battered fish, fully prepared entrées and other frozen, prepared fish items:**
- Read and follow package directions.
 - Most of these items are cooked from the frozen state, usually in the deep fryer, oven, microwave or steamer.

Classification of Shellfish

1. Mollusks are soft sea animals that fall into three main categories
 - a. Univalves, which have a single, shell (Abalone & Conch)
 - b. Bivalves, which have a pair of shells, hinged (Clams & Oysters)
 - c. Cephalopods such as Octopus, Squid & Cuttlefish
2. Crustaceans with segmented shells & jointed legs: Lobsters, Shrimps, Crabs

Storage of Shellfish

The shellfish should be purchased alive if possible, so as to ensure its freshness. They should be stored in a cold room, always covered with crushed ice and a damp cloth. The shell fish should be cooked as soon as they are purchased alive.

The choice of Shellfish

The freshness can be considered by recognising the brightness of their eyes, stiffness of flesh & their tail. The claws should spring back whenever pulled. The claws should not be loose but should be intact. They should also be heavy according to their sizes and above all they should smell fresh. They should also not be slimy to touch.

Classification of Fin Fish:

- White Fish is mainly flat fish. It contains oil only in the lives (e.g. sole, pomfret etc). These are deep sea fish.
- Oily fish is mainly sound fish. It contains fat all over their body. The body is mostly pigmented. Such fish is also called surface fish, e.g. mackerels, sardines etc.

Check your progress 4

1. Explain the methods of cooking fish and its storage.

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2.6 LET US SUM UP

In this unit, we:

- Understood the classification; importance and preparation of fish
- Understood the effect of cooking on fish
- Understood and learn storage of fish
- Learnt the methods to check for the freshness of the fish

Check Your Progress: Possible Answers

Check your Progress 1

Refer 2.1

Check your Progress 2

Refer 2.2

Check your Progress 3

Refer 2.3

Check your Progress 4

Refer 2.4

UNIT 3 EGG COOKERY

Structure

- 3.0 Objectives**
- 3.1 Introduction**
- 3.2 Structure and Composition of Egg**
- 3.3 Principles of Egg Cookery**
- 3.4 Methods of Cooking Egg**
- 3.5 Nutritive Food Value of an Egg**
- 3.6 Let Us Sum Up**

3.0 OBJECTIVES

In this unit, we have discussed the structure and composition of an egg, various points to be kept in mind while cooking an egg, the various types of cooking an egg and the nutritive value of an egg.

After going through this unit, you should be able to:

- State the structure and composition of an egg
- Be aware of the various cooking methods and points to be kept in mind while cooking eggs
- Explain the nutritive value in the diet

3.1 INTRODUCTION

Eggs are laid by females of many different species, including birds, reptiles, amphibians and fish and have probably been eaten by mankind for millennia. Bird and reptile eggs consist of a protective eggshell, albumen (egg white) and vittles (egg yolk), contained within various thin membranes. Popular choices for egg consumption are chicken, duck, roe and caviar, but the egg most often consumed by humans is the chicken egg.

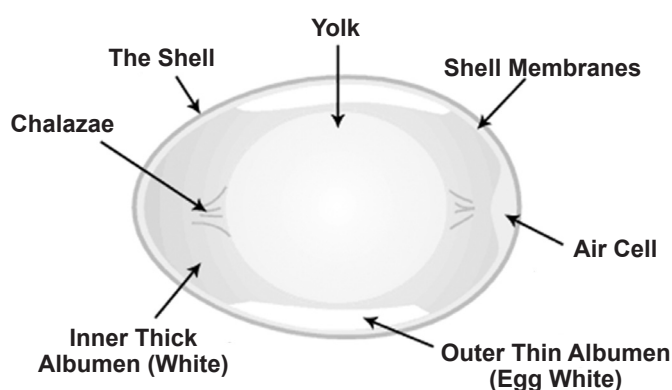
3.2 STRUCTURE AND COMPOSITION OF EGG

A whole egg is made up of a yolk, white and shell. A membrane lines the shell and forms an air cell at the large end of the egg.

The yolk is held centered in the egg by the chalazae. These are two white strands, which are present when an egg is broken. The yolk is the unfertilised embryo in the egg. Yellow in colour, the depth of colour will vary with the feed of the hen. The yolk is high in fat and protein and contains iron. A large yolk has approximately 59 calories. The yolk is valued for the richness and texture, which it provides in both cooking and baking.

The shell or the outer covering of the egg may be white or brown. Shell colour has no effect on the quality, cooking properties or nutritive value of the egg. The breed of the chicken determines colour of the shell. Composed primarily of calcium carbonate, the shell is very fragile. It is porous, which allows it to breathe. The porous nature of the shell allows loss of moisture even if unbroken.

The white is the food and moisture source for the embryo in a fertilised egg. It accounts for 67% of the liquid weight of the egg. Egg white is made up of two parts. A thick white surrounds the yolk. A thinner, more liquid part is between the membrane and the thicker white. Albumin protein is the major component of the white. It also contains sulphur. The white is clear and soluble when raw. It is white and firm when coagulated. Albumin in the egg white is valued for its ability to hold air when beaten. Beaten egg whites provide light fluffy texture for soufflés, chiffon pies, angel food cakes and other items.



Selection Criteria

The term 'egg' applies not only to those of hen, but also to the edible eggs of other birds, such as turkey, geese, ducks, guinea fowl, plovers and gulls. But in general, hen's eggs are used for consumption.

The indicators for freshness of eggs are:

- Clean, well-shaped and strong egg shells
- Thick to thin egg white
- Round and firm yolk

If the egg is old and not good, there is a simple test. Put the egg in water with salt (about 60 gms of salt in half liter of water). Older eggs will come up and float.

Check your progress 1

1. Explain the structure and Composition of eggs using a diagram.

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3.3 PRINCIPLES OF EGG COOKERY

The basic principle of egg cookery centers around the ability of the protein in both the yolk and the white to coagulate when heated. The thickening or coagulation of an egg mixture is brought about because protein molecules attract and hold about them large quantities of water. Solid particles held suspended in the liquid result in a gel formation. This quality of eggs makes them usable for thickening such food products as custards and puddings and for coating food materials. Because the proteins in the egg yolk differ from those of the white, the temperatures at which they coagulate differ too. However, temperature no higher than 165°F (74°C) will thicken both white and yolk. Undiluted egg yolk begins to thicken at a temperature close to 158°F (70°C).

