

**MODULE 3**

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**UNIT 1 SOURCES OF FINANCE****CONTENTS**

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**1.0 INTRODUCTION**

Finance is very crucial and indispensable for the success of any business organisation. No special or business organisation can succeed without funds. Hence, it is necessary to be exposed to the various sources of finance, especially for small and medium scale enterprises which is the subject of this unit.

**2.0 OBJECTIVES**

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

- outline the importance of finance in business
- differentiate the kinds of capital available in business
- explain how small firms can raise capital.

### 3.0 MAIN CONTENT

#### 3.1 Importance of Finance in Business

First, it is necessary to place finance or funds in its proper perspective with regards to the operations of a business enterprise, be it large or small.

The four traditional factors of production are:

- land
- labour
- capital
- entrepreneurship

Today we may add a fifth factor, which is technology, information or technical know-how. Our focus in this unit is on the third factor which is capital, otherwise known as finance, money or funds.

In management, we have the four capital M's viz:

- Man
- Money
- Materials
- Markets.

The importance of capital or finance cannot be overemphasised because no form of business large or small, concept or scope, can succeed without capital. Capital can simply be defined as wealth used in the production of further wealth. This we say in Economics that demand for capital is *Derived Demand* because capital is required for the procurement of equipment, machinery, foods and for the purchase of raw materials and for payment of wages etc. It follows therefore, that an organisation without finance is like a ship without a rudder or an automobile without an engine.

##### 3.1.1 Kinds of capital

The capital used in the running of the business enterprise can be divided into two broad categories. These are fixed and circulating capital.

###### 1. Fixed capital

The fixed capital of a firm is the money needed for permanent investment such as the purchase of land, erection of factory buildings, purchase and installation of equipment, etc. from the foregoing, we

deduced fixed assets of a firm include the land on which the firm stands, the buildings, machines, trucks and furniture which usually depreciate over a long period of time.

The commercial banks are jointly-stock banks or limited liability organisations which owe a duty to their shareholders to make profits. Consequently, banks usually do not engage in very risky investments such as financing projects that are not likely to be viable, or giving long-term credits or loans and as such, firms have to explore other sources of finance in order to provide the capital needed for their fixed assets.

## **2. Circulating capital**

This is otherwise known as working capital and it is the money needed for defraying the recurrent expenditure of firms. Working capital is used for such purposes as payment of wages and salaries, purchase of raw materials, fueling of vehicles, settlement of electricity bills, etc. since these are short-term credits, firms can obtain loans from banks to finance their working capital.

### **3.1.2 Sources of Capital**

The capital available to a business organisation can be raised from two main sources:

#### **1. Internal sources**

These include the firm's own funds or self financing, money realised from past savings, ploughing back of undistributed profits into the business, mergers and the pooling together of resources as in the case of partnership and joint ventures.

#### **2. External sources**

The external sources of capital comprises loans or all sorts of borrowing from banks, private sources, investment trusts and finance corporations; government subsidy or grants, and capital realised from the issue of shares, stocks and debentures as in the case of public limited liability companies.

### **3.1.3 Capital for Large and Small Firms**

All the various sources of capital summarised above are not accessible to all types of firms. Much depends on the type, age, size and magnitude of the business organisation in question. Therefore, various firms raise their capital from various sources.

## 1. Small firms

The main sources from which small firms, such as the sole proprietor and the partnership, obtain capital or funds for financing their business are as follows:

- a. Small firms can raise initial capital from the savings which the proprietor or partners have accumulated over a period of time. Such savings may be targeted saving specifically earmarked for the launching of the business in question.
- b. The owners of small business can also raise capital by borrowing money from private sources such as individuals, relatives and friends. A common feature in West Africa is to start business with funds contributed by the members of the family, a group of friends or an age group from the same village who had decided to go into partnerships or cooperatives.
- c. Another source of capital open to small firms is self-financing through ploughing back or re-investing of profits into the business to an optimum size to enable it enjoy the economic of scale.
- d. In West Africa, the government has on some occasions, given loans to small businesses which they are satisfied are likely to be viable through such organisations as the Nigeria Industrial Development bank (N.I.D.B.), the Fund for Agricultural and Industrial Development (F.A.I.D.), the rehabilitation commission, the poultry subsidy and oil palm rehabilitation schemes of the ministry of agriculture, the bank for commerce and industry and the agricultural bank.

## 2. Large firms

Unlike the firms, capital is usually not a serious problem for the large business organisation, such as joint stock companies and co-operative societies because they have by far richer and multifarious sources of raising capital for their business operations.

