

**COURSE
GUIDE**

**HCM239
MENU PLANNING AND CATERING SERVICES**

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Introduction

HCM239: Menu Planning and Catering Services is a semester course work of two credit hours. It is available to all the students, taking the BSc. Programme in Hotel and Catering Management in the School of Business and Human Resource Management.

This course consists of fifteen units involving the nature of menu planning and catering services. The course is designed to give students further in-depth understanding on how to produce and serve acceptable menu. The course involves empirical studies of the characteristics and properties of various food commodities; costing and control, scope of catering operations, pastry, cake making and confectionaries in the hospitality industry. The idea is to enable students to be able to compile and arrange varieties of standard recipes from different food commodities and cooking methods, with a view to produce palatable, attractive, appetite-stimulating and balanced menus. This, bearing in mind that the mechanics of menu planning, types of catering establishment, catering for special nutritional needs and special functions, and to improve the standard of catering services, as well as ensuring customers satisfaction of the food and beverage service section in a well established catering industry.

The course guide, in addition to the above, gives detailed information about what the course HCM239 is all about and the materials needed are spelt out for achieving maximum success. Other important information provided in the course guide includes how to make use of your time on a Tutor-Marked Assignments (TMAs). There will also be tutorial practical classes. Full details concerning this will be conveyed to you at your chosen study centre.

Course Contents

The course contents for the programme consist of the nature of menu planning and catering services; menu for special nutritional needs, types of catering establishment, pastry and cake making, catering for special functions, food commodities costing and control in the catering establishment.

Course Aims

The aims of this course are to further expose you to menu planning and catering services and the importance of the different types of catering establishments and functions. Due to the principles of menu planning and the techniques involved in food and beverage production, this course is aimed at making you compile different menu, using your

knowledge of the various commodities available, culinary knowledge and skill to produce acceptable menu for an individual's special nutritional needs and functions in the hospitality industry.

These aims will be achieved by:

- Explaining the importance of planning and organizing catering for special functions.
- Explaining the importance of food and nutrition and the correct choice of food for the correct group of people.
- Identifying the classification and sources of food commodities.
- Identifying the different types of catering establishment.
- Explaining the principles involved in cake making and confectionaries.
- Explaining the importance of dish costing and control in the catering industry.
- Describing the preparation of beverages and the processes involved in the preparation of non-alcoholic drinks
- Compiling and preparing standard menu from the various food commodities using different methods of cooking.

Objectives

At the end of the course, you should be able to:

- Explain the different types of catering establishment
- Explain the true nature of the principles of meal planning and organizing and special catering function.
- Explain the importance of food and nutrition to the body and the correct choice of food for the different groups of people
- Identify the various types of food commodities and assess their use, cost, storage, hygienic handling and nutritional value.
- Identify the different types and the basic ingredients required in pastry, cakes, and confectionary making.
- Explain the importance of dish costing and control in the catering industry.
- Classify the different types of alcoholic and non alcoholic beverages available in the catering industry.
- Demonstrate the production of dishes using different food commodities, test and applying different methods of cooking.

Course Materials

- Course guide.
- Study units.

- Text books
- Assignment guide

Study Units

There are 15 units in this course which should be studied carefully. The units are as follows:

Module 1

Unit 1	Types of Catering Establishment
Unit 2	Measurements and Measures
Unit 3	Herbs and Spices
Unit 4	Vegetables and Salads

Module 2

Unit 1	Fruit and Nuts
Unit 2	Milk and milk Product
Unit 3	Egg Cookery
Unit 4	Fish Cookery

Module 3

Unit 1	Beverages
Unit 2	Catering for Special Function
Unit 3	Menu for Special Nutritional Needs
Unit 4	Bread Making and Dough Product

Module 4

Unit 1	Pastry Making
Unit 2	Cake Making
Unit 3	Costing and Control in the Catering Establishment

Each study unit includes an introduction, the objectives of the unit, the main contents, exercises, conclusion, summary, references and tutor marked questions. It will take at least two hours. You are expected to study the materials, reflect upon them, and attempt the exercises.

Some of the exercises will necessitate your visiting some hospitality establishments and market survey. You are advised to do so in order to have practical experience of the concepts taught in the course. I also advise that you practice some of the recipes given in the course on your own. This will enhance your practical knowledge. There are also reference materials, e.g. text books for further readings. They are to give

you additional information. Practice the tutor-marked questions for greater understanding. By so doing the stated learning objectives will be achieved.

The Modules

The course is divided into four modules. The first module has four units, the same number of units in the second and third module while the last module has three units.

The first module treats the different types of catering establishments, different measuring devices including local and how to measure ingredient accurately before proceeding for production practical; highlights the major common herbs and spices; vegetables and salads; their functions and special contribution to good health.

The second module exposes the different types of food commodities found in the market with special reference to fruits and nuts, milk and milk products, egg cookery and fish cookery. It further treats the classification and sources of supply of the food commodities, assesses their nutritional value, using cost storage, preservation, hygiene handling, recipes and the various methods of preparation.

The third module classifies different types of alcoholic and non-alcoholic beverages available in the catering industry. It further treats the preparation of beverages and the processes involved in the preparation of non-alcoholic drinks. It also treats the correct choice of food for different group of people, how to plan good menu for special catering functions and the production of bread product.

The fourth and last module treats the basic principles involved in cake making, the different types and production of pastry and confectionaries. It also treats the importance of dish costing and control in the catering industry.

Assignments

There will be assignments and you are expected to attempt all of them.

Assessments

Tutor-Marked Assignment

In doing the tutor-marked assignments, you are expected to apply what you have learnt in the contents of the study units. After you attempt

them, submit them to your tutor for grading. They constitute 40% of the total score.

Final Written Examination

At the end of the course, you will write the final examination. It makes up the remaining 60% to make 100%.

Summary

HCM239 exposes you to the principles of menu planning and catering services and the techniques involved in compiling acceptable menu bearing in mind the different types of food commodities using standard recipes to produce acceptable dishes. On successful completion of the course, you would have been adequately equipped with the necessary principles for effective planning, preparation, presentation of menu and improve its delivery service.

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MODULE 1

Unit 1	Types of Catering Establishment
Unit 2	Measurements and Measures
Unit 3	Herbs and Spices
Unit 4	Vegetables and Salads

UNIT 1 TYPES OF CATERING ESTABLISHMENT

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1.0 INTRODUCTION

Before we can examine the different types of catering establishments, we must establish some definitions which cover its wide scope. The hotel and catering or hotel and food service industry is now becoming widely known as the “Hospitality Industry”. The industry is usually defined by its output of products which satisfy demand for food and drink and accommodation (but it excludes food and drink manufacture and retailing). The provision of food for people of all ages, in all walks of life at all times of the day or night, and in every situation shows the variety of the scope which is to be found in the catering industry.

The standard industrial classification indicates that there are many types of food and beverage operations. It also indicates that some operations are primarily concerned with the provision of food and drink (for example restaurants and takeaways) whereas other operations are what can be called secondary operations, where the provision of food and drink is part of another business. These include welfare catering and industrial catering.

The standard industrial classification also classifies the industry by types of food and beverage premises. This does not necessarily indicate the type of demand being met or the conditions under which provision is being made. For example, cafeterias may be found in motor way service stations, in airline terminals, on rail stations, in retail catering, in industrial and welfare catering. It should therefore be understood that similar types of food and beverage operation may be found in a variety of different sectors. One thing that is common to all sectors of the catering establishment is the need for food to be cooked and served well.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- Describe the various types of commercial and non-commercial catering.
- Identify the different kinds of food served in the various sectors of catering.
- Explain the types of service rendered in commercial and non-commercial catering.

3.0 MAIN CONTENT

3.1 Classification of the Catering Establishment

The catering industry could be referred to as a hospitality industry which makes provision of food, drinks and in some cases accommodation for people in school, hospital, industry, etc. However, it is possible to make a number of distinctions between the many different types of food and beverages outlets in the catering industry.

There are two types of catering establishment: commercial and non-commercial.

3.1.1 Commercial Catering

Commercial catering may be defined as the operations in which profitability is the primary concern. Such outlets exist not only in

private ownership but also in the publicly owned sector of the economy. Also, it is worth noting that in commercial sector, catering may be a secondary and additional service to customers for example, catering at departmental stores. Examples of commercial catering include: hotels and restaurants, wine bars, fast foods, takeaway, licensed house (Pub) catering, motel and travel lodges, guest houses, youth hostels, transport catering, outside catering (OOC), and franchising etc.

3.1.2 Non-Commercial Catering or Welfare Catering

Subsidized or welfare catering may be defines as those operations in which the profitability of the catering facility is not the outlet’s primary concern. Since the operation are either completely or partially subsidized by a parent body.

Such establishment’s primary obligation is the well-being and care of their customers or parents. Unlike customers frequenting commercial sector operations, the customers often do not have choice of catering facilities. The non-commercial catering facilities are usually subdivided by government bodies which dictates allowance per heads, or by parent companies who may have a similar arrangement. Examples of such establishment include: institutional catering, hospital catering, industrial catering, and prison.

Figure 1.1 Sectors of the Catering Industry

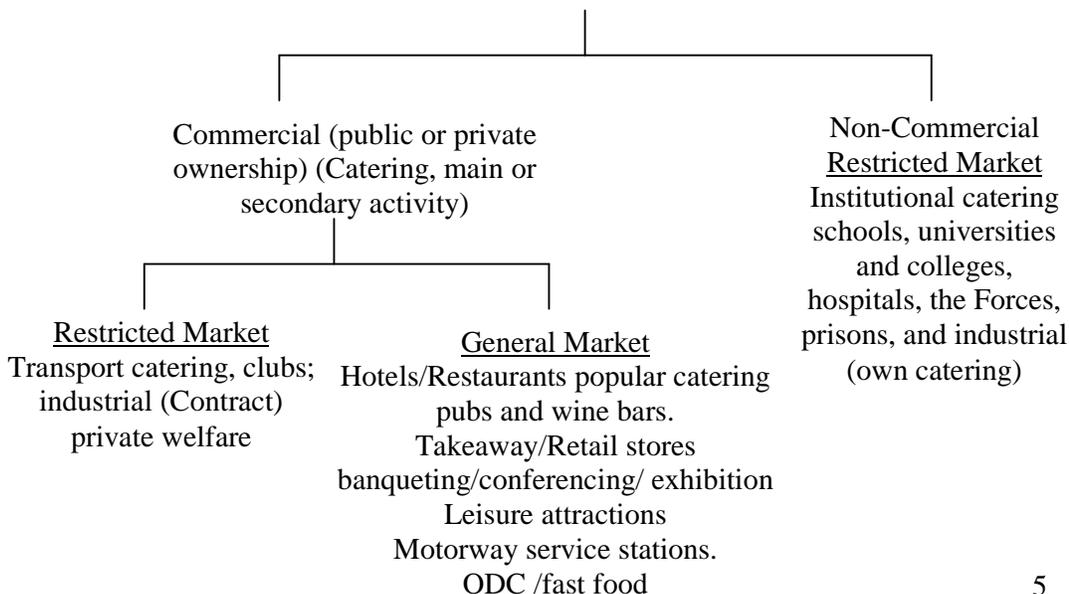
Sector	Purpose of Sector	Historical Summary
Hotels and other tourist accommodation	Provision of food and drink together with accommodation.	Developed from inns supported by developments in transport and increases in business and leisure related tourism.
Motorway service stations	Provision of food together with retail and petrol services for motorway travellers, often in isolated localities.	Emerged in the 1960’s advent of motorway building, influenced by America and became specialized because of government regulations on provision of catering, retail and petrol as well as location.
Welfare including: hospitals, schools, colleges, universities, forces, prisons, and other welfare.	Provision of food and drink to people through a need, primarily determined by an authority.	Regulated and given substantial boost by welfare state creation in 1948 and maintained now through social conscience.

Industrial Catering either in-house operations or provided by catering contractor.	Provision of food and drink to people at work.	Born out of recognition that better fed workers work better. Given boosts in 1 st and 2 nd world wars by legislation. Further developed by unions wish to preserve conditions and the emergence of professional contractors
Licensed Trade Including Public houses, wine bars, licensed clubs, and members clubs.	Provision of food and drink in environment dominated by licensing requirements.	Developed from inns; also origin of steak houses e.g. Bernie in 1960.
Transport including: railways, airline, marine.	Provision of food and drink to people on the move.	Grew out of need to meet requirements of the travelling public. Originally services were mainly of high levels reflecting the type of travellers but eventually changed to meet needs of the wide range of travelling public.
Outdoor Catering: off premises catering	Provision of food and drink away from home base and suppliers.	Developed through need to provide services at special events. The term ODC is misleading as little of this catering actually takes place outside.
Restaurants, including conventional specialist 'carveries'	Provision of food and drink generally at high price with high level of service.	Grew out of hotel restaurants, (Escoffier/Ritz influenced which were originally highly formal) through chefs wishing to start their own business.
Popular Catering, including: cafes, pizza, wimpy, grills, specialists coffee shops, little chefs' steak houses.	Provision of food and drink generally at low medium price with limited levels of service.	Developed from ABC and Lyons concepts. Gone through various phases. Lately American influenced.
Fast Food e.g. Tantalizer, Mr. Biggs, Royal, McDonald, Burger King, Wendys'.	Provision of food and drink in highly specialized environment characterized by high investment, high labour costs and vast customer.	Grew from combination of popular catering and takeaway heavily influenced by American Companies; sophisticated meal packaging and marketing.

Take-away, including: ethic, spuds, KFC, Snacks, fish and chips, sandwich bars, kiosks.	Provision of food and drinks quickly.	Developed from original fish and chips concept influenced by American and trend in food tastes
Retail Stores	Provision of food and drink as adjunct to provision of retailing	Developed from prestigious stores wishing to provide food and drink as part of retailing concept.
Banqueting/ conference exhibition	Provision of food and drink on large scale, usually pre-booked.	Originally associated with hotels but has now become major sector in its own right.
Leisure attraction e.g. theme parks, galleries, theatres, airline terminals	Provision of food and drink for people engaged in another leisure pursuit.	Increases in leisure have made profit from food and drink attractive to leisure and amenity providers.

As mentioned earlier, the catering industry is classified by the type of food and beverage premises. This does not necessarily indicate the type of demand being met or the conditions under which provision is being made. It should therefore be understood that similar types of food and beverage operations may be found in a variety of different sectors. Sectors are therefore defined by the nature of demand being met, as shown in the table above. A historical summary of each sector is also given. This identification of sectors also provides a frame work for those of you studying Hotel and Catering to which further studies and experience may be related. In order to be seen in more detail each sector will be analyzed by reference to a set of variables that exist in the different sectors.

Figure 1.2 Summary of the sectors in the Catering Industry



Based on the above classification, it is necessary to outline at this juncture the different types of catering outlet in the catering industry and to identify their main characteristics in some cases. Examples, catering in railway station is normally open to the travellers as well as the general public.

3.2 Hotels and Restaurants

A great difference is demonstrated when palatial, first class, luxury hotel is compared with the small hotel owned and run as a family concern. With restaurants, a similar comparison may be made between the exclusive top-class restaurant and the small restaurant which may serve just a few menus.

Hotels are residential and most of them provide breakfast, menu, dinners and snacks. In some hotels, conferences and banquets and parties will be an important part of the business. However, it is worth to note that provision of food and drinks in this sector of the industry is strongly determined by the category of such hotel. In other words, one would expect a first class hotel to offer services of food round the clock and besides this, the provision of food and beverages facilities should range from self service style to waiter silver service, buffet service which is used in luxury hotels. While in the small hotels, provision of food and drinks may not be throughout the day. Some may provide lunch and dinner and snacks, lunch plus snacks and so on.

Unlike the hotels, restaurants do not offer accommodation and therefore their primary function is the provision of food and beverages. The various types of restaurant include snack bars, cafes, coffee shops, takeaway, steak bars, speciality restaurant, etc. Restaurant will vary with the kind of meals they serve. Some will serve all kind of meals whilst others will be restricted to the service of lunch and dinner or lunch and tea etc. Again, banqueting may form an important part of the restaurant's service. In some cases, various types of meal service, such as grill rooms, or speciality restaurant which may limit the type of foods served e.g. smorrebrod, steaks, egg, etc will be provided.

The various types of restaurants have divers range of styles of service ranging from the self service cafeteria to the more elaborate methods of table service (e.g. French revision English) found in luxury restaurants and those particular service techniques; specialty restaurants such as Chinese, Indian, etc. In many restaurants today, a separate bar area is provided for pre and after meal drinks. These have double advantage of offering the customer a place to sit and relax away from the dinning area and they allow a aster seat turn-over in the restaurant.

3.2.1 Fast Food and Take Away

This sector of the hospitality industry is concerned with the preparation and serving of food and beverages quickly for immediate sale to the customer for consumption either on or off the premises, e.g. of fast food and takeaway operations include the many themed pie or hand burger units found in the high streets of most town today as well as operations; such as fish and chips shops. There are several identifiable characteristics common to this sector of the industry.

- The units are usually themed around a product (e.g. chicken and chips), a range of products (e.g. fish).
- The units are often owned by large chains or are franchised.
- The products are well marketed
- The pricing of the items is within a fairly distinctive knowing price band.
- The method of production is less hectic
- The method of food service is simplified and basic.

Customer demand has resulted in the rapid growth of a variety of establishments offering a limited choice of popular food at a reasonable price, with little or no waiting time to be consumed either on the premises or taken away.

3.2.2 Motels/Travel Lodges and Clubs

Motels/travel lodges are sited near motor ways and arterial routes. They focus on the business person who requires an overnight stop or the tourist who is on a driving holiday. These properties are reasonably priced, they consist of a room only with tea and coffee making facilities. Staffing is minimal and there is no restaurant. However, there will be other services close by often managed by the same company. The growth and success of the budget hotel sectors has been one of the biggest changes to affect the hospitality industry in recent years.

The Private Clubs

Are usually administered by a secretary or manager appointed by a management committee formed from club members. Good food and drink with an informal service in the old English style are required in most clubs. Night clubs and casinos usually have the type of service associated with this restaurant trade.

3.2.3 Chain-Catering Organizations and Licensed-house (Pub) Catering

1. Chain-Catering organization

There are many establishments with chains spread over wide areas and in some cases over seas. They often serve lunch, tea and morning coffee, and have snacks bars and cafeterias.

2. Licensed-house (Pub) Catering

There is great variety in public-house catering, from the ham and cheese roll operation to the exclusive *a' la carte* restaurant. Public-house catering can be divided into categories such as:

- The luxury-type restaurant
- The Gastro pubs – there is a growing trend for well qualified chefs to work in pubs, and develop the menu according to their own specialities, making good use of local produce.
- The specialty restaurant, e.g. steak bars, fish restaurant, carvery, theme.
- Fork dishes served from the bar counter where the food is consumed in the normal drinking areas.
- Finger snack, e.g. rolls and sandwiches.

3.2.4 Commercial Catering For Restricted Market

Transport catering in areas such as road, rail air, and sea has a number of characteristics not commonly associated with other food and beverage outlets. It usually involves the feeding of a large number of customers arriving together at a certain time and who need to be catered for at a specific time (e.g. on board air line) the four main types of transport catering include:

1. **Road:** Road catering has progressed from the inns and taverns of earlier days. The catering services are usually opened twenty-four hours a day. The types of service offered include self-service and waiter service restaurant, etc.
2. **Railway:** Rail catering may be conveniently divided into two major areas – terminal catering and in-trans catering. Catering at the railway terminal usually comprises licensed bars, self service and waiter service restaurants, fast food and takes away dispensing hot and cold food and beverages. In-transit catering basically consists of two main types of service. The first is the restaurant car service where breakfast, lunch and dinner are sold

to passengers. The other type of service is the buffet which is self service operation in which passengers go to the car and pick their choice of food from the counter. Meals on trains may be served in the restaurant cars and snacks from buffet cars. The space in a restaurant car kitchen is very limited and there is considerable movement of the train which causes difficulty for staff.

3. **Airline:** Airline catering has increased and developed considerably over the past twenty years. It originally consists of sandwiches and flask of tea, coffee and alcoholic beverages. Like the railways, airline catering falls into two main areas; terminal catering and air terminals which usually consist of self service and waiter service restaurant, supplemented vending machines and licensed bars. The in-flight catering service varies considerably with the class of travel, type and of duration of flight etc. The food and beverages provided are highly standardized with the meals portioned and packed. The foods are re-heated before service to passengers on board. Disposable cutlery, napkins, cups etc. are used to cut down breakages and wastage.

One characteristic of airline catering is that e-catering service is often contracted to specialized catering firms. The provision of catering service in air travel to passengers is normally included in the price of the fare.

4. **Sea or Maritime Catering:** This varies from the provision of food and beverages on short sea-route ferries where the catering service does not often feature prominently, to the large cruise or passenger liners where the catering facilities are an important part of the service offered by the shipping line and are usually included in the price of the fare. On the cruise liners the standard of catering facilities is high because they are important sales feature in competitive activities. On the short route, the price is usually the more important factor and because of the necessity to feed large number of people, the catering service provided is usually of the popular and fast food types.
5. **Clubs:** Clubs as a sector of the hotel and catering industry are establishments offering food and drink and at times accommodation to members and bonafide guests.

The types of clubs range from working men's clubs to political party clubs, social clubs, sport clubs and restaurant clubs to the private exclusive clubs. The proprietary clubs are the licensed clubs owned by the individual or company. They operate with a view to make profit. The

registered clubs are those clubs whose management is responsible to an elected committee. The members own all the property, including, food and drinks and they pay their subscription to a common fund.

3.3 Non-commercial or Welfare Sector

As earlier mentioned, the fundamental difference between welfare and commercial catering of hotels and restaurant is that the latter is run to make a profit and provide a service. The objective of welfare catering is to provide a service without necessarily making a profit. The standards of cooking should be equally good, though the type of menu will be different.

The hospital catering has been grouped under the welfare catering. The object of catering in hospitals is to assist the medical staff (Doctors, Nurses, etc) to get the patient better as soon as possible. To do this, it is necessary to provide good quality food, to cook it with minimum loss of nutritional value and to present it to the patient in an appetizing manner. When this is done, the catering staff are doing a really worthwhile job, which is one of the most important in the industry. Providing the service for hospital staff is also part of hospital catering. The hospital catering operates diverse services to meet the requirements of different levels staff activities. Many large hospitals have facilities for special functions, conferences and social events with the necessary food production and food and beverage service support.

3.3.1 Institutional Catering

This includes schools, colleges, universities, hospitals, prisons. In some of these establishments, no charge is made to certain groups of customers. The provisions of food and beverage services are partially or completely subsidized by various government funds. This is why the catering services are referred to as welfare sector. Very few catering contractors are found in this sector. Majority are self operated.

3.3.2 Industrial Catering

It is the policy of many large companies to provide catering facilities for employees as it has been realized that productivity and efficiency are related to the welfare and well being of the workers.

The different methods by which organizations provide catering facilities include:

- i. A catering department can be set up within the company, the cost of the equipment, labour and other expenses will be borne by the company.
- ii. The company invites tenders from industrial caterers for the provision of catering services to the company. The facilities and equipment, and possibly labour and other costs, could be paid for by the company and for a fee the caterers will provide a catering manager who will organize and run the operation.
- iii. The company could provide floor space to an outside caterer or catering organization at a normal rent. The equipment, labour, overhead and other costs are borne by the caterer.

Whatever method of catering is chosen, the extent of the subsidy and whether it is a fixed amount to offset losses or given in the form of luncheon vouchers to the employee is the management policy decision and this decision can only be reached after consideration of all known factors and information.

3.3.3 Other Aspects of Catering

1. Catering for the Army, Navy and Air-force

The catering services for the armed services are specialized and each have its own training centre. Details of catering facilities and career opportunities can be obtained from caterer information office.

2. Contract Catering

There are many concerns who are prepared to undertake the catering for businesses, schools, hospitals, etc, leaving these establishments free to concentrate on the business of educating or nursing, or whatever may be their main concern. By employing contract caterers, they are using the services of people who have specialized in catering, thus relieving themselves of the worry of entering a field outside their province. Contract catering is used by nearly every branch of catering including the armed forces. The arrangement varies depending on the type of contract.

3. Outside Catering (ODC)

When functions are held where there is no catering setup or where the function is not within the scope of the normal catering routine then certain firms will take over completely. Considerable variety is offered to people employed in these undertakings and often standard will be of the highest order. The types of function will include garden parties,

agricultural and horticultural shows, the opening of new building, weddings, banquet and parties in private houses etc.

4.0 CONCLUSION

Types of catering establishments were the main topic we discussed in this unit. We discussed about the classification of catering establishments which are commercial and non-commercial catering. We then listed the sectors of the catering industry in which the purpose and historical summary of each sector was tabulated. Types of catering establishments include; Hotels and Restaurants, Fast Food and Takeaway, Motels, Travel lodges and Clubs. The non-commercial catering establishments are hospital catering and institutional catering; other aspects of catering are catering for Armed Forces, contract catering, outside catering.

5.0 SUMMARY

The two broad classifications of catering establishments are commercial and non-commercial. Commercial establishments are operated for the sole purpose of profit while the non-commercial catering establishments are operated for the purpose of immediate satisfaction. Sectors of catering establishments include; hotels and other tourist accommodation, motorway service station, welfare, industrial catering, licensed trade transport, restaurants, popular catering, fast food, take away, retail stores, banqueting, and leisure attractions, all these are for the commercial sector. For the non-commercial/welfare sector we have hospital catering, institutional catering and industrial catering.

In the next study unit, we shall discuss measurements and measures.

6.0 TUTOR-MARKED ASSIGNMENTS

1. Describe briefly how industrial catering differs from hotel catering.
2. List the different types of catering establishments by their groups.

7.0 REFERENCES/FURTHER READINGS

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UNIT 2 MEASUREMENTS AND MEASURES

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- 7.0 References/Further Readings

1.0 INTRODUCTION

One of the greatest frustrations involved in trying to prepare certain recipes is the inability to determine just how much of a particular ingredient you will need in order to end up with the amount specified. This is especially true for ingredients that are bought by the pound or bunch but are to be cut up and measured by the cup. Adding to this frustration is the fact that how small you cut your pieces, how tightly you pack them, or how moist they happen to be can influence the volume they take up. Even the weather can change the measurement for an ingredient that attracts moisture from the air.

As you become experienced as a cook, you will be able to calculate certain quantities by memory or guess work. If you make use of recipe often, you will probably have a fairly good visual idea of how much of each ingredient to use without weighing it each time. On the other hand, some recipes call for absolute accuracy of what goes in, and you will be wise to measure the quantities every time. There is often a big difference between the size of cups and spoons in the kitchen, and recipes which call for table spoonful, desserts spoonful and teaspoonfuls are liable to get a variety of interpretations. Usually, this means a level spoonful unless it says otherwise, but a more accurate method is to use the British standard measuring spoons.

For a good result in the production, proper measuring of the ingredients is advisable and very essential in baking. In some textbooks, measurements are given in cups, table spoons (tbs). Where measuring cups and spoons are not available to buy in stores, you can substitute them by using empty margarine tin for one cup and tomatoep for ½ cup and tomatoe puree for ¼ cup, while ordinary table spoon and teaspoon can replace the measuring spoons. In case these tins are not available, you can use any cup in your reach, but make sure that the same cup you use for flour should be used for sugar, margarine and liquid etc.

It is therefore quicker to measure food than to weigh it, particularly with small quantities. This method is mostly used in the present day recipes when scales are too expensive to purchase or not available.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- Identify the different measuring devices used in the kitchen.
- Explain the uses of the measuring devices.
- Explain the methods used to convert measurement to metric.
- Describe how to regulate oven for cooking temperature and the storage point for keeping foods.

3.0 MAIN CONTENT

3.1 The Metric System

The metric measure refers to measurement that is based on the metre and kilograms. The metric system is based upon the decimal system. The metric unit used in the kitchen are:

1. Millilitre (ml) and litres (1 = 1000ml) for volume measurements, instead of teaspoons, cups and quarts;
2. Grams (g) and Kilograms (kg = 1000g) for weights instead of pounds and ounces;
3. Millimetres (mm) and centimetres (1cm = 10mm) for linear measurements instead of inches;
4. Degree Celsius (⁰C) for temperature instead of degrees Fahrenheit (⁰F).

Thus the abbreviations:

g	=	gram
Kg	=	Kilogramme
dl	=	decilitre
l	=	litre
mm	=	millimetre
cm	=	centimetre
⁰ C	=	⁰ Celsius (centigrade)
⁰ F	=	⁰ Fahrenheit

3.1.1 Methods used to Convert Measurements to Metric

There are two ways of converting recipes measurements to metric. One is the method of “soft” conversion, in which the actual measurement is mathematically converted to metric and rounded off to the nearest round figure. This method is not so practical, however, because you might arrive at a quantity that is not easily measured in the new metric cups and spoons. Also, many goods will be pre-packaged in units of half-litres, or litre or half-kilograms, and so forth, instead of in units of points, quarts or pounds. The other method used is called “hard or solid” conversion. Most recipes has been readapted to metric, using the most convenient and or standard metric measuring unit that works in the recipe even though it may not be as an exact conversion from other standard measurement.

3.1.2 Metric Measurements for Liquid and Dry Volume

All metric measurements for volume are expressed in millimetres and litres. 30ml = 1 ounce 1l (1000ml) = approximately 1 quart.

Metric measuring equipment comes in the following standard sizes:

1. Measuring Spoons

- 1 ml (slightly less than $\frac{1}{4}$ teaspoon)
- 2ml (slightly less than $\frac{1}{2}$ tea spoon)
- 5ml (almost exactly 1 teaspoon)
- 25ml (about $1\frac{2}{3}$ table spoons, or 1 teaspoon less than $\frac{1}{8}$ cup)

2. Small cups for dry measure

- 50ml (2 teaspoon less than $\frac{1}{4}$ cup)
- 125ml ($1\frac{1}{2}$ teaspoons more than $\frac{1}{2}$ cup)
- 250 ml (1 table spoon more than 1 cup)

3. Large Measuring Cups

- 500ml (0.5L) about 1 2/3 tablespoon more than 1 pint)
- 1L (1,000ml) about 32/3 tablespoon more than 1 quarters

3.1.3 Solid Conversion (metric weight)

A kilogramme is subdivided into gram and common abbreviations used in recipes are kg for kilogramme and g for gram. There are 1000gms in 1 kilogramme. The table below gives the conversion of ounces into grams. Exact conversions would take us into complicated fractions, so the weights are given to the nearest whole figure in grams.

Figure 2.1 Conversion of ounces to grams

Ounces	Grams (approximate)
1/4	7
1/2	14
3/4	21
1	28
2	57
3	85
3 1/2	100
4(1/4 lb)	113
5	142
6	170
7	198
8(1/2 lb)	227
9	250 (1/4 kg)
10	257
11	284
12(3/4 lb)	312
13	340
14	369
15	397
16	425
16(1lb)	454
17 1/2	500 (1/2kg)
26 1/2	750 (3/2 kg)
32 (2lb)	908
35	1000 (1kg)

In the anticipation of converting to metric system, it is suggested that you take 25g as the basic unit, because it is easily multiplied for larger metric quantities – 50, 100, 250, 500 and it provides the foundation for thinking metrically to carry beyond the stage of trying to convert

imperial weights into their exact and awkward metric equivalents. It is therefore suggested for example, 100g as an easy alternative to 4oz.

To maintain consistency, fluid quantities could also be rounded off in the same way so that $\frac{1}{2}$ pint, for example, becomes 250ml instead of the exact equivalent 284ml. Many recipes are based on the proportions such as ‘half fat to flour’ or one part fat, and one part flour to 10 parts liquid for a thick sauce. These are easily calculated in terms of the unit chosen. Recipes based in the 25g unit fit into the existing equipment found in home and schools, colleges, kitchens and the unit link up with the teaching of mathematics.

Figure 2.2 Conversion for dry Ingredients

1 heaped tablespoon flour	25g	Or 1oz approx.
1 level table spoon sugar, salt, rice	25g	Or 1oz approx.
2 heaped tablespoons bread crumbs	25g	Or 1oz
1 level tablespoon jam or syrup	50g	Or 2oz approx.
1 large egg	50g	Or 2 oz approx.
1 level teacup flour	100g	Or 4oz approx.
6 lumps sugar	25g	or 1oz approx.

3.2 Metric Conversion for Liquid (Fluid) Measures

A litre is divided into millilitres, centilitres and decilitres as follows:

1 litre =	10 decilitres	= 100 centilitres	= 1000 millilitres
$\frac{1}{2}$ litre =	5 decilitres	= 50 centilitres	= 500 millilitres
$\frac{1}{4}$ litres =	2.5 decilitres	= 25 centilitres	= 250 millilitres

Common abbreviations are:

l	=	Litre
dl	=	Decilitre
cl	=	Centilitre
ml	=	millilitre

Figure 2.3 Conversion of Fluid ounces to Millilitres

Fluid (ounces)	Millilitre (approximate)
1	28
2	57
3	85
4	113
5 (1/4 pint)	142
6	170
7	198
8	227
9	255
10 (1/2 pint)	284
15 (3/4 pint)	426
20 (1 pint)	568
25 (1 1/4 pint)	710
30 (1 1/2 pint)	852
35 (1 3/4 pint)	994 (almost a litre which is 1000ml)

For liquid ingredients such as water, milk and cooking oil

2 tablespoon	=	1 1/4 floz = 35ml
4 tablespoon	=	2 1/2 floz = 70 ml
6 table spoon	=	3 3/4 floz = 105ml
8 tablespoon	=	5 floz = 140ml

3.2.1 Approximate Quantities of Food to Serve

Appetites differ so much that you must take this into account when estimating. One of the worst disasters that can befall a cook is to run short of food. It is even worse for the guests, especially if they are enjoying what you have cooked. So it is always safer to err on the generous side if you are catering for people you do not know. To give you a guide, the following quantities are the minimum to allow for each person:

Figure 2.4 Approximate Quantities of Food to Serve

Food	Quantity
Soup	One pint (1/2 litre) for three people is a good average with bones 6-8oz (200 – 250g) per person.
Fish	Filleted 4oz (100 – 120g) per person oysters 4 – 6 per person. Lobster 1 for 2 people Crab 1 for 2 people
Meat	With bones 8 – 12oz (about ¼ kg) per person boneless 4 – 6 (100- 150g) per person Cutlets 1 or 2 per person, depending on size. Chops 1 or 2 per person, depending on size. Croquettes 2 – 3 per person Sweetbread 1 for 1 – 2 people
Chicken	2 – 4 lb (about 2kg) size for 4 – 5 people
Duck	Large one for 3 – 4 people
Rabbit	1 for 3 – 4 people
Hare	1 for 6 – 8 people
Rice and pasta	Allow 20oz (about 50g per person to serve with curry or as an accompaniment; 3oz 975-100g) if for a main dish.
Tart or pudding	1 ½ lb (3/4 kg) fruit and 6oz (150g) pastry serves 4 – 5 people
Suet pudding	8oz(200-250g) flour its equivalent serves 6 – 7 people
Sponge pudding	4oz (100g) butter, flour, etc serves 5 – 6 people
Milk pudding	1 pint (1/2 litre) milk serves 3 -4 people

Figure 2.5 Length Measures

1 meter = 100 centimetres = 1000millilitres = 39.37 inches.