Eggs are available in four forms:

1. Fresh
2. Liquid
3. Frozen and
4. Dried

Eggs may be further classified into whole eggs, egg yolks and egg white. “Fresh egg” refers to the egg still in its shell. “Liquid egg” refers to eggs that have recently been broken or separated from the shell and placed in cans; freezing usually preserves these. Various blended egg products are available under different trade names, many containing whole egg plus additional yolk. In calculating the amount of eggs to be used in a recipe or formula, one can assume that the whole egg is approximately 75 per cent moisture, the remainder being solids. This will be considered further with the matter of recipe balance. Yolks- is used for improved creaming, greater volume etc. The approximate amount of fat in the yolk is between 7 and 10 per cent of total fat content. Although the yolk appears to be almost semi-solid, it contains almost 50 per cent water.

Whites- Egg whites contain approximately 86 per cent moisture. The whites are either firm or fluid in nature. The whites close to the yolk are generally firm, while the portion closer to the shell is fluid. In general, whites are fibrous in nature, they tend to gel or hold together.

Uses of egg in cookery

Eggs are a very important and costly ingredient of bakery products, especially of cakes and rich sweet doughs. In fact, they represent 50 percent or more of the cost of the ingredients used in cake production. The purchase, storage, handling and proper use of eggs are factors, which must be thoroughly understood if product of high quality is to be produced at a pre-established cost.

Uses

Eggs serve the following major purposes:

- **Leavening:** The foam from whipped or beaten eggs entrap air bubbles, which expand when heat is applied. In the mix, they improve creaming. As a leavening by foam formation to make the dish light, as in soufflés or meringues.

Principles of Food Production

- Increase the number of air cells formed and coat these cells with a fat, which permits further expansion of the air cells. In baking, the air cells expand further and the partial evaporation of moisture, in the form of steam leavening. When whipped, as for sponge cakes, the foam formed by the whisking affects the leavening.
- **Colour:** The yolk of the egg provides the desirable yellow colour and gives the cake a rich appearance.
- **Flavour:** Eggs have an odor, which some people consider desirable or required to the baked product.
- **Richness:** Because of the fat and other solids of the eggs the eggs provide- has additional fat and tastes better. Eggs also provide shortness to the mix, enabling the mix to be handled easily.
- **Freshness and Nutritive Value:** As a food eggs have great nutritive value. Because they contain moisture (75 per cent for whole eggs) and natural ability to bind and retain moisture, they retard staling. This is especially true of products made with additional yolks.
- For blinding, as in egg croquettes\
- The protein of eggs is unexcelled in quality and is used as a standard against which other food proteins are measured.
- Eggs make a substantial contribution of vitamins A and D and also contain a small amount of B complex vitamins and minerals.
- The essential fatty acids are more finely emulsified in eggs than in any other food thus assuring easy, complete digestibility and ready utilisation.
- To decorate and garnish dishes.
- As a thickening, as in custards and cooked salad dressings

Coagulation of egg protein

When heat is applied, the egg white changes from a transparent viscous mass to a soft white continuous paste, the optimum coagulation temperature of 148 F (64 C) the white becomes tough and porous. Excessively high temperatures cause the egg white to lose water, shrink and toughen. Because of its fat content, undiluted egg yolk has fewer tendencies to toughen; rather it becomes crumbly in texture when heated beyond the optimum temperature.

Preparation of an egg

Egg Cookery

The primary purpose of exposing eggs to heat is the coagulation of the proteins. Vinegar acts as a catalyst in the coagulation process. The egg white becomes whiter if vinegar is added. Salt is added to enhance the flavour.

1. The whole egg after being beaten will coagulate at 156°F (68°C)
2. Whites will coagulate at between 140°F (thin white) –152°F (thick white)
(60-66°C)
3. Yolks coagulate at 144-160°F (62-70°C)
4. Whole egg combined with liquid, such as in custard, coagulation occurs at 175-185°F (79-85°C)

Check your progress 2

1. Explain uses of an egg in cookery.

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3.4 METHODS OF COOKING EGG

Eggs can be cooked in three ways:

1. In the shell (Boiled and Coddled)
2. Shelled & unmixed (Frying, Poaching and en-croquet)
3. Mixed (Omelets & scrambled)

Boiling of eggs:

1. Select an egg, without any cracks. Take cold water in a deep pan. Add salt.
2. Put the egg in cold water. Enough water should be there to cover the egg.

Principles of Food Production

3. Put on the flame and boil. After the first boil, simmer. Note the time and give little stirring so that the yolk remains in the center.
4. Cooking time: 4 minutes-soft boiled, 6 minutes just boiled and 8 minutes hard-boiled.
5. Remove the egg and place in water to stop cooking and easier peeling of the shell.

Coddling:

Take a perforated container. Keep the egg in it. When the water is boiling, pour it on the egg in a steady stream.

Frying:

1. In a frying pan take a little oil and heat it.
2. Break an egg in a cup and pour it gently on the pan so that the yolk comes in the center. For sunny Side up remove when the white coagulates and turns white.
3. For Fried egg turned over, turn the egg over and cook the yolk.
4. Serve with grilled tomato, roast potatoes and grilled bacon.

Poaching: In a small pan, take water. Add salt and vinegar. Bring it to boil and reduce the flame to maintain the temperature at 72 C i.e. small bubbles coming to top. Take a poaching ring, grease it and place it in water. Break the egg in a cup and pour into the poaching ring. Cook till white turns colour and coagulates.

En-Cocotte: In English, it means in a small pot. Grease the pot with butter and season it. Break the egg, put it in a pot and cover with lid. Put the pot in water bath. Place the whole arrangement in oven at 240 C and cook the eggs until they are set.

Omelettes: Conditioning the pan: Take two spoons of salt, few drops of oil and heat the frying pan. Make a pad of duster. When the mixture is on the flame, rub it and throw the mixture away. There are three types of omelets.