- a. *Selling of shares:* this is particularly true of the joint stock companies. The chief source of capital for public limited liability company is from the sale of shares to the public. Once a company has received its certificate of incorporation, it can then proceed to publish its prospectus inviting the public to apply for shares and thus subscribe to the capital of allotment or stock certificate

which designate them as shareholders of the company by virtue of their having contributed funds to the running of the business. Shares need not always be paid for in full, but when the company is in difficulty or needs more capital for expansion, it calls on shareholders to pay for any balance outstanding on their shares.

- b. *Debenture*: apart from selling shares, a public company obtains loans from the public in the form of debentures or loan certificate to those from whom it has borrowed money. Such creditors or debenture holders receive a stipulated amount as interest on the capital they have invested in the business.
- c. *Internal self-finance*: occasionally, rather than issue fresh shares or take more loans, a company may decide to set aside a proportion of its profits for purposes of expansion and research. Instead of distributing all profits among shareholders, some of it is ploughed back into the business and this constitutes another source of capital for many firms.
- d. *Bank Loans*: commercial banks can more readily give loans to large firms than small ones because these are more firmly established in business and besides, they have got the necessary collateral security which banks demand in case of default.
- e. *Investment trusts*: some companies specialise in giving loans for business or credit facilities to firms and other establishments. These are investment trusts, hire purchase and insurance company. Such companies usually have on their staff, a panel of economists who are charged with the responsibility for undertaking feasibility studies of projects for which loans are being sought before recommending the approval of such loans on basis of the financial viability of the applicants firms.
- f. *Finance corporations*: these are set up by the government to finance projects which are vital for a country's economic development e.g. Agricultural Credit Corporation and Industrial Development Corporation. The latter provides capital for the establishment of basic industries, food processing factories and pioneer industries. Government can also provide capital for resuscitation of businesses that have fallen on evil days. The Rehabilitation Commission and the Cooperation for American Relief Everywhere (C.A.R.E) were actively engaged in such ventures in the immediate post-war Nigeria.

The public statutory corporation is in a distinct class of their own in terms of capital procurement for business because these are fully

financed by the government and besides, although they are expected to pay their way, they were not established solely with the profit motive as a predominant objective. Thus, the government will usually come to their rescue anytime they are genuinely in financial difficulties.

### **3.1.4 Survival of Small Firms**

From the foregoing analysis, we see that large firms have more sources of capital and so can afford to grow. The small firms, on the other hand, are not so lavishly financed and so most of them remain small. Nevertheless, these small units of business organisation are able to hold their own and remain in business in the face of several odds, such as, paucity of finance and fierce competition with the giant oligopolies, i.e. the large firms.

There are reasons why the small firms survive side by side with the large business and commercial establishments.

- a. First of all, it must be realised that the growth of firms is a dynamic phenomenon which is a continuing process with several interacting factors. New firms are born continually and most of them start on a small scale. There is a considerable amount of prestige attached to being in business on ones own and entry into some businesses is fairly easy. Besides, there seems to be an unending supply of potential entrepreneurs who are ready to venture into the exploitation of some new ideas or favourable market opportunities. Some of the small firms of today will grow into the large firms of tomorrow. Many will die in the wake of competitions, but other new small firms quickly emerge to take their places.
- b. Some aspects of our economy are associated with small scale production e.g. weavers, tailors, and tinkers operate quite economically in their small firms with very little overhead costs and so remain in business in spite of the large factors engaged in similar production. Such small firms are more flexible than the large firms and also less vulnerable during periods of depression.
- c. Another advantage which contributes to their survival is that they are able to add variety to their products as well as pay attention to details according to the speculations of their individual customers. These small firms open at odd hours, give personal attention to their clients, are not subject to bureaucratic control like the large firms, and so can afford to remain in business.

- d. Furthermore, the existence of the small firms does not jeopardise the interest of the large firms nor threaten the quasi-monopoly of certain trades. They only fill the vacuum created by the giant oligopolies and so both of them can exist side by side.
- e. In addition, there are obvious obstacles to growth, chief among which are lack of capital for expansion and security of high-level managerial personnel. Where long distance transportation is expensive, as in West Africa and many of the underdeveloped countries, operating on a small scale production at a few points, particularly if the necessary raw materials are located at different places and the finished product is bulky and expensive to transport.
- f. There is limit to growth of any firm beyond which diseconomies of scale set in. as a business concern grows in size, there is increased risk of borrowed capital, and higher magnitude of losses in the event of failure. In terms of personnel, there is tendency for management to deteriorate in efficiency as a business organisation expands because there are far too many departments and branches to be coordinated, more people are involved in decision making, and formidable difficulties of communication emerge. As the organisation becomes more bureaucratic, there is considerable loss of interest and decline of morale. These risks and defects associated with increase size and scale of production trends to keep firm smaller in size.
- g. Security and logistics reasons, the fear of war and possibilities of economic blockade could influence a country to adopt the policy of establishing several small industries in various parts of the country rather than supplying the whole country from one giant firm. If such industry is captured or destroyed by the enemy during war, the nation would have no alternative source of internal supply.
- h. A common feature of West African entrepreneurs is their unwillingness to combine with others resulting from the fact that they are mutually suspicious of one another. There is the unusual love of freedom coupled with a desire for quick return on investments and many of the businessmen are reluctant to take risk on a large scale. There is a limit to what a single person can do and so, as a result of lack of capital, managerial expertise and other constraints, many business units in West Africa remain small. On the other hand, SME's collapse mainly because of mismanagement of funds and mal-administration.