Metric length	Imperial Equivalent	
	Actual	Approx.
1mm	0.39 inch	$\frac{1}{25}$ inch
2mm	0.078inch	$\frac{1}{12}$ inch
5mm	0.197 inch	$\frac{1}{5}$ inch
1cm	0.39 inch	$\frac{2}{5}$ inch
5cm	1.97 inches	2inches
10cm	3.93 inches	4 inches
20cm	7.86inches	8inches
50cm	19.68 inches	20inches
1metre	39.37 inches.	3 1/4ft

3.2.2 Pan Sizes and Linear Measurements

Under the metric system, some baking dishes such as casseroles are marked in litre sizes. Most pan sizes, however, are expressed in centimetres instead of inches. Thus 1 centimetre = 0.4 inches, 1 inch = 2.5 cm

Figure 2.6 Pan Sizes and Linear Measurements

Common pan sizes	Customary Unit	Metric Unit Rounded.
Casseroles	1 quart (qt)	1 litre (l)
	1 ½ quart (qt)	1.5 litre (l)
	2 quart (qt)	2 litre (l)
Baking Pans (round)	8 inch (8 x 1 ½)	20cm
	9 inch (9 x 1 ½)	23cm
Tube pan	10 Inches	25 cm
Rectangular	9 x 13 x 2 inch	23 x 33 x 5cm
	15 ½ x 10 ½ x 1 inch	39 x 25 x 3 cm
Jelly Roll pan	9 x 5 x 3 inch loaf pan	23 x 13 x 8 cm

Figure 2.7 Volume capacities for the following cake pans include

Cake pans	Capacities
Rectangular cake pans	8 x 8 x 2 inches = 6 cups
	9 x 9 x 1 ½ inches = 8 cups
	9 x 9 x 2 inches = 10 cups
Round cake pans	8 x 1 ½ inches = 4 cups
	9 x 1 ½ inches = 6 cups
Pie plates	8 x 1 ¼ inches = 3 level cups
	9 x 1 ½ inches = 4 level cups
Loaf pans	8 ½ x 4 ½ x 2 ½ inches = 6 cups
	9 x 5 x 3 inches = 8 cups

3.3 Cooking Temperatures

The metric cooking temperatures are expressed in degrees Celsius (⁰C) formerly called degrees centigrade – instead of degrees Fahrenheit (⁰F). The Celsius system is based on a freezing point 0⁰C and a boiling point of 100⁰C.

Temperatures

No degree Fahrenheit (⁰F) minus 32 x ⁵/₉ = degrees Celsius (⁰C)
 Example 212⁰F = 100⁰C (boiling water)

Figure 2.8 Conversion of Current Fahrenheit Oven Temperature to Celsius

	Current Fahrenheit	Closest 10°C (allowing 30°C increments)	Actual Celsius
Candy	200°F	90°C	(94°C)
	240°F	116°C	(115.5°C)
	250°F	120°C	(121°C)
	300°F	150°C	(149°C)
	325°F	160°C	(163°C)
Deep Fat Frying	375°F	160°C	(190°C)
	400°F	210°C	(205°C)
	450°F	230°C	(232°C)
	500°F	260°C	(260°C)

3.3.1 Temperature for Baking and Roasting

Round the temperature in Celsius to the nearest 10. For example, if a baking temperature of 325°F is needed, the equivalent in Celsius is 163°C; rounding to the nearest 10 would give 160°C.

Figure 2.9 Oven Chart for Baking

Oven	Gas with thermostatic control up to 9	Gas with thermostatic Control up to 12	Electric °F	Electric °C
Very hot	8 – 9	10 – 11	450 – 500	230 – 260
Hot	6 – 7	9 – 10	400 – 450	200 – 230
Fairly Hot	5	8	350 – 400	170 – 200
Moderately hot	3 – 4	6 – 7	300 – 350	150 – 170
Slow	1 – 2	3 – 5	250 – 300	120 – 150
Very cold.	¼ - ½	1 – 2	200 – 250	90 – 120

3.3.2 Simple Test for Temperature in Local Ovens: Example Swish Oven or Anthill Oven

1. Heat the oven by the method suitable for each particular type of food
2. Place a piece of white paper in the oven for 2 – 3 minutes. If the paper is:
 - Black - Oven too hot
 - Dark brown - very hot
 - Golden brown - Hot

- Light brown - moderately hot
- Light biscuit - Slow

Figure 2.10 Other useful Temperatures

⁰ C	⁰ F	Food commodities.
-18	0	Storage for frozen goods
0	32	Freezing point
1	33.8	Storage of fresh fish
2	35.6	Storage of fresh meat and poultry
5	41	Normal refrigeration temperature
7	44.6	
8	46	Storage for fresh vegetables
10	50	
37	98.4	
76	168.8	Hollandaise sauce.
93	119.4	Coagulation of eggs; making Sauce Anglaise
100	212	Poaching temperature
160	320	Boiling temperature
180	356	Sugar for glazing
		Caramelisation of sugar.

4.0 CONCLUSION

In this unit, metric system is explained along side methods of converting measurement to metric. Metric conversion for liquid is discussed with the abbreviations used.

It is concluded that worst disaster for a cook is to run short of food that is quantity and minimum allowed for each person is discussed.

Pan sizes and linear measurement which enables cook to know the actual amount of content capacities of the pan is explained with some examples. Also, actual temperature needed for baking and roasting in Celsius which is based on freezing point 0⁰C and boiling point 100⁰C is discussed.

5.0 SUMMARY

Metric system which is the measurement based on metric and kilogram is discussed with the one used in the kitchen which is millilitre, litre, gram and kilogram for weight, millimetre and centimetre for linear measurement along with method the used to convert measurement to metric which are of 2 types i.e. soft and hard or solid conversion).

Metric measurement for liquid and dry volume and the equipment with standard size is explained.

Metric conversion to liquid measure like:

1L = 10 decilitres = 100 centilitres = 1000 millilitres and the common abbreviations used are also explained with the table of conversion of fluid ounces to millilitre e.g. 1oz = 25ml, 2oz = 57ml.

Approximate quantity to be served per individual is also discussed with some Illustrations.

Soup = 1 pint (1/2 litre) for 3 people.

Fish = 200 – 250z per person

A length measure is also explained with metric length and empirical equivalent.

1m = 100cm = 1000ml = 39.37 inches.

1mm = 0.39 inch, 1/25 inch.

Pan sizes and linear measurement along with customary unit and metric unit is explained. Also, volume capacities for cake-pan is discussed. e.g. rectangular pan = 8 x 8 x 2 inches = 6 cups.

Cooking temperatures, conversion of Fahrenheit to Celsius in oven temperature for baking and roasting and actual Celsius were treated. Rounding off of equivalent Celsius to nearest 10⁰C is compulsory. Oven chart for baking with varying thermostatic control for various conditions (e.g. very hot, hot, fairly hot, very cool) in electric Fahrenheit or Celsius is discussed.

Finally, simple test for temperature in local oven methods and other useful temperature for various food commodities were also explained.

In the next study unit, we shall discuss herbs, spices and condiments.

6.0 TUTOR-MARKED ASSIGNMENTS

1. Convert the following ounces to grammes
 - a. 8 ³/₄ ounces.
 - b. 17 ¹/₂ ounces
 - c. ¹/₄ ounces
 - d. 35 ounces
 - e. 3 ¹/₂ ounces
2. Describe how to test for baked products using the local oven.

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UNIT 3 HERBS, SPICES AND CONDIMENTS

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1.0 INTRODUCTION

Herbs, spices and condiments are plant resources that contain nutrients for healthy development of our body. They are both locally available and can be used with other recipes to prepare delicious menus. With ones meagre income, one can provide good food sufficiently to protect us from illness which can lead to premature death. Such menu include bitter leaf soup, garlic stew, ginger and garlic drinks, etc.

Herbs, spices and condiments cover a wide range of vegetable substances with pungent flavour, pleasant smell and volatile oils which make them very useful flavouring agents in culinary art. Traditionally, they perform both medicinal and culinary purposes, they have no food value but are important from a nutritive view point in aiding digestion because they stimulate the flow of gastric juice.

Herbs may be fresh but majority are dried. This is to ensure a continuous supply of the herbs in the markets across the country. Herbs contain volatile oil which gives them their extensive smell and flavour. They are simple to grow and where possible, any well ordered kitchen could have its own fresh herbs patch.

The primary function of spices in food is to improve the flavour of the dish. Spices such as cloves, African black pepper, Cinnamon, etc because of their volatile oil contents impact various flavour to the food. This appeal to the senses of smell therefore rendering the food more palatable. Some spices are used to give colour to foods and some are used as thickening agents for the preparation of curries.

The primary quality that is commonly looked for in 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 and flavoured. It is therefore only when pleasing to the eye and palate that food becomes fully acceptable.

Besides enhancing the flavour and aromas, herbs and spices have a physiological action beneficial to our system. They act as a stimulus to the digestive system and help digestion in many ways. 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 herb and spice has medicinal properties. E.g. the effect of cloves on digestion, e.g. clove oil stimulates the flow of gastric juices and is non-injurious to the lining of the stomach; also the oil of cloves is used in dentistry to soothe tooth aches and its antiseptic properties are well known. Garlic has been indicated in the treatment of numerous diseases such as haemorrhoid, rheumatism, dermatitis, abdominal pains, cough, loss of appetite, etc. Ginger tea is used commonly to ease an ailing stomach. Spices are also used as fragrance. Owing to modern techniques, most spices such as garlic, onions and ginger have now been made obtainable in powdered and liquid form.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

- Define herbs, spices and condiments
- Explain the food value of herbs, spices and condiments.
- Describe the various uses of herbs, spices and condiments in cookery
- Identify various types of herbs, spices, condiments available in the catering industry.
- Distinguish between the local herbs, spices and condiments and imported ones.

3.0 MAIN CONTENT

3.1 The Realm of Herbs

Herbs are plants with leaves, seed and flowers used for flavouring food, medicine, or perfume. There are about thirty known types of herbs, approximately twelve are generally used in cookery. Herbs are used fresh, but the majority are dried so as to ensure a continuous supply throughout the year. The leaves of herbs contain an oil which gives the characteristic smell and flavour. They are simple to grow and where possible any well ordered kitchen should endeavour to have its own fresh patch.

Dried herbs are obtainable in lb or kg bags and in packets. Herbs have no food value but are important from a nutritive point of view in aiding digestion because they stimulate the flow of gastric juices.

These are the twelve most commonly used herbs: Bay leaves, Celery Seed, Chervil, Chives, Marjoram, Mint, and Parsley, Rosemary, Sage, Tarragon, Thyme and Lovage.

3.1.1 Importance of Herbs, Spices and Condiments

Herbs, spices and condiments are usually added to food as to improve the flavour, appearance, texture and preserve the food. By improving the flavour and texture of foods, herbs and spices excite the appetite and increase the flow of the digestive juices thereby making the food more easily digested. It is important to mention that too much of either of them can spoil a dish. It is therefore advisable to use them sparingly.

Herbs, spices and condiments are used in food preparation for the following reasons:

- To improve the flavour of the food
- To act as a tenderizer
- To impart pleasant aroma in food and also for garnishing

3.1.2 Classifications of Herbs, Spices and Condiments

Herbs, spices and condiments can be classified into two main groups:

- (a) Natural
- (b) Artificial

Natural herbs and spices

Are those used directly as derived from the plants without subjecting them to any industrial processing. Examples of natural herbs are African

lemon grass, bitter leaf, tea bush (efirin). Some natural spices are African nutmeg, African black pepper and ginger. Examples of condiments are different types of red pepper, onions and mustard seed.

Artificial herbs, spices

Are those that are produced industrially after some processing e.g. Curry, thyme, sesame, etc.

3.1.3 Uses of Herbs

- i. Bay leaves:** - Bay-leaves are the leaves of the bay laurel or sweet bay trees or shrubs. They may be fresh or dried and are used for flavouring many soups, sauces and stews.
- ii. Celery Seed:** - This is dried and used for flavouring soups, sauces, and stews. Fresh celery should be used for white soup or sauce to avoid discolouration. When celery seed and salt are ground together, it is known as celery salt.
- iii. Chervil:** - Chervil has a small, neatly shaped leaves with a delicate aromatic flavour. It is best used fresh, but may also be obtained in dried form. Because of its neat shape, it is used for decorating chaud-froid work. Chervil is also one of the finest herbs, the mixture of herbs can also be used in many culinary preparations
- iv. Chives:** - These are a bright green member of the onion family resembling a coarse grass. It has a delicate onion flavour. It is used for flavouring salads and horsd'oeuvre and should be used fresh.
- v. Marjoram:** - Marjoram is a sweet herb which may be used fresh in salads and when dried, can be used for flavouring soups, sauces, stews and certain stuffing's.
- vi. Mint:** - there are many varieties of mint. Fresh springs of mint are used to flavour peas and new potatoes. Fresh or dried mint may be used to make mint sauce, or mint jelly for serving with roast lamb. Another lesser known mint for the kitchen is apple mint.
- vii. Parsley:** - This is the most common herb and has numerous uses for flavouring, garnishing and decoration of a large variety of dishes. It is generally used fresh, but may be obtained in dried form. When garnishing deep fried fish, it is advisable to fry whole heads of fresh parsley till crisp.
- viii. Rosemary:** - Is a strong fragrant herb which should be used sparingly and may be used fresh or dried for flavouring sauces, stews and salads.

- ix. **Sage:** - Sage is a strong bitter, pungent herb which aids the stomach to digest rich fatty meat and is therefore used in stuffing's for duck, goose and pork
- x. **Tarragon:** - This plant has a bright green attractive leaf. It is best used fresh, particularly when decorating chaud-froid dishes. Tarragon has a pleasant flavour and it is used in sauces, one well-known example is Béarnaise. It is one of the fine herbs and as such is used for omelettes salad, fish and meat dishes.
- xi. **Thyme:** - Thyme is a popular herb and it is used fresh or dried for flavouring soups, sauces, stews, salads, vegetables and stuffing's.
- xii. **Lovage:** - Lovage leaves have a strong celery-like flavour when finely chopped, they can be used in soups, stews, sauces and salads.
- xiii. **Fine Herbs (Fines Herbs)**
This is a mixture of fresh herbs, usually chervil, tarragon and parsley, which is referred to in many classical cookery recipes.

3.1.4 Commonly Used Local Herbs

There are varieties of local herbs used within Nigeria. They are: - bitter leaf, tea bush, garlic, onions and African lemon grass

(1) Bitter leaf (veronica Anyadanna)

This is called Ewuro in Yoruba. It is a large shrub which only grows in the tropics. It is said to be botanically related to lettuce, chicory and daisies.

Bitter leaf is easily grown and is also readily available in the market either as fresh leaves or washed and scrubbed.

It can also be dried for storage and used as a vegetable in stews often with egusi. It gives a bitter mildly astringent quality to dish. It is also widely used medicinally.

(2) Tea Bush (Occimum Cratissm) Benin (Ihiri)

Igbo – Nchaawu and called Efirin in Yoruba. The leaves are used in variety of ways. It is either used as salad or as a vegetable or cooked with egusi soup as done in some parts of Kwara and Kogi States. It is also used in the flavouring of meat. The leaves are widely believed to aid digestion.

(3) Onions (*Alium Cepa*)

It is known as *alubolsa* in the southern part of the country. This is closely related to garlic. Onions are added to soups, stews, rice dishes and others. There are only a few foods that can be cooked with onions. Onions are used in boiling meat to flavour and tendering it. It has been found to be effective against gastro intestinal cancers. Onion Contain vitamins C and A.

(4) Garlic (*Alium Sa Tirum*)

This is popularly known as *AAYU* in the southern part of Nigeria. This specie is closely related to onions. Garlic has a strong flavour when cooked with meat, poultry and even bush meat. It is used as a medicinal herb to control high blood pressure.

(5) African Lemon Grass

This is called *Koko Oba* by the Yoruba, *Achara* by the Igbo and the Hausa gyanne. This plant is easy to cultivate and is taken as tea in some areas. It is used in preparing pottage and soup in other areas. It also serves as local deterrent to snakes and flies.

3.2 Spices

Spices are natural products, obtained from the fruits, seed, roots, flower or the bark of a number of different trees or shrubs. They contain oil which aids digestion by stimulating the gastric juices. They also enhance the appearance of food and add a variety of flavours. As spices are concentrated in flavour, they should be used sparingly. Otherwise they can make food unpalatable. Most spices are grown in the Indies and the far East. There are some local spices used in Nigeria.

3.2.1 Uses of Spices

- (i) **All Spice or Pimento:** This is so called because the flavour is like a blend of cloves, cinnamon and nutmeg. It is the unripe fruit of the pimento tree which grows in the West Indies. All spice is picked when still green and dried when the colour turns to reddish brown. All spice is ground and used as flavouring in sauces, sausages, cakes, fruit pies and milk puddings. It is one of the spices blended for mixed spice.
- (ii) **Anise:** This is also known as sweet cumin and has a sweet aniseed flavour. It is used for fish, sweets, creams and cakes.

- (iii) **Anise (pepper):** A strong hot flavoured red pepper.
- (iv) **Anise (Star):** Stronger than anise, this has a slight liquor flavour. Used in Chinese cookery with pork and duck.
- (v) **Cloves:** Cloves are the unopened flower buds of a tree which grows in Zanzibar, Penang and Madagascar. The buds are picked when green and dried in the sun, when they turn to a rich brown colour. They are used for flavouring stocks, sauces. Cloves may be obtained in ground form and as such they are used in mixed spice.
- (vi) **Cinnamon:** Cinnamon is the bark of the small branches of Cinnamon shrub. The inner pulp and the outer layer of the bark are removed and the remaining pieces dried. It has a pale brown colour and is obtained and used in stick or powdered form. It is mainly used in bakery and pastry work.
- (vii) **Nutmegs and Mace:** The tropical nutmeg tree bears a large fruit like apricot which when ripe, splits. Inside is dark brown with a bright red net-like covering which is the part that becomes mace. Inside the nut is the kernel in which is the nutmeg. Although the two spices come from the same fruit, the flavour is different. Mace is more delicate and is used for flavouring sauces and certain meat and fish dishes.

Nutmeg is used in sweet dishes (particularly milk puddings) sauces and some potato dishes and pastries. It is also used in mixed spice.
- (viii) **Coriander:** Is a pleasant spice obtained from the seed of an annual plant grown chiefly in Morocco. It is yellowish brown in colour and tastes like a mixture of sage and lemon peel. It is used in sauces, curry powder and mixed spice.
- (ix) **Caraway:** Caraway seeds come from a plant grown in Holland. The seeds are about ½ cm long, shaped like a new moon and brown in colour. Caraway seeds are used in cake and certain breads, cheese and confectionary. Also for flavouring certain liqueurs such as Kummel.
- (x) **Ginger:** Is the rhizome or root and is reed-like plant grown in the far East. The root is boiled in water and sugar syrup until soft. Ground ginger is used mainly for pastry and bakery work and for mixed spice.

- (xi) **Turmeric:** This grows in the same way as ginger and it is the rhizome which is used. It is without any pronounced flavour, its main use being for colouring curry powder. It is ground into fine powder after which the colour is bright yellow.
- (xii) **Saffron:** The stigmas from crocus is known as saffron crocus (grown in Spain). The saffron crocus are dried and form saffron which is a flavouring and colouring spice. It is used in soups, sauces and particularly in rice dishes, giving them a bright yellow colour and distinctive flavour. Saffron is very expensive as it takes the stigmas from approximately 4000 Crocus flowers to yields 30grams
- (xiii) **Chillies and Capsicums:** These are both from the same family and grow on shrubs. They are bright red and are used in pickles and for red pepper. The larger kind is called capsicums; they are not so hot and, when ground are called paprika. This is used for a Hungarian type of stew known as goulash.

3.2.2 Basic Ingredients Used for Making Curry Powder and Mixed Spices

Curry Powder

Ingredients for a typical curry Powder:

2 parts bay leaves	3 parts ginger
3 parts chillies	2 parts nutmeg
3 parts saffron	2 parts garlic
3 parts caraway	40 parts coriander
3 parts cloves	3 parts all spice
4 parts cinnamon	4 parts mace
4 parts mustard	4 parts pepper
20 parts turmeric.	

Ingredients for mixed spices:

4 parts all spice	4 parts coriander
4 parts cloves.	1 part cloves
4 part cinnamon	1 part ginger

3.2.3 Locally Used Spices

Some of the spices locally used in Nigerian menu are:

- (i) Ginger

- (ii) Pepper
- (iii) African Black pepper
- (iv) Cloves
- (v) Africa Nutmeg
- (vi) Eeru

1. Ginger (*Singuber Officinale*)

It is known as *Atale* in Yoruba land while the Hausa call it *Chita*. This spice is the root or rhizome of a red-like plant. The roots are used fresh or dried and ground on meat, moin-moin, in chicken dishes, etc. It is also used for pastry and bakery work and it is used in the preparation of drinks like kunu and sobo. It is used medicinally for catarrh, tooth ache and sour throats.

2. Red Pepper (*Capassicun*)

There are many varieties of red pepper. Red peppers are available all year round and it gives colour, thickening, flavour and hotness to foods. Some of the common peppers are ata rodo, shombo, ata wewe and tatase.

3. African Black Pepper (Igbo – *Oziza*, Hausa – *Mansow*)

This is commonly called iyere among the Yoruba's and it is one of the members of the pepper corn family. When dried, it is a black round seed like that of okro and it has olive green/red colour. It can be found in the market during the rainy season. This seeds can be made into powder and used for soups and sauces. When powdered, it is also added to other ingredients to cure tonsillitis

4. Cloves

It is popularly called Kannafuru. The clove is a very old and important spice. Its name was coined from the Latin word *CLAVUS* and a French word *CLOU*, both meaning nail because of the nail-like shape. Cloves are ground and used alongside other spices in the making of soups, drinks and in the seasoning of roast dishes.

5. African Nutmeg (*Nutmeg and mace*)

The Yoruba call it Ariwo, the Igbo call it Ehuru and Hausa call it Gujiya Dallian. The nutmeg fruit resembles an apricot in size and shape. The coat has a thin covering which dries into mace. Although the aroma of the mace is similar to that of nutmeg, they have separate uses. Nutmeg is

grounded and used in powdered form for soups, stews and also in making cakes, puddings and sweets.

6. Eru in Yoruba (Sylopia acthipea)

This is called Uda in Igbo, Hausa calls it Kimba. Eru is the cluster of long black seed pods, more or less constricted between internal seeds. The long pod are broken in several places or crushed to enable the flavoured set to be broken. It is used for pepper soup when made in powdered form with other spices. It is also used as medicine to cure malaria and also added to black soap to cure spots and rashes on the body.

3.3 Condiments

Condiments are used as additional seasoning at the table during meals. They are arranged permanently on the dining table for use when eating. Condiments include salt, pepper, cayenne pepper, paprika, mustard and vinegar.

3.3.1 Types and Uses of Condiments

1. Salt (Sodium Chloride)

Is essential for stabilizing body fluids and preventing muscular cramp. Salt is used for curing fish such as herrings and haddocks and for cheese and butter making. Salt is also used for pickling of foods, and in the cooking of many dishes and as a condiment on the dining table. Salt must be stored in a cool dry place as it readily absorbs moisture. It should be kept in airtight packets, drawers or bins.

2. Pepper

Is obtained from black pepper corns which are the berries of tropical shrubs. White pepper corns are obtained by removing the skin from the black pepper corn. White pepper is less pungent than black and both may be obtained in ground form. Green pepper corn are fresh unripe berries, milder than dried pepper corns, available frozen or in tins. Pink pepper corns are softer and milder than the green pepper corns, available, preserved in vinegar. Ground pepper is used for seasoning many dishes and as a condiment on the table.

3. Cayenne pepper

This is red pepper used on savoury dishes and cheese straws. It is a hot pepper which is obtained from grinding chillies and capsicums.

4. Paprika

Is a bright red mild pepper used in goulash. Mustard is obtained from the seed of the mustard plant. It is sold in powdered form and it is diluted with water, milk or vinegar for table use or sold ready mixed in jars. A large variety of continental mustards are sold as paste in jars, already mixed with herb and wine vinegars.

5. Vinegar

Malt vinegar is made from malt which is produced from barley. Artificial, non-brewed, poor or limitation vinegars are chemically produced solutions of aseptic acid in water. They are cheaper and inferior to malt vinegar. Having a pungent odour and a sharp flavour. Spirit vinegars are produced from potatoes, grains or starchy vegetables, but they do not have the same flavour as malt vinegar. Red or white vinegars are made from grapes and are more expensive and have a more delicate flavour than the other vinegars. Vinegar is used as a preservative for pickles, roll mops and cocktail onions and as a condiment on its own or with oil as a salad dressing. It is used for flavouring sauces such as mayonnaise, and in reduction for sharp sauces e.g. sauce piquante, sauce disable.

3.3.2 Preservation and Storage

Herbs, Spices and condiments can be preserved either by drying or freezing. It should be dried as rapidly as possible away from direct sunlight. After drying, the leaves are then crushed into powder and stored in airtight glass or plastic containers. For freezing, herb leaves are washed, patted dry.

SELF ASSESSMENT EXERCISE

Distinguish between herbs, spices and condiments.

4.0 CONCLUSION

This unit has discussed generally about herbs, spices and condiments, including the classification and uses of herbs, spices and condiments. We also dealt with the commonly used local herbs and spices in Nigerian menu. We also discussed the type of condiments, the basic ingredients used for making curry powder, and mixed spices. Finally, preservation of herbs, spices and condiments were also discussed.

5.0 SUMMARY

Herbs, spices and condiments are important in the preparation of our meal because they contain nutrients for healthy development of our body. Herbs, spices and condiments are classified into natural e.g. lemon grass, bitter leaf, etc. Artificial, e.g. curry, thyme, etc. Herbs, spices and condiments are added to food to improve the flavour, appearance, texture and preservation. We so looked at the way of preserving and storing herbs, spices and condiments.

In the next study unit, we shall discuss vegetables and salads.

6.0 TUTOR-MARKED ASSIGNMENT

Into how many classes can herbs and spices be grouped? Name them and give two examples of each class.

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UNIT 4 VEGETABLES AND SALADS

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1.0 INTRODUCTION

Vegetable can be define as a plant cultivated for consumption - roots, stems, leaves or flowers. Vegetables are among the highly perishable food stuffs and are seasonal. However, through the advancement in science and technology, they can now be kept for a reasonably long time and are made available during the off seasons.

Vegetables are an excellent source of vitamins and minerals and they should be prepared as near to the time of cooking as possible so as to retain both flavour and the vitamin content. Therefore, serve them as soon as they are cooked and it is better to err on the side of undercooking them slightly than to cook them for too long. The vitamin content can be destroyed by overcooking, so, can the colour. Fresh vegetables are important foods both from an economic and nutritional point of view. Vegetables are important part of our diet. Therefore, the recognition of quality, purchasing, storage and efficient preparation and

cooking is essential if the nutritional content of the vegetables is to be conserved.

Salad can be made from a wide variety of vegetables, both raw and cooked. Fruit, nut, cheese, herbs and other ingredients may be added to give extra colour and flavour. Although lettuce frequently forms the foundation of salads, there are few vegetables and edible plants that may be used in salad making.

Originally, salad consists of uncooked edible leaves of various plants but today, the name is applied to mixtures which may include cooked and uncooked, herbs, fruits, meat and fish. To ensure that all vegetables and fruits used are in perfect condition, leafy salad plants should be young, crisp and freshly gathered. All the vegetables used for salad must be properly washed in several waters or under running water.

If stored for any length of time, they lose vitamin C and become limp and lacking in flavour and texture. Salad can be served in simple form consisting of only one or two ingredients such as lettuce, endive, chicory, tomatoes, cucumber, watercress and beetroot.

Salad may be dressed in glass, china, wooden bowls are often presented in crescent-shaped china dishes.

Simple and composed salads are suitable for serving with cold buffet dishes, with roast poultry, meat and game, especially where these are second meat dish. It is usual to serve a salad but not accompanying hot vegetables. A nicely dressed simple salad is an ideal accompaniment to grilled meats.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- Explain the food value of vegetables and salad and classify them into the various groups.
- Explain the various factors to be considered when choosing the different groups of vegetables
- Identify the basic ingredients used for salad making
- Describe the different dishes that can be prepared from vegetables and salads.

3.0 MAIN CONTENT

3.1 Nutritive Value of Vegetables

Vegetables, especially the leafy ones are rich in B-complex vitamins and also contain a fair amount of vitamin C. Vegetables are also rich in carotene which is a precursor to Vitamin A. They are good sources of crude fibre. The crude fibre has the property of absorbing water. They therefore add bulk to stool and hence assist in easy defecation. Thus, vegetables often serve as a mild laxative. Vegetables are, in addition, good sources of the mineral elements notably iron, calcium, phosphorous, sodium, and sulphur. However, vegetables often interfere with the proper utilization of iron and calcium found in them. They are low in energy content being deficient in fat and carbohydrate especially the leafy vegetables. They are not highly proteineous, hence they should be complemented with other sources of protein.

Figure 4.1 Nutrient compositions of some Vegetables (mg or 100g edible portion).

Vegetable (raw)	Moisture (%)	Food Energy	Protein (g)	Fat (g)	Calcium (g)	Iron (mg)	Thiamine (mg)	Riboflavin (mg)	Niacin (mg)	Ascorbic Acid (mg)
Bitter leaf	83	52	5.3	0.4	145	5.0	-	-	-	-
Baobab leaf	77	69	3.8	0.3	402	-	-	-	-	-
Cassava leaf	72	91	7.0	1.0	303	7.6	0.25	0.60	2.4	311
Okra	82	36	2.1	0.2	84	1.2	0.04	0.08	0.6	47
Okra leaves	82	56	4.4	0.6	532	0.7	0.25	2.80	0.2	59
Cocoyam leaves	-	-	-	-	409.10	1.21	0.19	0.49	2.06	161.00
Amararithus (tete)	-	-	-	-	190	4.6	0.12	0.19	0.57	68.00
Amararithus (tete elegun)	-	-	-	-	5.94	25.03	-	0.31	1.83	81.00
Melon seed (egusi)	6	567	25.8	49.7	53	7.3	0.10	0.12	1.4	-

3.1.1 Classification of Vegetables

Vegetables are classified for culinary purpose as being either root or green. Root vegetables include carrot, onions, turnips, swedes, spinach, potatoes, Jerusalem artichokes and beetroot. Green vegetables include cabbage, lettuce, carli flower, sprouts, spinach, water leaf, peas, beans, asparagus, chicory, celery and seakale. Certain fruits such as the tomato, eggplant and marrow are also classified as green vegetables. Other miscellaneous vegetables are cucumber, pumpkins, peppers, garden egg, okra, etc.

The various types of vegetables are roots, tubers, Bulbs, leafy, Brassicas, pods and seeds, fruiting, stems and shoots and mushroom and fungi.

Figure 4.2 Types of vegetables

Roots	Tubers	Bulb	Leafy	Brassicas	Pods and Seeds	Fruiting	Stems and shoots	Mushroom and Fungi
Beetroot Carrots Celeriac Horseradish Mooli Parsnips Radish Salsify Scorzonera Swedes Turnips	Jerusalem Artichokes Potatoes Sweet potatoes Yams	Garlic Leaks Onions Shallots Spring onions	Chicory Chinese leaves Corn salad Lettuce Mustard and cress Radiccio Sorrel Spinach Swiss card Watercress	Broccoli Brussels sprouts Cabbage Calabrese Cauliflower Curly kale Spring greens	Broad beans Butter or lima beans Runner beans Mange-tout Okra Peas Sweet corn	Aubergine Avocado Courgette Cucumber Goulds Marrow Peppers Pumpkin Squash Tomatoes	Asparagus Beans Cardoon Celery Endive Globe vartichokes Kohlrabi Sea kale	Ceps Chanterelles Horn of plenty Morels Mushrooms.

3.1.2 The Grading and Quality of Fresh Vegetables

There are four main quality classes

- Extra class – for product of top quality
- Class I – for produce of good quality
- Class II – for produce of reasonably good quality
- Class III – for produce of low marketable quality

The quality of root vegetables is determined by their firmness and freedom from blemish... Onion should show no sign of sprouting, carrot should not be too large and turnips should show no signs of worm holes. Potatoes should show no signs of damage and green vegetables should

have a crisp fresh look about them. Discoloured limp leaves in cabbage cauliflower, broccoli, spinach and sprouts are signs of staleness.

3.1.3 Factors to Consider When Choosing Vegetables

Leafy vegetables

- The colour should be attractive and they should look crisp and fresh.
- The mid-rib of large leaves e.g. cocoyam leaves should snap sharply when broken across.
- They should be free from insect attack
- The leaves should not drop when the bunch is shaken, if many leaves drop when shaken it shows that the vegetable is not fresh.
- Miscellaneous vegetables:
- They should not be over-ripe and should be free from insect attack. e.g. maggots
- They should be fresh. Okra for example should snap sharply when broken.
- Onions should be firm and well covered with skins.

Root vegetables

- They should be free from soil
- The skin should be smooth, unwrinkled and firm.
- They should be free from signs of decay.
- They should be free from bruises caused by cut or spades.
- Medium-sized vegetables should be chosen in preference to very small or very large ones.

3.2 Methods of Cooking Vegetables

The purposes of cooking vegetables are:

- Because they are very fibrous, vegetables are cooked to make them more digestible by softening the cellulose and starch grains in starchy vegetables.
- To make them more palatable and appetising.

3.2.1 Root Vegetables

Root Vegetables can be cooked by any of the following methods: boiling, frying, baking, roasting or steaming, mashing or creaming. The method of cooking will depend on the type of vegetable and purpose for which it is meant. However, when cooking root vegetables, the

following precautions and steps should be taken since most of the food value contained in them may be lost through bad choice of preparation and cooking:

- The peeling should be done very carefully and thinly to prevent loss of the edible part.
- The peeled vegetable should not be soaked in water for a long time before cooking. They should be soaked in salted water, immediately after peeling so as to prevent discolouration.
- Sweet potatoes, cocoyam and yam may be cooked with their peel on. This method saves the loss of some of the nutrients that may occur with peeled ones.
- An iron pot should be avoided in cooking as this tends to discolour white root vegetables. Aluminium and enamel pans are more suitable.
- When cooked, the vegetables should be removed from the water immediately or they may become sodden and watery and lose their flavour and colour.
- Root vegetable should be boiled gently to prevent them from breaking up.
- Vegetables should be served immediately if possible, as cold vegetables are rather insipid to taste.
- As much as possible, the conservative methods of cooking should be used for vegetables. This is because these methods of cooking help to conserve the nutrients retain the flavour, maintain the shape and size and little heat are required. Examples of such conservative methods are:
 - (a) Baking – only moisture is lost.
 - (b) Stewing – the liquid used for cooking should be used in the sauce
 - (c) Steaming

3.2.2 Leafy Vegetables

The following rules should be observed when cooking leafy vegetables:

- Wash leaf well several times without breaking so as to remove soil and other dirt.
- Trim well, discard dead leaves, and pluck fresh leaves from stalk.
- Cut cabbage into four and soak for a short time to crisp the pieces. Add little salt for the last 15 minutes to remove grubs.
- Shred cabbage just before cooking. Large green vegetables may be shredded, but small ones may be cooked whole.
- Pound bitter leaves in a mortar to break up the leaves. Wash several times to remove bitter taste.

- Avoid overcooking vegetables in stews and soups, as overcooking impairs colour and flavour and destroys vitamin C.

1. Cooking Vegetables and Effect of Heat on Vegetables

Approximate time are given for the cooking of vegetables as quality, age, freshness and size all affect the length of cooking time required.

Young, freshly picked vegetables will cook for a shorter time than vegetables allowed to grow older and which may have been stored after picking. In general, all vegetables are to be cooked in cold salted water, with the exception of new potatoes. Those vegetables that grow above the ground are started in boiling salted water, so that they may be cooked as quickly as possible for the minimum period of time so that maximum flavour, food value and colour are retained. There are different ways by which vegetables can be cooked. They can be boiled, steamed, or cooked in a pressure saucepan and stewed. All vegetables cooked by boiling may also be cooked by steaming. The vegetables are prepared in exactly the same way as for boiling, placed into steamer trays, lightly seasoned with salt and steamed under pressure for the minimum period of time in order to conserve minimum food value and retain colour.

Leafy vegetables are usually cooked in conjunction with melon. This type is usually referred to as efo elegusi (Yoruba) meaning vegetable with melon. Alternatively, the vegetable can be cooked with additional seasonings and spices. The method chosen will depend on the purpose for which the vegetable is meant and the type of dish to go with it. Many vegetables are also cooked raw by the stir-fry method, a quick and nutritious method of cooking.