1. **Plain:** Take a non-stick pan and add butter. Add the mixed and seasoned eggs and cook it till the mixture is set. Fold the omelet from the middle.
2. **Rolled:** In a frying pan add butter and cook the stuffing. Prepare plain omelet. Put the stuffing and with a fork bring the one end on top in semi-circle shape. Roll till end.

3. Open Omelet or Garnished: The seasoned eggs are added in the same pan in **Egg Cookery** which the stuffing is cooked and allowed to set. Finish in the salamander.

Scrambled

Break the egg in a small bowl and season it. In the frying pan add the butter with milk and the egg. Cook it gently on a low flame with a wooden spoon till creamy texture is achieved. Serve it on a toast.

Check your progress 3

1. Explain different ways of cooking an egg.

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3.5 NUTRITIVE FOOD VALUE OF AN EGG

An egg is a compact and almost complete food. It is equal to seventy calories of energy and contains carbohydrates, fats, proteins, mineral salts, vitamins and water. Vitamins A, B, D are all necessary for health and growth. Iron, phosphorus and calcium for building and maintaining healthy bodies it furnishes all the amino acids essential for building and repairing body tissue. From the culinary point of view, an egg comprises two separate parts. The white or albumen and the yolk The average egg is 10% shells, 30% yolk, 60% white, 73% water is contain in its constituents.

- As the first semi-solid food taken by infants
- As a nourishing and easily digestible food for invalids
- As a quick-cooking and nourishing dish for breakfast or main meals

Principles of Food Production

Egg Sizes		
Classification	Min Wt. / Egg	Min Wt. / Dozen
Jumbo	70 Gm (2.5 Oz)	840 Gm (30 Oz)
Extra Large	63 Gm (2.25 Oz)	756 Gm (27 Oz)
Large	56 Gm (2 Oz)	672 Gm (24 Oz)
Medium	49 Gm (1.75 Oz)	588 Gm (21 Oz)
Small	42 Gm (1.5 Oz)	504 Gm (18 Oz)
Pee Wee	35 gm (1.25 oz)	420 gm (15 oz)

- Most commonly used eggs in commercial and home cookery are large eggs.
- Jumbo and Extra Large eggs are sometimes used as Breakfast eggs for poaching and frying.
- Medium, Small and Pee Wee eggs are rarely used.

Market forms of eggs

- Fresh eggs: - Often used for breakfast cookery
- Frozen eggs: - Includes whole egg, whites, yolks, whole egg with extra yolk etc. It should be pasteurised before freezing.
- Dried eggs: - Should be pasteurised before drying. Includes whole egg whites and yolks. Moisture is removed through evaporation. They are primarily used for baking.

Coagulation

- Whites® 140F – 152F (60 – 66C)
- Yolks® 144F – 166F (62 – 70C)
- Whole eggs after beating® 156F (68C)
- Coagulation temperature increases when diluted with milk or sugar.
- Acids – cream of tartar or lemon juice lower the coagulation temperature.
- Salt in egg mixture aids coagulation.

Storage of eggs

The shell of the eggs is very porous; hence, we have to keep the eggs away from any contaminating odors. The eggs can be stored at 2-5 °C. The fresh-laid egg is always desired for its delicious flavour and this flavour changes but little in a week or two if the egg is kept cool. Many methods have been tried, such as laying them away in sawdust, sinking them in water-glass solution or coating the shell with paraffin or some other substance to prevent evaporation and the entrance of air. The introduction of cold storage on a large scale promises a solution of the problem. If eggs are fresh when placed in storage, it is possible to keep them just above the freezing temperature for months without appreciable deterioration. Eggs too long in storage may be detected by the musty odor and flavour, the running of the yolk into the white and the thin quality of the white, which prevents beating stiff.

Check your progress 4

1. Explain the nutritional importance of eggs.

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3.6 LET US SUM UP

In this unit we:

- Understand structure of an Egg
- Understand the effect of cooking on egg and learn effect of heat on proteins
- Understand the different types of preparations made using the egg.
- Understand the storage of eggs

Check Your Progress: Possible Answers

Check your Progress 1

Refer 3.2

Check your Progress 2

Refer 3.3

Check your Progress 3

Refer 3.4

Check your Progress 4

Refer 3.5

UNIT 4 MEAT COOKERY

Structure

- 4.0 Objectives
- 4.1 Introduction
- 4.2 Structure & Composition of Meat
- 4.3 Beef
- 4.4 Lamb
- 4.5 Pork
- 4.6 Poultry
- 4.7 Let Us Sum Up

4.0 OBJECTIVES

In this unit, we have discussed the structure and composition of different types of meat such as beef, lamb, pork and their various cuts used in different types of dishes.

After going through this unit, you should be able to:

- Understand the basic composition and structure of meat tissue
- Understand structure and composition of beef
- Understand structure and composition of lamb/ mutton
- Understand structure and composition of pork
- Understand structure and composition of poultry

4.1 INTROUDCTION

Fresh meat can be cooked for immediate consumption or be **processed**, i.e. treated for longer-term preservation and later consumption, possibly after further preparation.

Meat is a typical base for making sandwiches. Popular varieties of sandwich meat include ham, pork, salami and other sausages and beef, such as steak, roast

beef, corned beef, pepperoni and pastrami. Meat can also be moulded or pressed (common for products that include offal, such as haggis and scrapple) and canned. Meat can be broadly classified as "red" or "white" depending on the concentration of myoglobin in muscle fibre. When myoglobin is exposed to oxygen, reddish oxymyoglobin develops, making myoglobin-rich meat appear red. The redness of meat depends on species, animal age and fibre type. Red meat contains more narrow muscle fibres that tend to operate over long periods without rest, while white meat contains more broad fibres that tend to work in short fast bursts.

The meat of adult mammals such as cows, sheep, goats and horses is generally considered red, while domestic chicken and turkey breast meat is generally considered white.

4.2 STRUCTURE & COMPOSITION OF MEAT

Composition

Muscle tissue consists of three major components: water, protein and fat.

Water

Water is about 75 percent of muscle tissue. With such a high percentage of water, you can see why shrinkage can be a big problem in cooking meat. Too much moisture loss means dry meat, loss of weight and loss of profit.