### **3.1.5 Small and Medium Scale Equity Fund Scheme**

The topic of this unit is consonance with the workshop theme of the 14<sup>th</sup> Enugu International Trade Fair which is on Empowering Small and Medium Scale Enterprise for Sustainable Economic Development. Coupled with the fact that the managers and staff of small and medium scale enterprise have been invited as participants at the workshop; it is necessary to examine the new government policy aimed at encouraging the growth of small and medium scale equity fund scheme.

Under the federal government policy on small and medium scale equity fund scheme which is administered by registered banks with the supervision of the Central bank of Nigeria (CBN), banks are required to set aside 10% of their pre-tax profits for small and medium scale enterprises funding. Equity participation is between the beneficiary enterprises and the funding banks. Owners of such businesses are allowed to use the land on which the business is situated as collateral; while the banks provide funds for direct purchase of equipment form manufacturers as their own equity participation in business. A special account is opened for each SME benefiting from which disbursements are made in gradual liquidation of the investment capital.

It is a matter for regret that many small and medium scale enterprises promoters, proprietors and managers are ignorant of the existence of this very important laudable scheme, due mainly to lack of public enlightenment about the scheme and to the lethargy on the part of the banks to enthusiastically participate in the scheme.

Something drastic must be done to create awareness and ensure proper utilisation of fund, including establishment of a special bank as a receptacle for the 10% equity fund scheme and a special department in CBN charged with monitoring of the fund.

## **4.0 CONCLUSION**

ECCIMA and Manmark would have achieved our objective in organising this workshop, if an awareness is created in the minds of participants on the theme of the 14<sup>th</sup> Enugu International Trade Fair, and if small and medium scale enterprises (SMEs) are conscious of how best to obtain funds for their businesses and manage same more efficiently.

On the part of government, the organised private sector and funding agencies, it is strongly recommended that more seminars of this nature be organised for SMEs. Besides, a specialised bank should be established for administration of the small and medium scale Equity Fund Scheme, just like its forerunners, and Education Tax Fund Banks



which had functioned with comparative success, to the advantage of specialised sectors of the economy, respectively.

It should be reiterated that profits, the reward for entrepreneurship, do not fall like manna from heaven. You need capital and efficient management to generate profits. Participants have been exposed to various sources of capital in this brief paper; which should be explored to their advantage. Finally, it is pertinent to add that with modest capital, prudent management and ingenious entrepreneurship; small and medium scale enterprises will grow by leaps and bounds into large scale businesses and with it, their multifarious services to our society in particular and to humanity in general.

## **5.0 SUMMARY**

There are various sources of finance available for small and medium enterprises.

## **6.0 TUTOR-MARKED ASSIGNMENT**

List the various sources of finance you know.

## **7.0 REFERENCES/FURTHER READING**

Central Bank of Nigeria: *Economic and Financial Review* (Various Issues).

*Constitution of the Federal Republic of Nigeria, 1999.*

Ocheoha A. O. (1980). *Synthesis of Modern Economics*. Benin City: Ethiope Publishing Corporation.

*Synopsis of Policy Analysis and Decision Making Models*. Enugu: Amicus – Virgo Academy, 2000.

## **UNIT 2 INVENTORY MANAGEMENT AND SUPPLY OF RESOURCES**

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### **1.0 INTRODUCTION**

The investment in inventories for most firms represents a sizeable sum. Since this investment is so large, management practices which result in savings of a few per cent of total inventory values represent large savings of naira and kobo.

Inventory control is important in production in several ways. First, inventories must be large enough to provide balance in the production line. If some machines operate at different rates from others, one way to overcome these imbalances in production rates is to provide temporary inventories or banks as they are called, between machines.

Second, inventories of raw materials, semi-finished products take up the slack when sales or productions volumes fluctuate. This leads to the third reason that inventory control is important. Inventories tend to provide a smooth flow of production, and this facilitates scheduling.