2. Effect of Heat on Vegetables

Heat has the following effects on vegetables:

- The cellulose and semi cellulose in cell walls softens
- Starchy grains swell and burst
- Vitamins and soluble mineral salts are leached out by water in boiling.
- The addition of bicarbonate of soda to green vegetables destroys vitamin C.
- Vitamin A is soluble at high temperature under pressure and can be destroyed in pressure cooking

3.2.3 Different Cuts of Vegetables

The size to which the vegetables are cut may vary according to their use. However, the shape does not change. The different cuts include:

- Julienne (strips) – cut vegetables into 2 cm (inch) lengths (short julienne); cut lengths into tiny slices. Cut the slices into thin strips; double the length gives a long julienne, used for garnishing e.g. salad, meat, fish, and poultry dishes.
- Brunoise (small dice) – cut the vegetables into convenient size lengths; cut the length into 2mm (1/2 inch); cut the slices into 2 mm 1/12 inch); strips; cut the strips into 2mm (1/12 inch) squares.
- Macedoine (1/2 cm (1/4 inch) dice) - cut the vegetables into convenient lengths; cut the length into 1/2 cm (1/4 inch) slices; cut the slices into 1/2cm (1/4 inch) strips; cut the strips into 1/2 cm (1/4 inch) square.
- Jardiniere (batons) – Cut vegetables into 1 1/2 cm (3/4 inch) Length; cut the length into 3mm (1/4 inch) slices; cut the slices into batons (3 x 3 x 18mm (1/8 x 1/8 x 3/4 inch).
- Paysanne – there are at least four accepted methods of cutting paysanne. In order to cut economically, the shape of the vegetables should decide which method to choose. All are cut thinly: 1cm sided (1/2 inch) triangles; 1cm sided 91/2 inch squares); 1cm diameter (1/2 inch) round; 1cm diameter (1/2 inch) rough-sided rounds.
- Concasse – Roughly chopped, e.g. skinned de-seeded tomatoes are roughly chopped for many food preparations.

3.2.4 Preservation and Storage

1. Preservation

- (a) **Canning:** Certain vegetables are preferred in tin. Carrots, beans, peas, mushrooms, truffles, tomatoes etc are examples.
- (b) **Dehydration:** Onions, Carrot, Potatoes and cabbage are shredded and quickly dried until they contain only 5% water
- (c) **Drying:** The seeds of legumes (peas and beans) have their moisture contents reduced to 10%
- (d) **Pickling:** Onions and red cabbage are examples of vegetables preserved in vinegar.

- (e) **Salting:** Fresh runner beans may be sliced and preserved in dry salt.
- (f) **Freezing:** Many vegetables such as peas, beans, sproats, spinach and cauliflowers are deep frozen.

2. Storage

Root vegetables do not deteriorate quickly and may be bought in bulk. Green vegetable show mark of deterioration very quickly and as a general rule should be purchased fresh daily. Successful storage for all vegetable required a cool dry, shaded room kept at an even temperature of approximately 8⁰C. The vegetables should be placed on racks or shelves raised from the floor to ensure adequate ventilation. Frozen vegetables should be stored in a deep freeze cabinet at a temperature of 18⁰C or less and should be used in rotation.

3.3 Salads and Salad Dressing

The preparation of raw and or cooked foods into a wide variety of cold items is referred to as salad. They are made from a wide variety of vegetables, both raw and cooked. The purpose of making salad is to add variety to the menu and diet by preparing food that has eye appeal, thus making it palatable and digestible.

Salads, when produced, add variety of flavours and textures and provide food that is particularly suitable for hot weather. Another purpose is for it to be conveniently wrapped for takeaways.

The basic characteristics of salad are that it must be clean and fresh in appearance; presentation should be eye appealing. Neither too colourful nor over decorative, therefore stimulating appetite. Nutritional value is also obtained because of the mixture of raw and cooked foods. Salad may be served as an accompaniment to hot and cold foods and as dishes in their own right. They can be served for lunch, tea, high tea, dinner, supper and snack meals.

Salads may be divided into two sections:

- Simple, using one ingredient;
- Mixed or composite, using more than one ingredient.

Some salads also form part of a composite hors-d'oeveure.

3.3.1 Salad Ingredients

To prepare salad, the ingredients include:

- (i) Beetroot: peel cooked beetroot and cut into thin slices. If small, grate or dice. If large, sprinkle with salt, pepper and a little sugar, then cover with vinegar, or a mixture of half vinegar, half water.
- (ii) Brussels sprouts – prepare, wash and shred finely.
- (iii) Cabbage – choose a firm, white cabbage, prepare and wash, then drain well and cut in half or quarters to remove any hard woody stalk. Place cut side down on a chopping board and shred very finely with a sharp knife.
- (iv) Carrot – peel or scrape, then grate on a coarse grater just before serving.
- (v) Cacili flower – break into small springs or flowerets, wash well and serve raw.
- (vi) Celery – separate the sticks and wash them well. Cut into even sized lengths or leave small hearts of celery whole
- (vii) Chicory – remove any coarse outer leaves, trim off the root, then cut in half length ways and wash under cold running water.
- (viii) Cucumber – wrap the skin, then slice the cucumber very finely with a sharp knife. Do not peel.
- (ix) Endive – trim off the root end and remove the coarse outer leaves, separate the remaining leaves, wash and drain well.
- (x) Lettuce- discard discoloured leaves, separate the inner leaves and wash them under a running cold tap or in several changes of cold water. Drain in a sieve, colander or salad basket, or shake them in a clean tea towel. If the lettuce is withered, wash it in cold water, shake lightly to remove excess moisture, then place it in a polythene bag or a bowl covered with a plate and leave it in the bottom of the refrigerator, or any cool place, for an hour. This will help crispen the leaves.
- (xi) Mustard and cress – discard any withered or discoloured leaves, then gather the cress into a bunch and cut off any lower parts of the stem with the scissors. Wash several times under a running cold tap, turning the cress over and pickling out the seeds. Drain well.
- (xii) Radishes – wash off any mud, cut off the leaves, trim the root end and leave a small piece of the stalk if serving them whole, slice very large ones.
- (xiii) Spring Onions – cut off the roots. Remove the outer layer of the skin, trim the leaves down to about two inches of green, rinse in cold water.
- (xiv) Tomatoes – remove stem and wipe tomatoes. Either skin and cut in thin slices or leave the skins on and cut into quarters.

- (xv) Water Cress – Trim the coarse end from the stalks, wash and drain well.

3.3.2 The Various Techniques Associated with Salad Preparation

- (i) Peeling – This is the removal of the outer skin of vegetable. Using a peeler or a small knife according to the thickness of the skin.
- (ii) Chopping – This is cutting into very small pieces (parsley, onions).
- (iii) Cutting – This is using a knife to divide food into required shapes and sizes.
- (iv) Carving – This means cutting meat or poultry into slices.
- (v) Seasoning – This is the addition of salt and pepper
- (vi) Dressing – This can either mean an accompanying salad dressing such as vinaigrette, or the arrangement of food for presentation on plates, dishes or buffets.
- (vii) Garnishing – This is the final addition to the dish, such as quarters of tomatoes added to egg mayonnaise
- (viii) Marinade – A rich spiced pickling liquid used to give flavour and to assist in tenderising meat such as vanision.

3.3.3 General Rules for Making Salad

- (i) All raw salad vegetables should be washed and drained thoroughly and should not be left in water
- (ii) Attention should be given to careful decoration and garnishing of all salads. A good colour balance is essential.
- (iii) Where a number of items are used in the composition of a salad, some thought should be given to the balance of flavours and to the possible duplication of its vegetables elsewhere in the menu.
- (iv) It is usual to flavour salads with various dressings. The ingredients used in the preparation of these dressings are various salad oils, vinegars, lemon juice, cream, fresh herbs, salt, pepper. English and French mustard and sugar. Garlic may be used by rubbing a cut clove around the salad bowl before adding the ingredients or by adding it chopped or pressed to the salad.

3.3.4 Salad Dressing

The dressing is almost as important as the salad. You can vary it as you like, using the basic French dressing recipe, also known as vinaigrette as a start. The dressing should always be offered with any salad.

The essential dressing includes:

- (i) Cream acidulated) dressing
- (ii) Vinaigrette (French) dressing, and
- (iii) Mayonnaise.

These dressings may be varied by the addition of other ingredients:

- **Cream Dressing**

This is the simplest of all and is delicious. Mix cream, lemon juice, salt and pepper together and either serve separately, or top salad with it.

- **French Dressing**

Recipe

3 tablespoons olive, corn vegetable, or blended oil.
1 table spoon tarragon or wine vinegar or lemon juice
¼ teaspoon salt
Good pinch of dry mustard
Freshly ground pepper

Method

Put the seasonings into a small basin and blend with the vinegar or lemon juice. Add oil, beating well with a fork until it makes an emulsion and the dressing looks cloudy. Use at once as the oil and vinegar will separate if allowed standing. Toss the salad well to distribute the dressing evenly. You can make a larger quantity of dressing and keep it in a screw-topped bottle. You must shake the bottle well every time you take some out. The proportion of oil to vinegar varies with individual taste, but the vinegar should always be used sparingly.

- **Mayonnaise**

Recipe

Put 2 egg yolks ½ pint (250ml) olive oil or salad oil 1–2 table spoons wine or tarragon vinegar or lemon juice ¼ teaspoon salt Good pinch dry mustard 2 – 3 twists freshly-ground pepper

Method

Put 2 egg yolks into a small basin, add the seasonings, beating them well, add the olive oil drop by drop very gradually, beating well all the time with an electric or hand whisk. After the emulsion begins to thicken, the oil can be poured in more quickly. Add a few drops of

vinegar when it becomes too thick. This will turn it to the right consistency. When all the oil has been incorporated, add the rest of the vinegar and any extra seasoning that is needed. Mix well again and use.

NB:

If the mayonnaise curdles during the making, put another egg yolk into a basin and the curdled sauce very gradually in the same way as you added the oil to the original yolks. Use extra oil for the increased number of yolks.

3.3.5 Selected Salad Recipes

- **Vegetable Salad**

Arrange bouquets of cooked vegetables, carrot, turnips, peas, beans, etc, around a bunch of cooked cauliflower buds, season with vinaigrette or mayonnaise and finish with chopped parsley.

- **Mixed salad**

Neatly arrange in a bowl, a typical mixed salad would consist of lettuce, tomatoes, cucumber, watercress radishes etc. Almost any kind of salad vegetable can be used. Offer vinaigrette separately

- **French Salad**

The usual ingredients are lettuce, tomatoes and cucumber, but these may be varied with other salad vegetables, in some cases with quarters of egg. A vinaigrette made with French mustard (French dressing) should be offered.

- **Tomatoes Salad**

Any single vegetable, such as tomatoes or cucumber may be sliced and coated lightly with French dressing, plus finely chopped fresh parsley or herbs.

- **Coleslaw**

For 10 portions

Recipe

Mayonnaise 300ml (5/8 pt), white or Chinese cabbage – 500g, carrot – 125 g, onion (optional) 60g.

Method

Trim off the outside leaves of the cabbage:

- Cut into quarters, remove the centre stalk
- Wash the cabbage, shred finely and drain well
- Mix with a fine julienne of raw carrot and shredded raw onion, To lessen the harshness of raw onions blanch and refresh
- Bind with mayonnaise sauce, natural yoghurt or vinaigrette

SELF ASSESSMENT EXERCISE

Classify vegetable into the different groups you know. State the factors to be considered when choosing root and leaf vegetables.

4.0 CONCLUSION

In this section, we learn that vegetables and salad are very good to the body and very nutritive for human. It is excellent for us to know that all the characteristics of vegetables and salad are very essential in choosing a suitable vegetable and also salad.

All the assumptions taken or considered when choosing root, miscellaneous and leafy vegetables are essential in this study.

The cleanliness and hygiene taken in the preparation of vegetable and making of salad make it possible for us to have a very neat consumable vegetables and salads. We now conclude that classification, factors, method of cooking vegetables, effect of heat on vegetables, preservation and storage of vegetables, salad and salad dressing, ingredient in making salad, methods of making salad and salad recipes are very essential and vital in making vegetables and salad.

5.0 SUMMARY

In this unit, we discussed about vegetables and salad, the definition of vegetables and the main ingredient for making salad. The factors to be considered when choosing vegetables i.e. the root, leafy and so on were also highlighted.

The nutritive values of vegetables are also explained in which the leafy vegetable is the one that is rich in vitamin B –complex and a fair amount of Vitamin C. The types and of vegetables which include roots, tubers, bulbs, leafy, Brassica, Pods and seed fruiting, stem and hoots and mushroom and fungi were not left out in this study and also the method of cooking vegetables in order to make them palatable and appetizing

when consuming it. The cuts of vegetables are Julienne, macadoine, Jordinerie, paysanne, concasse.

Also, the effect of heat on vegetables while cooking was discussed. This helps to retain its flavour, food value and colour. The storage and preservation of vegetables were also discussed in this unit. Such preservations include canning, drying, pickling, salting and freezing. Lastly, we discussed about salad and salad dressing. The method to be used, the recipe to be used and the general rules to be followed in making salad.

In the next study unit, we shall discuss fruits and nuts.

6.0 TUTOR-MARKED ASSIGNMENTS

- (1) List the basic ingredients used for making salads.
- (2) Explain the meaning of the following terms
 - a. Peeling
 - b. Chopping
 - c. Cutting
 - d. Dressing
 - e. Garnishing.

7.0 REFERENCES/FURTHER READINGS

Foskett David, et al (2003). *The Theory of Catering*, Hodder and Stoughton Educational: London (10th Edition).

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ANSWER TO SELF ASSESSMENT EXERCISE

- 1a. Roots e.g. carrots, parsnips, turnips.
- b. Tuber e.g. potatoes.

- 2a. Green leaves e.g. waterleaf, cabbage, spinach, amaranthus, lettuce, etc.
- b. Swollen leaves i.e. bulbs e.g. onion.

- 3a. Miscellaneous vegetables e.g. cucumber, pumpkins, pepper, garden-egg, okra, etc.
- b. The following are the factors to be considered when choosing root and leaves vegetables.

LEAVES VEGETABLES

- The colour should be attractive, and they should look crisp and fresh.
- The mid-rib of large leaves e.g. cocoyam leaves, should snap sharply when broken across.
- They should be free from insect attack
- The leaves should not drop when the bunch is shaken. It shows that the vegetable is not fresh.

ROOT VEGETABLES

- They should be free from soil
- Skin should be smooth, unwrinkled and firm
- They should be free from bruises caused by cut or spades.
- They should be free from signs of decay.
- Medium sized vegetables should be chosen in preference to very small or very large ones.

MODULE 2

Unit 1	Fruit and Nuts
Unit 2	Milk and Milk Product
Unit 3	Egg Cookery
Unit 4	Fish Cookery

UNIT 1 FRUITS AND NUTS

CONTENTS

1.0	Introduction
2.0	Objectives
3.0	Main Content
3.1	Classification of Fruits
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3.1.2	Factors to be Considered when Choosing Fruits.
3.2	Methods of Cooking Fruits
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1.0 INTRODUCTION

Fruits can be defined as something that grows on a tree or plant and tastes sweet such as apple, banana, etc. Fruits can also be referred to as the part of a plant, bush, or tree that contains seeds.

Fruits are another group of very important food stuff for human beings. Fresh fruit is refreshing and thirst-quenching. The water and cellulose prevent constipation. Fruit eaten raw is of greater value than cooked fruit, because some of the vitamins present in fruits are easily destroyed by heat, e.g. vitamin C. Fruit that is rich in sugar, e.g. bananas, grapes, sweet oranges, is more nutritive than the non sweet type and is excellent for children. When ripe, fruit may prove irritating to the digestive

system and may be the cause of colic, diarrhoea and other stomach upsets.

Nuts are the reproductive kernel (seed) of plant or tree from which they come. Nuts are perishable and may easily become rancid or infested with insects. Some people have an allergy to nuts which can cause several illness and possible death.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- Identify the various types of fruits and nuts and explain their nutritive value.
- Explain the factors to be considered when choosing fruits and nuts.
- Describe the different methods of preparing fruit
- Explain how to preserve and store fruits and nuts

3.0 MAIN CONTENT

3.1 Classification of Fruits

Fruit for culinary purposes can be classified into two broad groups viz:

A. Fresh Fruits: these include:

- soft fruits, e.g. different types of berries, bananas, guava.
- hard fruits e.g. apple, pears, plumps, melons, mangoes.
- Citrus e.g. oranges, lemons, grape fruit.

B. Dried fruits e.g. figs, apricots, dates, prunes etc.

Figure 5.1 Different fruits and their seasons.

Fruit	Season	Fruit	Season
Apple	All year round	Green gage	August
Apricot	May to September	Lemon	All year round
Avocado pear	All year round	Mandarin	November to June
Banana	All year round	Melon	All year round
Blackberry	September to October	Orange	All year round
Black currants	July to September	Peach	September
Cherry	June to August	Pear	September to March
Clementine	Winter	Pineapple	All year round
Cranberries	November to January	Plum	July to October
Damson	September to October	Raspberry	June to August
Dated	Winter	Red currants	July to September
Fig	July to September	Rhubarb	December to June
Goose berry	July to September	Strawberry	June to August
Grape fruit	All year round	Tangerine	Winter
Grapes	All year round		

Because of the modern storage methods and air transport, the majority of these fruits may be available all year round.

3.1.1 Nutritive Value of Fruit

The nutritive value of fruit depends on its vitamin content. Fruits generally have limited nutritive value. The major nutrient in fruit is ascorbic acid. Almost all fruits contain physiologically significant amounts of this vitamin. Since most fruits are often consumed raw, a large amount of vitamin C present is then consumed. Fruits also contain carbohydrates in form of sugar, cellulose and starch. The cellulose is however indigestible and so adds bulk to the stools. Fruits are thus mild natural laxatives. Fruits also contain pectin which assists in the formation of jollies. Most fruits contain small quantities of carotene and the B group of vitamins. Fruit however, contain little or no protein or fat. Ripe fruits contain no starch as they have been converted to sugar, fructose and glucose are the chief sugar found in fruits. Fruits provide little mineral salts. Fruits contain different types of organic acids. These acids are responsible for the sourness of unripe fruit. During the process of ripening, the concentration of these acids falls and that of the sugars rises. Some acids present in fruits are citric, oxalic, malice, tartaric, etc. The table below shows the Vitamin C content of some fruits.

Figure 5.2 Average Compositions of Fruits (% Composition)

	Water	Protein	Carbohydrate	Fats	Cellulose	Mineral Salts	Vitamins
Fresh Fruits	85.90%	0.5	5.5 – 10.5	0.5	2.5	0.5	A, C, & B
Dried fruits	15.20%	4.2	65 – 75	5.5	5.5	2.4	A

Figure 5.3 Ascorbic Acid, (vitamin C) Content of some Fruits.

Fruit	Ascorbic Acid (mg/100kg)
Avocado	18
Banana	9
Cashew	252
Guava	326
Mango (ripe)	42
Orange	46
Palm fruit (raw)	12
Pawpaw	52
Pineapple	34
Tangerine	28

3.1.2 Factors to Consider when Choosing Fruits

The following are the factors to be considered when choosing fruits:

- They must be fresh
- They must be free from insect infestation
- They must not be over ripe
- They must be firm to touch
- Fruits in season e.g. banana, pawpaw, citrus and carrots are common during the dry season while guava, and mangoes are common during the raining season.
- Hard fruits should not be bruised.

3.2 Methods of Cooking Fruits

With the exception of certain fruits (lemon, shubarb, cranberries), fruit can be eaten as a dessert or in its raw state. Some fruits have dessert and cooking varieties, e.g. apples, pears, cherries and goose berries.

1. Raw Fruit

Most fresh fruits, when thoroughly ripe, are suitable for serving raw. Thus most of the nutrients especially vitamin C are retained and consumed. However, when consuming fruits raw, they must be washed properly. Washing is necessary so as to remove dust, residual soil and

other micro-organisms which may be present the fruit. The washing is then followed by peeling, e.g. banana, mangoes, pawpaw, pineapple, citrus etc.

2. Cooked Fruit

Sometimes fruits are cooked for variety and to make them more palatable, increase their keeping quality, soften cellulose or cook the starch. For example, green apples are cooked so as to improve their starch content.

3. Stewing

Fruits can be stewed in water or cooked in sugar syrup. Those cooked in syrup usually maintain their shape better than those cooked in water. If the sugar concentration is about the same as the concentration of soluble materials in the fruit, the fruit tends to hold its shape during cooking. If, however, the sugar concentration in the syrup is higher than that of the fruit, water is withdrawn from the fruit by osmosis, the fruit shrinks and becomes tough.

4. Baking

Another method used in cooking fruits is baking. For example, apples are prepared for baking by coring and slitting the skin at right angle to the core around the middle of the apple to avoid splitting during baking. For variety, fruits can be baked together with different ingredients.

3.2.1 Effects of Cooking on Fruit

- The vitamin C content is particularly destroyed and may even destroy completely if the cooking is very intense.
- The cellulose is softened and the fruit therefore becomes softer and more digestible.
- Pectin necessary for the setting of jams and jellies is released.
- Mineral salts are leached out into the water but are lost if syrup, made from the cooking water is served with the fruit.
- Cooking destroys bacteria which may be present in the fruit.

3.2.2 Methods of Serving Fruit

Fruit can be served whole, fresh, ripe and raw, while the unripe fruit, sour fruit and fruit with hard seeds may be cooked. The juice can be squeezed out, like citrus fruits and served in cups. Also the juice can be squeezed from the fruit after it has been cooked and then used for

making jelly or the fruit may be cooked to a pulp and sieved for making “fruit fool”. They can also be served in form of salads.

Unripe fruits, sour fruit and fruit with hard seed like berries and guava may be cooked to increase digestibility. Whenever possible, fruit should be served whole in the case of large fruit like pawpaw and pineapple, cut just before serving to prevent the escape of Vitamin C.

3.2.3 Preservation of Fruits

Fruits can be preserved in the following ways:

- a. **Drying:** Apples, pears, apricots, peaches, bananas and figs are dried; plums when dried are called prunes and currants, sultanas and raisins are produced by drying grapes.
- b. **Canning:** Almost all fruits may be canned; apples are packed in water and known as solid packed apples; other fruits are canned in syrup.
- c. **Bottling:** Bottling is used domestically, but very little fruit is commercially preserved in this way; cherries are bottled in maraschino.
- d. **Candied,** glace and crystallised fruits are mainly imported from France.
- e. **Jam:** Some stone fruits and all soft fruits can be used
- f. **Jelly:** Jellies are produced from fruit juice.
- g. **Quick freezing:** Strawberries, raspberries, loganberries, apples, black berries, grape fruit gooseberries and plums are frozen and they must be kept below 0⁰C/32⁰F.
- h. **Cold storage:** Apples are stored at temperatures between 1 – 4⁰C (34 – 39⁰F), depending on the variety of apple.
- i. **Gas storage:** Fruit can be kept in a sealed store room where the atmosphere is controlled; the amount of air is limited, the oxygen content of the air is decreased and the carbon dioxide increased, which controls the respiration rate of the fruit.

3.2.4 Storage of Fruit

- (i) Hard fruits, such as apples, are left in boxes and kept in a cool store.
- (ii) Soft fruits, such as raspberries, should be left in their punnets or baskets in a cold room.
- (iii) Stone fruit are best placed in trays so that any damaged fruit can be seen and discarded.
- (iv) Peaches and citrus fruits are left in their delivery trays or boxes.
- (v) Bananas should not be stored in too cold a place because the skins turn black.

3.3 Food Value of Nuts

Nuts are highly nutritious because of their protein, fat and mineral salts. Nuts are valuable for energy, protein, iron and B vitamins, except for chestnuts and coconuts, which are much poorer in these nutrients.

Nuts lack vitamin A, C and D and most of them are low in calcium (except almonds) and in carbohydrate, but this makes them useful food for diabetics and slimmer.

Nuts are of considerable importance to vegetarians who may use nuts in place of meat. They are therefore a food which builds, repairs and provide energy. Nuts are used whole, ground as meal or as creams or paste (e.g. peanut butter).

3.3.1 Digestibility and Storage

Nuts are difficult to digest unless grated or pounded. If used as a main dish, like pulse, they may lack the savoury taste which stimulates the appetite, but this can be provided with yeast extracts, monosodium glutamate, dried onions, herbs, etc. they are best stored whole or as pastes. Dessert nuts, those with the shell on, are kept in a dry ventilated store. Nuts without shells, whether ground, nibbed, flaked or whole are kept in airtight containers. When milled they do not keep well and can become rancid.

3.3.2 Quality and Purchasing Points of Nuts

- Nuts should be of good size.
- They should be heavy for their size.
- There must be no sign of mildew

3.3.3 Types and Uses of Nuts in Cookery

Nuts are used extensively in pastry and confectionary work and vegetarian cookery. Also for decoration and flavouring. They are used whole, or halves, and almonds are ground, nibbed and flaked.

- i. **Almond:** Salted almonds are served at cocktail parties and bars. Ground, flaked or nibbed almonds are used in sweet dishes and for decorating cakes.
- ii. **Brazil nuts:** Brazil nuts are served with fresh fruit as dessert and are also used in confectionary.
- iii. **Chest nuts:** Chestnuts are used as stuffing for turkeys. Chestnut flour is used for soup, and as a garnish for ice cream. Chestnut pure is used in pastries and gateaux.

- iv. **Coconut:** This used in desiccated form for curry preparations and in many types of cakes and confectionaries.
- v. **Hazel nuts:** These nuts are used as a dessert and for praline.
- vi. **Macadamia nuts:** These expensive nuts have a rich delicate sweetish flavour. They can be used in pasta dishes, savoury sauces for meat, game and poultry and in ice cream sorbets and puddings.
- vii. **Pecans nuts:** Are used salted for dessert, various sweets and ice-cream.
- viii. **Peanuts and cashew nuts:** They are salted and used as bar snacks. Also used in some stir fry dishes.
- ix. **Pistachio nuts:** - These small green nuts grow mainly in France and Italy and are used for decorating gelantines, small and large cakes and petit fours. They are also used in ice-cream.
- x. **Walnuts:** - Imported mainly from France and Italy, are used as dessert, in salads and for decorating cakes and sweet dishes. They are also pickled, while green and unripe.

3.3.4 Selected Recipes for Fruits

1. Fruit Salad

Ingredients

Fresh fruit, e.g. pineapple, mango, banana, pawpaw, orange.

Syrup: 4 table spoons sugar (4oz), 25ml (1/2 pint) water

Method

- Wash fruit, remove skin and rind.
- Cut up into small neat pieces and put in a bowl.
- To prepare syrup, dissolve the sugar in the water and bring to boil. Boil for 5 minutes but do not allow it to colour.
- Pour the hot syrup over the diced fruit, stir gently and leave it covered until cold, then chill if necessary.
- Arrange in a glass dish or fruit bowl, paying attention to the colour scheme. Serve with milk, custard sauce or cream.

Fruit salad may be all fresh, stewed canned, or frozen. Fruit salads are usually served as a sweet dish, but could also be served with lettuce or other green vegetables. Syrup or sweet sauce or French dressing or mayonnaise is all good with fruit salad.

2. Fruit Fool (mango fool)

Ingredients

4 fairly ripe mango
 3 tablespoon sugar
 150 ml water for syrup
 150 ml undiluted evaporated milk
 150 ml milk }
 1 egg } for custard

Method

- Wash and peel mangoes and cut up
- Prepare the syrup as described earlier
- Stew mango in the syrup to make a pulp. Sieve and beat well
- Heat the milk and pour it on the lightly beaten egg and prepare the custard.
- Cool custard and mix with mango puree and evaporated milk. Chill in refrigerator if desired.
- Serve in individual glasses

Guava, bananas and pawpaw can be used in preparing fruit fool

3. Stewed Fruit

Ingredients

500g firm fruit (pineapple, under-ripe mango, pawpaw, guava, or berries)
 4 – table spoons sugar (use less for sweet fruit)
 250ml water

Method

- Dissolve sugar in water very slowly and boil for 5 – 7 minutes.
- Cut fruit into neat pieces.
- Place the syrup and simmer gently till tender
- Serve with the syrup poured round.

3.3.5 Balance Recipes for Nuts

Vegetarian mixtures of good food value contain nuts, dried milk, soya and cereals, flavoured with savoury extracts, dried herbs, mushrooms etc. Such mixtures can be used to make rissoles, baked “roasts” and as

stuffing for pepper, tomatoes and baked onions. Nut pastes can be made into balanced snacks with bread, served with salad and milk. They can also be made into drinks and creams, mixed with fruit juices, eggs, milk and sugar. Milled and pounded nuts can be made into soups and spread and milks.

- i. **Nut Bread:** - Sweet-walnut and apricot bread, almond and currant bread, savoury-peanut bread with brewers' yeast.
- ii. **Ground nut Stew** (Nigerian dish), a savoury mixture of stewed meat, smoked dried fish, pepper, tomatoes and pounded peanuts
- iii. **Chicken with almonds**(Chinese dish); steamed chicken in savoury sauce with salted almonds
- iv. **Chicken Almond Soup:** Chicken stock, ground almond, egg yolk, cream and rice.
- v. **Savoury Nut Spread:** - Nut paste, soya potatoes, onion, yeast extract
- vi. **Nut Fudge** (uncooked): Pounded peanut, honey, dried skim milk

4.0 CONCLUSION

In this unit we discussed fruits and nuts. It highlights the factors to be considered when choosing fruits. We classified fruits into fresh and dry fruits. We also talked about different methods of cooking fruits and the effects of cooking on fruits. This unit also treated different fruits and their seasons.

On nuts, we discussed types and uses of nuts, preservation and storage of fruits and nuts. Finally, some selected recipes of fruits and nuts were discussed.

5.0 SUMMARY

In summary, fruits and nuts are essential items in our everyday diet because of their nutritive values. We have different types of fruits and nuts. We have both fresh fruits and dry fruits. There are different methods of cooking fruits which include, baking, stewing and cooking. Some are also eaten raw. Uses of nuts depend on the types which include; Brazil nuts, chest nuts, coconut, Hazel nuts, peanuts, cashew nuts, pistachio nuts, etc.

In the next study unit, we shall discuss milk and milk products.

6.0 TUTOR-MARKED ASSIGNMENTS

1. State the factors to be considered when choosing fruits and nuts.
2. What are the effects of coking on fruits.

7.0 REFERENCES/FURTHER READINGS

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UNIT 2 MILK AND MILK PRODUCTS

CONTENTS

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- 3.0 Main Content
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 - 3.1.1 Nutritional Value of Milk and Milk in Illness
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1.0 INTRODUCTION

This unit treats milk which is the whitish liquid produced from the mammary gland of mammals. It is the major food of the young of all mammals including human being. It has often been described as the only substance created by nature solely for use as food and its value for babies is without question. Not all milk comes from the cow, it can also come from horses, goats, ewes, sheep, monkey, dogs, etc. but because it is the kind most widely known and used in this country. The composition of each type of milk is adapted to the species producing it. For example, animals found in very cold climate have a higher milk fat than those found in the tropical countries. Because milk is the principal source of calcium in the diet, medical authorities recommend certain daily quantities for various age groups. However, the milk produced by the cow is the commonest and the most commonly consumed by man.

In addition to nutritional quantities, milk contains a number of non-pathogenic or harmless bacteria. These include those which bring

about souring due to the formation of lactic acid and are of great value in the home. Though they may cause inconvenience in the home and are destroyed by heat, they help to prevent the occurrence of certain dietary deficiencies.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

- Identify the various sources of milk
- Explain the various types of milk
- Explain the nutritional value of milk
- Explain the uses of milk
- Identify the different types of milk and their products:
- Describe the different types of milk products.

3.0 MAIN CONTENT

3.1 Milk

Milk is a whitish nutritious liquid produced by female mammals for feeding their young. The milk most used in this country is that obtained from the cows. Goat milk and ewes milk can also be used.

3.1.1 Nutritional Value of Milk and Milk in Illness

Milk contains all the nutrients required for growth, repair, energy, protection and regulation of the body. Milk is one of the most nutritionally complete foods available, containing a wide range of nutrients which are essential for the proper functioning of the body. In particular, milk is a good source of protein, carbohydrate, calcium and B group, fats and vitamins.

The carbohydrate milk is called lactose which is a disaccharide and is less sweet and soluble than the common sugar, sucrose. This property enables it to crystallize under some conditions and thus, impart a grainy texture to ice cream and condensed milk (product).

Fat content of whole milk varies among individual cows. However, during processing in industries, milk is blended and fat content controlled. Minimum standard of whole milk in many countries is 3.25%. Milk is a good source of high quality protein and the major protein in milk is casein.

However, casein in fresh milk is combined with calcium salt to form calcium caseinate. The second most important protein found in milk is albumin and the third is globulin which are both present in lower quantities than casein. Globulin, is greater than albumin. Protein in milk is rich in all essential amino acids. Whole milk is rich in vitamin both fat soluble and water soluble vitamins. The yellowish colour of milk – fat is due to the carotenoid it contains. Vitamin A is found in the highest quantity while vitamin D, E, K, are present in small amount. Milk is a good source of Riboflavin which is responsible for the greenish yellow colour of whey of milk.

Due to the fact that riboflavin is easily destroyed by light, it is always better to market milk in opaque container so as to preserve riboflavin content. Milk is also rich in Vitamin B₁₂. Similarly, milk is a good source of some essential mineral elements such as calcium, phosphorous. It is however, low in iron.

Milk in illness: Milk being a fluid, is easily swallowed and the quantity given can be measured and regulated easily. It is more easily absorbed and requires less effort than any other food and it is therefore of great importance in gastric and intestinal diseases. Its flavour can be easily disguised.

3.1.2 Food Value of Milk

Cow Milk:	88% of water 3.3% of protein: (a) casein (b) lacto albumin (c) lacto globulin. 3.6% of fat (vitamin B1, B2) fat soluble vitamin A, D 4.6% of lactose (milk Sugar)
Goat Milk:	3.3% of protein 4.5% of fats 4.4% of lactose
Sheep Milk:	5.6% of protein 7.5% of fats 4.9% of lactose
Buffalo Milk:	3.8% of protein 7.5% of fat 4.99% of lactose.

3.1.3 Types of Whole Milk

- (1) **Fresh Whole Milk:** This is the milk obtained directly from the cow where none of the nutrients has been removed. It is most nutritious of all types of milk. The fresh whole milk can be

subjected to other industrial processes in a bid to preserve and store it. They include:

- (a) **Pasteurized Milk:** Milk heated for a short time (about 30 minutes) at temperature below 100⁰C. Such a treatment is to kill all the harmful bacteria present in the milk which is called pasteurization.
- (b) **Homogenised Milk:** Fresh whole milk which its fat particles has been broken down into very minute particles and the milk mixed properly so as to obtain homogeneous fluid. This is usually achieved by passing the whole fresh milk through a very tiny nozzle in a special piece of equipment known as homogenizer.
- (c) **Sterilized Milk:** Milk subjected to sterilization process whereby the milk is subjected to a more severe heat treatment than pasteurization. The aim of this sterilization is to kill all the harmful bacteria and all micro organisms present in the milk.
- (2) **Skimmed Milk:** Fat content in this type of milk has been removed thus reducing its fat-butter content to somewhere in the region of 0.1%. It is therefore made up of predominantly protein, carbohydrate, minerals and vitamins. It has lower energy value than the whole milk.
- (3) **Evaporated Milk:** This is the whole milk from which about 60% of water content has been removed. It is achieved by heating the milk in a vacuum. It is then homogenized, cooled and sterilized by heat treatment. Evaporated milk is sold under different trade marks e.g. peak, coast, etc
- (4) **Dried or Milk Powder:** Over 90% of the water content has been removed and it is then milled to powder form. Both whole and skimmed milk can be processed into milk powder. When skimmed milk is used, it is known as dried skimmed milk (DSM).
- (5) **Condensed Milk:** This is the evaporated milk to which a safe and suitable nutritive sweetener, usually sugar has been added. It is therefore sweeter and thicker than evaporated milk. Because of very high sugar content, it can keep longer than evaporated milk. When over 95% of the water content of condensed milk is removed, condensed dry milk is obtained. Condensed milk is not sterilized before canning.
- (6) **Filled Milk:** This is a combination of skimmed milk and vegetable fat or water non-fat dry milk and vegetable fat.

- (7) **T. T. Milk:** Comes from cow of any breed which have passed the tuberculin test. It is not marked or considered separately from other tested milk.
- (8) **Ultra heat treated Milk:** Is also available and is sometimes known as long life milk. The package is date stamped to give the last suitable date for use.
- (9) **Channel Island Milk:** Comes from cow of the channel island breed (Jerseys and Guernsey's). It is very rich and of high quality and must have a butter-fat content of at least 4%.
- (10) **Kosher or Kedassiah milk:** It is specially prepared in accordance with Jewish practice.