Protein

Protein is an important nutrient and the most abundant solid material in meat. About 20 percent of muscle tissue is protein. Protein coagulates when it is heated. This means it becomes firmer and loses moisture. Coagulation is related to doneness. When protein has coagulated to the desired degree, the meat is said to be "done". Doneness is discussed later in this chapter. After protein has coagulated, applying higher heat toughens it.

Fat

Fat accounts for up to 5 percent of muscle tissue. Of course, more fat may surround the muscles. A beef carcass can be as much as 30 percent fat. Because of health and dietary concerns, many meat animals are being bred and raised with a lower fat content than in past years. Nevertheless, a certain amount of fatness desirable for three reasons:

1. Juiciness

Marbling is fat that is deposited within the muscle tissue. The juiciness we enjoy in well-marbled beef is due more to fat than to moisture. Surface fat protects the meat—especially roasts from drying out during cooking as well as in storage. Adding surface fats where they are lacking is called barding.

2. Tenderness

Marbling separates muscle fibers, making them easier to chew.

3. Flavour

Fat is perhaps the main source of flavour in meat. A well-marbled Prime (top grade) steak tastes “beefier” than the same cut of a lower grade.

STRUCTURE

Muscle fibers

Lean meat is composed of long, thin muscle fibers bound together in bundles. These determine the texture or grain of a piece of meat. Fine-grained meat is composed of small fibers bound in small bundles. Coarse-textured meat has large fibers. Feel the cut surface of a tenderloin steak and compare its smooth texture to the rough-cut surface of brisket or bottom round.

Connective tissue

Muscle fibers are bound together in a network of proteins called connective tissue. Also, each muscle fiber is covered in a sheath of connective tissue. It is important for the cook to understand connective tissue for one basic reason: Connective tissue is tough. To cook meats successfully, you should know

- Which meats are high in connective tissue and which are low.
- What the best ways are to make tough meats tender.

1. Meats are highest in connective tissue if

- They come from muscles that are more exercised. Muscles in the legs, for example, have more connective tissue than muscles in the back.
- They come from older animals. Veal is tenderer than meat from a young steer, which, in turn, is tenderer than meat from an old bull or cow. (Young animals have connective tissue, too, but it becomes harder to break down as the animal ages.)

2. Meats high in connective tissue can be made tenderer by using proper cooking techniques.

There are two kinds of connective tissue: collagen, which is white in colour and elastin, which is yellow.

- **Collagen**

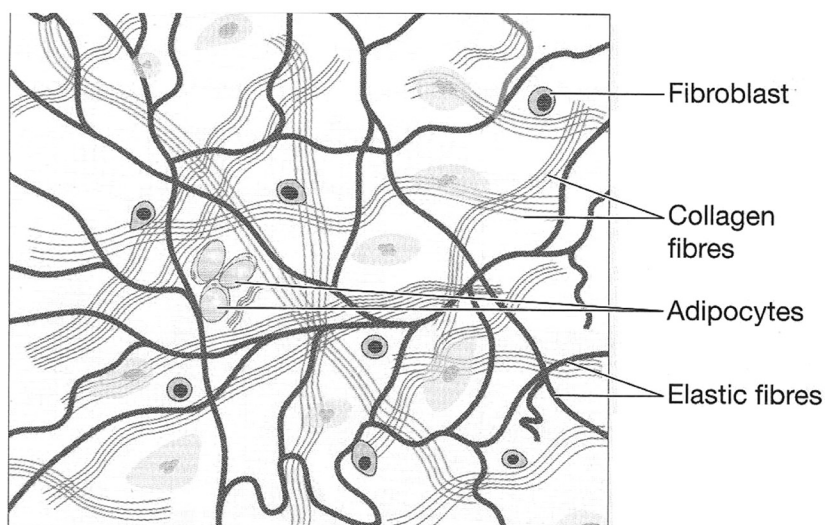
Long, slow cooking in the presence of moisture breaks down or dissolves collagen by turning it into gelatin and water. Of course, muscle tissue is about 75 percent water, so moisture is always present when meats are cooked. Except for very large roasts, however, long cooking by a dry-heat method has the danger of evaporating too much moisture and drying out the meat. Therefore, moist-heat cooking methods at low temperatures are most effective for turning a meat high in connective tissue into a tender, juicy finished product. Other factors also help tenderise collagen: Acid helps dissolve collagen. Marinating meat in an acid mixture or adding an acid such as tomato or wine to the cooking liquid, helps tenderise it.

Enzymes are naturally present in meats. They break down some connective tissue and other proteins as meat ages. These enzymes are inactive at freezing temperatures, slow-acting under refrigeration, active at room temperature and destroyed by heat above 140°F (60°C). Tenderisers are enzymes such as papain (extracted from papaya) that are added to meats by the cook or injected into the animal before slaughter. Exercise care when using enzyme tenderisers. Too long an exposure at room temperature can make the meat undesirably mushy.

- **Elastin**

Older animals have a higher proportion of elastin than younger animals. Elastin is not broken down in cooking. Tenderising can be accomplished only by removing the elastin (cutting away any tendons) and by mechanically breaking up the fibers, as in

- Pounding and cubing (cubed steaks)
- Grinding (hamburger)
- Slicing the cooked meat very thin against the grain (as in London broil)



Loose (areolar) connective tissue.

Check your progress 1

1. Explain the composition and structure of meat.

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4.3 BEEF

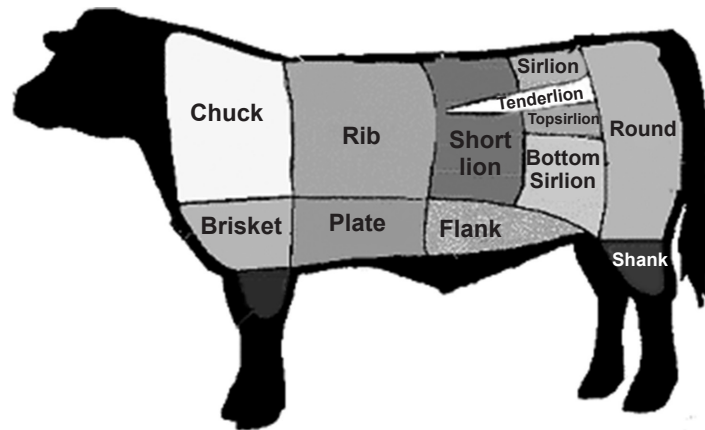
Cuts of Beef / Veal

The hanging or maturing of beef at a chill temperature of 1°C for up to 14 days has the effect of increasing tenderness and flavour. This hanging process is essential as animals are generally slaughtered around the age of 18-21 months and the beef can be tough. In addition, a short time after death an animal's muscles stiffen, a condition known as rigor mortis. After a time chemical actions caused by enzymes and increasing acidity relaxes the muscles and the meat becomes soft and pliable. As the meat continues to hang in storage, rigor mortis is lost and tenderness, flavour and moistness increases.