Finally, inventory control leads to the production and purchasing in economic lot sizes. These economic lot sizes represent the optimum quantity to produce to minimise costs.

## 2.0 OBJECTIVES

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

- list the importance and objectives of inventory control
- describe how to carry out effective inventory control.

## 3.0 MAIN CONTENT

### 3.1 Objectives of Inventory Control

There are several objectives of inventory control. Sometimes compromises must be made in attempting to achieve these goals, since meeting all of them at one time is not possible. The objectives of inventory control are to:

1. minimise investment in inventory.
2. minimise warehousing costs.
3. minimise losses from damage, obsolescence and perish ability.
4. maintain enough inventory so that production does not run out of raw materials, parts, and supplies.
5. maintain efficient transportation of inventories, including the functions of shipping and receiving.
6. maintain an efficient inventory information system
7. supply information on the value of inventory to accounting
8. co-operate with procurement so that efficient and economical purchasing can be accomplished.
9. make forecast of inventory requirements.

### 3.2 Benefits of Inventory Control

An effective inventory-control system secures numerous benefits as the followings.

1. It assures proper execution of policies covering procurement and use of materials and makes possible rapid shifts in business to meet changes in market conditions.
2. It obtains economies through a reduction in needless variety of items carried in stock.
3. It eliminates delays in production caused by non availability of required materials and tools
4. It avoids over accumulation of inventories and tools, and thereby maintains the minimum investment consistent with production needs and procurement policies

5. It reduces inventory losses caused by inadequacy inspection of incoming materials, damage, deterioration, obsolescence, waste, or theft.
6. It provides “balance-of-store” records to serve as a reliable basis for effective production planning, economical procurement, cost accounting, and preparation of financial reports.

### **3.3 Procedures for Establishing an Efficient Inventory Control System**

1. Determine the place of inventory control in the organisation
2. Develop a method for classifying and identifying inventory
3. Set up and secure control through balance of stores records (perpetual inventory cards) for planning inventory needs and allocating materials, requisitioning purchases, taking physical inventory, and preparing financial statements
4. Establish the steps in the materials control cycle for the regulation of the flow of items from requisitioning procurement to completion of the product
5. Set up procedures for tool procurement and for its control
6. Secure physical control in inventory through an effective system of keeping stores.

The major responsibility for control of inventory should normally be placed in the manufacturing division under the chief of production planning and control. This means that all phases of the inventory-control cycle (requisitioning, procurement, receiving, storage, allocation, processing and replenishing) will have centralised direction, even through the execution of the cycle concerning the purchasing, engineering, inspection, and sales departments.

### **3.4 Control of Materials**

#### **3.4.1 Classification and Identification of Inventory**

In order to save time and simplify identification and allocation and control, the various types of inventory should be classified by means of symbols. Indeed, an identification system should be set up for all aspects of the business departments and sections, machines, operations positions, etc.

#### **Types of Inventories**

Inventory includes tools, standard supply items, raw materials, goods in process, and finished products. Raw materials are commodities (steel, lumber, asbestos, fabrics) and purchased parts (machined forging and

casting such as gears and pistons) that go into the final product. Goods in process are materials that have been partly fabricated but are not yet completed. Finished goods are completed items ready for shipment.

### **Symbols for Identification**

The numeric and mnemonic are common systems of symbolisation for classifying and identifying inventories (including tools). The numeric system identifies and classifies items and subgroups by numbers and decimals. When the system is properly set up, the various digits and decimal positions are significant in designating models, location, sizes, or physical properties. The mnemonic system classifies and identifies items and subgroups by employing letters and numbers which assist the memory. The first letter may designate the general (e.g. “Z” for model, “SA” for Subassembly and “P” for component parts). Stores may also be identified by use of tags, paint colour or distinctive marking.

### **3.5 Balance of Stores Record (Perpetual Inventory)**

The balance of stores records plays the central role in the inventory control systems, particularly in a job-order plan. In essence, it controls the movement of each item as it goes in and out and shows the current balance on hand. Since the record is closely associated with production planning, it is generally best kept by a balance of stores clerk in the production planning office.