3.1.4 Uses of Milk

Milk is used in:

- Soup and sauces
- Cooking of fish and vegetables
- Making of puddings, cakes and sandwiches
- Hot and cold drinks
- Ice cream making
- Milk shakes
- Mousse
- Soufflés
- Lemon meringue pie.

3.2 Care of Milk

1. Milk should be kept cooled, clean and covered
2. Its quality can be affected in a short time if it is left in a warm, sunny spot.
3. Out in a refrigerator, it is good to stand the bottles in a basin of cold water covered with a damp piece of muslin if refrigerator is not available.
4. Milk should be kept in the dark because sunlight destroys some of the vitamin and will tend to spoil the flavour.
5. Milk should be kept covered because an open bottle or jug will pick up dust and germs and because milk has the tendency to absorb flavours and odours from other foods.
6. The best place to keep milk is in the bottle but once it is poured into a mug for table use, it should not be returned to the bottle.

7. Milk belongs to the dairy and their bottles must be rinsed in cold water as soon as they are empty and put out for collection by the milkman.

3.2.1 Effect of Heat on Milk

When milk is warmed in an open pan, skin forms on the top. If the skin is removed, another appears and the value loss is in the skin. Skin equates milk protein mixed with some fats and salts which have been precipitated. Milk boils over because steam collects over the skin. If milk is heated for a long time, it becomes a brownish colour and it is affected, the flavour partly due to caramelization of sugar in the milk.

3.2.2 Packaging

Bulk fresh milk can be supplied in different types of packaging, this comes in form of a plastic bag in bon which holds a capacity of between 12 – 20 litres (3.5 gallons). They should be placed in appropriate refrigerator. The unit and the content can be drained as required by fitting correct tap device. All packs contain fresh pasteurized homogenised milk and can be obtained in either whole or semi-skimmed varieties. Other types of packaging include polybottle (large plastic bottle) of fresh milk available in 1½ litre carton of fresh milk.

3.2.3 Spoilage of Milk

Milk is a splendid food for bacteria as well as being splendid for animals and human beings. Some bacteria are harmless e.g. souring bacteria. Others are disease carrying bacteria e.g. those of typhoid and tuberculosis. Every care must therefore be taken to prevent their entrance at every stage from cow to the consumer.

Odour, taste, keeping quality and healthy value depend entirely upon bacteria content.

Bacteria enters the milk through:

- (a) Udder
- (b) The cow's body (if the cattle are not kept clean and open-pail milking is practised, there is every opportunity for microscopic organisms to get into the milk)
- (c) The milk and utensils – unless clean methods are used, there is danger of contamination.

Milk must be protected from dust and flies, it should be kept covered in a cool, dark-place away from food substances with a strong odour.

3.2.4 Preservation of Milk

Commonest methods of preserving milk are:

- Evaporation
 - Dehydration
 - Sterilization
 - Pasteurization
- (i) **Evaporation:** - This is done by removing a large proportion of water from the milk. The fat is homogenized to break up the globules and the final product is sterilized. Such milk is free from germs, there is no great loss of vitamins A and D, but there is a great loss of vitamin C and some loss of Vitamin B. Evaporated unsweetened milk which is widely used in West Africa is fresh milk reduced to about half of its original volume. It is sealed in sterilized tins and has a label giving a clear description of its contents. As a result of the treatment given, the milk contains fewer bacteria than fresh milk and is less likely to spread infection.
- (ii) **Dehydration:** - These are produced by the removal of water at a very high temperature but constituents are altered as little as possible. The most common method used here is the spray process. Milk is sprayed under pressure into a chamber which the temperature does not exceed 40⁰C. Very fine drops of milk coming into contact with hot dry air lose water quickly and fall and collect as fine powder. The protein is not coagulated so that the powder is easily soluble in water.
- (iii) **Sterilization:** - The milk is poured into bottles and heated beyond boiling point to 120⁰C under pressure. It is kept at that temperature for up to an hour and then cooled rapidly. Ultra High Temperature (UHT) sterilization involves heating milk rapidly to 150⁰C, holding it at its temperature for one second and then cooling it quickly. It is usually packed in plastic coated cartons lined with aluminium foil. Sterilized milk will keep indefinitely if stored properly, but the taste is altered, the protein isles digestible and the finely emulsified fat are digested.
- (iv) **Pasteurization:** - The object of this method is the majority of bacteria including the pathogenic (disease carrying) forms. The milk is heated to 65⁰C and maintained at that temperature for 30 minutes, after which it is very rapidly cooled. Pasteurized milk is not sterile because much of the bacteria are destroyed but not souring bacteria. It will keep for a short time.

3.2.5 Storage of Milk

Milk keeps less than almost any other food. It readily becomes dirty and unsafe. Therefore, it must be stored with care as it is an excellent food to human beings. It is unfortunate that it is an excellent food also for bacteria.

- (1) Fresh milk should be kept in the container in which it is delivered.
- (2) Milk must be stored in the refrigerator
- (3) Milk must be kept covered as it absorbs smell such as onion or fish smell.
- (4) Fresh milk and cream should be purchased daily
- (5) Tinned milk is stored in a cool dry ventilated room
- (6) Dried milk is stored in air tight tins and kept in a dry store.
- (7) Imitation cream is kept in the refrigerator.

3.3 Milk Product

3.3.1 Yoghurt

Yoghurt is a soured milk juice which is prepared by adding a starter culture to suitable heat treated milk to ferment it. The organisms in this culture are selected strain of **Lactobacillus, streptococcus thermophilus** and which produce a firm smooth clot with the typical flavour and texture of yoghurt and it has a characteristic tangy taste. Differences in taste and texture of yoghurt depend on the type of milk used and the activity of the micro-organism involved.

There are two types of yoghurt:

- (a) Stirred yoghurt, which has a smooth and fluid consistency.
- (b) Set yoghurt which is more solid and has a firmer texture.

All yoghurt is 'live' and contains live bacteria which remains dormant when kept at a low temperature.

Yoghurt is available plain (natural) or in a wide variety of flavours. It often has pieces of fruit added during manufacture. Yoghurt is rich in nutrients containing protein, vitamins, mineral, calcium, etc.

3.3.2 Cheese

Cheese is made from milk protein by fermenting the whole milk by lactic acid forming bacteria followed by coagulation by an enzyme known as rennet. The quality of any particular cheese is affected by previous

treatment of the milk, the temperature of coagulation and the acidity of the milk.

There are various types of cheese, these include:

- (a) (i) Hard cheese e.g. cheddar, which is golden colour cheese with a close texture and a fresh mellow, nutty flavour.
- (ii) Cheslure: orange-red or whiter, loose crumbly texture with a delicate creamy flavour.
- (b) Semi-hard cheese e.g.
 - (i) Caerphilly: - white in colour and flaky with a fresh, mild, slightly flavoured.
 - (ii) Wensleydale: - white in colour, moderately close texture with a fresh, mild slightly salty flavour, excellent with crisp apple or apple pie.
- (c) Blue veined e.g. Irish blue, Danish blue.
- (d) Soft Curd cheese:
 - (i) Curd cheese: - produce a soft, milk flavoured, low fat cheese made from either skimmed or medium-fat milk.
 - (ii) Cottage cheese: - a low fat; high protein product made from pasteurized skimmed milk; also available are very low fat, sweet and savoury varieties.
 - (iii) Fromage frais: - (French cheese) or fromage blanc is a fat-free soft curd cheese to which can be added to give richer varieties; also available, low fat, medium fat, savoury and fruit flavour.
 - (iv) Quark: - a salt free, fat free soft cheese made from skimmed milk.
- (e) Soft Cheese e.g. camembert which is white, round with soft close, creamy texture and full flavour.
- (f) Cheese spread e.g. Sam roe and gouda.

Cheese is a highly concentrated food

Fat protein, mineral salts and vitamins are all present. Therefore it is an excellent body building, energy producing, protective food.

3.3.3 Cream

Cream is the lighter weight portion of milk which still contains all the main constituents of milk such as lactose, mineral ash and water but in different proportions. The fat content of cream is higher than that of milk while the water content and other constituents are lower. Cream is separated from the milk and heat treated. The description of cream is related to its milk fat content. The different types are:

- (1) **Half Cream:** This contains not less than 12% fat and is used mostly for coffee.
- (2) **Single Cream, Pouring Cream:** This contains not less than 18% milk fat. It is widely used in cooking because it is less likely to separate than a richer cream when it is added to hot dishes. It is good for pouring on fruits, cereals, but it will not whip because its fat content is not up to 38 – 42%.
- (3) **Sterilized Cream:** - This contains not less than 23% milk fat. It has a slightly cooked taste, so it is more suitable for use as ingredient for serving on its own.
- (4) **Whipping Cream:** - This contains not less than 35% milk fat and is the ideal consistency for whipping, but may not always be widely available.
- (5) **Double Cream:** - Contains not less than 48% milk fat. It can be whipped or served on its own and it can be added to hot dishes carefully. It is also used as an ingredient to decorate cold desserts.
- (6) **Thick Jersey Cream:** - This is very thick and has a high fat content. It is most suitable for table use. It can also be lightly beaten and used as a filling for a sponge cake.
- (7) **Clotted Cream:** - (Devonshire Cream): Contains about 5% milk fats. All creams except a clotted cream is obtained by skimming untreated milk.
- (8) **Soured Cream:** - Contains not less than 18% fat content. Cream soured by addition of a starter culture i.e. inoculation with a special lactic acid bacteria. It has a special flavour and it is used for salad dressing, cheese cakes, savoury dips, etc.
- (9) **Canned Cream:** - This is sterilized and has a minimum fat content of 23%. It has a slightly cooked flavour and has a

prolonged keeping quality since it has been heated in the sealed containers.

3.3.4 Selected Dishes Made from Milk

1. Milk Puddings: Milk Puddings are nourishing and digestible if well cooked. There are different types of milk pudding namely:

- (i) Rice pudding
- (ii) Semolina pudding.

The ingredients – milk, cereals, sugar and eggs supply the constituents necessary for the building of the body.

Ingredients

Cereal or fainacenis substances:

- (a) Whole grain e.g. rice, tapioca, sago
 - (b) Small grain e.g. semolina, fine millet
 - (c) Powdered or crushed, e.g. corn flour, rice flour, cassava flour, yam flour.
- (2) **Milk:** Fresh milk makes the best pudding but diluted, evaporated or condensed milk can be used.
- (3) **Eggs:** The flavour is improved and food value is increased by adding eggs. They must only be added after the starchy substance is thoroughly cooked. The mixture must then be re-heated to cook the egg.

Recipes for Milk Puddings

500ml fresh and diluted milk
 40 – 50g grain
 1tablespoon sugar
 1egg (optional)
 Flavouring – nutmeg, vanilla, lemon rind.

2. Rice Pudding (Whole Grain)

500ml milk
 1 tablespoon sugar
 1 egg (optinal)
 50g white rice
 Nutmeg

Method

- (1) Pick and wash rice
- (2) Cook rice gently in milk until almost all the liquid is absorbed and mixture is creamy. Add the sugar.
- (3) Cool slightly and stir in the beaten egg if used
- (4) Pour into a greased pie dish, place the pie dish in a tin containing cold water, grate nutmeg in top and brown in a quick oven. If there is no oven, return to fire for egg to cook and serve hot or cold.

3. Rice Flavour Pudding

(Available to all edible powdered grams)

500ml milk

1 egg

1 tablespoon castor sugar

40g rice flour

Flavouring – grated lemon rind or vanilla essence.

Method

- (1) Mix the powder smoothly with a little of the cold milk
- (2) Boil the rest of the milk in the flavouring. Stir the paste and pour the boiling milk on to it, stirring all the time.
- (3) Return to the rinsed pan and boil for 5 – 7 minutes stirring all the time. Add sugar, cool and then add the beaten egg
- (4) Pour into a greased pie dish and proceed as for semolina pudding

4. Semolina Pudding.

500ml milk

1 tablespoon castor sugar

Vanilla essence.

40g semolina

1 egg

Method

- (1) Heat the milk. Sprinkle in the semolina. Stir well to prevent it collecting in lumps.
- (2) Bring to the boil and simmer for 15 – 20 minutes stirring at all time.
- (3) Remove from fire, add sugar, cool slightly, then add beaten egg.
- (4) Pour into a buttered pie dish. Place the pie dish in a tray containing a little cold water and bake in a moderate oven, cook

the egg to brown the top. If an oven is not available, return sauce pan to fire to cook the egg. Serve hot or cold.

4.0 CONCLUSION

In this unit we have discussed milk which is the whitish liquid produced from mammary gland. The nutritional value of milk i.e. the nutrient it contains was also explained. Also the types of milk and how they are processed. Care of milk and the effect of heat on milk was also looked at.

Additionally, preservation, storage and packaging of milk is treated and various milk products were examined. It is therefore concluded that milk produced from cow is the commonest and the most commonly consumed by man and it is the principal source of calcium in diet.

5.0 SUMMARY

This unit has examined milk which is a whitish nutritious liquid produced by female cow for feeding its young ones. The nutritional value which is the nutrient required for growth, repair, energy, protection and regulation of the body was also highlighted, Examples of such nutrients are protein, vitamin, carbohydrate, calcium, fats, etc. The food value of milk is also treated.

Types of milk, example – fresh whole milk, evaporated milk, skimmed milk, dried milk or milk powder, condensed milk, how it is processed, its uses and care is also discussed. How milk content is altered by bacteria i.e. spoilage of milk and the medium through which bacteria enters the cow milk is explained. Preservation of milk by pasteurization, sterilization, dehydration and evaporation along with its storage is also treated.

Finally, milk product such as yoghurt, cheese, cream with different varieties of each and how they are processed from milk was discussed along with selected dishes made from milk, e.g. milk pudding. The ingredients needed, recipe and method of preparing the milk pudding is also discussed in this unit.

In the next study unit, we shall discuss egg cookery.

6.0 TUTOR-MARKED ASSIGNMENTS

1. What types of milk are available for large scale cooking? Compare their nutritive values. Explain how you would use them and give examples of the dishes in which each may be used.

2. What precaution would you take during storage to retain the nutritive value of milk?

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UNIT 3 EGG COOKERY

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1.0 INTRODUCTION

An egg is a living organism consisting of an embryo and a store of food enclosed in the protective shell. Everything about an egg is designed to ensure the safe development of a living embryo into a chick. But most eggs for consumption have not been fertilized and therefore do not contain a developing embryo. Eggs are produced by reptiles and bird. However, as far as food and nutrition is concerned, attention is usually focused on eggs produced by birds. When one uses the term 'eggs', one is usually referring to eggs of domestic fowl; but there are several other birds' eggs that are edible e.g. turkey, duck, ostrich, and guinea fowl.

The egg is one of the most widely used commodities in cookery. Its properties are utilized for enriching, thickening, colouring, shortening, emulsifying, coagulating, clarifying and lacerating. All section of the kitchen use eggs, often in combination with other ingredients to produce dishes where their specific properties become fundamental to the dish. Eggs are immensely versatile as well as providing a wide range of dishes for a basic meal. They are used in cooking as raising agents, in cakes, soufflés and other things because of the air which is incorporated when they are whisked. Eggs can be prepared and served with or without garnishes as dishes in their own right. They are usually served

plain for breakfast, but when garnished, are more suitable for luncheon and supper.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- Identify the various types of eggs and describe the nutritional contents of the egg.
- Identify the various egg products used in the hospitality industry
- Explain the factors to be considered when choosing eggs.
- Describe the various methods of cooking eggs.
- Explain the uses of eggs in cooking

3.0 MAIN CONTENT

3.1 Structure of an Egg

All eggs generally have a common structure be it produced by chicken, duck, turkey, guinea fowl and goose. The structure of the egg is shown below.

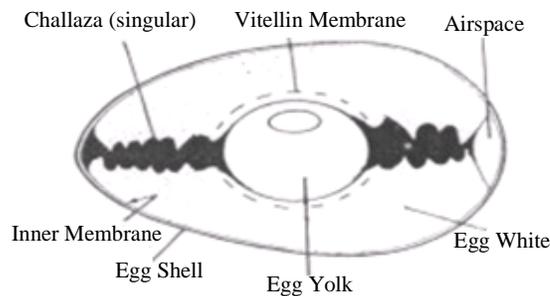


Fig. 8 Structure of an Egg

Eggs are spherical in shape with one end pointed and the other end blunt. They are covered by a hard protective shell which can either be white or brown in colour. The colour of the shell depends upon the breed of the chicken and it is unrelated to the colour of the yolk or to the food value and quality of the egg. The shell is porous and this allows for moisture and gaseous exchange with the surrounding air... The porosity of the egg shell allows for the development of the embryo but it decreases the keeping quality of the egg. Immediately beneath the egg shell are two inner membranes which separate at the blunt end is the egg forming what is known as the air space. At the centre of the egg of the egg yolk which is held in a position by two cord-like structures called chalazae. The egg-yolk is covered by a membrane known as vitelline

membrane. Immediately after the vitelline membrane is the thick egg white, a high proportion of thick egg white is an indication of good quality of the egg.

3.1.1 Nutritive Value of Eggs

Eggs are valuable and they are of importance in the diet since they are rich in protein and fat. About three quarters of the egg weight is water. This is followed by protein, fat and mineral elements in decreasing order. Although proportions vary among eggs, the white is usually about 58 percent of the weight of the whole egg, the yolk is 31 percent and the shell 11 percent. The yolk is a more concentrated food than the white since it contains only about 51 percent water. The yolk contains more protein which is totally devoid of fat. The protein of egg as a whole is of good biological value and is easily digested. Eggs can therefore be used to replace meat, poultry or fish in the diet. Eggs also contain vitamin. Both egg yolk and white are good sources of riboflavin and it is this vitamin that is responsible for the slightly greenish tint to an egg white. Eggs are also rich in minerals such as iron, sulphur, phosphorus and calcium. Eggs do not contain starch (carbohydrates) and ascorbic acid. Therefore they should be combined with farinaceous foods in order to give the necessary bulk. Eggs are available food for children, especially for those suffering from rickets, because of their protective food value. New-laid eggs are nourishing and easily digested. Therefore, it must be fresh when used.

Figure 7.1 Composition of Egg, (Egg yolk and egg white).

Constituents	Whole egg (%)	Egg Yolk (%)	Egg White (%)
Water	73.7	51.1	87.6
Protein	12.9	16.0	10.9
Fat	11.5	30.5	Trace
Ach Minerals	1.0	1.7	0.7
Vitamins	1	0.5	2

3.1.2 Grades of Eggs

Eggs are graded according to quality and freshness. Grade AA, are the highest quality eggs, and grade A are the most desirable for eating simply as eggs – hard, or soft cooked, poached, fried or baked because they have the freshest flavour and the yolk stays well rounded and well centred. Grade B, an economical buy, is not suitable for general cooking and baking. Grade C are eggs which are fit for breaking for manufacturing purposes but cannot be sold in their shells to the public.

Eggs are also sold by size, with minimum weights per dozen as follows:

- Jumbo 1dozen = 840g
- Extra large 1dozen = 756g
- Large 1dozen = 672g
- Medium 1dozen = 588g
- Small 1dozen = 504g
- Peewee 1dozen = 420g

Large size (or 56g) egg is the accepted size for recipes in most cook books. If cooking by the metric measurements use extra large eggs as the metric cup is slightly larger in volume than the standard cup.

3.1.3 Egg Products

Most egg products are available in liquid, frozen or spray dried form. Whole egg is used primarily for cake production where its foaming and coagulation properties are required. Egg whites are used for meringues and light sponges where their foaming properties are crucial. Usage of egg product include; ready meals, pies/piats, baked goods, cakes, dairy products, desserts, biscuits drinks, baby foods, soup, salad dressing, noodles, meat binders and pet foods.

3.2 Factors to Consider when Choosing Eggs

In buying eggs, it is very important to make sure that stale eggs are not purchased. Therefore, to test for freshness, the eggs must possess the following qualities:

- The shell should be slightly rough
- If held towards the source of light, it should be bright and clear and not opaque. Opaque egg is not good and should not be purchased. This process is known as candling.
- When broken, the yolk should be intact and surrounded by the egg white. A diffused yolk i.e. one in which yolk and egg white are mixed together is bad.
- When immersed in salted water, it should sink and not float.
- When broken, there should be no offensive odour produced.
- When shaken, no sound should be produced if the egg is of good quality.

3.2.1 Methods of Cooking Eggs

The various methods of cooking eggs include:

- 1. Boiling:** This is one of the commonest ways of preparing eggs. It involves immersing the egg completely in water and bringing the water to boil for about 3 – 5 minutes. The egg can either be soft boiled or hard boiled. In a soft boiled egg, the protein undergoes partial coagulation while in a hard boiled egg, complete coagulation of the protein occurs.
- 2. Poaching:** In preparing poached eggs, enough water to cover the eggs completely is brought in for boil in a shallow pan. An egg is broken into a cup and is dropped gently into the water. After dropping all the eggs, the water is heated to simmer and is removed from the heat, covered and allowed to stay for about three to five minutes until the eggs are firm but not hard. Salt or vinegar is sometimes added to the water in which eggs are poached to hasten coagulation and thus improve the shape of the poached eggs. Alternatively eggs can be poached in a specially designed pan for poaching.
- 3. Frying:** In this method, a thin layer of oil or fat is put into the frying pan. The fat should be allowed to heat to a point at which it will sizzle on addition of drop of water. The eggs should be broken and emptied into the hot oil. The egg is then cooked slowly until the white is set.
- 4. Scrambled Egg:** In this method, fat or oil is put in the frying pan and is allowed to heat up. The eggs are then broken into a cup. Salt, pepper, milk, tomatoes juice or any other fruit or seasoning can be added as desired. The mixture is then beaten with a fork to break up the yolk. The mixture is poured into the frying pan and cooked over a slow heat. It is stirred gently so that the thickened portions are lifted from the bottom of the pan and the uncooked portion allowed to run down. The cooking is discontinued when the mixture is coagulated before it becomes dry.
- 5. Omelette:** There are two kinds; plain omelette and omelette soufflés. In the second kind, the eggs are separated, the whites beaten and folded into the yolk. As a general rule, plain omelettes are savoury and omelettes soufflés are sweet. To make a successful omelette, it is important to use the correct size of pan for the number of eggs used. An omelette pan usually has curved sides which enable the omelette to be turned out easily. Butter is always used for cooking the eggs. The method of preparing

omelette is similar to that of scrambled eggs. The frying pan containing butter is heated over the fire to melt. The egg mixture is added and the pan is placed over a moderate heat. As the omelette cooks and the eggs coagulate, the omelette should be lifted from the edge towards the centre and the pan tipped so that the uncooked mixture flows under the cooked portion. When the whole mixture is creamy and the bottom is slightly brownish, the omelette is rolled or folded in half by lifting the handle of the pan and manipulating the omelette with the aid of a spatula. If desired, grated cheese, chopped meat, fish, tomatoes, onions or creamed vegetables can be put on the omelette before it is folded.

6. **Baked Egg:** Eggs may be baked in special dishes known as cocottes or in a round shallow earthen ware dish. Flavouring such as finely-chopped ham, tomatoes, cheese or mushroom may be placed in the cocottes before the eggs are broken into them, or a variety of cooked garnishes can be added to the plate before breaking the eggs. Before putting in the eggs first butter the dish (cocotte) generously, then leave it to warm. Break the eggs into the dish, cover the yolks with small pieces of butter and stand the cocottes in a pan (or a roasting tin containing enough hot water to come half way up the sides. Bake in a moderate oven (350⁰F 177⁰C) for 8 – 10 minutes until the white is just set and the yolk is creamy. Cocottes retain the heat and the egg will continue cooking for a minute or two. It is best to remove it from the oven about half a minute before it is properly set.

3.2.2 Effects of Heat on Egg

When an egg is heated, it coagulates but the yolk does so at a temperature about 68⁰C while the white coagulate at a lower temperature of about 60⁰C. When the egg has been blended, the combined mixture coagulates at about 63 – 65⁰C. Sauces and custards should therefore be cooked slowly and kept below boiling point. If the egg cooks quickly or continued cooking to a higher temperature, it become unevenly set and shrinks as some of the liquid is squeezed out of it given a cracked or curdled result.

3.3 Uses of Eggs in Cookery

- (i) Eggs are used to increase food value and to improve the flavour of foods to which they are added e.g. doughnuts, banana, pancakes, egg and corned beef stew.
- (ii) Eggs serve as thickening agent in sauces and soups e.g. custard sauce, etc.
- (iii) Eggs serve as a binding agent e.g. fish cakes, yam balls.

- (iv) Eggs are used for coating foods before frying e.g. fish, yam balls, meat cake, etc.
- (v) Serves as glazing agent – eggs lightly beaten and brushed over pastry and scones gives golden brown gloss to the finished dish.
- (vi) Serve as leavening/rising agent e.g. cake making. This is due to the ability of egg to enclose air when whisked. After heating the enclosed air expands and thereby raises the food mixtures.
- (vii) Acts as emulsifying agent e.g. in mayonnaise ad cake mixtures.
- (viii) As garnishing in dishes e.g. hard boiled eggs are sliced or wedged and used for garnishing salad. e.g. the yolk may be sieved and the white chopped for garnishing meat or fish dishes.
- (ix) Eggs are valuable in the diet especially in the growing children and invalids because they are rich in nourishment and are easily digested.

Preservation of Eggs

- Only newly-laid egg that are fresh from the nest should be preserved. They should not be washed or dipped in water, as washing removes the thin natural coating which excludes air. They may only be wiped with a dry cloth to remove any trace of dirt.

The Methods of preservation of eggs are as follows:

- keep in a cool place where the temperature is so low that the growth of bacteria will be hindered, as in cold storage.
- keep them in air tight condition, as in (i) packing with the point end downwards in sand or saw dust; (ii) coating with salt less fat, e.g. lard, shea butter or coconut.

3.3.2 Storage of Egg

To preserve freshness, store eggs in the refrigerator in their carton just as they are packed. This means blunt end is up and the yolk stay centred. Do not place them near any strong-flavoured foods since the shells are porous. Plan to use eggs with 10 – 14 days

Egg white: May be stored in a covered jar in the refrigerator up to four days. It also freeze well; thaw and use as exactly as you would fresh egg white.

Egg yolk: Will also freeze but does not soften completely when thawed; to use it in a blender-style mayonnaise or hollandaise, let thaw, then beat in the blender with a fresh yolk. Store raw yolk in a container covered

with a thin layer of cold water. This prevents the yolk from forming a hard skin. Refrigerate and use within four days.

3.3.3 Selected Recipes for Eggs

1. Scotch Eggs

Ingredient

250g sausage meat
4 hard-boiled eggs.
Seasoned flour
Oil for frying
1 teaspoon H.P Sauce
Egg and bread crumbs
White pepper and salt.

Methods

1. Season the sausage meat with the sauce, white pepper and salt and divide into four equal portions.
2. Shell the eggs. Coat each with a portion of the sausage meat, using a little seasoned flour if the meat is sticky to handle.
3. Coat each covered egg and breadcrumbs
4. Fry in hot fat until brown and crisp, allowing sufficient time for the sausage meat to cook thoroughly and drain.
5. Cut each egg in half and serve cold with salad or hot with sauce or gravy

2. Baked Egg Custard

Ingredients

2 or 3 eggs
500ml milk
½ level teaspoons sugar
Nutmeg or vanilla flavouring

Methods

1. Beat the eggs with sugar, add milk and flavouring, and strain into a bowl or cup. Then pour into a greased pie dish.
2. Place dish into the baking tin containing sufficient cold water to come half way up the dish.
3. Put in a slow oven and bake for 40 – 50 minutes

4. The custard must not boil or it will curdle. Add more cold water during the cooking if necessary.

3. Queen of Pudding

Ingredients

250ml custard
1 tea cup fresh breadcrumbs
Grated rind of one lemon
1 table spoon margarine
2 table spoons jam
2 egg whites
2 egg yolks
1 heaped tablespoon sugar.

Methods

1. Grease a pie dish and put breadcrumbs in
2. Heat milk with lemon rind and margarine, add to the beaten egg yolks and add sugar
3. Pour over the crumbs and leave to soak for half an hour.
4. Bake in a slow oven until set. Spread the melted jam on top
5. Whisk egg white stiffly and fold in the sugar carefully. Whisk until quite stiff. Pile over the pudding and dredge with icing sugar
6. Bake in a slow oven until egg white is crisp and pale biscuit in colour.

4. Egg Mornay

Ingredients

4 – 5 hard-boiled eggs.
1oz butter
Nutmeg
Salt and pepper
1 ½ oz grated cheese
1 ¼ white sauce.

Methods

Cut the eggs into thick slices, place them on a well-buttered fire proof dish, and sprinkle them lightly with nutmeg and more liberally with salt and pepper. Add 1oz cheese to the sauce and pour it over the eggs. Sprinkle with cheese and add butter. Brown the surface in a hot oven or under the grill and serve.

SELF ASSESSMENT EXERCISE

- (i) State the factors to be considered when choosing eggs.
- (ii) Enumerate the various uses of egg in cookery

4.0 CONCLUSION

This unit dwelt generally on eggs. We looked at the structure of an egg, the nutritive value of egg and grades of egg. We also stated the factors to be considered when choosing eggs. The unit also looked at different methods of cooking egg. In addition, it discussed about the various uses of eggs and how eggs can be stored. We finally looked at some selected recipes for eggs.

5.0 SUMMARY

Eggs are very essential because of their highly nutritive value. This unit examined eggs. Eggs have a high value of protein and fat. Egg products are also very useful such as biscuits, baby foods, desserts, etc. There are various method of cooking egg which include; boiling, poaching, frying, omelettes, baking. Eggs can be preserved by keeping them in a cool place of low temperature and in an air tight condition. Some selected recipes of eggs are scotched eggs, baked custard, egg mornay and queen of puddings. In the next study unit, we shall discuss fish cookery.

In the next study unit, we shall discuss fish cookery.

6.0 TUTOR-MARKED ASSIGNMENTS

1. Highlight the various methods of preparing eggs.
2. Give the recipe and method of preparing scotch eggs.

7.0 REFERENCES/FURTHER READINGS

Foskett, David (2003). *The Theory of Catering*, Book Power with Hodder and Stoughton (Tenth Edition).

Wright, Reilly O Enid (1985). *The Students' Cookery Book*, Oxford University Press.

ANSWERS TO SELF ASSESSMENT EXERCISE

- (i) When breaking it there should be no irritating smell
- (ii) It should sink when put in salt water
- (iii) The yolk should be surrounded by the egg white when broken

- (iv) The shell should be slightly tough
 - (v) If the egg is of good quality, no sound must be produced when shaken.
- (b) Egg is used for:
- (i) The improvement of dishes' quality
 - (ii) Emulsifying in cookery
 - (iii) Colouring in cookery
 - (iv) Glazing
 - (v) Coating food before frying

UNIT 4 FISH COOKERY

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
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1.0 INTRODUCTION

Fish are creatures that live in either fresh or salted water. Because of health considerations, many people choose to eat fish in preference to meat and consequently consumption of fish is and has been steadily increasing. The quality of the whole fresh fish can be determined by its clean, fresh smell, clear eyes, shining scales, red gills and the firmness of its flesh. Fish are valuable not only because they are good source of protein, but because they are suitable to all types of menus and can be cooked and presented in a wide variety of ways. The range of different types of fish of varying textures, taste and appearance is indispensable to the creative chef.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain the nutritive value of fish
- Classify the different types of fish
- Identify the various methods of cooking fish
- Explain how to store and preserve fish.

3.0 MAIN CONTENT

3.1 Fish

Fish as earlier mentioned are creatures that lived in either fresh or salted water.

Food Value

Like meat, fish are also good source of protein that is rich in all essential amino acids. The proteins of fish is more tender than that of meat and therefore are more digestible. The fat content of fish is however considerably less than that of most types of raw meat and poultry. Because of the lower fat content, the energy content of most fish is lower than that of meat and poultry. The mineral content of fish is variable. Many types of fish are poor sources of calcium. However, those canned with bones are an excellent sources of calcium if the bones are consumed with the flesh. Most of the shell fish are good sources of calcium. Most fish are low in iron, but oysters are rich in this minerals. Fish from the sea are good sources of iodine because of the presence of this element in the sea water. Most fish are good source of B-Complex vitamins while the fat fish are also rich in the fat soluble vitamins especially vitamin A and D. There are no carbohydrates in fish and therefore should be combined with carbohydrate foods.

Figure 8.1 Nutritional Compositions of some Fishes (Composition in terms of 100grams edible Portion)

Fish	Energy kcal	Moisture (%)	Protein (g)	Fat (g)	Carbohydrate	Fiber (g)	Ash (g)	Calcium (mg)	Phosphorous (mg)	Iron (mg)
Cat fish	90	79.6	17.6	1.6	0	0	1.2	61	197	1.2
Cod	96	77.7	17.8	2.2	0	0	2.3	-	-	-
Dog fish	106	74.8	21.4	1.6	0	0	2.2	-	-	-
Eel	261	63.7	11.9	23.3	0	0	1.1	90	403	2.4
Globe fish	89	78.3	19.5	0.6	0	0	1.6	-	-	-
Horse	143	66.6	25.0	4.0	0	0	4.2	-	-	-
Mackerel	171	67.1	18.9	10.0	0	0	4.0	-	-	-
Mackerel	109	70.0	12.3	2.3	8.8	-	6.6	-	-	-
Mackerel	102	75.1	17.9	0.6	4.8	-	1.6	261	267	1.6
Oyster	102	77.0	19.9	1.9	0	0	1.2	-	-	-
Prawn	143	72.5	17.6	7.5	0	0	2.4	333	277	1.3
Skate	107	78.0	17.7	3.5	0	0	0.8	132	110	4.3
Sardine	92	78.0	20.4	0.5	0	0	1.1	-	-	-
Snail	142	69.8	21.8	5.4	0	0	3.0	-	-	-
Scavenger Stock Fish										

3.1.1 Classification of Fish

For culinary purpose, fish are classified into two major groups (a) Fin fish (b) Shell Fish

1. Fin Fish

These have fins on their bodies. They can be further classified into two groups:

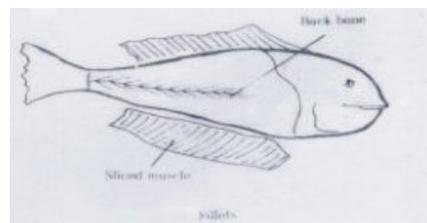
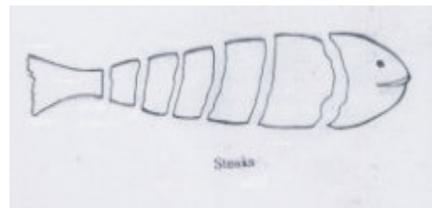
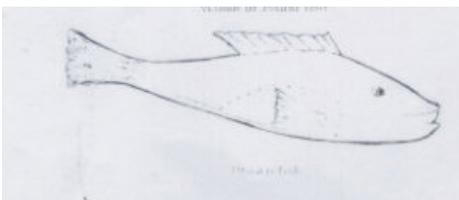
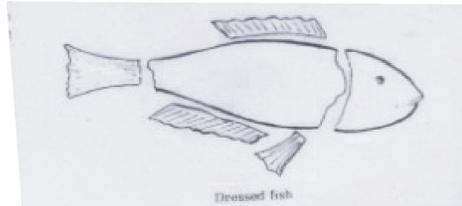
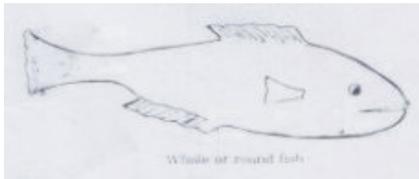
- White or lean fish: In this group. Most of the fat is deposited in the liver and not between the muscle fibres. Examples are Cod, halibut.
- Oily or fat fish: - these have fat distributed all over their body especially among the muscle fibres. Examples are herring, mackerel, salmon etc.