Principles of Food Production

Quality

- Lean meat should be bright red, with small flecks of white fat (marbled).
- The fat should be firm, brittle texture, creamy white in colour and odorless.
- The flesh should rise quickly after being pressed.



Beef Joints

- Topside and silverside-whole or rolled
- Rump-whole or boneless
- Sirloin-with rump, fillet and wing rib
- Sirloin-short cut, thick flank removed
- Sirloin-boned and rolled, fillet removed
- Sirloin-boneless
- Sirloin-with rump and fillet (chump end)
- Sirloin-chump end, boned and rolled
- Wing rib-on the bone or boned and rolled
- Strip loin-boned, fillet and thick flank removed
- Strip loin-special trim boned; fillet, thick flank removed and trimmed
- Fillet, standard-untrimmed
- Fillet, larder trim-all skin, fat and muscle removed

- Fillet special-trimmed
- Fore-rib-untrimmed, oven prepared, carvery prepared or boned and rolled
- Rib eye roll-prepared from the fore-rib; the main eye of meat with cartilage, muscle, fat and gristle removed.
- Brisket-boneless and rolled
- Pony-prepared from fore-rib after brisket, shank and sticking piece are removed
- back, top or middle ribs-prepared joints
- Chuck steaks-boneless
- Shin-boneless
- Full baron-consists of a pair of rumps, loins and wing ribs
- Short baron-consists of a pair of rumps and loins
- Baron (double sirloin)-consists of a pair of sirloins
- Roasting-consists of half a full baron cut lengthwise
- Loin and rib-consists of half a full baron cut lengthwise with rumps removed.

Beef Cuts

- Beef olives, braising steaks, rump steaks
- “T” bone steaks, standard
- “T” bone steaks, short cut-flank removed
- Club steak-prepared from the sirloin and wing rib
- Sirloin steaks, standard
- Sirloin steaks, short cut-flank removed
- Sirloin steaks, special trim-flank removed and trimmed
- Sirloin steaks, larder trim-flank removed
- Minute steaks
- Fillet steaks, standard

Principles of Food Production

- Fillet steaks, special trim
- Fillet steaks, larder trim
- Fillet tails
- Rib steaks-bone in, prepared from the fore rib
- Rib eye steaks-bone removed
- Braising steaks
- Beef burgers-pure
- Beef burgers-seasoned
- Beef burgers-economy

Veal

Good quality carcasses weighing around 100kg can be produced from calves slaughtered at 12-24 weeks. This quality of veal is necessary for first-class cookery. Calves, which are not considered by the producer to be suitable for quality veal or beef, are, however, slaughtered within 10 days after birth and are known as 'Bobby' calves. The meat obtained is suitable for stewing, pies, casseroles etc.

Quality

- The flesh of veal should be pale pink, firm, not soft or flabby
- Cut surfaces must not be dry, but moist
- Bones in young animals should be pinkish white, porous and with a small amount of blood in their structure
- The fat should be firm and pinkish white
- The kidney ought to be firm and well covered with fat

Veal Joints

- Hind and end-as a pair, the remaining portion of the carcass after removing the breasts; can be supplied singly
- Hind-as above with the best ends removed, singly or as a pair
- Haunch-as above with the best loins removed, singly

- Haunch-boned and rolled
- Leg-the haunch with the chump and removed
- Leg-boned and rolled
- Topside-prepared from the leg after removing the knuckle
- Cushion-a prepared muscle block of meat cleared of fat and sinew
- Top rump-thick flank
- Silverside-under cushion
- Whole rump
- Chine and end-remaining portion of the hind and end after removing the haunches
- Long strip loin-prepared from the single chine and end
- Long strip loin-special trim
- Long strip loin-larder trim (further trimmed)
- Saddle
- Loin-boneless or with bone in
- Short strip loin-prepared from the loin
- Short strip loin-larder trim (further trimmed)
- Short strip loin-special trim
- Fillet
- Knuckle
- Best end
- Rack-a prepared single best-end
- Breast
- Shoulder-bone in or boned and rolled
- Diced veal
- Minced veal

Veal Cuts

- Escalope, ex cushion-prepared from the cushion
- Escalope-prepared from topside, top rump and silverside
- Chops, standard-prepared fro the loin
- Chops, short cut-as above with the flank removed
- Steaks, larder trim-prepared from short strip loin
- Osso buco-cuts across the shin including bones approximately 2 cm
- Cutlets, larder trim

Check your progress 2

1. Explain beef structure with the help of a diagram.

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4.4 LAMB

Cuts of Lamb and Mutton

Most lamb carcass available is from animals aged between 4-6 months.