#### **a. Perpetual Inventory Form**

The store record must be specially designed to serve the needs of the business. A loose-leaf ledger or card is kept for each item in terms of unit quantities (pounds, pieces, or gallons) and usually in terms of monetary value. The data frequently carried on the record include the name and identification of the items, location in storage, rate of consumption, ordering point, ordering quantity, and the following balance columns:

1. *Ordered* - quantity placed on order by purchase requisition
2. *Received* - quantity supplied to the storeroom
3. *Issued* - quantity released to the plant in response to requisitions for materials
4. *Balance on hand* - current quantity and value of stores
5. *Allocated or applied to* - quantity apportioned to a production order but not as yet issued for use in plant
6. *Available* - quantity still available for allocation

## **b. Ordering Point and Ordering Quantity**

To prevent shortage and high costs due to under or over buying and to determine when and how much to order, a minimum quantity (ordering point) and a maximum quantity (ordering quantity) should be established for each item and should be indicated in the stores record. The *ordering point* indicating the minimum quantity which must be kept in stock and thus the time at which the item must be recorded, is determined by the rate of use in production and the time necessary for purchasing or fabricating the item. The *ordering quantity* is determined by striking an economic balance among the following factors that influence procurement costs.

1. Inventory-carrying charges (e.g. storage, insurance, and interest
2. clerical costs of ordering for purchase or for fabrication in the plants
3. Transportation costs
4. Quantity discount on purchases.

The increase in carrying charges accruing from larger ordering quantities must be balanced against the resulting savings in terms of clerical and transportation costs and quantity discounts. The ordering quantity should be periodically revised to meet the financial situation of the company and to meet seasonal fluctuation in production and market trends-rising or falling prices.

## **4.0 CONCLUSION**

In the course of our discussion in this unit, we concluded that inventory management and control have a lot of embedded benefits if properly managed by any organisation. It is therefore important for any organisation in the hospitality sector of the economy to establish a good inventory management and control.

## **5.0 SUMMARY**

This unit focuses on the following areas; the importance and objectives of inventory control and how to carry out effective inventory control.

## **6.0 TUTOR-MARKED ASSIGNMENT**

1. Discuss the benefits of inventory management to any organisation .
2. How can you control material within the scope inventory management?

## 7.0 REFERENCE/FURTHER READING

Central Bank of Nigeria: *Economic and Financial Review* (Various Issues).

*Constitution of the Federal Republic of Nigeria*, 1999.

Ocheoha A. O. (1980). *Synthesis of Modern Economics*. Benin City: Ethiope Publishing Corporation.

*Synopsis of Policy Analysis and Decision Making Models*. Enugu: Amicus – Virgo Academy, 2000.

## **UNIT 3 THE START UP PROBLEM**

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### **1.0 INTRODUCTION**

Given that a man has what he thinks is a unique product or service to offer the market place and a strong desire to be his own boss, how does he proceed to establish himself as the head of a business enterprise? What are the major factors to consider if the business venture is not to end in failure and bankruptcy- as nine out of ten do? What sources of information and outside help are available? Is there a better chance of success from acquiring an on-going business or buying into a franchise chain, rather than starting a new business from the ground up? In this unit, the pitfalls to avoid in starting your own business, Maury Delman discusses these questions, as well as the major reasons for business failures, and lists sources of help in making the initial decisions. Delman's suggestions underscore the necessity of thoroughly understanding the operational and financial considerations involved in starting one's own business.

The entrepreneur will usually experience severe difficulties during his first two years in business. Delivery date must be met, products must be reliable, and bills and employees must be paid. But mainly, the entrepreneur must convince potential customers that his gadget is better and less costly and that his business has a long life expectancy. An obvious requirement is that the entrepreneur must have confidence in his entrepreneurial abilities and be committed to the successful exploitation of his product concept.

To repeat, both his abilities and his strategies must be documented in a business plan that is used as a tool in establishing financial support for the new venture, and as a reference framework with which to compare the future status of the business.



## OBJECTIVES

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

- identify some of the pitfalls in starting a new business
- suggest solutions to the identified pitfalls

### 3.0 MAIN CONTENT

#### 3.1 Pitfalls to Avoid in Starting Your Own Business

U.S. Department of Commerce studies show that about half of new small businesses never make the third year. Retailing suffers the most, with only 29% surviving three-and-a-half years. Wholesales show best with a 48% survival after the same period.

Nevertheless, Dun & Bradstreet figures suggest that more than 400,000 firms are started annually with about an equal number being discontinued.

Survival depends upon a variety of factors. Dun & Bradstreet people have been able to pinpoint nine major reasons for failure of new businesses.

Topping the list is simply lack of managerial experience. Even those who have managed other businesses successfully have come quickly to bankruptcy when operating businesses they knew little about. For example, take the case of a young Pennsylvanian who went into the building business after nine years as an insurance agent. With his cash tied up in real estate and “receivables,” suppliers were willing to sell to him on a cash basis only. He couldn’t buy enough to keep going. After four years, he filled a voluntary petition in bankruptcy with liabilities twice the size of his assets.