2. Shell Fish

These have a protective shell covering the fish. Shell fish can be divided into two groups: one group has a soft body protected by a shell e.g. oysters, mollusc's calms and scallops. The other has a segmented crust like shell e.g. lobsters, shrimps, crabs and Crayfish. Because of the large percentage of water present and deficiency in fat, white fish is of less nutritive values than oily fish. The food value of shell fish lies mainly in its protein content and the useful amount of B – vitamins and iodine it contains. Most fish are caught in fresh waters while the shell fish are caught in ocean and salt water.

3.1.2 Fish Cuts

- Whole fish or round fish: these are fish that are marked as taken from water
- Drawn fish: these have has the intestinal organ removed.
- Dressed or pair dressed fish: These have also had the scales, head, tail and fins removed.
- Steak; these are cross-section slices from large dressed fish.



Fillet

These are the sides of a fish cut lengthwise away from the back bone. They are practically boneless. Fig. 8.2

3.2 Things to look for when Buying Fish

When buying whole fish, the following points should be looked for to ensure freshness:

- Eyes: bright, full and not sunken, no slime or cloudiness.
- Gills: Bright red in colour; no bacterial slime
- Flesh: firm, translucent and resilient so that when pressed, the impression goes quickly; the fish must not be limp.
- Scales: - flat, moist and plentiful.
- Skin: - Should be covered with a fresh sea slime or be smooth and moist with a good sheen and no abrasion or bruising; there should be no discoloration.
- Smell Pleasant, with no smell of ammonia or sourness.
- Fish should be purchased daily if possible, direct from the market or supplier.
- Fish should be well iced so that it arrives in good condition.
- Fish may be bought on the bones or filleted
- Medium sized fish are usually better than the large fish, which may be coarse; small fish often lack flavour.

3.2.1 Storage and Preservation of Fish

1. Storage

Fresh fish are stored in a fish box containing ice, in a separate refrigerator or part of a refrigerator used only for fish at a temperature of 1 – 2°C (34 – 36°F)

- The temperature must be maintained just above freezing point.
- Frozen fish must be stored in a deep freezer cabinet or compartment at 18°C (0°F).
- Smoke fish should be thawed out before being cooked.

2. Preservation

Like meat and poultry, fish can be preserved in the following ways: Freezing, canning, salting, pickling and smoking.

3.2.2 Portion Guide for Fish

For normal table d/hotel, service the following average weights of fish per portion is suitable:

- Small cuts of fish (e.g. Fillet, supreme, paupiettes, goujons) – 90 – 100g
- Cut of fish on ones (e.g. troncons, obrnes) 150 – 200g
- Whole small fish (e.g. herring, mackerel, mullet, sole, trout) – 200 – 250g

For a'la carte service, increase the above weight by approximately 50%[^] in each case.

3.2.3 Preparing Fish for Cooking

- Cover the table with news paper or any sheet of clean paper. The paper protects the table, and the scales, etc should be wrapped in i.
- Handle the fish carefully
- Cut off the fins and then trim the tail with a pair of scissors kept specially for used in the kitchen. If no scissors are available, use a sharp knife, but this tends to damage the flesh if care is not taken.
- Remove the scales by scrapping from the tail towards the head with a kitchen knife
- Slit open the underside or belly, starting from the head. Remove the entrails carefully, remove blood and dark skin.
- Reserve the roes if any. Wrap entrails and scales up in the paper and dispose of them immediately as the smell quickly attracts flies.
- Wash the fish thoroughly, but do not allow to soak, as soaking makes it soft.
- Rub a little salt on the inside to remove the black skin: Rub half a lime all over the flesh to remove the fishy smell. Rinse quickly in cold water.
- Dry with a cloth. Cut up and season with salt and pepper. Fish may sometimes be cooked whole if they are small.
- The head should be thoroughly washed and rinsed because it is slimy. Rub inside with lime.

3.3 To Fillet Fish

- Scale in the usual way. Cut off the head.
- Using a sharp knife and cut the flesh down the back bone, cutting as near to the bone as possible. Remove the flesh first from one side and then from the other.
- Wash fillets quickly and use as required.

Filleted fish looks very attractive and is especially good for young, for invalids and for convalescents. Use the head and bone in making stock for soup.

3.3.1 Skinning Fish

For a whole fish (e.g. sole) wash and cut off the fins. Make a small incision across the tail, slip the thumb between the skin and flesh and loosen the dark skin round the sides of the fish. Hold the fish firmly on a board with enhance and with the other, take hold of the skin firmly and rib it off quickly towards the head. Turn the fish over and skin the second side. Some people do not mind the white skin being left on unless the flesh is a very large one.

To skin Fillets, lay the fillet on a board, skin side down, rub a little salt on the fingers to give a firm grip and prevent slipping, and then insert a sharp knife between the skin and the flesh. Stroke the flesh away from the skin with a gentle sawing action keeping the knife at an angle and working from tail to head. Rinse the fillets and dry on kitchen paper.

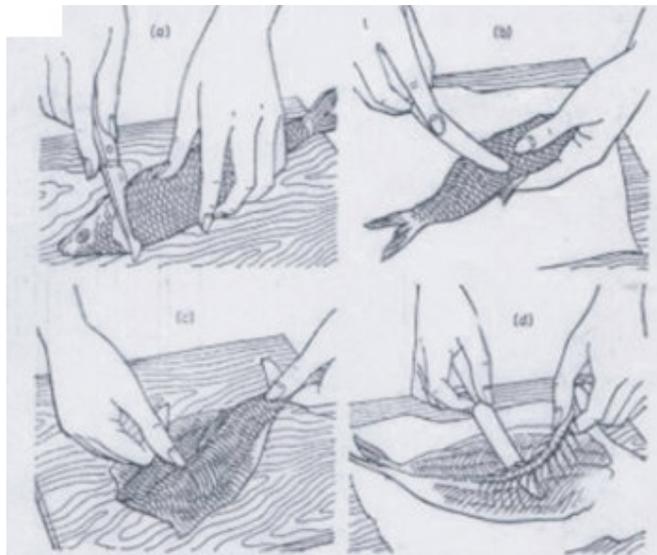


Fig 8.3: To fillet a herring: (a) Cut off head (b) Scrape to remove scales (c) cut down to tail, open fish, place on board and press along centre back; (d) turn fish over, ease

3.3.2 Preparation of Dried Fish

- Wash thoroughly to remove sand or grit.
- Remove the head and fins
- Remove scales or skin
- Flake or cut in moderate size pieces according to the purpose for which it is required.

3.3.3 Methods of Cooking Fish

The important thing to remember is that fish cooks quickly, and if it is cooked for too long, it will lose its flavour and become stringy and dry. So, whichever method you choose, avoid over cooking.

The various methods of cooking fish include: Boiling, poaching, steaming, grilling, frying, (deep or shallow), baking, Roasting and stewing.

1. Frying

This is the most popular method of cooking fish. Shallow method of frying is usually employed, however, deep frying is recommended if large quantities of fish are to be fried. Fried fish is tastier and more attractive than fish cooked by other methods, but it is less digestible and therefore not suitable for infants, sick children and invalids. It is also desirable to coat fish before frying because of the following reasons:

- To prevent fish from being in direct contact with the hot oil.
- To keep the shapes of the of the fish
- To conserve the nutrient in the fish.

Fish can be coated with seasoned flour i.e. flour which salt and white pepper have been added; butter, eggs and bread crumbs

2. Boiling

This is process of heating the fish in water medium. The fish is susceptible to breakage with this method of cooking. Most of the fish nutrients are lost to the cooking medium. Water is therefore a wasteful method. The water however, can be used as starch for soups, sauces and gravies.

3. Stewing

This is also a common method of cooking fish. It involves cooking the fish in some water and a little oil over a low heat for a long period. It is

therefore economical and also conserves all the nutrients. It is suitable for tough cuts. It is more digestible than fried fish.

4. Steaming

This is another suitable method of cooking fish for sick people as it makes it easy to digest. The flavour and nutrients are also conserved as fish is cooked in steam and not allowed to come into contact with water. Fillets of fish are the best, but small whole fish as well as thin cuts can be used.

5. Grilling

This is heating the fish through radiation from the fire. Since the drips from the fish are lost to the fire, some of the nutrients especially fat soluble vitamins can be lost during cooking with this method. Fish cooked by this method include herrings and other small fish.

6. Baking

This is the process of cooking the fish in the oven after coating. It is not very common method. Fish suitable for cooking by this method are whole large fish or rolled fillets.

4.0 CONCLUSION

This unit focuses on fish cookery. It classifies according to its culinary purposes which are fin fish and shell fish. We also noted different types of fish cuts. We highlighted points to consider when buying fish for cookery. Also we explained different methods of preparing different kinds of fish. Methods of cooking fish include, boiling, stewing, steaming, grilling, baking and frying.

5.0 SUMMARY

Fish is a good source of protein and other nutrients. The cookery of fish can be classified into two major types according to their culinary purpose which includes fin fish and shell fish. There are also different fish cuts. Fish can be preserved by freezing, canning, salting, pickling and smoking. The best method of storage is by freezing.

In the next study unit, we shall discuss beverages

6.0 TUTOR-MARKED ASSIGNMENTS

- 1 Outline the factors to be considered when buying fish.
- 2 State the various methods of cooking fish.

7.0 REFERENCES/FURTHER READINGS

Kaufmann and Cracknell (1975): *The Practical Professional Cooking*,
The Macmillan Press Ltd. London

Foskett, David, (2003). *The Theory of Catering*, Book Power with
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Wright, Reilly O Enid (1985): *The Students' Cookery Book* Oxford
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MODULE 3

Unit 1	Beverages
Unit 2	Catering for Special function
Unit 3	Menu for Special Nutritional needs
Unit 4	Making Bread and Dough Product

UNIT 1 BEVERAGES

CONTENTS

1.0	Introduction
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3.0	Main Content
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3.1.1	Food Value and Types of Coffee
3.1.2	Uses, Rules and Quality Points for Buying Coffee
3.1.3	Methods of Making Coffee
3.1.4	Reasons why Bad Coffee is Produces
3.2	Tea
3.2.1	Food and Blends
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3.3	Cocoa
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3.4	Chocolate
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3.5.1	Milk Drinks
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1.0 INTRODUCTION

The simplest, cheapest drink of all is water which varies from place to place in taste and character according to the substances dissolved or suspended in it. Soft water has a low content of lime. Hard water has abundance of lime (if the flavour to lime is too strong, the water may have to be softened to remove the excess of lime). The word beverage means a drink; the generally accepted definition is a non-alcoholic liquid. Beverages are fluids consumed as stimulants. Beverages can be broadly classified into two categories; - Alcoholic and non-alcoholic (beverage or soft drink) beverages. Examples of non-alcoholic

beverages are chocolate, coffee, cocoa, tea, fruit drink, mineral, water milk. Examples of alcoholic beverages are cocktails, aperitifs, fancy drinks, wines, fortified wines, spirit, beer, cider, perry. Low alcoholic drinks are also available.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- Identify the various types of alcoholic and non-alcoholic beverages.
- Explain the food value and uses of beverages
- Describe how to make different types of beverages.

3.0 MAIN CONTENT

3.1 Non Alcoholic Beverages: Coffee

Coffee is a non-alcoholic beverage. Coffee seeds are obtained from the mature plant whose seeds, known as coffee beans, are usually roasted and then milled. The composition of coffee is complex with a large range of compounds including flavanoids, chlorogenic acids, nicotine acids and caffeine. Coffee contains the following:

- A stimulant known as caffeine
- A volatile oil which gives a particular flavour.
- Tannin: the tannin is responsible for the astringent flavour perceived. However, the quantity of tannin in coffee beans is reduced during the roasting process.

3.1.1 Food Value and Types of Coffee

Coffee itself have no food value, but when milk and sugar are added, it improves its nutritive value.

The types of coffees are:

- Espresso – steam under pressure is forced through powdered coffee.
- Cappuchino – strong filtered coffee with whisked hot milk added.
- French Coffee usually contains chicory; the root is washed, dried, roasted and ground. The addition of chicory gives a particular flavour and appearance to the coffee.
- Coffee essence is a concentrated form of liquid which may contain chicory

- Instant coffee is liquid coffee which has been dried into powdered form.
- Decaffeinated coffee has most of the caffeine removed, and is, therefore, less stimulant.

3.1.2 Uses, Rules and Quality Points for Buying Coffee

Coffee is mainly used as a beverage which may be served with milk, cream or as a flavouring for cakes, icings, mousse and ice-cream. It can be brewed to suit individual tastes. The different pure coffees which can be brewed in a wide selection of different coffee makers, or by various special brewing methods, make it possible to provide a brew to suit everyone. Whatever type of coffee is drunk, and regardless of roasting time, fineness of grind or brewing method, there are basic rules to observe for making a good cup of coffee.

The Rules for Making Coffee are as follows:

- Use good coffee which is freshly roasted and ground.
- Use ground or vacuum-packed coffee within 10 days or the quality will deteriorate. Store in airtight containers in a cool place.
- Use freshly drawn, freshly boiled water cooled to 92°C – 96°C (198 – 205°F) (to preserve the flavour and aroma of the coffee) Do not use boiling water.
- Measure the quantity of coffee carefully 300 – 360g (11 – 13oz) per 5 litres (9 pint)
- After the coffee has been made, it should be strained off, otherwise it will acquire a bitter taste if kept hot for more than 30 minutes. Do not reheat brewed coffee.
- Milk is served with coffee, should be hot but not boiled.
- All coffee making equipment must be kept scrupulously clean, washed thoroughly after each use and rinsed with clean hot water (never use soda).
- Make coffee in pots which have been thoroughly dried and warmed.

The Quality Points for Buying Coffee are as follows:

- A good quality coffee bean should be bought.
- The bean should be freshly ground
- As water varies in different areas, sample brews with several kind of coffee should be made to select the best result.

3.1.3 Methods of Making Coffee

Coffee can be prepared successfully by a variety of methods. Such methods include jug method, cafeteria, automatic drop, glasscone, Turkish or Greek, Espresso, sauce pan method and still set method. Whatever the method used, the best results are obtained when the coffee is fresh.

The various methods of making coffee are:

- i. **Jug or Sauce Pan Method:** - Boiling water is poured into the coffee grounds in a jug or a sauce pan, allowed to stand for a few minutes, then strain.
- ii. **Instant Coffee:** - Boiling water is added to soluble coffee solids. The flavour of instant coffee is improved if it is made in a pot using approximately one heaped teaspoon for each cup, and according to taste. Fresh water which is below boiling point should be added. Instant coffee is convenient because it can be made into individual cups by adding water to the coffee and stirring.
- iii. **Percolator Method:** -When the water boils, it rises up through a tube and percolates through the coffee grounds.
- iv. **Cona Coffee:** - The water is boiled in a glass globe then it passes up a tube to a glass cup which contains the ground coffee. Here it infuses and as it cools, it drops as liquid coffee into the bottom of the glass globe.
- v. **Still Set:** - This consists of a container into which the ground coffee is placed. Boiling water is passed through the grounds and the coffee is piped into an urn at the side.
- vi. **Espresso:** This method involves passing steam through coffee grounds and infusing under pressure.
- vii. **Filter method:** - Boiling water is poured into a container into which the ground coffee has been placed. The infusion takes place and the coffee drops into the cup below.

3.1.4 Reasons why Bad Coffee is Produced

1. Weak Coffee

- Water has not reached boiling point.
- Insufficient coffee

- Infusion time too short.
- Stale or old coffee used
- Incorrect grind of coffee used for equipment in operation

2. Flat Coffee

- All points for weak coffee.
- Coffee left in urn too long before use, or kept at wrong temperature.
- Dirty Urn or equipment
- Water not fresh, or boiled too long
- Coffee reheated.

3. Bitter Coffee

- Too much coffee used.
- Infusion time too long
- Coffee not roasted correctly
- Sediment remaining in storage or serving compartment
- Infusion at too high a temperature
- Coffee may have been left in urn for too long before use

3.2 Tea

Tea is the name given to the young leaves and leaf buds of the tea plant after they have been specially treated and dried. Tea is an evergreen plant of the camellia family which is kept to bush size for easy plucking and only the two top leaves and bud are plucked.

Tea is prepared from leaves of the shrub tea sinesis. The beverage is prepared by steeping the leaves or extracts in hot water. Like coffee tea also contains:

- A stimulant
- A volatile oil which gives it its flavour
- Tannin.

Tea show marked difference according to the country and district in which it is produced and it is usual to blend several types.

China teas have the most delicate flavour of any, but lacks body. Tea comes in either tea bag or loose leaves packs which cover a wide variety of catering needs.

3.2.1 Food and Blends

Tea is a natural product. It contains no artificial colouring, preservations or flavourings. It is virtually calorie free and has no fat content, if taken with or without milk or sugar. Tea alone has no nutritional properties, but it is a most refreshing drink. Nutritional value is only supplied by the milk and sugar added to the tea.

1. **Blend:** The word “blend” indicates that a named tea in the market for sale to the public may be composed of a variety of different teas to produce one marketable tea acceptable to the average consumer palate.

Blends of tea provide the widest possible choice of tea with many different characteristics and flavour. A popular, brand leading blend can contain as many as 35 different teas.

2. **Speciality Tea:** Takes its name from the area or country in which it is grown. A blend of tea for a particular time of the day, a blend of teas, known after a person; a blend of teas which fruit oil, flower, petals or blossoms have been added or a ‘made’ processed tea.
3. **Flavoured Teas:** Are real tea blended with fruit, herbs or spices. These should not be confused with tisanes and fruit infusions made from herbs, hibiscus leaves and fruits, but which do not contain any real tea. Several varieties of green tea are also available.

3.2.2 Uses and Storage of Tea

There are more than 150 blends of tea grows in more than 31 countries:

- Use a good quality loose leaf or bagged tea.
- This must be stored in airtight containers at room temperature
- Always use freshly drawn boiling water
- In order to draw the best flavour out of the tea, the water must contain oxygen. This is reduced if the water is boiled more than once.
- Measure the tea carefully
- Use 1 teabag or 1 rounded teaspoon of loose tea for each to be served.
- Allow the tea to brew for the recommended time before pouring

Figure 9.1 Recommended Brewing Times

	Type	Country of Origin	Brewing time	Milk/Black lemon	Characteristics.
Darjeeling	Black	India	3 – 5 minutes	Black or milk	Delicate, slightly astringent flavour
Assam	Black	India	3 – 5 minutes	Black or milk	Full-Boiled with a rich, smooth, malty flavour.
Ceylon Blend	Black	Sri lanka	3 – 5 minutes	Black or milk	Brisk, full flavour with a bright colour.
Kenya	Black	Kenya (Africa)	2 – 4 minutes	Black or milk	A strong tea with a brisk flavour
Earl Grey	Black	China or China Darjeeling	3 – 5 minutes	Black or lemon	Flavoured with the natural oil of citrus bergamot fruit.
Lapsang Souchong	Black	China	3 – 5 minutes	Black	Smoky aroma and flavour
China Oolong	Oolong	China	5 – 7 minutes	Black	Subtle, delicate, lightly flavoured tea.

1. **Method of Preparation of Tea:** All the utensils used must be clean. Pre-heat the tea pot by pouring water into it for some time and then pouring it out. Then put the tea bag or sachet into the hot tea pot and pour boiling water over it. (about one teaspoon to each pint of water). Infuse for about 5 minutes, keeping warm during infusion. Pour out at once after infusion. It is then ready for consumption. Milk and sugar can be added if desired.
2. **Storage of Tea:** Packs of tea should be stored in a clean dry and well ventilated store room, away from strong smelling products. Once a pack is opened the tea should be kept in a dry clean airtight candy because it will pick up any aroma or flavour and become tainted.

3.3 Cocoa

Cocoa beans are the seeds obtained from the cocoa tree. The seed are usually enclosed in a pod, which is yellowish in colour when ripe and

green when unripe. When ripe, the beans are removed, fermented and then dried. The dried beans are then subjected to processing. Different beverages can be produced from cocoa. These are usually prepared by dissolving the desired quantity (usually about 1 – 2 teaspoonfuls in a cup). Sugar and milk are added if desired. Cocoa should be kept in airtight containers in a well ventilated store.

3.3.1 Food Value and Uses of Cocoa

Cocoa contains some protein and a large proportion of starch. This helps to provide the body with energy. Iron is also present in cocoa.

Uses of Cocoa

For hot drink, cocoa is mixed with milk, and water. Whole liquid is needed to cook the starch and make it more digestible. Cocoa can be used to flavour pudding, cakes, sauces, icing and ice-cream.

3.4 Chocolate

Cocoa beans are used to produce chocolate and over half of the cocoa bean consists of cocoa butter. To produce chocolate, the cocoa butter is mixed with crushed cocoa beans and syrup. With bakers' chocolate, the cocoa fat (butter) is replaced by vegetable fat thus giving a cheaper product which does not need tempering.

For commercial purposes chocolate is sold in blocks known as couverture. Pure chocolate couverture is made from cocoa mass, highly refined sugar and extracted cocoa butter. It is the additional cocoa butter which gives couverture its qualities for moulding, its flavour and therefore its higher price.

Uses of chocolate

Chocolate or couverture is used for icings, butter creams, sauces, dipping chocolates and moulding into shapes.

Drinking Chocolates

This is ground cocoa from which less has been extracted and to which sugar has been added. It can be obtained in flake or powdered form.

3.5 Mineral Waters and Soft Drink

A wide range of mineral waters are available, both home produced and from overseas, and either natural (still) in character or treated with gas

(carbon dioxide) to give a light sparkle or fizz. Examples of natural mineral waters are button and malvern. Manufactured soft drinks include grape fruit, lime juice (still) and tonic water. Coca-cola, ginger, (sparkling) etc. squashes and cordial are all concentrated fruit extracts, meant to be broken down with fresh or aerated water into a long drink, and to be served hot or iced. Fruit juices are the unfermented juice of fresh fruits such as apple, grape, orange, tomato. Fruit syrup are concentrated fruit juices preserved with sugar or manufactured from compound colouring and flavours (orange, lime, cherry). A large range of compound flavourings is available.

3.5.1 Milk Drinks

Milk can be offered plain, either hot or cold. Other milk drinks include:

- Milk shakes with ice cream – A mixture of fresh milk, ice-cream and a flavouring syrup, rapidly whisked and served in a tall glass.
- Ice-cream sodas – Combination of fruit syrup and fresh cream in a long glass filled with soda water and topped with ice-cream.
- Egg noggs – Beaten eggs (preferably pasteurized) with fruit syrup and sugar added, mixed with hot or cold milk in a tall glass and topped with grated nut meg.
- Coffee and cream make a good coffee, pour into a cup and top with thick cream.
- Orange milk shake – use orange squash in flavouring syrup and vanilla ice cream. Top with sliced oranges and blend until a light fluid is obtained. Skimmed milk or fresh oranges can be used.
- Coffee milk shake – Use very strong coffee or a teaspoonful coffee powder or coffee essence and vanilla ice cream.
- Iced fruit cup – Mix together fruit juice, pineapples and fresh orange juice. Pour over crushed ice and top with sliced oranges or lemons.
- Milk with honey – Add one spoonful of honey and a few drops of lemon juice to a glass of warm milk.
- Egg flip – Whisk the egg and sugar well together. Warm the milk and pour on the egg. Add brandy and mix well. Serve in a glass
- Other products from which beverages are made either by addition of hot water or milk includes; Bournvita, Bovril, Horlicks, Ovaltine.

3.5.2 Alcoholic Drinks

These are beverages that contain some percentage of alcohol. They vary from beer, stout, wine and spirit. Wine has been made for over 6000 years and is produced in most parts of the world. It is the fermented

juice of the grape and is available in many styles: red, white, sparkling, organic, alcohol-free, de-alcoholised and low alcohol. Wines may be drunk while young (within a short time of bottling) or allowed to age (in some cases for many years).

Bottled wines should always be stored on their sides so that the wine remains in contact with the cork. This keeps the cork expanded and prevents air from entering the wine which, if allowed to happen, will turn the wine to vinegar.

Most of the alcoholic drinks have a stimulating effect due to their alcoholic content. Examples of alcoholic drinks include:

- **Fortified wines** – are those which have been strengthened by the addition of alcohol usually produced from grape juice. The best known are port, sherry and madeira.
- **Aromatised wines** – are produced by flavouring a simple basic wine with a blend of ingredients: (fruit, roots, bark, peel, flavour, quinine, herbs). Vermouth and Dubonnet are two examples of aromatised wines popular as aperitifs.
- **Spirits** – are distillations of fermented liquid which are converted into liquid spirit. They include whisky, gin, vodka, brandy and rum.
- **Liqueurs** – are flavoured and sweetened spirits. A wide range of flavouring agents are employed (e.g. aniseed caraway, peaches, raspberries, violets, rose petals, cinnamon, sage, honey, coffee, beans). Many different liqueurs are available (cointreau, cherry, brandy, etc).

Cocktails and Mixed Drinks

Cocktails are usually a mixture of a spirit with one or more ingredients from liqueurs, fruit juice, fortified wines, eggs, cream etc. Cocktail may be garnished with mint, borage, fresh fruit, olives, etc. Mixed drinks have an assortment of names that include flips, fizzes, noggs, soirs, and cups. Cocktails and mixed drinks can also be made from non alcoholic ingredients.

Beer

Is a term that covers all beer-like drink such as ale, stouts and lagers. It is made from a combination of water, grain (e.g. barley), hops, sugar and yeast.

Types of beers include: bitter mild, burton, strong ale, barley wine, porter, lager. Reduced alcohol beers are also available.

Beers are good sources of energy, they contain high levels of carbohydrates and protein. Beers are richer in minerals than wines, but lower in alcohol at only 305%.

3.6 Recipes for Beverages

1. **Iced Tea:** Make the usual way. Infuse for 4 minutes and strain. Chill thoroughly. Serve with ice cubes and a slice of lime or lemon in the cup
2. **Iced Coffee:** Make coffee in the usual way. Add milk and chill thoroughly. Sweeten before chilling if necessary
3. **Lemonade:**

Ingredients

2 lemons
500ml boiling water
Sugar to taste

Method

- Wash lemons. Cut a few thin pieces of the rind from one of them
- Squeeze out the juice of both lemons into a jug. Add lemon rind and sugar. Pour on boiling water.
- Cover the jug and allow lemonade to stand until cold. Strain and chill if possible.

4. Pineapple Drink

Ingredient

Pineapple
2 pints of water
Sugar to taste
A few cloves.

Method

- Wash the pineapple very well before peeling. Put the peelings in an enamel sauce pan and cover with water.
- Bring to the boil and boil for 5 – 10minutes
- Strain and add the cloves and allow to stand until cold.
- Sweeten. Remove cloves and chill before serving

When pineapples are plentiful, the pulp may be used together with the peelings.

SELF ASSESSMENT EXERCISE

How would you prepare lemonade?

4.0 CONCLUSION

In this unit we have discussed about beverages. Beverages can be classified into alcoholic and non alcoholic beverages. Non alcoholic beverages are coffee, tea, cocoa, chocolate and milk. Alcoholic beverages are beer, liqueur and wine. The unit also discussed various reparations of both alcoholic and non-alcoholic beverages. It also highlighted the effects of alcoholic and non-alcoholic beverages.

5.0 SUMMARY

Beverages can be classified into alcoholic and non-alcoholic beverages. Non-alcoholic beverages include coffee, tea, cocoa, milk. Coffee types are Espresso, Cappichino, French coffee, Coffee essence – instant coffee and decaffeinated coffee. Milk drinks include ice cream, milk shakes, Egg noggs etc. Minerals and soft drinks are also non-alcoholic beverages. Alcoholic beverages include wines, cocktails, beers, liqueur, spirits. Alcoholic drinks have stimulating effect because of the alcoholic contents.

In the next study unit, we shall discuss catering for special functions.

6.0 TUTOR-MARKED ASSIGNMENTS

1. (a) Differentiate between non-alcoholic and alcoholic beverages.
(b) Describe any three methods of making coffee
2. Name and describe the method of preparing any five milk drinks.

7.0 REFERENCES/FURTHER READINGS

Foskett, David et al (2003). *The Theory of Catering*, Book Power with Hodder and Stoughton (Tenth Edition).

Lillicrap, R Dennis, Cousins A John (1994). *Food and Beverage Service*, Hodder and Stoughton Educational: London (Fourth Edition).

Wright, Reilly O Enid (1985). *The Students' Cookery Book*, Oxford University Press.

ANSWER TO SELF ASSESSMENT EXERCISE

Lemonade

Ingredient

2 lemons
500ml boiling water
Sugar to taste

Method

- Wash lemons. Cut a few thin pieces of the rind from one of them.
- Squeeze out the juice of both lemons into a jug. Add lemon ring and sugar.
- Pour on boiling water
- Cover the jug and allow lemonade to stand until cold, strain and chill if possible.

UNIT 2 CATERING FOR SPECIAL FUNCTION

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 - 3.3 Service Method in Function Catering
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1.0 INTRODUCTION

A function can be described as the service of food and drink at a specific time and place for a given number of people at a known price. Food plays an important role in our day to day social activities. Food occupies a unique position in the society. Apart from its importance in providing energy and promoting growth, food has a specific and important significance on certain functions. Such functions include, birthdays, naming ceremonies, weddings, special reception to mark important occasion or special dinner, luncheon or cocktail party for important guests.

The joy over marriages, births, feasting at which the presence of guests adds to the mirth and happiness of such moments. The services of food, then has always been associated with intimate human contact. Whenever such occasions for celebrations arise, there must be guests and hosts or hostesses and caterers. The guests are the people who came to share the joy or happiness of the occasion, while the host or hostesses are the people who are around to receive and welcome the guests while the

caterer provides and serves food and drink at the function. The success of any function is a joint responsibility of the host, guest and caterer.

The type of function and the purpose for which it is meant will dictate the type of food to prepare. Apart from the functions mentioned, some foods are specially associated with important festivals in the various localities of the country.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- Explain the various hospitality catering function
- Explain the factors to consider when planning special function.
- Identify the various types of menu for function catering
- Describe the different methods of serving foods at function catering.

3.0 MAIN CONTENT

3.1 Function Catering

Function catering is the term used to cover the service of special functions for special groups of people at specific times, the food and beverages provided being predetermined. It includes occasion such as luncheon parties, conferences, cocktail parties, weddings, naming ceremonies, birthday parties and dinner-dances.

In the large first class establishments, all functions take place within the banqueting suites and are under the administrative control of the banquet manager. In smaller operation, these functions normally take place in a room set aside for the purpose and come under the jurisdiction of the manager or assistant manager. There are also specialists, banqueting conference centres or hall. Most of the staff available for functions are employed on a casual basis. However, depending on the type of function, some takes place in the host or celebrants' house or in an open field.

Sometimes, functions are called banquets. However, the word banquet is normally used to describe a large formal occasion. The variety of function event ranges from simply providing bar facilities in reception area before meeting, to more formal occasion catering for 1500 – 3000 people. The type of function facilities found in an establishment will also depend on the level of market for which it is catering. Function catering is found in the commercial and public sectors of the hospitality industry. The type of function suites and variety of functions offered in

all establishments will often differ considerably. Policy decisions relating to function catering are determined by a number of characteristics inherent in this type of catering.

First, depending on where the establishment is located there will be a banqueting season. This is where the main business is concentrated, for example, from May to December, depending on the location, and this is known as the wedding season. The manager is then also able to assess the profit margins to be achieved. This will then aid the control procedures and help to establish yardsticks against which the performance of a function may be measured. Function menu are usually pre-listed with the desired profit margins added to them. These menu will generally have a standard set of purchasing operational specification added to them.

3.1.1 Types of Functions

There are two main types of hospitality function:

1. Formal meals (sometimes called banquets)

- Luncheons
- Dinner
- Wedding breakfasts

2. Buffet receptions

- Wedding receptions
- Cocktail parties
- Buffet teas
- Dances
- Anniversary parties
- Conferences

A further breakdown of the types of function may be as follows:

1. Social Functions

- Dinner (trade association)
- Luncheon (Rotaries)
- Receptions
- Cocktail parties
- Charity dinners
- Corporate entertaining
- Naming ceremony

2. Conferences (Business Function)

- Political Conferences.
- Trade union
- Training seminars.
- National and International Conferences
- Sales conferences
- Academic Conferences.
- Working Lunch
- Working Dinner

3. Public Relations

- Press party to lunch a new project
- Fashion parade
- Exhibitions
- Dealer's meetings
- Seminars.

4. Other functions include

- Burial ceremony
- Festivals
- Birthday party
- House warming
- Christmas party

3.1.2 Factors to Consider when Planning Functions Catering

Whatever may be the type of occasion, the following points should be considered when planning for functions:

- The money available
- The importance of such occasion
- The number and type of people invited to the function
- The type of food in season.
- The facilities available (cooking equipment and serving equipments)
- The time the party is expected to take place i.e. morning, afternoon, evening or all night party.
- The age of the invitees expected at the function
- The venue of the party

3.1.3 Collecting Function Details

Customers or hosts are usually invited for detailed view of the venue. In some establishment this will include a menu tasting. During the menu tasting, the customer is encouraged to discuss their requirements. The food and beverage manager will gather this information. The customer will also be advised of the different options available, for example:

- Different room layouts
- Choice of menu, vegetarians or allergy requirements
- Order of service
- Flowers
- Cloakroom requirements
- Technical requirements, overhead projectors, public address system, etc.

The customer requirements are then summarized in a function sheet designed by the establishment. This will allow for adequate planning by the food and beverage department of the establishment.

3.2 Function Menu

Function catering always entails extra work and requires thorough planning well in advance. As food is the most important item involved, thought should be given to the choice of food appropriate for the occasion, the number of people catered for and the cost involved.

Dinner, luncheons, and buffets: These may be formal or informal. These are special occasions on which special foods are served. They are usually held to commemorate specific events. For example the visit of another president or head of state to Nigeria, marking the foundation anniversary or convocation of an institution, or attainment or achievement of a special goal etc. When such a special party is held in the evening, it is called dinner, while it is referred to as luncheon if it is held in the afternoon. Buffet could be served either in the afternoon or dinner.

Special guests are usually invited to such ceremonies. They may take the form of a sit down meal or standing buffet, planning is absolutely essential. Menu may consist of some or all the following depending on the form the party will take:

- Appetizers: fruit cup, fruit juice, grape fruit, tomatoes juice, melon, shrimps, sardine, salted nut, etc.
- Soups: thin soups, vegetable soups etc.

- Fish: fried, steamed, fish stews, etc
- Meat: stews, roast, grilled etc.
- Poultry: roast, stews, etc.
- Cereals: rice, corn, millet etc
- Pulses: - Beans, peas, lentils
- Vegetable: root vegetable, green vegetables, salad
- Desserts: pudding, custard, fresh fruits.
- Coffee or tea.

The types of menu offered could be: table d'hotel menu that is a set price: -

One, two, or three course menu with ideally a choice at each course. Or A'la carte menu: that is a list of well varied dishes each priced individually so that the guest can make up his/her own menu of whatever number of dishes that may required. Menu could be a buffet which may be all cold or hot dishes or a combination of both, either to be served organized on a self service basis. Depending on the time of year and location, barbecue dishes can be considered.

3.2.1 Cocktail parties

Preparation of food for cocktail parties can always be done in advance. Usually finger foods are served on such occasions. They include pastries of different types. Tiny savouries or snacks are usually served and they should be small enough for people to pick up with their fingers and put into their mouths. Savouries should not be greasy and should not have garnishes that are likely to drop off and soil people's clothes. For good results, cocktail savouries could be arranged by sticking them with cocktail sticks and pressing the ends of the sticks into a grape fruit, a whole or halved pineapple, a melon or a large cabbage. They could also be attractively arranged on trays, or flat plates lined with a plain doyley or aluminium foil.

When planning cocktail savouries, have some or all of the following. More may be provided if necessary:

Cheese: Biscuits, rolls, straws, cubes, with olive or cocktail onions

Fish: Shrimps, prawns, fish balls.

Meat: Meat balls, tiny cocktail sausages, icebabs

Potato: Crisps, chips, balls.

Pastries: Sausage rolls, fish boats, etc.

Sandwiches: Variety of savoury fillings.

Eggs: Stuffed, scotch eggs.

Beans: Akara balls or other bean savouries

Rice: Rice cakes.

Cassava: Cassava crisps chips, straws

Plantain: - Crisps, round of green plantains fried

Nuts: - Groundnuts, cashew, cocktail onions, gherkins, olives.