Quality

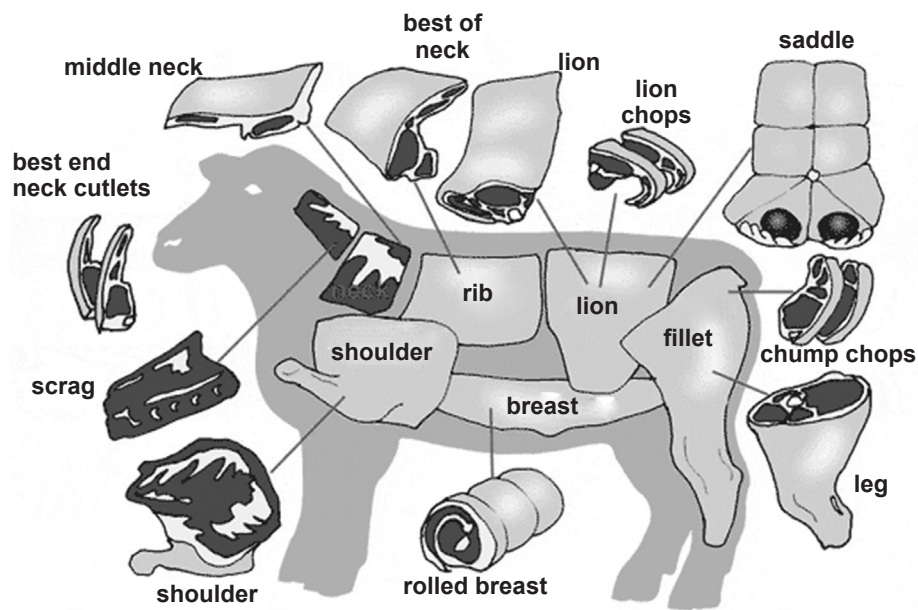
- Lamb is under 1 year old – after 1 year it is termed mutton.
- The carcass should be compact and evenly fleshed.
- The lean flesh o lamb and mutton ought to be firm and of pleasing, dull, red colour and of a fine texture.
- The fat should be evenly distributed, hard, brittle, flaky and white in colour.
- Bones should be porous in young animals.

- Hind and end, long – the remainder of the carcass after the beast, neck and shoulders are removed
- Hind and end, short – as above with the middle neck also removed
- Hind – consists of 2 legs and loins, uncut
- Haunch – boneless
- Leg – a leg with the chump end
- Leg – boneless or boned and rolled
- Leg, Carvery cut- prepared from the leg or haunch with the aitch bone, cod fat and tail removed, excess fat and shank end removed, the knuckle bone cleaned and the joint tied.
- Chine and end, long - -the remainder of the carcass removing the breasts, neck, shoulders, legs and middle neck.
- Saddle – an uncut pair of loins and chump ends
- Saddle, oven prepared – the flanks, kidney knobs, bark and all internal fat removed.
- Saddle, boned and rolled – oven prepared, boned and tied or netted
- Short saddle – an uncut pair of loins without chump ends, also available oven prepared or boned and rolled
- Best end, long – a pair of uncut ends with 11 rib bones each side
- Best end, short – a pair of uncut ends with 7 rib bones each side
- Best end, split and chined – prepared from short best ends
- Rack – Best end spite and chined and trimmed, ready for cooking
- Rack, larder trimmed – a rack further trimmed with 1.5 cm of the ends of the rib bones cleaned
- fore – the reaming portion of the carcass after removing the hind
- Short fore – a fore with the breasts and short best ends removed, can be boned and rolled

Principles of Food Production

- Shoulder – also available boneless or boned and rolled
- Neck and middle – short fore with the shoulders removed, 5 rib bones each side
- Middle neck – neck and middle with the neck removed between the first and second ribs, leaving 4 rib bones each side
- Breast

Lamb Cuts



Cuts of Lamb

- Diced lamb, stewing – prepared from any combination of cuts
- Diced lamb – kebabs, prepared from the legs
- Minced lamb – the fat content should not exceed 25%
- Economy chops – prepared from the chine and short end from which the flank has been removed.
- Loin chops, trimmed – prepared from the saddle
- Noisette – prepared from boned loins, rolled, tied and cut into pieces
- Valentine of lamb – prepared from boned short saddle, partially sliced to give a butterfly cut.
- Crown or Barnsley chops – cut across the short saddle giving an uncut pair of loin chops

- Cutlets, trimmed – cut from the best end
- Butterfly cutlets – cut across an uncut pair of best ends, producing double cutlets
- Cutlets, French trimmed prepared from the rack.
- Band saw chops – prepared from the unacceptable chump ends from loin chops and the unacceptable blade – bone cutlets from the best end.
- Pauillac lamb – young milk fed lambs supplied with head and liver weighting between 7-10 kg
- Dressed saddle – an oven prepared saddle, decorated and embellished for buffet presentation
- Crown of lamb – prepared from 2 best ends tied in a round shape with the rib bones slanting outwards

Check your progress 3

1. Explain lamb structure with the help of a diagram.

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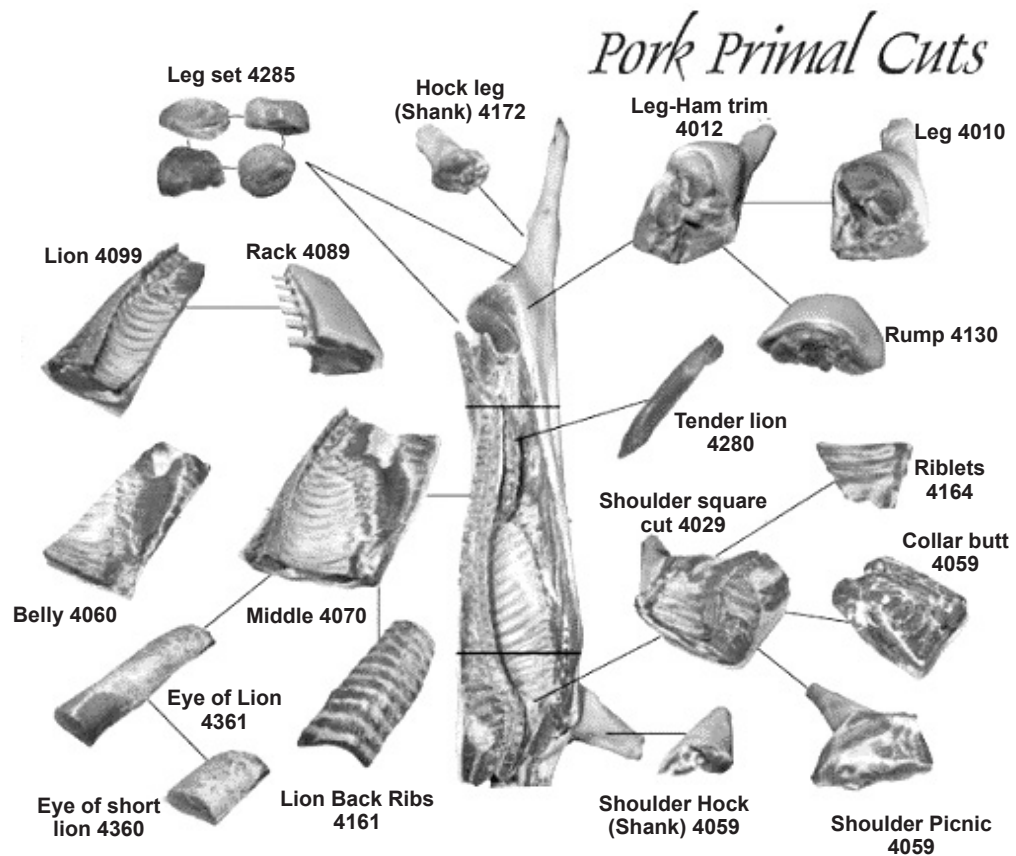
4.5 PORK