A “receivable” is simply money somebody owes you that you can’t get your hand on yet. Experience in selling insurance is hardly a good training for another business that requires buy-sell judgement and heavy day-to-day expenses before the profits roll in. But even with specific experience in some lines there is no assurance of success. The importance of experience is not the time spent but what is learned. Successful businessmen underscore the need for balanced experience. This includes knowledge of your product, financial handling, buying and selling.

Insufficient starting capital ranks just under lack of experience as a cause of all business failures. The notion that a few thousand dollars and

very hard work will bring success has held very little validity since the 1930s. An experienced women's-wear retailer says, "anyone going into business now without plenty of capital in back of him should have his head examined." Even if a new business venture should survive its first year with limited capital, this disadvantage takes many years to overcome.

Borrowing the needed capital often seems an easier solution than it is. Those who don't calculate exactly how much the interest on the borrowed money will eat into their expected profits often come to grief-discovering too late that they've only been working for the bank. A man who earns 9% "clear profit" on capital that he borrowed for 9% can have a great time running his own business until he starves to death.

Yet the attractions of being "independent" have been known to induce new "businessmen" to close their eyes to the hard fact that they won't earn a cent for themselves until they have met all operating costs and the interest.

Today, anyone starting a new business must first figure his normal operating expenses plus his salary. For safety, the expense figure should be adjusted upward from 25% to 50%. There are always unforeseen costs. Then, he'll have to determine the volume of business he must do to cover these expenses. The cost of supplies, merchandise, etc., to produce this volume must be figured. Finally, what fixtures are needed and what receivables will have to be carried if credit is granted to customers? In essence, what capital is needed to produce income enough for a reasonable net profit after expenses? A surprising number of people go into business without doing this hard arithmetic.

The third business pitfall is the wrong location. Inexperienced people are prone to look for inexpensive locations. Good locations are bound to cost money but the volume realised from a good location can more than offset the higher rent.

Once a business is under way, it can readily fall victim to the fourth pitfall-inventory mismanagement. The common warning, "don't get too much inventory," should be modified to, "don't buy too much of the wrong merchandise."

The management of inventory is an art, if what you are doing is selling something that you keep in stock. Its ABC's are simply put, even if its XYZ's are not. The dollars you have invested in inventory must earn you money at a desirable rate. Fast turnover will earn money on goods that are priced at a small profit margin. Goods that turn over slowly only pay well if the markup is large. The great inventory tragedy is found in

goods that sit on your shelves without buyers. They represent dollars you have invested that are not earning anything—in short, precious capital that's tied up. This is all just as obvious as it can be, but, oh, the businesses that go on the rocks because of ill-judged inventory.

In big successful retail stores there is not love, humanity, sentiment or personal whim in the matter of inventory. The hard questions are: “what sells, at how fast a turnover, for what mark up?” and buyers of stock succeed or fail in their ability to solve that equation most profitably. By contrast, I know of a successful man who quit his profession to invest his all in a store selling a “cultural” product that he thought the people “ought to” have. It bankrupted him because people buy what they want, not what you think they “ought to.”

Pitfall five is too much capital going into fixed assets. Any money invested in fixtures or real estate will most likely come from your working capital or will be borrowed. Money tied up in frozen assets that aren't necessary to your business is working capital that may not be available when you need it for either a crisis or an opportunity.

The sixth pitfall is poor credit granting practices. The temptation to let customers “put it on books” can be very strong, particularly if your competition is coming from low-margin, big-volume cash competitors. If you offer easy credit in order to get the business, some customers may be so slow to pay that they'll give you “the business.” When you force credit on people you are in danger of attracting the poorer payers. One of the shocks lying in wait for new businessmen is that well-heeled customers are very often the slowest to pay their debts.

In granting credit, two fundamental questions must be answered. Do I have enough capital? Do I know how to collect?

A general rule is that you must have additional capital on hand equal to one-and-a-half month's credit sales in order to give customers 30 days to pay. Credit granting and collecting takes skill. Many people just don't have it. One retailer with 25 years experience commented, “When I first started I also tried to sell on credit but found that I wasn't a good collector, so after several months I made all sales for cash and have since conducted a cash and carry business.”

Pitfall number seven is taking too much out for yourself. It's an easy habit to fall into. Many new business starters pledge to themselves, “We are not going to take anything out of the business.” And of course they can't stick to it. What's the purpose of going into business if you aren't going to take something out? The approach to what you take out for

yourself should be flexible and realistic. When profits decline owners must curtail their drawing.

The eighth pitfall can come from too much success. Business is so good you decide to expand but unplanned expansion can be ruinous. Generally, businesses grow in two ways: slow and steady from within-marked by increased sales and profits, or by rapid expansion through addition or acquisition.