3.2.2 Birthday and Weddings

Preparation for wedding parties can be spread over a long period same as for a birthday party. Careful planning is needed to avoid waste of time, energy and food. The types of foods prepared for these two occasions are similar. They usually involve preparation of a cake which is expected to be cut with some fun fare. Apart from the cake, any other type of food may be served depending on the financial disposition of the celebrant.

The dishes served are however different; that is, menu for formal and informal. As for formal, there should be a varied choice of menu with a wide price range and special menu available for the occasions. As functions are booked up months in advance, special care is called for with regards to foods in season. The minimum number of courses is often four plus beverages. They are often made up of:

- Hors d'oeuvre or other appetizers
- Soup fish
- Meat – with a selection of seasonal vegetables
- Sweet
- Coffee – with a selection of petites fours.

The above menu is popular today but extra or alternative courses such as entrees, cheese, or savouries may be added. As for the other formal, some of the dishes served are:

- Grain - jollof rice, fried rice, plain boiled rice
- Meat – beef stew, chicken stew, peppered chicken, roast chicken, roast mutton, pork
- Salad – lettuce and tomatoes salad served with fish or chicken
- Cabbage – boiled or coleslaw
- Fish – steamed and dressed
- Rice bread.
- Assorted cakes
- Ginger beer.

3.2.3 Burial Ceremonies

Special diets are usually prepared during the burial ceremonies of an old people. At such ceremonies different types of foods are prepared varying

from bean cake (akara), rice (white, jollof and fried); meat and chicken stew, yam flour (amala) fufu, garri (Eba), pounded yam with egusi soup, etc. This practice is however common among the Yoruba tribes and some tribes in the Eastern part of Nigeria.

3.2.4 Naming Ceremonies and Traditional Ceremonies

In some areas of the country, special diets are expected to be prepared during naming ceremonies and some traditional festivals. However, in most cases, the normal diets peculiar to the area and are easily available are prepared during the naming ceremonies. However, during the traditional festivals menu offered are tied to specific diet. For example during the Eebi festival in Yoruba land, Ikokore must be prepared.

3.3 Service Methods in Function Catering

Generally, it is recognized that in functions, the service may take any of the following forms:

- Silver
- Family
- Plate
- Assisted service
- Self-service
- Compromise service
- English service

The type of service method chosen is usually determined by the:

- Host's wishes
- Time factors
- Skills of the service staff available
- Equipment available
- Type of function

3.3.1 Informal Services

There are different types of informal services. These are:

1. **Family style service:** This is when the whole food is placed or main part of it is placed on the table at one time and served by the persons at the table. This type is widely used in many homes. This is because it is simple and requires less time and effort than most other forms of service. Family style service has advantages and disadvantages. The advantage is that (1) people can help

themselves only to the kind of food they meant (2) they can take only the amount of food they think they can eat. While the disadvantages are (1) people often take more than they can eat, so food left over on plates is usually thrown away. (2) food may be allowed to sit on the table longer than it should, allowing harmful bacteria to grow.

2. **English service:** In this style, all the food is served at the table by the host and hostess and other members of the family. It is a pleasing and hospitable form of service.
3. **Compromise service:** In this style, some of the foods are served at the table, usually by the host, and others may be served in individual portions from the kitchen. This is a suitable style for any meal and may be used with or without a waitress. Usually, the main dish and the accompaniments of the menu dish are served at table.
4. **Plate service:** The food is placed in the plates in the kitchen and then served to the guests. This type is often used in parties such as naming ceremonies, funerals, house warming etc. It is a quick and easy form of service. This type of service offers an opportunity to arrange the food attractively and give the size of portion desired. Its advantage is that (1) you can practice portion control (2) as soon as the food is put on plates, the remaining food can be put in the oven or refrigerator to keep it at its proper temperature. The disadvantages are that (1) some people especially guests, may prefer to help themselves to the amount of food they want (2) people must ask for second helpings if they are still hungry. They may hesitate to do so.

3.3.2 Formal Service

The only type of formal service is Russian or continental style. It is not used very often in the home, but mainly used during formal dinners and luncheons. It is used mainly by the hotels and restaurants. In this style, all the food is served from the kitchen, and requires adequate trained waiter or waitress service. A formal meal should be undertaken without adequate and well trained help. At least, one waiter or waitress is needed for every six guests.

3.3.3 Buffet Style Service

In this style, the guests serve themselves. It is often called the do-it-yourself service, and is convenient for entertaining a large number of guests when there is no maid or servant. The food is arranged in serving

dishes on a table or counter along with dishes, napkins, and flatware. The guest approach the buffet at its various points to select their requirements course by course, most ancillary items may also be collected if needed, at the buffet. These might include rolls, butter, sauces and the like. The guests then return to their tables to consume the meal. Any dirt are then removed by clearing staff at the appropriate time.

4.0 CONCLUSION

In this unit, our main discussion was catering for special functions. We looked at the different types of functions. We then outlined the factors to be considered when planning function catering. Also we explained function menu. We then discussed on cocktail parties, birthdays and weddings, burial ceremony, naming and traditional ceremonies. Finally, we examined the different service methods.

5.0 SUMMARY

In summary, a function is the service of food at a specific time and place for a given number of people at a known price. The two main types of hospitality functions are formal meals (banquets) e.g. luncheons, dinner, wedding, breakfast and buffet receptions, e.g. wedding reception, cocktail parties, buffet teas and anniversaries. Other include social conferences, public relations, burial ceremonies and festivals.

Function meals include, appetizers, soups, fish, meat, poultry, cereals, pulses, vegetables, desserts, coffee or tea. The types of services are silver, family, plate assisted service, English service.

The service method chosen is determined by the host's wishes, time factor, and skill of the service staff, equipment available and type of function.

In the next study unit, we shall discuss menu for special nutritional needs.

6.0 TUTOR-MARKED ASSIGNMENTS

1. List the different types of functions we have and give examples.
2. List seven service methods you know.

7.0 REFERENCES/FURTHER READINGS

Foskett, David et al (2003). *The Theory of Catering*, Book Power with Hodder and Stoughton (Tenth Edition)

Wright, Reilly O Enid (1985). *The Students' Cookery Book*, Oxford University Press.

UNIT 3 MENU FOR SPECIAL NUTRITIONAL NEEDS

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- 7.0 References/Further Readings

1.0 INTRODUCTION

In the first unit of the course ‘Menu Development of Planning’ (HCM 203), we treated food and Nutrition. You already know that there are different types of food nutrients. These nutrients perform different functions in the body. They also occur in different food sources. It is therefore necessary to combine a number of foods in order to ensure that a person’s meal contains all important nutrients. The nutritional requirements of human beings vary according to their physiological stages. The nutritional requirement of the infant for example is different from that of a pregnant woman. Apart from the physiological stage, there are other factor that affect the nutritional requirements of human beings.

Some of these factors are: - occupation, climate, stress, sex, type of recreation indulged in, etc. However, we shall be concerned in his unit,

with the nutritional needs of human beings as affected by the physiological stage or age. A combination of a number of foods given to an individual lead to balanced meal. A balanced meal is one that contains the important nutrient in the correct quantity for a given person. In HCM 203, you learnt some of the factors to be considered when planning menu. In this unit, you are also going to learn more about meal planning.

The health of an individual depends to a large extent on how effectively the nutritional needs are met. Therefore, an understanding of the characteristics of different groups of people and their nutritional needs is necessary for effective planning and preparation of good meal.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- Describe the characteristics of each different groups of people that affect their nutritional needs.
- Identify the nutritional needs of each groups of people.
- Explain the guidelines for meal planning.
- Plan simple balanced meal for different groups based on special needs.

3.0 MAIN CONTENT

3.1 Nutritional Needs of Infants and Children

Infancy covers the period from birth to one year (0 – 1year) while children covers toddler age one to two years. At no other time in human life is food as important as during infancy. This is because this is the stage at which the rate of growth is highest. For example, the weight of an infant at five months old almost doubles his or her weight at birth. Also at this stage, the infants are more susceptible to infection and therefore they need food to develop effective antibodies. For the infant to be able to meet both conditions, a well balanced diet must be given. It is therefore necessary for us to also examine characteristics of infants which influence their nutritional needs.

Since the function of growth is performed by protein, infants require a generous amount of it. Both the quantity as well as the quality of the protein must be adequate. All essential amino acids must be present for optimum growth to take place. Apart from this, the protein must be in a form that can be easily digested by the infant for it to be useful. The energy content of the infants' diet must also be adequate. This is because, if the energy content of food is not enough for the body

requirement, part of the protein will be used in producing energy and growth will therefore be retarded.

Similarly, adequate vitamins should be supplied. At this age, the bones and teeth are still being developed. The infant's diet must be rich in minerals notably, calcium, phosphorous, magnesium and fluorine, iron and vitamin C are also very important in their diet as they need a lot of these nutrients. Since milk which flourish the bulk of the infants' diet lacks vitamin C, citrus juice, especially orange, should be given to them.

3.1.1 Recommended Daily Intake for Infants and Young Children.

The recommended daily intake for infants and young children is given in the table below as:

Figure 11.1 Reference amounts averaged for each age range

Month						Years				
Age		0-3	4-6	7-9	10-12		1-2	2-3	3-4	4-6
Energy	Kcal	120/kg	115/kg	110/kg	105/kg	Energy	1133	1310	1530	1705
Protein	g	9.8	11.8	17.8	19.0	Protein	23.3	25.9	28.6	30.4
Vitamin A	ug	300	300	300	300	Vitamin A	250	250	300	300
Vitamin D	ug	10	10	10	10	Vitamin D	10	10	10	10
Vitamin C	mg	20	20	20	20	Vitamin C	20	20	20	20
Thiamine	mg	+	+	0.3	0.4	Thiamine	0.5	0.5	0.6	0.7
Riboflavin	mg	+	+	0.5	0.6	Riboflavin	0.7	0.8	0.9	1.0
Niacin	mg	+	+	5.6	6.6	Niacin	7.6	8.6	9.6	11.2
Folic Acid	ug	+	+	60	60	Folic Acid	100	100	100	100
Vitamin	ug	+	+	0.3	0.3	Vitamin	0.9	0.9	0.9	1.5
B ₁₂	mg	+	+	7	7	B ₁₂	10	10	10	10
Iron	mg	+	+	500-600	500-600	Iron	400-500	400-500	400-500	400-500
Calcium						Calcium				

Enough of these nutrients are supplied by the breast milk.

As could be seen from the table, both energy and protein requirements of the infant increase as growth takes place. However, the requirements for vitamins A, D and C are constant as growth progresses, while that of thiamine, riboflavin and niacin increase with growth. The increase in the requirement for thiamine, riboflavin and niacin is due to their involvement in energy release and since the energy requirement increased with growth, the increase in the requirement of these vitamins should therefore be expected. As the infants grow, however, their diets should generally be modified to include some chewing, but it must be rich in body building foods. Since the capacity of the infants' stomach is very small, their food should be concentrated in the body building energy type and other nutrients such that the little food consumed will be able to meet their nutritional requirements.

Food suitable: for example, blended dry fish, a little palm oil or skimmed powdered milk should be added to the maize or millet ground often given to infants. The addition of these food stuffs will increase both protein and energy content of the food and hence be able to meet their nutritional needs. Foods such as eggs, fish, and minced meat, skinned and blended beans should be given to infants. Milk should be given in generous quantities. Soups made from vegetables, bones, fish and meat should also be in the children diet.

3.1.2 Guidelines for Meeting the Nutritional Needs of Infants and Children

To be able to meet the nutritional needs of the infants and children, the following guideline should be considered:

- Their meals must be balanced, they must contain good sources of protein, energy, vitamins and minerals.
- A small quantity must be served at a time. This is because small dishes are always more nutritive to a child than large proportions.
- All utensils used in preparation and serving of the food must be scrupulously clean.
- Meals should be served punctually and regularly.
- The feeding should be made as pleasant as possible to the child.
- Children should be made to sit comfortably when eating.

3.1.3 The Adolescent Group

At between 11 – 20 years of age, growth still continues, therefore, energy and growth nutrients are still required. However, because of the increased activity at this age, the need for energy nutrients becomes higher. Children's food between these ages should be rich in energy giving items as well as the vitamins that aid the liberation of energy, especially those required for good teeth and bone formation. The nutritional requirements for the adolescents and adults are shown below.

Both energy and protein requirements increase, reaching the peak at about early adulthood. This is due to growth spurt and increased activity that usually occur during adolescence. This is the period the individual is involved in a lot of activities like dancing and many other energy demanding engagements. However, the higher nutrient requirement for males more than that of female should be expected because the males are usually involves in more energy demanding activities.

For girls, this is the age at which menstruation commences. This periodic loss of blood will necessitate an individual requirement for iron, folic acid, vitamin B12 and ascorbic acid so as to make good for the loss

during menstruation. The higher requirement for iron in female than males should be expected.

Foods suitable: - Adolescent should therefore consume food high in energy – such as cereals and tubers, protein – such as legumes, meat, fish and vegetables. They should however avoid an excessive consumption of sugar and fat to avoid being obese.

Figure 11.2 Recommended Daily Intakes for Adolescents and Adults

Male								Females				
Ages		7-10	11-14	15-18	19-22	23-50	51+	11-14	15-18	19-22	23-50	51+
Energy		2400	2800	3000	3000	2750	2400	2400	2100	2100	2000	1800
Protein	g	34	45	56	56	56	56	46	46	44	44	44
Vitamin A	ug	700	1000	1000	1000	1000	1000	800	800	800	800	800
Vitamin D	ug	10	10	10	7.5	5.0	5.0	10	10	10	7.5	5.0
Vitamin C	ug	45	50	60	60	60	60	50	60	60	60	60
Thiamine	mg	1.2	1.4	1.4	1.5	1.4	1.2	1.1	1.1	1.1	1.0	1.0
Riboflavin	mg	1.4	1.6	1.7	1.7	1.6	1.4	1.3	1.3	1.3	1.2	1.2
Niacin	mg	16	18	18	19	19	16	15	14	14	13	13
Folic Acid	ug	300	400	400	400	400	400	400	400	400	400	400
Vitamin B12	ug	3.0	3.0	3.0	3.0	3.0	3.0	30.	3.0	3.0	3.0	3.0
Iron	mg	10	18	18	10	10	10	18	18	18	18	10
Calcium	mg	800	1200	1200	800	800	800	1200	1200	800	800	800
Phosphorous	mg	800	1200	1200	800	800	800	1200	1200	800	800	800
Magnesium	mg	250	350	400	350	350	350	300	300	300	300	300

3.2 Nutritional Requirement for Adult Group

The adult is a person who has reached maturity and is grown in size and strength. Members of this group have reached maturity and have stopped growing. The adult requires adequate nutrition for the maintenance of the body processes and the everyday activities of life. Factors that influence the nutritional needs of the adult include his work, health, and age. For instance, among adults there are sedentary and manual workers, the sick or the invalids, the aged, pregnant and lactating mothers. The adults diet should be balanced and suitable for his work, health and age.

A poor diet in adults could lead to different types of problems. For instance, excessive intake of fatty foods and carbohydrates could lead to obesity. The consumption of vegetables, fruits, skimmed milk, fish lean meat and cereal products should be increased.

3.2.1 The Sedentary Workers

Sedentary occupations are those that are characterized by sitting down and do not involve physical exercise, e.g. typing, writing, tailoring etc. Sedentary workers do not require much energy food since their jobs do

not require the expenditure of much energy. Regular exercise is important for people in this group.

3.2.2 The Manual Worker

Manual jobs are strenuous and include farming, coal mining, grass or wood cutting, and other similar strenuous jobs. They require the expenditure of excessive energy. Therefore, manual workers require an increased intake of energy giving foods so as to meet the energy requirements.

3.2.3 Pregnant Women

The pregnant woman needs extra nutrient in addition to the balanced diet she requires as an adult. This is because she has provided for the nutritional need of the developing child (foetus) in her womb. A pregnant woman would eat good balanced meal in order to produce a healthy normal baby. Where the diet of a pregnant woman is inadequate, the child will develop at the expense of the mother. The mother thus will be the first to show signs of deficiency.

In severe cases of malnutrition, during pregnancy, the baby also shows signs of deficiency. This could result in low birth weight, premature births, or different forms of malformations in the child. The nutritional need of the foetus imposes an additional nutrient requirement on the pregnant woman who will need a large amount of protein since this is the nutrient the foetus requires for growth and development. Therefore, she must consume foods that are rich in protein such as egg, legumes, fish and meat. An adequate consumption of protein will provide a sufficient amount for the foetus with enough left for the normal maintenance of the woman.

Similarly, the pregnant woman needs extra energy to be able to move the new increased weight and also perform some other activities. The consumption of adequate energy will spare her protein. However, the pregnant woman should watch her energy consumption as it is not good for her to be overweight during this period. She should try to match her energy intake with the expenditure.

The iron requirement of the pregnant woman is also high. This is because the foetus will derive its own iron stored for use after birth, at least for the first 22 days, from the mother. This will definitely deplete the mother's store of this mineral. Some iron will, furthermore be lost during child birth.

The pregnant women should consume adequate amounts of food rich in iron such as offal, liver, vegetables and legumes. Apart from iron, the pregnant woman also needed to increase her calcium, phosphorous and magnesium consumption so as to allow for that required by the foetus. Due to increased energy required, her vitamin requirements especially thiamine, riboflavin and niacin are on the increase, so also the need for Vitamin C, folic acid and Vitamin B12. She should therefore consume a generous amount of leafy green vegetables, fruits, milk, eggs; meat and fish. All these will supply her with the additional nutritional needs.

3.2.4 Lactating Mothers

A lactating mother is one that is breastfeeding one, or more than one infant. She is therefore, constantly losing milk to the infants. Breast milk is highly nutritious for infants. The lactating mother stands the risk of nutrient depletion if she is not on good nutrition to replace those nutrients lost during breastfeeding. The most important nutrient required by the lactating woman is energy, she loses a lot of energy through milk secretion. An average lactating woman secretes about 60ml of milk per day. The energy value of this is 500 (calories). She must therefore consume adequate food to supply this extra energy in addition to her normal energy requirement. Similarly, an additional protein must be consumed to take care of that lost in breastfeeding. Since the infant is dependent on the mother for all his or her nutrient needs, the diet of the lactating mother must also be rich in vitamins and minerals especially, iron, calcium, phosphorous, and B-complex. Vitamins apart from being rich in energy foods, is also rich in proteins, minerals and fat.

Figure 11.3 Recommended daily intakes for pregnant and lactating mothers compared with those for women of 50kg weight typical in developing areas.

		Reference woman 50kg (15 – 18yrs)	Pregnancy (19yrs+)	Lactation First Six months.
Energy	Kcal	200	2350	2550
Protein	g	43	58	72
Vitamin A	ug	750	750	1200
Vitamin D	ug	2.5	10	10
Thiamine	mg	0.8	0.9	1.0
Riboflavin	mg	1.2	1.4	1.5
Niacin	mg	13.2	15.5	16.8
Folic Acid	ug	200	400	300
Vitamin B12	ug	2.0	3.0	2.5
Vitamin C	mg	30	50	50
Iron	mg	28	28	28
Calcium	mg	400-500	1000-1200	1000-1200

3.3 Nutritional Requirement for the Aged

This group of people are often characterized by reduced physical activity resulting in a decline in energy expenditure. This implies that the quantities of energy food for the aged needs to be slightly decreased. The need for proteins, vitamins and minerals remains unchanged. In some cases, there might even be need for an increase as tissue breakdown increases in old age. Where an aged man spends most of his time indoors, there could be shortage of vitamin to give supplementary vitamin D. An aged man who has problem with his digestive and absorptive processes may require dietary advice.

Dental problems may prevent some old people from taking adequate diet. Cooking methods that aid digestion need to be adopted in preparing meals for the aged. Foods that do not digest easily, such as oily or fried food, should be avoided. Their food must be easy to chew and digest.

Food suitable

A good supply of green vegetables and fruit is necessary to meet the need for folic acid, other vitamins and roughage. Aged people also require plenty of liquid like water and milk. The aged need to remain as active as possible. This helps to stimulate digestion as well as strengthen bones and muscles.

3.3.1 Invalids and Convalescents

An invalid is a person who is sick. Some of them suffer from gastric or intestinal disorders, certain allergies or diseases and they require special diets. They are sick people often confined to the bed. Their diets are prescribed by dieticians or doctors and must be taken into account. The diet prescribed will depend on the type of ailment. For example a diabetic patient. A convalescent is somebody who is just recovering from an illness. These two groups of people may suffer:

- Breakdown of some body tissue and loss of weight.
- Loss of appetite and weakness and possible shortage of specific nutrient in their bodies

3.3.2 Guidelines for Providing Meals for the Invalid and Convalescents

- If the meal is a doctor's advise, it must be strictly followed.
- If there are no special restrictions, foods that are easy to digest should be served. Such food should contain the necessary nutrients.
- The food should be fresh and of good quality. Dairy products, good cuts of meat, fresh fruits and vegetables should be basic foundation of an invalid's food.
- Appropriate cooking methods that will make the food easily digestible should be employed e.g. steaming. Oily foods should be avoided because they make food less digestible.
- Food should be palatable
- Absolute cleanliness should be maintained both during the preparation and serving of the food.
- Food should be served attractively and in small portions.

3.4 Meal Planning: Planning of balanced diets

A meal that contains more than one of the food nutrients can be referred to as mixed diet. When a meal contains all the necessary food nutrients – protein, carbohydrates, fats, minerals and vitamins in the correct proportions for a given person, it is referred to as a balanced meal or diet. Meal planning is the process of designing balanced diets in which all the essential nutrients are present in the right proportion, for specific groups of people.

A well planned meal should meet the nutritional needs of a given individual and thus promote health. An ill-planned meal on the other

hand can retard good health. What the meal planner produces is referred to as a menu. There are breakfast, lunch and supper/dinner menu.

3.4.1 Guidelines Underlining Effective Meal Planning

The following are points to consider when planning meals:

- Adequacy and availability of foods.
- The meal must contain all the necessary food nutrients. Each of the five groups must be represented. When possible, choose foods that contain a variety of nutrients.
- Traditions and customs of the people for whom the meal is meant.
- Economic resources of the individual
- Personal likes and dislikes.
- Keeping quality of the food
- Ease of food preparation
- Knowledge of the food values
- Types of cooking method to be used so as to conserve maximum nutrients and flavour of the food.
- Capability (skill) of the person cooking as well as the facilities available
- Period when the food will be consumed.
- Types of food in season
- Occupation of the individual

3.4.2 Selected/Suggested Menu

The three main meals of the day are breakfast, lunch and supper. Snacks or refreshments can be served in between the meals when desired. Each meal is made up of a number of courses. A course is thus a part of a meal.

Breakfast

This is the first meal of the day. It must not be omitted. It should be light but substantial and should be able to sustain an individual until lunch. The meal planner can experiment with foods that are available in a given locality and time. The breakfast menu can be continental or local. Examples of suggested menus for breakfast are:

Examples of continental breakfast menu:

Fruit juice, oranges and pawpaw

Cereal: - e.g. corn flakes, quaker oats, and maize or millet porridge.

Egg: - boiled, fried, poached, scrambled, or made in omelette. Bacon, fiver, liver can be served in place of egg.

Milk and chocolate drink for children, tea or coffee for adults.

- Local breakfast menu
- Fruit juice or fruit
- Akara or moin moin
- Hot maize porridge enriched with soya bean milk and sugar

Lunch and Supper: Lunch is normally the meal eaten in the afternoon between breakfast and supper, which is the evening meal. Lunch and supper are the main meals of the day. Many menu often interchange dishes for lunch and supper. Dishes for supper should however, are lighter than those for lunch since people normally go to sleep after supper. When a heavy lunch is followed by an equally heavy supper, the digestive organs may become overlaboured.

Examples of lunch menu

Tomatoes soup (any drinking soup served as appetiser)

- Meat or fish stew
- Vegetable soup (with or without melon)
- Pounded yam, amala, eba or semovita
- Fresh fruits (e.g. orange, pawpaw, pineapples, banana, etc)

Examples of dinner menu

- Meat or fish stew
- Fried or boiled plantain
- Beverage (if desires)
- Fruits.

When writing menu, the protein component should come first, followed by the energy source and then the protective foods. The order is, however, different for breakfast. This is because a fruit juice is supposed to be taken first so as to sharpen the appetite because most people usually have a dull appetite in the morning. Hence the fruit comes first, followed by the protein source and then the carbohydrate or energy source.

SELF ASSESSMENT EXERCISE

- (i) Describe the nutritional requirement for the following:
- Infant
 - Pregnant women
 - Aged
 - Convalescent.
- (ii) Plan a suitable lunch for a manual worker.

4.0 CONCLUSION

In this unit, we have discussed the characteristics of infants which influence their nutritional need like protein, vitamin etc. We also examined the recommended daily intake for infant and young children and concluded that young children need more energy and protein (4-6years old) than (1-2years old) children but with equal amount of vitamin D, C and thiamine, folic acid, iron and calcium etc. We also concluded that adolescent and adults with excessive consumption of sugar and fatty food develop obesity. Sedentary and manual workers were also discussed. We noted that manual workers has to be taking energy giving food more than sedentary because of the kind of job they engaged in.

Recommended daily intake for lactating mother and pregnant mother was discussed with a lactating mother requiring more energy, protein, vitamin than pregnant women. Pregnant mother requires more of this than a woman of 50kg weight.

We also saw that the aged needs less energy given foods while the other nutrients remain unchanged. On the other hand, the invalid and convalescent persons are to follow the guidelines or prescription from a doctor.

Finally, we concluded that well planned meal promotes health and ill-planned meal retards health.

5.0 SUMMARY

The characteristics of infant which influence their nutritional need like protein, which is an essential nutrient, vitamin for bone and teeth and energy content which must be adequately supplied are discussed in this unit. Ages of children from (0-12) months and their nutritional need as they grow was also explained. For instance, ages 0 – 3 months need more energy than 0-12 months old baby and also 10 -12 months old baby requires more protein than 0-3 months old baby. Also, vitamin,

folic acid, calcium, niacin, iron and vitamin-B₁₂ which are needed in the same proportion including food suitable for infants were examined. Young children of ages (4-6yrs) need more protein, vitamin and energy than 1-2 years old child but requires equal amount of Vitamin D, C, thiamine, folic acid, Iron and calcium.

The guidelines for meeting nutritional needs of infants and children like balanced diet, small quantity served, clean utensils, pleasant feeding and comfortable sitting while eating were also outlined in this unit.

Adolescents group (11-20years) who requires energy and growth nutrient were highlighted along with the various nutrients needed by female and male adolescents. Lactating and pregnant mothers were also examined with their recommended daily intake. The aged, invalid, and convalescence were also discussed with suitable food needed by the aged and the kind of nutrient it should contain. In addition, we discussed the invalid and convalescents people respectively with guidelines needed for providing their meal such as a doctor's advice. Easily digested food, fresh and good quality food, cleanliness during preparation etc. planning of balanced diet and meal planning were discussed.

Menu which are of 3 types (breakfast, lunch and dinner) were discussed with guidelines underlying effective meal planning and how to develop a menu were also explained.

In the next study unit, we shall discuss bread making and dough products.

6.0 TUTOR-MARKED ASSIGNMENT

1. What is a balanced diet?
2. List the various factors to be considered when planning a balanced diet.

7.0 REFERENCES/FURTHER READINGS

Brody, Jane (1985). *Good Food Book*, W. W. Norton and Company: London.

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ANSWERS TO EXERCISE

- (a) Nutritional requirement for:
- (i) Infants – protein, energy content, vitamin, minerals, calcium, phosphorous, magnesium, fluorine, iron, Vitamin C.
 - (ii) Pregnant women – calcium, phosphorous, Iron, vitamin, thiamine, riboflavin, niacin, folic acid, vitamin B₁₂, magnesium, protein.
 - (iii) Aged – protein, vitamin, minerals, reduced energy food, folic acid.
 - (iv) Convalescent: - protein, vitamin, minerals.
- (b) Suitable lunch for a manual worker:
- Tomatoes soup (as appetizer)
 - Vegetable soup
 - Pounded yam
 - Fresh fruit (orange, pawpaw, banana, etc)

UNIT 4 MAKING BREAD AND DOUGH PRODUCTS

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
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 - 3.1.1 Types of Yeast Bread.
 - 3.1.2 Food Value of Bread and Dough Products.
 - 3.1.3 Understanding Fermentation Action of Yeast
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 - 3.2 Steps (stages) in Bread Making.
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 - 3.4.5 Currant Bread
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- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 INTRODUCTION

Bread and dough products basically contain wheat flour and yeast. Bread and bread products form the basis of our diet. Bread has been described as the staff of life and there is no doubt that many people depend upon it for feeding the family. It is also used in the hotel industry. It is not surprising therefore, that bread is seen as a fundamental staple product in our society.

Bread is obtained by baking a mixture of flour, water and salt, which is made light and porous by the use of yeast or some other means of aerations. We eat bread at breakfast, lunch and dinner in sandwiches, as bread rolls, as croissants, as French sticks, etc. Bread is also used as an ingredient for many dishes, either as slices or as bread crumbs. The basic bread dough of wheat flour, yeast and water may be enriched with fat, sugar, eggs, milk and numerous other added ingredients. Bread which has not been acerbated is known as unleavened bread and is eaten by the Jews at their special religious feasts.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- Identify the different types of bread and dough products and explain their food value.
- Explain the ingredients used for the production of bread and dough products.
- Describe the steps in bread making.
- Identify the possible faults in using yeast dough.

3.0 MAIN CONTENT

3.1 Yeast Bread and Dough Products

Bread is usually produced using yeast as the raising agent. Dough consists of strong flour, water, salt and yeast, which are kneaded together to the required constituency at a suitable temperature. When proving takes place, the yeast produces carbon dioxide and water, which aerates the dough. When baked, it produces a light digestible product with flavour and colour.

Enriched dough or enriched breads are:

- Buns
- Savarins
- Brioche
- croissants
- Danish pastries.

Croissants and Danish pastries are enriched dough where the fat is added by layering or lamination. A softer eating quality is obtained because the fat in the dough insulates the water molecules, keeping the moisture level higher during baking.

3.1.1 Types of Yeast Breads

- Plain and fancy breads:** Plain breads are the simplest of all yeast products. They are white, whole wheat, rye or a variation of them. Fancy breads are found in great variety, they include raisin bread, coffee cakes, tearing, cinnamon buns and crumb cakes. These may be filled and frosted to make them very fanciful.

- ii. **Plain and fancy rolls:** Plain rolls are similar to plain bread but they may be slightly sweeter. Some have eggs in them and special flavouring. They are often shaped in a variety of ways. Fancy rolls are made from a sweet yeast dough and may be flavoured. They may be frosted or filled with raisins, cherries, nuts, or other ingredients as desired.
- iii. **Yeast raised dough nuts:** Are fried in deep hot fat where as the other yeast products are baked.

3.1.2 Food Value of Yeast Bread and Dough Products

Flour-based products provide us with variety, energy, vitamins and minerals. Although, yeast breads are mainly energy giving foods, they can supply the diet with other nutrients as well as iron, thiamine, riboflavin and niacin. They are present in good amounts when enriched flour is used in making bread. The use of milk instead of water for the liquid provides an excellent source of protein. Milk supplies calcium and riboflavin. If the milk is whole milk, vitamin A is added. The contribution of milk to the nutritive quality of breads can be so great that in some breads, extra milk in the form of dried milk powder is used in addition to fluid milk. Whole meal bread products also provide roughage, an essential part of a healthy diet.

3.1.3 Understanding Fermentation Action of Yeast

Yeast is mainly used for raising bread dough. In some areas, palm wine is used successfully for large scale baking. Bread made with yeast keeps longer than that made with palm wine.

Varieties of Yeast

- (i) Compressed yeast can be bought by the ounce. It should be kept perfectly fresh. It does not keep well in hot weather, therefore, buy a small quantity at a time and always keep in a cool place.
- (ii) Dried yeast: - Keeps well and is used when it is difficult to obtain or to store fresh compressed yeast.
- (iii) Preserved yeast: - is the froth which rises to the surface of beer when it is fermented, but it is not so dependable.

Fermentative Action of Yeast

For dough to become leavened bread it must go through a fermentation process. This is brought about by the action of yeast, with enzymes in the yeast dough. Flour contains some sugar, and yeast cells require sugar as food. The yeast is creamed with a little sugar, then mixed with tepid

water and added to the warm flour, so with sugar, moisture and warmth the activity of yeast starts. Through a chemical process, the sugar attached, gas and alcohol are produced causing fermentation. During the process of fermentation, the gas collects and forms into little bubbles throughout the dough which should be kept in a warm place. With the warmth, the bubbles expand and cause the dough to rise. When the rise dough is put into the hot oven, the bubbles expand and the bread rises further. In the mean time, it sets and becomes firm and the texture becomes spongy.

3.1.4 Ingredients Used in Bread-Making

The main ingredients used in bread-making are:

- 1. Flour:** The flour in bread is important because it forms gluten when mixed with liquid. The framework of the dough consists of gluten which expands as carbon dioxide is released by the yeast. The gluten also forms the framework of the finished product. The type of flour that is used depends on the kind of bread to be produced. However, plain white strong flour, is usually used. This is because it gives a large loaf of good quality. When whole white flour is used, the dough is usually too sticky to kneed.
- 2. Liquid:** The liquid in bread dough may be milk or tap water. Milk improves the food value and quality of the bread but it increases the cost of production. Fresh fluid milk is scalded and cooled before it is used in bread to improve its baking quality. Evaporated milk requires no further heat treatment. More liquid is required when using flour that is produced from hard wheat than from soft wheat.
- 3. Yeast:** Either active, dry or compressed yeast may be used. The function of the yeast is caused by the fermentation of sugar and carbohydrate in the flour thereby releasing carbon dioxide gas which is required for leavening. The speed of fermentation can be increased by a modest increase in the amount of yeast, but a point is soon reached when a further increase in the amount of yeast does not accelerate fermentation but simply gives the bread a yeasty flavour.
- 4. Sugar:** Sugar is one of the major substrates for the yeast. The action of the yeast can be accelerated by the addition of sugar to the dough. When dough are made without sugar, the yeast first uses the small amount of sugar normally present in flour, and then an enzyme in the flavour called diastase or amylase acts on the starch in flour to form sugar. This enzymatic action takes time

and thus delays rising. It is important to mention that too much sugar delays rising as the sugar now acts as a preservative and thus delays the action of yeast.

5. **Salt:** Salt is essential to the normal flavour of bread but is sometimes omitted from bread that is to be used in special diet. Salt tends to control the action of the yeast and strengthen the gluten...
6. **Fat:** Fat is not an essential ingredient of bread. However, when added, it improves the quality of the bread. It also adds flavour to the bread, makes it more tender and also delays staling of the bread. It may be rubbed into warmed flour or for richer mixtures, may be melted and added with the liquid ingredients.
7. **Eggs:** This is an optional ingredient. When used, it adds colour and flavour to the bread and increases the nutritive quality.
8. **Temperature:** Though not an ingredient, it must be mentioned because it greatly affects the quality of the bread. The bowl, flavour and liquid used for mixing should be warmed. In fact, the warm environment is very essential for the yeast to act. Once the dough is mixed, it must be kept warm and away from draughts.

3.2 Steps (Stages) in Bread-Making

Whatever kind of bread you are making, the method is always the same and the following processes will give the correct results:

- i. **Creaming the yeast:** Put the yeast with a little sugar into a basin and cream it until it liquefies. Then add half the warm liquid. If dried yeast is used, the manufacturer's directions must be followed.
- ii. **Salting:** This process activates the yeast. Sprinkle a little of the flour over the yeast in the bowl, cover with a damp cloth and put in a warm place for about 10 minutes. The yeast then begins to work through the flour producing little bubbles.
- iii. **Mixing the dough:** After the sponging, the mixture is then mixed well either with the hand or a wooden spoon. Sufficient water should be added to form an elastic dough.
- iv. **Kneading:** Transfer the mixture dough on a floured pastry board and knead with a firm steady motion until the fingers are free

from the dough, which must be smooth and free from cracks and lumps.