Cuts of Pork

Quality

- Lean flesh of pork should be pale pink.
- The fat should be white, firm, smooth and not excessive.
- Bones must be small, fine and pinkish.
- The skin or rind ought to be smooth.

The suckling pig weighs 5-9 kg dressed and are usually roasted whole. Boars are wild or unsaturated male pigs.



Pork Joints

- Side-half a carcass split down the middle lengthwise, available with or without the head
- Leg and long loin-a side with head, hand and belly removed

- Leg and short loin-as above with the neck-end removed between fourth and fifth ribs **Meat Cookery**
- Leg-available with bone-in, boned and rolled and carvery cut
- Long loin-the portion remaining after removing the legs
- Long loin-available boneless or boned and rolled
- Short loin – the portion remaining after removing the leg
- Short loin – available boneless or boned and rolled
- Middle loin – short loin with chump end removed, available with bone – in or boned and rolled
- Long hog meat – long loin with skin and excess fat removed, available with bone – in or boned and rolled
- Short hog meat – short loin with skin and excess fat removed, available with bone in or boned and rolled
- Middle hog meat – middle loin prepared and available as above
- Neck-end – the remaining portion of long loin after removing short loin, available as above.
- Fillet – also known as tenderloin
- Belly
- Hand – the remaining portion of a side when the leg and long loin are removed. Available bone- in, boned and boned and rolled
- Shoulder – the shoulder is removed from a side by a perpendicular cut between fourth and fifth ribs; available as above
- Spare rib – the remaining portion of the neck- end after removing the blade bone
- Boneless neck- spare rib with bones removed
- Blade bone- the remaining portion of the neck- end after removing the blade bone
- Barbeque spare ribs – the rib bones and related meat removed from the belly
- Diced pork – produced from any combination of cuts

Principles of Food Production

- Minced pork – fat content should not exceed 25%
- Suckling pig– young piglet, which is slaughtered prior to weaning which normally takes places 5-7 weeks after birth; supplied as a carcass with head weighing between 5-10 kg

Pork Cuts

- Escalope– cut from the leg or chump end, trimmed and battened out
- Chops, rind on – prepared from the short loin
- Chops, trimmed- prepared from the short hog meat
- Steaks – prepared from middle hog meat
- Neck end chops – prepared from the neck- end, supplied rind – on or trimmed
- Sliced belly – cut from the prepared belly
- Spare ribs chops – cut from the spare rib

Bacon& Ham

Bacon: Bacon is the cured flesh of a pig (60-75 kg dead weight) specifically reared for bacon because its shape and size yield economic bacon joints. The curing process consists of salting either by a dry method and smoking or by soaking in brine followed by smoking. Green bacon is brine cured but not smoked, it has a milder- flavour and does not keep as long as smoked bacon.

Quality

- There should be no sign of stickiness.
- There must be no unpleasant smell.
- The rind should be thin, smooth and free from wrinkles.
- The fat ought to be white, smooth and not excessive in proportion to the lean.
- The lean meat of bacon should be deep pink in colour and firm.

Ham: Ham is the hind leg of a pig cut from the side of pork with the aitchbones; it is preserved by curing or pickling in brine and then dried and smoked. Imported hams include the Parma, Serrano, Bayonne, York, Braden ham and Suffolk.

Offal is the name given to the edible parts taken from the inside of the carcass: liver, kidney, heart and sweetbreads. Tripe, brains, oxtails, tongue and head are sometimes included under this term.

Tripe: Tripe is the stomach lining or white muscle of beef cattle. Honeycomb tripe is the second compartment of the stomach and considered the best. Smooth tripe is the first compartment and is not considered as good as honeycomb tripe. It may be boiled or braised. A menu example would be Tripe and onions.

Oxtail: Oxtail should be 1.5-2 kg, lean and with no signs of stickiness. They are usually braised or used for soups. Menu examples are Oxtail soup or braised oxtail.

Head: Sheep's head can be used for stock and pig's head for brawn. The calf's head is used for soup and certain dishes such as Calf's head vinaigrette. Sheep and calves' head should not be sticky; they should be well fleshed and odorless.

Suet: Beef suet should be creamy white, brittle and dry. It is used for suet paste. Other fat should be fresh and not sticky. Suet and fat may be rendered down for dripping.

Marrow: Beef marrow is obtained from the bones of the leg of beef. It should be of good size, firm, creamy white and odorless. It may be used as a garnish for steaks and for savories. A menu example would be Toast Baron

Brains: Calf's brains are those usually used; they must be fresh. A menu example is Calf's brain with Black butter sauce.

Bones: Bones must be fresh, not sticky; they are used for stock.

Liver: Calf's liver is the most expensive and is considered the best in terms of tenderness and delicacy of flavour and colour. Lamb's liver is mild in flavour, tender and light in colour. Sheep's liver, being from an older animal, is firmer in substance, darker in colour and has a stronger flavour than the lamb or calf's liver. Pig's liver is full flavoured and used in many pate recipes.

Quality

- Liver should appear fresh and have an attractive colour.
- It must not be dry or contain tubers.
- It should be smooth in texture.