Rapid expansion must be carefully planned since it requires skills to manage new people, you must hire more as you have additional capital. One storekeeper found out the hard way that two stores weren't twice as profitable for him as one. With one store going well he opened another across town. But the managerial help in his second store failed to grasp his successful methods. The owner had to supervise both stores with his wife helping out. When she got sick the load was too much. Eventually, physical and capital strain made him to sell the second store. Today, he operates one store profitably and without undue headaches.

Pitfall number nine-the wrong attitude-ruins many. Some businesses fail to prosper or come to grief because of wrong attitudes of their owners. Being in business is plain hard work, demanding full diligence. Some owners figure that since the business is theirs, they'll work hours only to suit themselves. Others get involved in outside interests to an excessive extent. They may even tell themselves that social and civic interests help promote the business when all they do is take the owner away from affairs that need tending. Greed kills off others. When products are misrepresented or shoddy, it is always found out. A well-known chain of fine restaurants had to be sold off because their owner evaded income taxes. The penalties levied by the internal revenue service in addition to jail sentence forced the sale of that restaurant chain.

But, even with all the hazards, the dream of having your own business can be realised. There are ways to overcome the obstacles and succeed. A prime source of help lies with the federal government through its agency, the small business administration, set up in 1953 to aid small business. The S.B.A. with field offices in principal cities, as well as in Guam and Puerto Rico, is available to assist new business hopefuls as well as established small businesses.

#### **4.0 CONCLUSION**

In conclusion, consultancy firms are open for counselling; you need enough information and experience on the business you are going into. An excellent source of information for anyone interested in starting a

business is a trade association. Trade associations exist in every major industry and minor ones.

## **5.0 SUMMARY**

The unit has been on the pitfalls to avoid in starting your own business like, lack of managerial skill, lack of experience, insufficient starting capital, wrong location, inventory mismanagement, too much capital going to fixed assets, poor credit granting, taking too much for yourself, the issue of expansion and lastly the wrong attitude. Some solutions were suggested to overcome the pitfalls.

## **6.0 TUTOR-MARKED ASSIGNMENT**

Discuss five pitfalls you might fall into when starting your own business.

## **7.0 REFERENCES/FURTHER READING**

*Checklist for going into Business* (Management Research Summaries No 120).

*Factors in Small Business Success or Failure* (Management Research Summaries No. 145).

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Clifford M. and Joseph R. (1975). *Entrepreneurship and Venture Management*.

## **UNIT 4      TOTAL QUALITY MANAGEMENT**

### **CONTENTS**

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Overview of (TQM)
  - 3.2 Concept of (TQM)
    - 3.2.1 Antecedents of Modern Quality Management
    - 3.2.2 The Quality Gurus
  - 3.3 Juran's Ten Step
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
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### **1.0 INTRODUCTION**

Total Quality Management (TQM) is a philosophy and practice of management which aims to satisfy the customers by means of employee involvement, consistent leadership and continuous improvement. In so doing, it brings together a number of hard and soft technologies of quality management. This paper will examine the fundamental principles of TQM, TQM as a strategic management tool, the concept of TQM, antecedents of modern quality management, quality gurus, accelerating use of TQM, quality and business performance, service quality and product quality, top management commitment, the tools and improvement circle, the metric and the processes, the implementation of performance measurement systems and benchmarking.

### **2.0 OBJECTIVES**

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

- define the concept of (TQM)
- apply the concept of (TQM) to your business

### **3.0 MAIN CONTENT**

#### **3.1 Overview of (TQM)**

Total quality management (TQM) is the integration of all functions and processes within an organisation in order to achieve continuous improvement of the quality of goods and services. The goal is customers' satisfaction.

Of all the management issues faced in the last decade, none has had the impact of or caused as much concern as quality in American products and services. A report by the Conference Board indicates that senior executives in the United States agreed that the banner of total quality is essential to ensure competitiveness in global markets. Quality expert J. M. Juran calls it a major phenomenon in this age. This concern for quality is not misplaced.

The interest in quality is due, in part, to foreign competition and the trade deficit. Analysts estimate that the vast majority of U.S. businesses will continue to face strong competition from the Pacific Rim and the European Economic Community for the remainder of the 1990s and beyond. This comes in the face of a serious erosion of corporate America's ability to compete in global markets over the past 20 years.

As we come to the end of the 20<sup>th</sup> century, the competitive and trade deficit problems are compounded by the weakening situation in Asian and other global markets. To compete in these markets may require additional efforts in both cost reduction and quality.