- v. **Rising:** The kneaded dough is then transferred into a floured mixing bowl. It should be covered with a damp cloth to prevent it from forming a skin on top and left in a warm but not hot place. This allows the yeast to carry out fermentation process in the dough. It is during this fermentation process that carbon dioxide is produced to make the dough rise. While the fermentation is taking place, the bread tins or baking trays should be greased.
- vi. **Knocking Back:** Turn the dough on to the board again and divide it into rolls, loaves or whatever you are making (it is usual to make more than one loaf). Flatten each piece of dough with the knuckle to knock away any air bubbles and knead to a firm dough gently but firmly until it regains its original size. Do not use too much of flour for dusting during the kneading process as it might spoil the colour and texture of the bread.
- vii. **Shaping:** Kneading the risen dough then cut the dough into desired size and shape and put into the baking trays or pans. To make a tin loaf, shape the dough either by folding it in three or roll it up like a Swiss roll and tucks the ends in so that the moulded piece of dough fits the tin exactly. To make rolls, divide the dough into equal-sized pieces and shape. For a crusty finish, brush the shaped dough with water, sprinkle with cracked wheat. For a soft finish, put the rolls close together on a baking sheet, brush with milk and dredges them with flour.
- viii. **Proving:** Leave the dough in a baking pan or tray in a warm place to rise until the dough doubles its size.
- ix. **Baking:** Bake in a hot oven to kill the yeast and stop its further action. Reduce the temperature after fifteen minutes or when the dough is brown and has set, to avoid obtaining a hard crust. The baking time is usually 35 – 45 minutes, but varies with oven temperature, the size of loaf and the type of crust desired. The cooked bread should be well risen and golden brown. It should then be cooled on a wire tray or the tops brushed with fat if so soft crust is desired.

3.2.1 Points to Remember when Making Bread and Dough Products

- Yeast should be removed from the refrigerator and used at room temperature.

- Check all ingredients are weighed carefully
- Work in a clean and tidy manner to avoid cross contamination
- Check all temperatures carefully.
- All whole meal dough absorbs more water than white dough. The volume of water absorbed by flour also varies according to the strength (protein and bran content).
- When using machines, check that they are in working order.
- Always remember the health and safety rules when using machinery
- Divide the dough with a dough divide, hand scrapper or hydraulic cutting machine.
- Check the divided dough pieces for weight when scaling, remember that dough lose up to 12.5% of water during baking, therefore, this needs to be taken into account when scaling.
- Keep the flour, bowl and liquid warm
- Remember to knock the dough back carefully once proved, as this will expel the gas and allow the greater dispersion of the yeast. It will once again be in direct contact with the dough.
- Proving allows the dough to ferment; the second prove is essential for giving dough products the necessary volume and a good flavour.
- Time and temperature are crucial when cooking dough products.
- When using frozen dough products always follow the manufacturers' instructions. Contaminations can occur if the dough is defrosted incorrectly.

3.2.2 Storage of Cooked Dough Products

Crusty rolls and bread are affected by changes in storage conditions. They are softened by a damp environment and humid conditions. Always store in suitable containers at room temperature and in a freezer for longer storage. Do not store in a refrigerator unless you want the bread stale quickly for use as bread crumbs. Staling will also occur quickly in products that contain a high ratio of fat and milk. Many commercial dough products contain anti-staling agents.

3.3 Possible Reasons for Faults When Using Yeast Dough

- Close texture in yeast dough could be:
 - Insufficiently proved.
 - Insufficiently kneaded
 - Insufficient yeast
 - Oven too hot
 - Too much water

- Too little water
- Uneven texture could result in:
 - Insufficiently kneading
 - Oven too cool
 - Over proving.
- Coarse texture could be as a result of:
 - Over-proofed, uncovered
 - Insufficient kneading
 - Too much water
 - Too much salt
- Wrinkled: result in:
 - Over proved
- Sour:
 - Stale yeast
 - Too much yeast
- Broken Crust –result in:
 - Under-proved at the second stage
- White spot on Crust:
 - Not covered before second proving

3.4 Selected Recipe for Bread and Dough Products

3.4.1 Recipe for bread

Ingredients:

Flour (hard, general purpose, or composite flour) -	375g
Salt -	2 teaspoons
Yeast -	30g
Fat -	25g
Milk (optional) -	50ml
Sugar (for sweet bread) -	100g
Egg -	1 whole

Procedure/Method

- Prepare the yeast solution by adding the yeast into a ½ cup of warm water and adding about 1 teaspoon sugar. Cover and allow to rest for a few minutes or until froth is formed.
- Sieve the flour and salt together in order to incorporate air.
- Make a well in the flour and add the yeast mixture, egg, sugar and fat.
- Mix thoroughly until a mouldable pastry is obtained
- Put in a bowl or basin and cover it in order to allow it to prove.
- Remove and knead well on a formica working surface and cut into required sizes, or pattern. Put on a grease bread tin and allow to prove again. This is the second prove in order to double its former size.
- Put in an already pre-heated oven.
- Bake at 450⁰F for 45 – 60 minutes
- Glaze with milk or an egg and milk wash
- Return to the oven to dry off for 1 minute

3.4.2 Bread Rolls (20 portions)

Ingredients

Flour (strong)	-	500g
Yeast	-	12g
Liquid (half water, half milk)	-	300ml (⁵ / ₈ pt)
Caster Sugar	-	½ (tsp)
Salt	-	

Method

- Sieve the flour into a bowl; warm in oven or above the stove.
- Cream the yeast in a small basin with a quarter of the liquid.
- Make a well in the centre of the flour, add the dissolved yeast.
- Sprinkle over a little of the flour, cover with a cloth, leave in a warm place until yeast ferments (bubbles).
- Add the remainder of the liquid (warm, the fat, sugar and salt).
- Knead firmly until smooth and free from silkiness.
- Return to the basin, cover with a cloth and leave in a warm place until double its size. (This is called proving the dough)
- Knock back. Divide into even pieces.
- Mould into the desired shape
- Place on floured baking sheet, cover with a cloth
- Leave in warm place to prove (double in size)
- Brush carefully with egg wash.

- Bake in a hot oven at 220⁰C (Reg. 7; 425⁰F) for about 10 minutes

3.4.3 Doughnuts (8 portions)

Ingredients

Flour (strong)	-	200g
Yeast	-	5g
Milk and water	-	60ml (1/8pt)
Medium egg	-	1
Butter or margarine	-	50g
Caster sugar	-	25g

Method

- Take the basic bun dough and divide into 8 pieces.
- Mould into balls and press a floured thumb into each
- Add a little jam on each hole: Mould carefully to seal the hole.
- Cover and allow to prove on a well floured tray.
- Deep fry in moderately hot fat 175⁰C (347⁰F) For 12 – 15 minutes.
- Lift out of the fat, drain and toll in a tray containing caster sugar mixed with a little cinnamon.

3.4.4 Rum Baba (20 portions)

Flour (strong)	-	500g
Yeast	-	12g
Milk	-	300ml
Currants	-	125g
Egg	-	5
Butter	-	125g
Sugar	-	25g
Pinch of salt		
Small glass of rum	-	2 – 3

Method

- Sieve the flour in a bowl and warm
- Cream the yeast with a little of the warm milk in a dispersed yeast.
- Sprinkle with a little of the flour from the sides, cover with a cloth and leave in a warm place until it ferments.
- Add the remainder of the warm milk and the washed dried currants and the beaten eggs, knead well to smooth elastic dough.

- Replace in the bowl, add butter in small pieces, cover with a cloth and allow to prove in a warm place.
- Add the sugar and salt, mix well until absorbed
- Half fill greased moulds and allow to prove
- Bake in a hot oven at 220⁰C (Reg. 7⁰, 425⁰F) for about 20minutes.
- Turn out when cooked, cool slightly
- Soak carefully in hot syrup.
- Sprinkle liberally with rum.
- Brush all over with apricot glaze.

3.4.5 Currant Bread

Ingredients

Flour	-	500g
Margarine	-	50g
Granulate sugar	-	50g
Egg	-	1 whole
Currant	-	75 g
Yeast	-	25g
Milk	-	25g
Caster sugar	-	1teaspoon
Salt	-	large pinch of salt.

Method

- Mix the salt with the warmed flour and sieve. Rub in the fat. Stir in the sugar and the currants to make the currants plump, pour a little boiling water over them, strain and dry them in a clean cloth.
- Cream the yeast with the caster sugar. Beat the eggs and add both the egg and tepid milk to the creamed yeast
- Make a well in the centre of the flour mixture, pour in the liquid. Cover tightly with a little of the flour and leave in a warm place for 20 minutes, set the sponge.
- Beat with the hand until thoroughly mixed. Put in a floured bowl and leave in a warm place for 1 hour to rise. Put in a warmed greased loaf tin and 'prove' until dough rises to the top of the tin.
- Bake in a hot oven for 15 minutes and reduce heat to moderate until thoroughly cooked.
- Remove from oven and brush top with sugar glaze, return to oven for a minute or two to dry the glaze.

Sugar Glaze – Dissolve 50g sugar in about 3 table spoons of water, bring to boil for 45 minutes without stirring. Cool before using.

4.0 CONCLUSION

In this unit, we treated bread and dough products which are produced by using yeast as the raising agent. Types of yeast bread, its food value, fermentative action of yeast, some ingredients used in bread making, steps or stages in bread making, point to remember when baking bread, and some reasons for fault when using yeast dough were explained. Finally, it was concluded that bread dough of wheat, flour, yeast is enriched with fat, sugar, etc and seen as the fundamental staple product in our society and the basis of our diet.

5.0 SUMMARY

Bread and dough products are discussed in this unit. Dough consist of strong flour, water, salt and yeast and are kneaded together to the required consistency. Types of enriched dough or bread such as buns, savarins, brioche, croissants, Danish pastures are discussed along with types of yeast bread which are listed and explained. Food value of yeast bread and dough product such as iron, thiamine, niacin, riboflavin, vitamins and minerals were listed. Action of yeast in bread (fermentative action), ingredients used in making bread such as flour, sugar, yeast, salt, fat, eggs, temperature and steps in making bread such as creaming, kneading, mixing, rising, knocking back, shaping, pouring, baking, and temperature were listed and discussed. Also, points to remember when making bread, and dough product and storage of cooked dough products were explained with possible reasons for fault when using yeast dough.

Finally selected recipe for bread and dough product, ingredients and methods used is also discussed.

In the next study unit, we shall discuss pastry making.

6.0 TUTOR-MARKED ASSIGNMENT

1. List the ingredients used in bread making and their respective functions in bread making process.
2. Explain the meaning of the following terms in bread making:
 - Fermentation
 - Proving
 - Kneading
 - Knocking back

- Rising

7.0 REFERENCES/FURTHER READINGS

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MODULE 4

- Unit 1 Pastry Making
- Unit 2 Cake Making
- Unit 3 Costing and Control in the catering Establishment

UNIT 1 PASTRY MAKING

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1.0 INTRODUCTION

Pastry dough is basically a flour and water mixture containing more fat than most dough. In making pastry we use flour, fat, a little bit of salt and liquid (water, milk, egg syrup). The proportion and method of incorporating the fat to flour determines the type of the pastry. The aim in pastry making is to make the pastry as light as possible and this depends on the amount of cold air incorporated in the mixture during the making. The cold air expands on heating, thus making the pastry light. In making pastry an attempt is made to produce tenderness and flakiness. Tenderness is the quality of being easily chewed or broken as measured by the breaking strengths. Flakiness is measured by the height between layers of dough in a baked sheet. Excellent pastry is an important part of a good pie. Pastry should be delicately browned thin not over $\frac{1}{8}$ inches thick, tender and well flavoured. A good pastry

should be light, flaky, crisp and not hard and should crumb easily when chewed.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- Identify the different ingredients used for production of pastries.
- Explain the different types of pastries.
- Describe the various methods of making pastries.
- Explain the conditions required in pastry making.

3.0 MAIN CONTENT

3.1 Pastry Making

The ingredients used for making pastry are as follows:

1. **Flour:** It is probably the most common commodity in daily use. It forms the foundation of bread, pastry and cakes. It is also used in soups, sauces, batters and other foods. In making pastries, use plain flour (except for suet pastry when raising agent is added). The flour should be of good quality, fresh and dry. It should be sieved to introduce air and remove lumps before use.
2. **Fat:** Pastry goods may be made from various types of fat, either a single named fat or a combination. Examples of fats are butter, margarine, cake margarine, pastry margarine, shortening and lard. Butter is excellent for flavour but does not possess the same qualities of water retention or creaminess as other specially manufactured fats.

Margarine is often made from a blend of oils which have been hardened or hydrogenated (hydrogen gas is added) and may contain up to 10% butter fat.

Cake margarine – this is again a blend of oils, to which is added an agent which helps combine water and hydrogenated fat together. (an emulsifying agent). Cake margarine may contain up to 10% butter.

Pastry Margarine – this is used for puff pastry. It is a hard plastic or waxy fat which is suitable for layering.

Shortening (another name for fat used in pastry making) – this is made from oils and is 100% fat such as hydrogenated lard, another type of shortening which is rendered pork fat.

3. **Liquid** – can be water, milk or egg. Usually, cold water is used for pastry. Milk is used in hot pastry. In richer pastry, a little egg yolk is added.
4. **Sugar** – is extracted from sugar beet or sugarcane. The juice is crystallized by a complicated manufacturing process. It is then refined and sieved into several grades such as granulated, castor or icing sugar.
5. **Raising agents** – air is the most usual raising agent and is incorporated by sieving flour. Air being a gas, expands on heating and pushes up the layers of the pastries.
6. **Salt** – Is added to give it a better taste and give out flavour.
7. **Egg** – Are important and versatile ingredients in pastry work. It acts as enriching and emulsifying agent. Hen's eggs are used in pastry work because of their binding, emulsifying and coating properties. Eggs add both protein and fat thus improving the nutritional value and flavour.

Suet pastry – use $\frac{1}{2}$ as much fat to self raising flour. Example 100g flour plus 50g suet. If you are using plain flour, add 1 level teaspoon of baking powder to 100g plain flour. Then steam or bake.

Oven – for baking, gas mark 7, electric 4250F, 220⁰C. When suet pastry is made, the fat (suet) is mixed in without rubbing, therefore, the pastry tends to be rather heavy and because of this baking powder is added to help the pastry rise. Suet pastry is the only pastry which has a raising agent.

Choux and Hot water pastry. It is always better to learn or follow the whole recipe.

Use of water vapour: This is produced during the baking process, from the liquid content used in the mixing. Water vapour has approximately 1600 times the original volume of the water. The raising power is slower than that of gas. This principle is used in the production of choux pastry, puff pastry, rough puff, flaky and batter products.

3.2 Types and Uses of pastry

3.2.1 Types of Pastry

The type of pastry made depends on the proportion of fat to flour, the amount of water and the method of mixing and baking. It also depends on controlling the action of a substance in flour called gluten. If the gluten is properly controlled by the correct method of handling the fat during the making process, the blown-up and risen dough will give the pastry the right texture.

The kind of pastry include; short crust, rough puff, flaky, suet, choux and hot water crust pastry.

Short Crust: - Use as much fat to flour, example 100g flour + 50g margarine. Oven gas mark 6, electric 400⁰F, 200⁰C

Rough Puff and Flaky: - Use $\frac{3}{4}$ as much fat to flour. Example 100g flour + 75g margarine. Oven gas mark 8, electric 450⁰F, 230⁰C (Recipe may say turn heat down later)

3.2.2 Uses of Pastry

Pastry is used for making pies, (fish pie, meat pie, cheese pie) pasties, tarts, apple ball, pastry shell, cheese straws or pastry, flane, stake and kidney pie, meat and vegetable pie, sausage rolls, banbury puff and turnovers.

3.3 General Rules for Making Pastry

Making good pastry is not difficult so long as a few rules are observed. If quantities are measured exactly and the mixture correctly handled, the result can be very satisfying.

Here are the general rules for making pastry:

- Keep everything for pastry-making cool
- Work in a cool place and if possible, on a marble slab or enamelled surface.
- Use plain flour for pastry, except for suet crusts and sift it unless using the pre-sifted variety.
- Use correct portion of fat to flour. Too little fat will make the pastry hard; too much will make it brittle and very difficult to handle.
- Use the fat suggested in the recipe for pastry. It is usually butter or lard margarine for puff and flaky pastry. A mixture of butter or

margarine and lard or cooking fat for short crust pastry, or some recipes call for special types of fat.

- Keep everything cool. Use iced water to mix and work on a cold working surface or ideally, a marble slab. Work quickly and lightly, handling the pastry as little as possible.
- Choose a fairly wide bowl for making pastry. This will give you plenty of room for working without spilling.
- Have the fat at room temperature. When it is rubbed into the flour it will not bleed evenly if it is too hard or too soft. Use the finger tips only, lifting the hand well above the bowl to incorporate as much air as possible. Rub fat and flour and keep in a sealed polythene bag or jar in the refrigerator for up to 3 months or in a cool dark place for 2 – 3 weeks. Take it out of the refrigerator for 30 minutes before mixing with water.
- Use the correct amount of water. The exact quantity depends on the kind of pastry, but adding too much makes the pastry hard, and too little makes it crumbly and difficult to handle. Add the water all at once by sprinkling it in. mix lightly with a round bladed knife until the pastry can be gathered quickly and lightly into a firm, ball with one hand, leaving the sides of the bowl clean.
- Rollout the pastry to a neat oblong and keep the rolling pin straight ahead of you. Use short, even strokes, lifting the rolling pin between each one and do not roll off the edge of the pastry or the air will be pressed out.
- When rolling out the pastry, use only a light dusting flour to prevent it sticking to the board. Lift it from time to time to keep it cool and allow air to get underneath. Be careful not to stretch pastry when rolling it out, and turn it, never the rolling pin, to get a good shape.
- Allow the pastry especially rich types like puff and flaky (which are rested between rolling any way) to rest in a cool place before using. Allow a covered pie, tart or flan to stand in a cool place for 10 – 15 minutes before baking. This will help set the shape of the pastry.
- Roll the pastry loosely round the rolling pin to lift it. Always use the rolled side of the pastry for the outside.
- Glaze pastry evenly with egg-wash or milk, using brush. Pools of liquid will make pastry soggy, and uneven glazing will give a patchy finish
- Follow the cooker manufacturer's instructions for the baking position, and bake at the correct temperature. This will melt the fat, expand the air and give a well coloured crust.
- Cool things like tartest, flan, cases and vol-au-vent on a wire tray to allow the steam to escape. This gives a crisp finish.

Please note that these rules do not apply to choux and hot water crust.

In adding fat to flour, you should bear in mind that fats act as a shortening agent. The fat coats the sub-proteins within the flour which has the effect of shortening the gluten strands. These gluten strands are easily broken when eaten. The development of gluten in a strong flour to the production of puff pastry is very important as we need long strands to trap the expanding gases which make the pastry rise.

3.4 Methods of Making Pastry

- Rubbing in by hand: used for short pastry
- Rubbing in by machine: for short pastry
- Creaming method by machine or by hand used for sweet pastry
- Flour batter method: for slab cakes.
- Lamination: used for puff pastry.
- Boiling: used for choux pastry

3.5 Terms Used in Pastry

- **Folding:** as in puff pastry
- **Kneading:** used as a term when making dough or in the first stage of making puff pastry
- **Blending:** mixing all the ingredients carefully by weight
- **Relaxing:** keeping pastry covered with a damp cloth, lining film or plastic to prevent skinning. Relaxing allows the pastry to lose some of its resistance to rolling.
- **Cutting:** always cut with a sharp, damp knife. When using cutters, always flour the cutters by dipping in flour as this will give a sharp, neat cut. When using a lattice cutter, use only in a firm pastry, if the pastry is too soft, you will have difficulty lifting the lattice.
- **Rolling:** roll the pastry on a slightly floured surface, turn the pastry to prevent it sticking; keep the rolling pin slightly floured and free from the pastry always roll with care, treat lightly, and never apply too much pressure. Always apply even pressure when using a rolling pin.
- **Shaping:** shaping refers to producing flans, tartlets, banquettes and other such goods with the pastry. Shaping also refers to the crimpling with the back of a small knife using the thumb technique.
- **Docking:** piercing raw pastry with small holes to prevent rising during baking and when cooking blind tartlets.
- **Glazing:** examples of glazing pastry dishes are as follows:

- Using a hot clear gel produced from a pectin source obtainable commercially – for finishing flans and tartlets; always use while still hot. A cold gel is exactly the same except that it is used cold. The gel keeps a sheen on the goods and excludes all oxygen which might otherwise cause discolouration.
- Using apricot glaze, produced from apricot jam. Acts in the same way as gels.
- Using egg wash, prior to baking to produce a rich glaze on removing from the oven.
- Dusting with icing sugar, then caramelizing in the oven or under the grill.
- Using fondant to give a rich sugar glaze, which may be flavoured and or coloured.
- Using water icing to give a transparent glaze, which also may be flavoured and or coloured.

3.6 Selected Recipes

1. Jam Tart

Ingredients

Flourisoft	100g
Lard, margarine or vegetable fat	25g
Water to mix	
Butter or margarine	25g
Salt	
Jam	2tbsp

Method

1. Prepare shot paste (recipe 82) mould into a ball.
2. Roll out into 3mm thick (1/8 inch) round.
3. Place carefully on a greased plate
4. Cut off any surplus pastry, neaten the edges
5. Spread on the jam to within 1cm (1/2 inch) of the edge
6. Roll out any surplus pastry, cut into ½ cm (1/2 inch) strips and decorate the top.
7. Place baking sheet and bake in a hot oven at 220⁰C for about 20 minutes

2. Banana Flan

Ingredients (4 portions)

Sugar paste	200g
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Mince meat 200g

Method

1. Cook flan blind, allow to cool
2. Make pastry cream or crust and pour while hot into the flan case.
3. Allow to set. Peel and slice the banana neatly
4. Arrange over lapping layers on the pastry cream. Cook with glaze.

3. Sausage rolls

Ingredients: (10 portions)

Puff pastry 500g (1 ¼ lb)
Sausage meat 1kg (2 ½ lb)

Method

1. Rollout the pastry 3mm (1/8 inch) thick into a strip 10cm (4 inches) wide.
2. Make sausage meat into a roll 2cm (1 inch) diameter
3. Place on the pastry moisten.
4. Fold over and seal. Cut into 8cm (3 inches) lengths.
5. Mark the edge with the back of a knife, brush with egg wash.
6. Place on a greased, dampened baking sheet.
7. Bake at 220⁰C for about 20 minutes.

4. Mince Pies

Ingredients

Makes 8 – 12 pies

Puff pastry 200g
Mince meat 200g

Method

1. Roll out the pastry 3mm (1/8 inch) thick
2. Cut half the pastry into fluted rounds 6cm (2 ½ inches) diameter
3. Place on a greased, dampened baking sheet.
4. Moisten the edges.
5. Place a little mince meat in the centre of each
6. Cut the remainder of the pastry into fluted rounds 8cm (3 inches) diameter

7. Cover the mince meat, seal the edges.
8. Brush with egg wash
9. Bake at 220⁰C for about 20minutes
10. Sprinkle with icing sugar and serve warm. Accompany with a suitable sauce.

5. Lemon Meringue Pie

Ingredients	8 portions
Sugar paste	200g
Lemon Curd	
Water	125ml
Sugar	
Corn flour	25g
Butter	25g
Lemon	1
Yolk	1 -2
Meringue	
Egg whites	4
Castor Sugar	200g

Method

1. Line a flan ring and cook blind
2. Prepare the lemon curd by boiling the water, sugar and zest and juice of lemon to a syrup
3. Thicken with diluted corn flour, remove from the heat, add the butter and whisk in yolks.
4. Place in the flan case
5. When set, pipe in the meringue and colour in a hot oven at 220⁰C

3.7 Finishing and Presentation

It is essential that all products are finished according to the recipe requirement. The finishing and presentation is often a key stage in the process as failure at this point can affect sales. The way we present a product is an important part of the sales technique. Each product of the same type must be of the same shape, size colour and finish. The decoration should be attractive, delicate and in keeping with the product range. All piping should be neat, clean and tidy. This could be by:

- Dusting: This is the sprinkling of icing sugar on to product using a fine sugar dredge or sieve. Muslin cloth.
- Piping: using fresh cream, chocolate or fondant

- Filling: products may be finished by filling with fruit, cream, pastry cream, etc. Never overfill as this will often give the product a clumsy appearance.

3.8 Possible Reasons for Faults in Short Pastry

- Hard pastry could be as a result of:

- too much water
- too little fat
- fat rubbed insufficiently
- too much handling and rolling
- over baking.

- Soft crumbly; could result from:

- too little water
- too much fat

- Blistered pastry could result from:

- too little water
- water added unevenly
- fat not rubbed in evenly

- Soggy Pastry: could be as a result of:

- too much water
- too cool an oven

- Shrinkiness; could result from:

- Too much handling and rolling
- Pastry stretches whilst handling.

3.9 Possible Reasons for Faults in Puff Pastry

- Not flaky

- Fat too warm thus preventing the fat and paste remaining in layers during rolling
- Excessive, heavy use of rolling pin

- Fat oozes out:

- Fat too soft

- Dough too soft
 - Edges not sealed
 - Uneven folding and rolling
 - Oven too cool
- Hard:
- Too much water
 - Flour not brushed off between rolling
 - Over handling
- Shrunken:
- Insufficient resting between rolling
 - Over stretching
- Soggy:
- Under baked.
 - Oven too hot
- Uneven rise:
- Uneven distribution of fat.
 - Sides and corners not straight.
 - Uneven folding and rolling.

3.10 Possible Reasons for Faults in Suet Paste and Choux Paste

Suet: - Heavy and soggy

- Cooking temperature too low
- Tough; could be too much handling, over cooking.

Choux Paste: - Greasy and heavy

- basic mixture over cooked

Soft Not aerated: could be that flour insufficiently cooked, eggs insufficiently beaten in the mixture, oven too cool, under-baked.

4.0 CONCLUSION

In this unit, our focus was pastry making. We discussed the different types of pastry and the ingredients used in pastry making. We then looked at the uses of pastry and the general rules for making pastry. Also, we outlined the various methods of making pastry.

We also outlined the recipes of pastry and how to make them. Finally, we looked at possible faults in suet, puff and short pastries.

5.0 SUMMARY

In summary, the ingredients used in pastry are mainly flour, fat, butter, margarine. The types of pastry made depend on the proportion of fat to flour, amount of water, and the method of mixing and baking. The different kinds of pastries include, short crust, rough puff, flaky, suet, choux and hot water crust pastries. The uses of pastry were listed and the general rules for making pastry were highlighted. The different methods of making pastries are rubbing by hand, creaming flour batter method, lamination and boiling.

Some selected recipes are Jam tart, banana flan, sausage rolls, mince pies.

In the next study unit, we shall discuss cake making.

6.0 TUTOR-MARKED ASSIGNMENT

1.
 - (a) List the ingredients used for pastry making.
 - (b) State the proportion of fat to flour used when preparing the following short crust pastries
 - Rough puff and flaky pastry.
 - Suet pastry
 - Short crust.

2. Explain the following terms in pastry making:
 - Kneading
 - Rolling
 - Glazing
 - Relaxing
 - Shaping

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UNIT 2 CAKE MAKING

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1.0 INTRODUCTION

The richness of cakes depends on the correct proportion of fat, sugar and eggs to flour, and it equally depends on how much you put in fruit. The higher the proportion of fat and eggs in a mixture, the richer the cake. Therefore, cakes vary in taste and texture according to the proportions of ingredients used and the method of preparation and cooking. Excellent cake is easily achieved by any one who will follow a few tested rules. Accurate measurement and following explicitly the correct baking ensures success in cake making.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- Explain the different materials used in cake making
- Describe the various methods of cake making.

- Identify the various possible reasons for faults in cake making.
- Describe how to bake simple cakes applying different methods.

3.0 MAIN CONTENT

3.1 Cake Making

3.1.1 Ingredients Used in Cake Making

Before starting to make cakes, however, it is useful to know a number of general points; the best ingredients, the correct size of tin, how to prepare it, the consistency of different mixtures and the oven temperatures appropriate to each type of cake:

1. **Flour:** Use good quality flour, and make sure it is dry. Self raising flour is generally used for plain cakes. For richer cakes, which contain more than half fat to flour, it is sometimes more suitable to use plain flour with baking power. This enables the amount of raising agent to be varied according to the other ingredients. The more fat and eggs a mixture contains, the less baking powder is needed.
2. **Fat:** Butter gives the best flavour and it should always be used for cakes that you want to keep for any length of time. Margarine can be a substitute and white cooking fat or lard can be used in a plain cake made by the melting method. (Ginger bread for example)
3. **Sugar:** Unless the recipe states otherwise, use castor sugar for cakes because it is finer than granulated sugar which may cause spotting. Moist brown and Demerara sugar are good for ginger breads and dark fruit cakes because they help to give a treacly flavour.
4. **Eggs:** Whisked eggs in a cake mixture act as a rising agent, so when a high proportion is used (as in sponge cake), very little, if any, extra raising agent is needed. Use standard or large eggs for cakes. Break each one into a saucer before putting into the basin. Whisk the eggs lightly to mix the yolks and white together.
5. **Liquid:** Add milk or water as necessary to give the mixture the correct consistency. Lemon or orange juice may be added, according to the flavour of the cake and spirits such as rum or sherry are sometimes used in a rich fruit cake. Eggs also act as liquid additions.

6. **Fruit and Nuts:** Most of the fruit which is sold for cakes is cleaned before it is packaged, so it may be used as it is. If they are not readily washed, currants, sultanas and raisins should be washed in cold water, drained, dried in a tea towel and spread out on a flat tin or sieve and dried off slowly in a warm place. If they are needed quickly, do not wash but put them on a wire sieve into a tea towel with a little flour, then pick them over to remove stalks. If your recipe calls for stoned raisins, prepare these by removing the stones with the point of a sharp knife. If glace cherries are syrupy, wash them well before using. Use ready-shredded peel if possible. If you have to use it whole, remove any sugar and cut the peel into fine shreds or chop it with a fine sharp knife. Use blanched almonds, but if you can't get them, put whole ones into saucepan with cold water to cover, bring just to the boil, strain and run cold water over them. The skins will slip off quite easily. To skin hazelnuts, spread them out on a baking tin or in the grill pan, and put them in a moderate oven or under a slow grill, shaking them all the time until they become dry and slightly brownish. Put them into a clean cloth and rub them until the papery skins are all removed.
7. **Leavening:** Baking powder, baking soda and beaten egg white are the leavening agents used in cake making. In sponge and angel cakes, air incorporate into beaten eggs or egg white is usually the only leavening. Soda is used when the liquid is sour cream, sour milk or butter milk and also when molasses appear in the recipe.
8. **Flavouring:** The best flavouring extracts should always be used in cakes, since an inferior flavouring will produce an inferior flavour in the product. The amount of flavouring required may be slightly greater when a shortening without flavour is used than when butter is the shortening.

3.1.2 Classification of Cakes

One way of classifying cakes is as follows:

Plain cakes and buns: Where the fat is rubbed in and the proportion of fat to flour is small e.g. rock buns.

Plain cakes: Where the fat is melted e.g. ginger bread.

Rich cakes: - Where the fat and sugar are creamed because there is a larger proportion of fat to flavour e.g. queen cakes, sandwich cakes, Dundee cake, and etc. Proportion of sugar, fruit and eggs to the pound of flour is also increased.

Sponge cakes: Where there is a large proportion of egg, with or without fat, e.g. Swiss roll

Miscellaneous: Belonging to no definite class. e.g. tap cakes brandy snaps.

3.1.3 Aids to Success in Cake Making

- Always have necessary utensils and ingredients collected before beginning to make a cake.
- Line tins carefully
- Prepare the oven so that it is at the correct temperature when required.
- Follow instructions implicitly
- Measure accurately
- Cream fat and sugar very thoroughly with a wooden spoon or with the hand until light and fluffy and white in colour. Warm the fat slightly to facilitate creaming. Do not melt, melted fat does not hold air.
- Make sure that there proper consistency is obtained.
- Place cake in correct position in oven.
- Do not let anxiety over-ride good judgement so that the oven door is opened unnecessarily.
- Remember that temperature is maintained in an electric oven for much longer than in a gas one – this is an important consideration in baking a cake.
- Test carefully for readiness.
- Allow cake to cool on a rack where there is circulation of air. If laid on a solid board, it will become damp and sodden underneath.

3.2 Methods of Cake Making

There are three basic methods of making mixtures, also known as cake batters. The working temperature of caked batter should be 21⁰C (70⁰F).

3.2.1 Sugar Batter Method

Also known as creaming method. For this method, the fat (cake, margarine, butter or shortening) is blended in a machine with castor sugar. The method is generally used for rich cakes e.g. wedding, Christmas, etc. It is equally used for plain batter cakes like Victoria sandwiches and queen cakes.

Recipe for small cakes (basic mixtures)
(yield 10 good size or 20 small cakes)

Ingredients

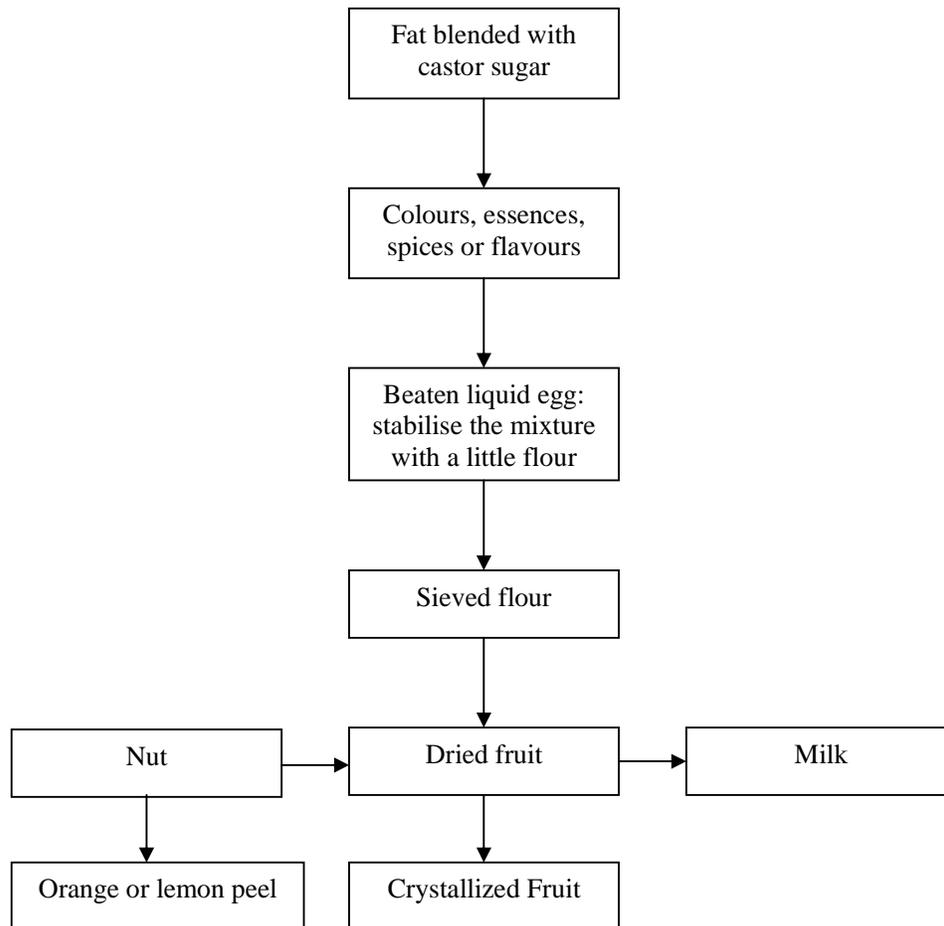
Flour	-	200g
Sugar	-	125g
Margarine	-	120g
Egg	-	2 – 3
Dried Fruit	-	110g
Baking Powder	-	½ teaspoon.

Method

Cream the margarine and sugar in a bowl until soften and fluffy.

Slowly add well beaten eggs, mixing continuously and beating really well between each addition

Lightly mix in the sieved flour, baking-powder and salt and other ingredients. In most cases, the consistency should be a light dropping one, and if necessary, it may be adjusted with addition of a few drops of milk.