Principles of Food Production

Kidney: Lamb's kidney is light in colour, delicate in flavour and is ideal for grilling and frying. Sheep's kidney is darker in colour and has a stronger flavour than lamb's kidney. Calf's kidney is light in colour, delicate in flavour and can be used in a wide variety of dishes. Ox kidney is dark in colour, strong in flavour and is generally used mixed with beef, for Steak and kidney pie or pudding. Pig's kidney is smooth, long and flat by comparison with sheep's kidney; it has a strong flavour.

Quality

- Ox kidney should be fresh and deep red in colour
- Lamb's kidney should be covered in fat, which is removed just before use; the fat should be crisp and the kidney moist

Hearts: Ox or beef hearts are the largest used for cooking, they are dark coloured, solid and tend to be dry and tough. Calf's heart, coming from a younger animal is lighter, is lighter in colour and tendered. Sheep's heart is dark and solid and can be dry and tough unless cooked carefully. Lamb's heart is smaller and lighter and is normally served whole. Larger hearts are normally sliced before serving.

Quality: Hearts should not be too fatty and should not contain too many tubes. When cut they should be moist.

Tongue

- Tongues must be fresh.
- They should not have an excessive amount of waste at the root end.
- Ox tongues may be used fresh or salted.
- Sheep's tongues are used unsalted.

Sweet Breads

There are 2 kinds of sweetbread, unequal in shape and quality. The heart bread is round and plump and of much better quality than the throat or neck breads, which are longer and uneven in shape.

Quality

- Heart and neck breads should be fleshy and large.
- They ought to be creamy white in colour.
- Heart breads are of better quality than the neck breads.

Check your progress 4

1. Explain pork structure with the help of a diagram and give few examples of Offals.

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4.6 POULTRY

The flesh of poultry is more easily digested than that of butcher's meat. It contains proteins and is therefore useful for building and repairing body tissues and providing heat and energy.

The method of cooking poultry depends on the size of the bird and its nature of the flesh. Some birds are very young with no or less fat, other birds are very tough and thus require a special kind of heat treatment especially moist heat. Hence, the young birds are subjected to the grill, tandoor or roasted method of cooking as they are tender.

Chicken pies or chicken dumplings and pakodas are made with fat fowls. Mature birds needs moist cooking, spices are added when flavour is lacking and are enriched with fat such as fricassee, chasseur, curries, kormas etc. Whereas the lean birds are fried as it enhances palatability.

Signs of good quality poultry

- Feathers should be light & fluffy.
- Eyes should be prominent and clear.
- There should be no unpleasant smells.

Principles of Food Production

- The skin should be clear with no greenish tinge on it.
- The feet should be moist and not stiff and dry.

The cuts are made mostly through the natural joints to produce two wings, two pieces of breast meat, two winglets, two drumsticks and two thigh pieces. The carcass can be used for stocks.

The picture below shows a whole chicken cut in 10 pieces.



a. Legs, b. thighs, c. wings, d. part of back portion. e. tail end of back portion. f. breasts and c. wings.

The English cuts

- Drum sticks
- Thighs
- Winglets
- Wings
- Breasts
- Carcass

The French Names

- Pilon de Cuisse
- Gras de Cuisse
- Aileron
- Aile
- Poitrine or Blanc
- Carcasse

Cooking Methods

Meat Cookery

The methods of cooking used for poultry depend upon:

- Type
- Age
- Size

Cooking methods

Roasting	Excellent method of cooking whole poultry. It is recommended to stuff the bird for increased flavour and truss for a compact shape that is easier to carve.
Boiling	Generally applied to older, poorer quality birds, especially chickens.
Poaching	Good for tender meats such as chicken breasts and turkey fillets.
Steaming	Good for tender birds, either whole or cuts. This method is typically used in hospital or special dietary cooking.
Stewing	Recommended for tougher meats but can be used for more tender cuts, such as in a fricassee.
Braising	Try this method for a whole duck or goose.
Pot roasting	Another excellent method for a whole chicken, duck or goose.
Baking	Not normally used for poultry, however, dishes cooked en-papillote may be an exception.
Grilling	Very suitable for chicken and turkey portions and to spatchcock, which can be grilled whole.
Shallow frying	Suitable for the most tender and best quality cuts of poultry, such as supremes or sautéed poultry cuts.
Deep frying	Can be used for coated poultry portions, such as a crumbed Chicken Kiev or a tempura batter for Japanese-style chicken.

Check your progress 5

1. Explain chicken structure with the help of a diagram. Also mention quality control checks for the same.

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4.7 LET US SUM UP

In this unit we:

- Understand composition and structure of meat
- Learnt the anatomy of beef and learn the parts of beef
- Understood lamb cuts and their names
- Understood pork cuts and learn about bacon and ham
- Learnt the cuts of chicken
- Understood the various offal parts

Check Your Progress: Possible Answers

Check your Progress 1

Refer 4.2

Check your Progress 1

Refer 4.3

Check your Progress 1

Refer 4.4

Check your Progress 1

Refer 4.5

Check your Progress 1

Refer 4.6

SOME USEFUL BOOKS FOR THIS BLOCK

1. Larder Chef, M. J. Leto, W. K. H. Bode, Ed. 4
2. Modern Cookery Vol-1, Thangam E. Philips, Orient Longman, 2005
3. Professional Cooking, Ed. 6, John Wiley & Sons
4. Theory of Cookery, Krishna Arora, Ed. 5, Rank Bros & Co., 2005

ACTIVITIES FOR THIS BLOCK

Activity 1

Visit a 5-star Hotel or any similar category of catering unit. Observe the operations of the Garde Manager Section and Butchery. Observe and list different meats used in that hotel and their uses. Observe the vegetables and fruits preparation done in Garde Manager Section.

GLOSSARY

Comprehensive Glossary is placed at the end of Block 1.

Enrolment No.

1. How many hours did you need for studying the units?

Unit No	1	2	3	4
Nos of Hrs				

2. Please give your reactions to the following items based on your reading of the block:

Item	Excellent	Very Good	Good	Poor	Give specific example if any
Presentation Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Language and Style	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Illustration used (Diagram, tables etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Conceptual clarity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Check your progress Quest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Feed back to CYP Question	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

3. Any Other Comments