Fig 14.1 Sugar Batter Method**Sugar Batter Method****3.2.2 Flour Batter Method**

Also known as whisking method. For this method, the eggs and sugar are whisked to a half sponge. This is the basic principal stage which aims to foam the two ingredients together until half the maximum volume is achieved. Other ingredients are added. A humectants such as glycerol may be added to assist until moisture retention. This type of method is used for plain sponge cakes which are very light and digestible.

Method**Sieve flour and baking powder**

Break the eggs into a mixing bowl and mix for about 5 minutes. Add sugar lightly and continue to whisk until the mixture has double its bulk, become stick and white. Then stand the bowl over a pot of water

pan while whisking as this will help to increase the volume and the thickness of the mixture. Be careful not to make the water too hot and do not allow the bowl of mixture to touch the water else the egg will curdle and the texture will be spoiled.

- Remove from heat and scatter about half of the flour over the mixture and fold it in lightly with metal spoon. Be careful not to expel the air which has been whisked into the eggs.
- Scatter the remaining flour over and continue folding until all absorbs.
- Pour the mixture lightly into a cake tin which has to be greased and dusted with 1 teaspoon of flour and castor sugar mixed together.
- Dredge the surface with castor sugar and bake in a moderately hot oven for about 45 minutes. Be careful not to overcook this type of mixture or else it will shrink and get tough.

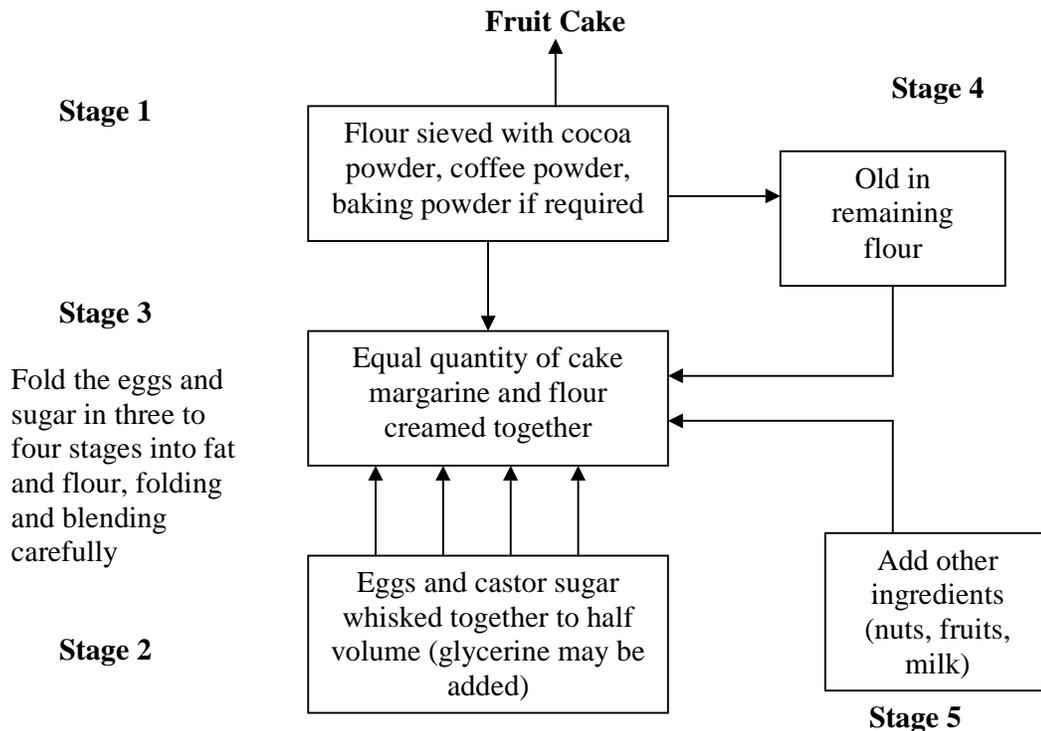


Figure 14.2 Flour batter method

3.2.3 Blending Method

Known also as rubbing method. Used for high ratio cake mixture. This uses high ratio flour, a flour which has been specially produced so that it will absorb more liquid. For this method, also use a high ratio of fat. This is made from oil to which a quantity of emulsifying agent has been added enabling the fat to take up a greater quantity of liquid. High ratio

cakes contain more liquid and sugar resulting in a fine stable crumbs, good eating quality, extended shelf-life and excellent freezing quality. The principal or basic stage is the mixing of the fat and flour to a crumbling texture.

This method is good for simple buns, plain cakes and scones.

Method

Sieve the flour, baking powder and salt together

Rub in margarine to a sandy texture.

Add sugar

Gradually add the well beaten eggs and mix as lightly as possible until combined.

Bake at temperature of 230 – 250 °C for 15 minutes.

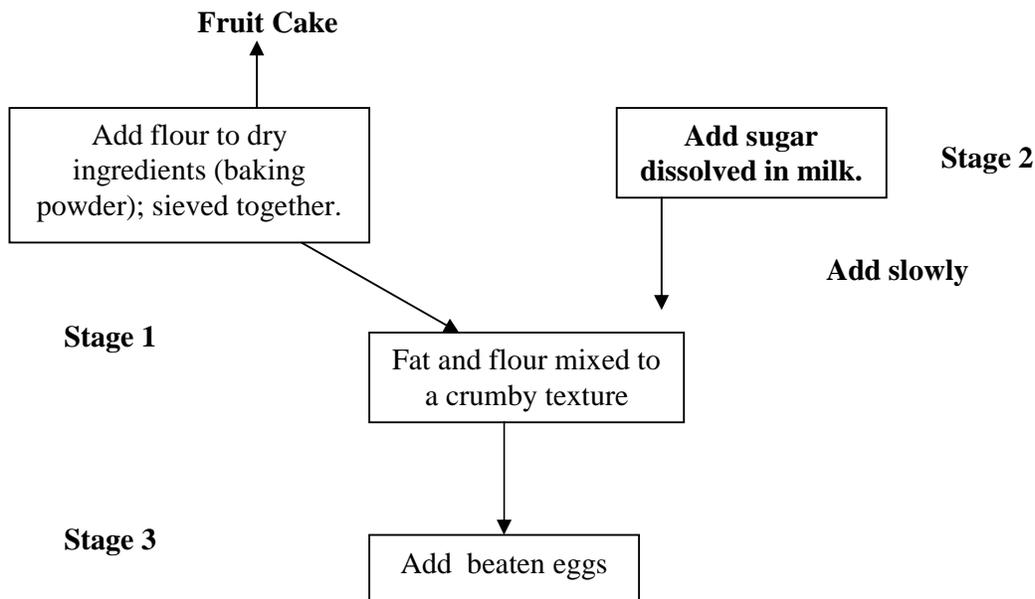


Figure 14.3 Blending method

3.3 Points to Remember When Making Cakes

- i. Have correct proportions. Fat and sugar are liquefying ingredients, therefore, the richer the cake, the less liquid such as milk is required but in some cases, none. It is better to add water instead of milk in the sandwich cake type of mixture.
- ii. For cakes of the sponge variety, e.g. sandwich cake, as much as possible of the egg should be added to the creamed fat without the addition of flour unless the mixture appears to be curdling. For

- fruit cakes, where a close texture is required, add egg and flour alternately.
- iii. For rich cakes and fruit at the end, mixed with some of the flour to help to keep the fruit suspended in the cake.
 - iv. Generally speaking, the plainer the cake, the hotter the oven, the richer the cake the cooler the oven. Bake small cakes, and very large cakes in the heart of the oven, larger cakes in the middle and very large cakes in the lower parts of the oven. Cakes must not be placed over the flame at the side of a gas oven or too near the element in an electric oven. Never bake a cake on a browning sheet.
 - v. Avoid opening the door before a cake has begun to set. Do not slam the door – especially this is important with sponge mixtures and ginger bread.

3.4 Consistency of Cake Mixtures

In many recipes, it is stated that the mixture should have certain consistency and the following terms are commonly used to describe this:

- **Stiff Dough:** - Use as little liquid as possible, only just enough to bind the ingredient into a lump. Used for making biscuits and pastry.
- **Soft Dough:** - Add as much liquid as the mixture will take without becoming so soft that it cannot be rolled out. Used for making yeast and scone dough.
- **Stiff Consistency:** - Add enough liquid to make a mixture that is too sticky to handle or roll out but which will keep its shape when dropped from a spoon. Used for rich fruit cakes.
- **Soft Dropping Consistency:** - A mixture which will drop easily from the spoon but too thick to pour. This is used for most cakes, including Victoria sandwiches.
- **Pouring Mixture:** - There should be consistency of the thick cream and spreads slowly when dropped from a spoon. A sponge cake has this consistency.

3.5 Baking Cakes

Before starting to make cakes, light the oven, setting it at the temperature given in the recipe and arrange the shelves to suite the types of mixtures. Small, plain cakes, scones and Swiss rolls near the top of the oven. Small rich cakes, sandwiches and sponge cakes go just above the center and larger cakes go in the centre. Very large rich cakes and

short breads which need long slow cooking go towards the bottom of the oven and biscuits near the top.

3.5.1 Preparing Cake Tins

Grease all cake tins lightly with melted unsalted fat (e.g. lard) or oil. The quickest way to do this is with a pastry brush dipped in the melted fat or oil. The tins may also be dredged with flour as an additional precaution against stocking. Sprinkle 1 or 2 tablespoons of flour into the greased tins, shake until well coated, then bang against the side of a hard surface and turn the tin upside down to shake out any surplus flour.

3.5.2 Test for Readiness of Cakes

The time given for baking cakes is approximate:

- Open door carefully and just enough to test cake quickly
- The cake should be well risen and evenly browned.
- Some cakes should be well risen, golden brown in colour, and firm to touch, both on top and underneath. They should begin to shrink from the sides of the tins on being taken out of the oven.
- For large cakes, press the top gently with the finger. It should feel firm and resilient and should give only slightly to the pressure then rise again immediately, retaining no impression.
- Another test is to hold the tin up to you ear. If the cake is making a sizzling noise, it indicates that it is not cooked through, so, it should be returned to the oven until this stops.
- Insert a warm skewer into the cake. If it comes out dry, the cake is ready. If there is any mixture sticking to it, the cake needs more cooking.
- If the cake is shrinking from the side of the tin, it is probably over-baked.

3.6 Cooling and Storing Cakes

3.6.1 Cooling

After baking, allow the cake a few minute to cool before turning it out of the tin. It will shrink away from the sides during this time, and will be easy to remove. Turn it out very gently, remove any paper to allow the steam top escape. Cool on a wire tray .Allow the cake to get completely cooled before filing or icing. A rich fruit cake can be left in the tin until it has almost cooled, then it should be turned out unto a wire rack, although in this case, the paper is best left on.

3.6.2 Storing Cakes

Cakes should be stored in tightly closed tins, kept in a cool place. Many of them are best eaten fresh, but fruit cakes and ginger breads improve with keeping. So should be made at least the day before they are cut – longer if the mixture is rich.

Fruit cakes which are to be kept for any length of time should be wrapped in grease proof paper or foil before being cooked in the tin. If a large enough storage tin is not available, wrap the cake in grease proof paper, then in aluminium foil. Iced or filled cakes and biscuits do not keep so well. Cake and biscuit should never be stored in the same tin. The biscuit will absorb moisture from the cakes and lose their crispness.

3.7 Possible Reasons for Faults in Cakes

- (1) If cake is having an uneven texture, this may be due to:
 - insufficient fat added.
 - too much liquid
 - fat is insufficiently rubbed in
- (2) If a cake is having a closed texture (stone cakes) this may be due to:
 - Too much fat
 - Hands too hot when rubbing in fat
 - Fats/flour ration is not correct.
- (3) Cake too dry may be due to
 - Too little liquid added.
 - Oven too hot.
- (4) If cake presents bad shape, this may be due to
 - Too much liquid
 - Oven too cold
 - Too much baking powder.
- (5) Fruit sink may be due to
 - Wetness of the fruit
 - Too much liquid
 - Oven too cool

- (6) Cake cracked on top may be due to
- Too little liquid
 - Too much baking powder
- (7) A coarse textured cake result from the use of too much raising agent
- (8) A damp and heavy cake may be due to:
- Incorrect proportion of ingredients
 - Too much orange or lemon juice added to the mixture
 - The oven too cool
 - The cake has been cooled too rapidly, making it damp.
 - The cake may have been packed into a tin before it has cooled sufficiently, so causing dampness.
- (9) Fruits sunk to the bottom of a cake may be due to:
- Insufficient proportion of ingredients – too much liquefying material, e.g. sugar
 - Too much baking powder.
 - Oven too slow
 - The use of wet fruit.
 - Fruit not mixed with some flour before adding.
 - A sudden drought or shake given to the tin.

4.0 CONCLUSION

In this unit, we discussed generally on cake making. We looked at the major ingredients in cake making. In addition, we looked at the classes of cake. We also looked at aids to success in cake making and explained the different methods of making cake. We also noted the points to remember when baking cakes and the consistency of cake mixtures. We finally looked at possible reasons for faults in cake making.

5.0 SUMMARY

This unit treated the concept of cake making. It classified cakes into plain cakes, rich cakes, sponge cakes and miscellaneous. We explained the methods of cake making, which included sugar batter method, flour batter method and blending method. The unit also listed points to remember when making cakes, test for readiness of cakes and possible reasons for faults in cakes.

In the next study unit, we shall discuss food costing and control in catering establishment.

6.0 TUTOR-MARKED ASSIGNMENT

1. (a) List the main ingredients used in cake making.
(b) Explain how to test when cakes are cooked.
2. (a) Mention the three basic methods of making cake mixtures
(b) Give the recipe and method of preparing cakes, applying one of the method mentioned above (6.2 (a))

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UNIT 3 FOOD COSTING AND CONTROL IN CATERING ESTABLISHMENT

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- 2.0 Objectives
- 3.0 Main Content
 - 3.1 The Object and Advantage of Costing and Control
 - 3.1.1 Dish Costing
 - 3.1.2 Costing Sheet (Dish costing Form)
 - 3.2 Profit Margins on Various Dishes.
 - 3.2.1 Costing of a Table D'hote menu
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 - 3.2.3 Pricing Policy
 - 3.3. Food Control in the Kitchen
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1.0 INTRODUCTION

Costing is ascertaining the amount relating to a suitable unit of output. In catering, a unit may be a dish to be served, an event, e.g. banquet, a unit of time (amount) or per sleeper night. It may also be defined as the analysis and allocation of expenditure for the purpose of determining the cost of each product or service and presenting appropriate cost information to the management.

Costing and control are the most important activities in any business concern. Except these activities are carefully carried out, profit may never be maximized. The desire of every caterer or hotelier is to make profit. A comprehensive system of costing must necessarily cover the whole range of items produced and sold. An hotelier or caterer will make sure that the charges made to his customers are sufficient to cover all his costs. This he achieves through sufficient high level of scales. He/she should make sure that the cost and sales maintain correct relationship to each other. The making of profit should not be trusted to chance, necessary calculations should be made over a period of time so

as to be able to detect unprofitable venture so that it can be corrected in time or abandoned them before damage is done.

The primary objective of any food cost account system is to produce useful information about the result of the food operation so that corrective measures may be made immediately should food cost be too high. Costing should be done continuously whether the establishment is big or small and an accurate record of the actual cost of the goods and services that are sold must be kept.

Thus, if a business is to be really successful and attain maximum profitability, every member of staff should be cost conscious because investigation has proved that one of the major causes of failure in the catering industry has been lack of understanding and failure to implement cost control systems.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- Explain the use of costing sheet in the catering industry.
- Calculate the cost per portion of dishes, the cost of dishes as percentage of sales.
- Determine the selling prices of meals using unit or multiple costing methods.
- Describe the control procedures in food preparation
- Explain pricing policy in the hotel and catering industry.

3.0 MAIN CONTENT

3.1 The Objects and Advantages of Costing and Control

The main object of financial accounting is to disclose whether or not a profit has been made by the establishment as a whole. A progressive hotel keeper will certainly not be satisfied with a single figure net profit at the end of accounting period and will at least require to know the profit made by each revenue producing department of the business. The advantage of costing may be summarized as follows:

- A system, of costing discloses the net profit made by each revenue producing department and shows the cost of each meal produced.
- Similarly, it enables the hotel keeper to determine the profit made from accommodation.

- An efficient costing system will reveal possible sources of economy, thus resulting in more rational utilization of labour stores.
- Costing provide valuable source of information necessary for the adoption of sound price policy.
- A cost record facilitates speedily quotation for special functions such as banquet, special lunches, dinners, etc.
- It shows the analysis of income and expenditure.
- It gives room for accommodation of two operations. e.g. restaurant and accommodation.
- It serves as a guide against salary less than the amount spent on a business.
- Cost makes it possible to know the total outlay for a particular business. Costing accounting may therefore be regarded as an important instrument in the hand of the management.

3.1.1. Dish Costing

The hotelier produces dishes for sale. To know the charge to customer, the cost of the material must be ascertained. The food cost must be marked up by the hotelier to know the charge to the customer. For the costing of a dish, you need to do the following:

- There is always a recipe consisting of the ingredient for preparing the dish. The quantity of each of the ingredients is specified in the recipe. Usually, good hotel has a 'manual' consisting of dishes and their recipes.
- The yield or the number of portions that can be got from a dish is also specified in the recipe. This presupposes that the hotel has to establish the size of a portion of each dish. This size forms the basis of costing. Once the size has been established, it has to be adhered to, so that the costing is not rendered invalidated.
- The unit prices of the ingredients vary from time to time, depending on the season of the year (if it is a seasonal product) and the bargaining power of the purchasers for most agricultural ingredients.
- Once the recipe for the product and the prices for the ingredients are known, the cost of each ingredients used can be calculated by multiplying the unit price by the quantity used. To know the total cost of ingredients, the costs of all the ingredients are summed up.
- It is necessary to know the cost of a portion of the dish. This is done by dividing the hotel cost of the dish by the number of the portion (yield).

- In order to know the charge on the portion of the dish, the cost per portion is marked up by the amount (gross profit) that will cover the labour and overhead cost and still provide a reasonable amount for net profit.

For instance, if the cost per portion of X and the margin is 60%, it implies that food cost percentage will be $100 - 60 = 40\%$. The selling price per portion is then calculated as:

$$\frac{X}{40} \quad \times \quad \frac{1000}{1}$$

$$= \frac{100X}{40}$$

3.1.2 Costing Sheet

For a lot of caterers and hospitality business dish costing appears to be a tedious process. However, a relatively short time in costing out all menu items will result in consistent high quality goods. Being produced at a selling price which will attract the required gross profit. First of all you require your standard recipe which will normally be for a specific number of portions. Using a recipe/dish costing record will allow you to keep a note of the content of dishes, and will help you to keep a record of garnishes and accompaniments. It will help you with pricing decision and with any amendments that are required for the recipe.

The costing sheet or dish costing form is used to cost dishes, a portion of dish, a number of dishes and portions of dishes.

An example of a costing sheet below requires you to put down on paper the date, the name of the dish and, the number of portions yielded from that particular recipe.

The quantity of each ingredient; the cost in the unit of which the ingredients are bought (that is Pounds, Kilos, Litres, Pint, etc) and the proportionate cost.

Care should be taken when compiling a dish cost form to ensure that units are either imperial or metric and not mixed, that is pounds and kilos or litres and pints. At the end of the dish costing form, you should have a total cost for the total number of portions, and therefore the total cost divided by the number of portions becomes the portion cost.

Figure 15.1 Example of a costing sheet (Dish Costing Form)

Name of dish: scrambled egg with ham on Toast			
Number of portion 100		Date: 8th Feb. 2007	
Quantity	Ingredients	Unit Cost	Cost N: k
4 litres	White Sauce	8.00	32.00
200	Eggs	.80	160.00
1kg	Butter	25.00	25.00
3kg	Ham	25.00	75.00
8	Sandwich	8.00	64.00
60g	Salt	2.50	2.50
30g	Pepper.	1.50	1.50
		Total	360.00
		Portion Cost	3.60
		Charge per portion at 60% margin	9.00

Having decided on a particular dish it should be costed accurately in order to fix the selling price and find the profit. The table above shows the calculation on the standard dish costing sheet (form), but let us work this through, item by item.

Item by Item

$$4 \text{ litres of white sauce @ } \text{N}8.00 = 4 \text{ litres} \times \text{N}8.00 = \text{N}32.00$$

$$200 \text{ egg @ } 0.80\text{k} = 200 \times 0.80 = \text{N}160.00$$

$$1\text{kg butter @}25 = 1\text{kg} \times 25 = \text{N}25.00$$

$$3\text{kg of ham @ } \text{N}25.00 = 3\text{kg} \times \text{N}25 = \text{N}75.00$$

$$8 \text{ sandwich loaf @ } \text{N}8.00 = 8 \text{ loaf} \times \text{N}8.00 = \text{N}64.00$$

$$60\text{g of salt @ } \text{N}2.50 = 6\text{gm} = \text{N}2.50$$

$$30\text{g pepper @ } 1.50 = 30\text{g} = \text{N}1.50$$

$$\text{Therefore the total cost of the dish is} = \text{N}360.00$$

\therefore The cost of one portion is $\text{N}360.00$

$$\begin{aligned} &\text{Divided by } 100 \\ &= \text{N}360.00 \end{aligned}$$

Portion costs per cover = ₦3.60

What we will now do is to calculate the selling price, exclusive value added tax if the required gross profit is to be 60%:

Remember the formula:

$$SP = \frac{\text{Food Cost}}{\text{FC\%}} \times \frac{100}{1}$$

$$SP = \frac{₦3.60}{40} \times \frac{100}{1}$$

$$= ₦9.00$$

Where FC = Food Cost

SP = Selling Price

The cost of the ingredients in any dish costing should be monitored regularly and should be done at least four times per year. As spices increase on to the end users (the customer) in order to maintain the required gross profit. If this is not done, then profits will suffer.

3.2 Profit Margins on Various Dishes

In budgeting its sales, a hotel may wish to achieve a certain profit margin on its sale. It expects this margin to cover all other cost other than food cost, and the net profit margin, since the selling price of a dish must be based on a number of factors that include:

- What the customers are capable of paying
- The competitor's prices and
- Some other policy of the business

Some of the dishes are capable of producing higher profit margins than used in budgeting. Others will produce less margin. In the former, food cost may be cheap enough that it can be heavily marked up, while in the latter the materials (ingredients) may be so expensive that will make the price unrealistic. From the discussion above, different dishes may have different margins. Some lower than expected and some higher. The important thing is that the resultant margin produced when all dishes are combined must be the budgeted margin expected if it wants to promote a line of products. It may do the same, if it realized that a product is capable of yielding more margins in future and may attempt to drop. It will reduce the awareness of customers of its usefulness.

3.2.1 Costing of a Table d'hote

There are certain things to realize in costing a table d'hote menu. That is 3-4 courses are involved, a portion from each of the dishes is served. A knowledge of how to cost a portion of the dish is important. Suppose we have a 3 course d'hote menu consisting of dishes A, B, C, D and E, the cost of a portion of each of the dishes has been made. To get the cost of the menu, we add up the cost of a portion of each of the dishes together. To get the selling price, we mark up cost by the expected margin. This assumes that dishes have equal margin. Suppose they do not have equal margin, the selling price of each portion shall be calculated based on the margin expected on each dish and the selling prices added together to get the selling price of the menu.

Example 1

A three course table d'hote menu consists of dishes A, B, C, D and E is to be served. The costs of a portion A, B, C, D and E are respectively N2, N2.50, N1.50, N1.20 and N1.50. The margin expected is 65%. Calculate the selling price of the menu.

Solution

Date: March 25th 2007

Menu

A
B
C
D
E

Portion	Dishes	Food cost per portion
1	A	N2.00
1	B	N2.00
1	C	N1.50
1	D	N1.20
1	E	N1.50
Total		N8.70
Margin		65%
Selling price		N24.86

In the example above, it is assumed that the dishes produce the same margin.

Example 2

The food cost of dishes A, B, C, D and E used to serve a table d’hote menu, their margins are given below.

Dish	Food cost per portion	Margin
A	N2.00	60%
B	N2.00	65%
C	N1.50	55%
D	N1.20	60%
E	N1.50	70%

Dish A
 Selling price = $\frac{N2.00}{40} \times 100$
 = N5.00

Dish B
 Selling price = $\frac{N1.75}{35} \times 100$
 = N5.00

Dish C
 Selling price = $\frac{N2.25}{45} \times 1000$
 = N5.00

Dish D
 Selling Price = $\frac{N1.00}{40} \times 100$
 = N 2.50

Dish E
 Selling price = $\frac{N1.50}{30} \times 100$
 = N5.00

Therefore, selling price of the table d’hote menu

Portion	Dish	Selling Price/Portion
1	A	5.00
1	B	5.00
1	C	5.00
1	D	2.50
1	E	5.00

3.2.2 Costing Of a' la Carte Menu

For a' la carte menu, the charge to a customer will depend on:

- the type of dishes taken
- The number of dishes taken
- The number of portions of various dishes taken.

The dishes are priced individually:

Example 3

Dishes A, B, C, D, E, F and G, are available for customers. The food cost of each of the dishes, the yield and the margin on each of the dishes are given below:

Dishes	Food Cost	No of portions	Margin
A	N40	10	60%
B	N135	30	55%
C	N10	8	50%
D	N10.50	6	65%
E	N24	16	70%
F	N20	10	60%
G	N48.75	15	35%

Calculate the charge to the customer in each of the cases below:

- The customer takes 1 portion of A, 2 portions of B, 1 portion of C and 3 portions of D.
- The customer takes 2 portion of each of dishes D, E, and F and portions 1 portion of G.

Solution

Dish	Cost per Portion (₦)	Margin	Selling Price (₦)
A	N4	60%	N10.00
B	4.50	55%	N10.00
C	1.25	50%	N2.50
D	1.75	65%	N5.00
E	1.50	70%	N5.00
F	2.00	60%	N5.00
G	3.25	35%	N5.00

(a) Charge to customer

Dishes	No of Portions	Charge/Portion	Charge (₦)
A	1	N10.0	N10.00
B	2	N10.00	N20.00
C	1	N2.50	N2.50
D	3	N5.00	N15.00
		Total Charge	N47.50

(b)

Dishes	No of Portions	Charge/Portion	Charge/Dish
D	2	N5.00	N10.00
E	2	N5.00	N10.00
F	2	N5.00	N10.00
G	1	N5.00	N5.00
		Total charge	N35.00

In the solution, total cost is divided by yield (number of portion). To get the cost per selling price is calculated by dividing the food cost per portion by food cost percentage and multiplying the result by 1000.

3.2.3 Pricing Policy

The management of an establishment is responsible for fixing the price of its items. However, some factors have to be taken into consideration.

- The expected or budgeted gross profit margin on the items.
- The competitor's prices
- The price elasticity of demand of the product.

The caterer usually has an idea of what her margin should be. She tends to mark-up food cost all products by the same margin to arrive at the budgeted margin. As previously discussed, it may be unwise to believe that all products should be marked-up by the same margin. Consideration has to be given to the purchasing power of the customers and the competitors' price even after the food has been marked-up by a margin. The management must decide exactly what factors are relevant to their particular establishment. An establishment which sets out to attract customers of high class people, the price can be high because of the high standard of cuisine and service unlike those governed by competitors' prices and a restaurant for labourers where the menu is basic and the prices are relatively low. For a business to continue to succeed and survive, the prices of its products must be able to cover effectively to the fixed and variable costs and shall make contribution to profit.

3.3 Food Control in the Kitchen

There must be a realistic method of controlling food in order to achieve the aims and objectives of the kitchen establishment. The following factors have been identified to be helpful towards reasonable profit drive:

- The kitchen head and the restaurant head should see themselves as operating toward one common goal. Realistic cooperation is important.
- The method of purchasing raw items and ingredients should be carefully examined. Reasonable prices for reasonable quantities will assist proper cost control and maximize profit. Large quantity / bulk purchase reduce cost.
- Waste should always be prevented. A good method of left over preservation and utilization is a good practice that generates more revenue. Loss of control over staff consumption is injurious to the profit target and also staff discipline.
- Stealing and pilfering are harmful to the effort of the hotel and the kitchen head. It has to be checked and controlled.
- Proper accountability is highly essential. Good record keeping of sales, items supplied and how the items were used and what were produced enables the chef to discover if his materials has been cleverly tampered with or not.
- Standardize food portioning assist very well in costing and determination of anticipated profit.
- Gross profit percentage should also be determined at the end of each month to access success of control. If there is a good control, the percentage is high, if control is weak, the percentage is low.

Gross profit = total revenue – total expenses on production.

$$\text{Gross profit percentage} = \frac{\text{Gross profit}}{\text{Total Expenses in production}} \times 100$$

Net Profit = Gross profit – Overhead (Salary, water, electricity, transportation, gas, etc)

3.3.1 Essential Kitchen Records

Cashier Summary sheet: It records all the cash and credit sales on kitchen production like foods, tea, coffee and snacks. The total sale is obtainable by adding all the total service sold as shown below. The original sheet is sent to the accounts office that cross-checks the

accuracy of the figure and total balance for further posting into a different ledger forms.

Figure 15.2 An example of daily cashier’s summary sheet

Unique Hotels Tanke-Ilorin DAILY CASHIER’S SUMMARY SHEET							
BILL NO	FOOD	BEVERAGE	SNACKS	BAR	10% SC	9% TAX	TOTAL
Total N							
Cash Sales N _____				Prepared by _____			
Credit Sales N _____				Checked by _____			
Total Sales _____							

- Kitchen sales analysis:

The book is divided into two major parts. The left hand side is the expenses column. While the right hand side is revenue method. Daily expenses and revenues are recorded from the first day to the last day in a particular month. At the end of each month, the total expenses side is compared with the total revenue side to arrive at the gross product or loss and the percentage. The cumulative totals are used in the table below.

An example of kitchen sales analysis

Expenses				Revenue.		
Date	Inv. No	₱	₱	₱	₱	Gross Profit
		K	K	K	K	
Jan 1						
2						
3						
↓						
30						
31						
Total						

- Kitchen Sectional Performances.

The form is divided into two major parts – expenses and revenue. Each major part is subdivided into sectional expenses and sectional revenue. The form helps to analyze the performance of each section of the kitchen and it makes clear which section generates the highest profit and the section whose performance is least or below expectation.

3.3.2 Control of Food Preparation

There are four major stages in controlling the preparation of food and beverages which together should reduce over production (and possible waste), loss from inefficient purchasing and processing and loss from excessive portion sizes. The operation of the four stages in a food and beverage control system should aid management in controlling cost efficiently and maximizing the profit ability of the operation as well as assisting in setting a standard for the establishment and ensuring overall customer satisfaction.

The four stages are:

Volume Forecasting

This is often referred to in other industries as production planning. It is a method of predicting the volume of sales of an establishment for a specified future period. The sale of an establishment are broken into sales of each selling outlet, and then broken down into the sales per meal item. Volume forecasting is not a perfect method of prediction but with study and application and information, a high level of accuracy of

prediction is possible, helping to minimize the common problem of the shortage or over production of items.

3.3.3 Standard Yields

The term 'standard' is synonymous to the phrase 'what it should be'. Standards are aids to management for the measurement of efficiency, particularly of kitchens and bars. The term yield may be defined as the edible or the usable part of a food item which is available after preparation, or preparation and cooking. A standard yield is the yield obtainable when an item is processed in the particular standard measure of preparation, cooking and portioning of an establishment, the items having firstly being purchased to a known standard. It is necessary to establish the standard number of portions that are obtainable from all major items that appear on an establishment's food and beverages, menu. For instance, a standard percentage obtained between meat, fat, and bone, and between specific standard joint when buying meat by the carcase and butchering it on the premises; the standard number of say 4oz portions of meat obtainable from a roast saddle of lamb; the number of "Six out" portion obtainable from a bottle of spirit, etc.

Having established the standard used on all major items, it is possible to be much more accurate with menu costing and pricing as well as being able to cover the volume forecast for specific items into raw material requirements.

The main objectives of standard yields are as enumerated below:

- To establish a standard for the quantity and number of portions obtainable from a specific item or food.
- To establish a standard for comparison with operating results, and thereby measure the efficiency of the production department.
- To establish an objective method of further evaluating standard purchasing specifications.
- To establish a standard cost factor for the item of food.
- To assist in menu costing and pricing.
- To assist in converting forecast requirement

3.3.4 Standard Recipes

A standard recipe may be defined as a written formula for producing a food or beverage item of specified quality or quantity for use in a particular establishment. It should show the precise quantities and qualities of the ingredients to be used together with the sequence of preparation and service of the item. In a situation where a number of chefs are cooking in the same organization, it is usual to use a standard

recipe. As its name suggests, it is a method of standardizing recipes so that there is a tight control on cost and quantity. Standardization should not be allowed to stifle the individual chef’s flair. It does mean that a group catering manager can control quantities, quality and cost more easily.

The recipe lays down the ingredients, method of production and quantities used. It should give the number of portions to be served – this would determine the size of portion (Portion control). A section given variations can be added to reduce the total number of recipes required.

The advantages in using the standard recipes are: -

- A well tried recipe ensures consistently good finished products.
- It controls portion size which is so important in costing a dish
- It is easy to determine the food cost of a particular dish
- It simplifies the pricing of a particular dish.
- It reduces the possibility of error.

Figure 15.3 An example of a standard recipe form is shown below:

Recipe		No:		
Ingredients	Quantities for			
	25	50	100	200
Method of production		Comments		
Presentation for service				
Variation		Ingredients and methods		

3.3.5 Standard Portion Size

A standard portion is the established number of ounces of a food or beverage items to be served to a customer in relation to the food or beverage cost and the selling price of an item. The standard portion size is usually established when the standard recipe is being prepared. A standard portion size represents the number of ounces of a food item to be served to customers in relation to the food cost and selling price of the item. The portion size is determined by the management of the establishment in conjunction with the head chef and restaurant or canteen supervisor.

There may well be two standard portion sizes for the same commodity in an establishment, depending on whether the commodity is being offered on a table d’hote or an a’la carte menu.

Standard portion sizes are important for two reasons:

- All customers should be served as accurately as possible the quantity of food for which they are paying. Irregular portion sizes of an item served to customers eating at the same table may lead to customer dissatisfaction. Too small portion will usually result in the loss of customers, whereas a correct and fair portion may well result in repeat business being secured.
- As a standard portion size is related to the price to be paid for an item, any excess in portion size causes a higher food cost for that dish and a reduced gross profit.

4.0 CONCLUSION

In this unit, food costing and control in catering establishment has been explained. Costing sheet is used to help keep a note of the content of dishes and also keep records which is to be done four times a year. Different menu were discussed and how to get the cost was also explained. It was also mentioned that pricing policy have some factor which have to be considered and for a business to succeed and survive, price of product must be able to cover both fixed and variable costs and excess in portion size reduces gross profit. So, all members of staff should be cost conscious because some causes of failure in catering industry are lack of understanding and failure to implement cost control system.

5.0 SUMMARY

We discussed the advantage of costing and control which is to choose whether a profit has been made or not by an establishment. We also explored dish costing sheet which contains the date, name, portion of a dish, number of portions yielded from that particular recipe and quantity of the ingredient. Costing of different kinds of menu: a'la carte menu, table d'hote menu with their selling price is got by making up expected margin with the cost of dishes and total cost divided by the yield to get cost per portion. Food control in the kitchen which is very important is discussed with method in order to achieve the aim and objectives of the establishment. Essential kitchen records which include cashier summary sheet, kitchen sale analysis, and kitchen sectional performance are mentioned with examples of each. Also, control of food preparation which includes 4 major stages; volume forecasting, standard yield, with its main objectives, standard recipe, its advantage with examples of form are also discussed.

Finally, standard portion size which represents number of ounce of a food item to be served to a customer in relation to food cost and selling price with its importance is also mentioned.

6.0 TUTOR-MARKED ASSIGNMENT

1. The food cost of dish is N35.00 and the yield is 10. The margin allowed by the management is 65%. Calculate
 - (a) The food cost per portion
 - (b) The charge per portion

2.
 - (a) State the stages involved in controlling the preparation of foods and beverages in a catering establishment.
 - (b) Define standard recipe and enumerate its advantages

7.0 REFERENCES/FURTHER READINGS

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