#### **3.2 The Concept of TQM**

TQM is based on a number of ideas. It means thinking about quality in terms of all functions of the enterprise and is a start-to-finish process that integrates interrelated functions at all levels. It is a systems approach that considers every interaction between the various elements of the organisation. Thus, the overall effectiveness of the system is higher than the sum of the individual outputs from the subsystems. The subsystems include all the organisational functions in the life cycle of a product, such as:

1. design
2. planning
3. production
4. distribution
5. field service.

The management subsystems also require integration, including:

1. strategy with a customer focus
2. the tools of quality
3. employee involvement ( the linking process that integrates the whole).

A corollary is that any product, process, or service can be improved, and a successful organisation is one that consciously seeks and exploits opportunities for improvement at all levels. The load bearing structure is customer satisfaction. The watchword is continuous improvement.

The Conference Board has summarised the key issues and terminology related to TQM:

- The *cost of quality* as the measure of non-quality (not meeting customer requirements) and a measure of how the quality process is progressing.
- A *cultural change* that appreciates the primary need to meet customer requirements, implements a management philosophy that acknowledges this emphasis, encourages employee involvement, and embraces the ethics of continuous improvement.
- *Enabling mechanisms of change*, including training and education, communication, recognition, management behaviour, teamwork, and customer satisfaction programs.
- *Implementing TQM* by defining the mission, identifying the output, identifying the customers, negotiating customer requirements, developing a “supplier specification” that details customer objectives, and determining the activities required to fulfil those objectives.
- *Management behaviour* that includes acting as role models, use of quality processes and tools, encouraging communication, sponsoring feedback activities, and fostering and providing a supporting environment.

### **3.2.1 Antecedents of Modern Quality Management**

Quality control as we know it probably had its beginnings in the factory system that developed following the industrial revolution. Production methods at that time were rudimentary at best. Products were made from non-standardised materials using non-standardised methods. The result was products of varying quality. The only real standards used were



measures of dimensions, weight, and in some instances purity. The most common form of quality control was inspection by the purchaser, under the common-law rule of *caveat emptor*.

Much later, around the turn of this century, Frederick Taylor developed his system of scientific management, which emphasised productivity at the expense of quality. Centralised inspection departments were organised to check for quality at the end of the production line. An extreme example of this approach was the Hawthorne Works at Western Electric Company, which at its peak in 1928 employed 40,000 people in the manufacturing plants, 5200 of whom were in the inspection process. Most involved visual inspection or testing of the product following manufacture. Methods of statistical quality control and quality control and quality assurance were added later. Detecting manufacturing problems was the overriding focus. Top management moved away from the idea of managing to achieve quality, and furthermore, the work force had no stake in it. The concern was limited largely to the shop floor.

Traditional quality control measures were (and still are) designed as defense mechanisms to prevent failure or eliminate defects. Accounts were taught (and are still taught) that expenditures for defect prevention were justified only if they were less than the cost of failure. Of course, cost of failure was rarely computed.

Following World War II, the quality of products produced in the United States declined as manufacturers tried to keep up with the demand for non-military goods that had not been produced during the war. It was during this period that a number of pioneers began to advance a methodology of quality control in manufacturing and to develop theories and practical techniques for improved quality. The most visible of these pioneers were W. Edwards Deming, Joseph M. Juran, Armand V. Feigenbaum, and Philip Crosby. It was a great loss to the quality movement when Deming died in December 1993 at the age of 93.

### **3.2.2 The quality Gurus**

Deming, the best known of the “early” pioneers, is credited with popularising quality control in Japan in the early 1950s. Today, he is regarded as a national hero in that country and he is the father of the world-famous Deming Prize for quality. He is best known for developing a system of statistical quality control, although his contribution goes substantially beyond those techniques. His philosophy begins with top management but maintains that company must adopt the 14 points of his system at all levels. He also believes that quality must be built into the product at all stages in order to achieve a high level of excellence. While it cannot be said that Deming is responsible for

quality improvement in Japan or the United States, he has played a substantial role in increasing the visibility of the process and advancing an awareness of the need to improve.

Deming defines quality as a predictable degree of uniformity and dependability, at low costs and suited to the market. Deming teaches that 96 percent of variations have common causes and 4 percent have special causes. He views statistics as a management tool and relies on statistical process control as a means of managing variations in a process. Deming develops what is known as the Deming chain reaction; as quality improves, costs will decrease and productivity will increase, resulting in more jobs, greater market share, and long-term survival. Although it is the worker who will ultimately produce quality products, Deming stresses workers pride and satisfaction rather than the establishment of quantifiable goals. His overall approach focuses on improvement of the process, in that the system, rather than the worker, is the cause of process variation.

Deming's universal 14 points for management are summarised as follows:

1. **Create consistency of purpose with a plan.** The objective is constancy of purpose for continuous improvement. An unwavering commitment to quality must be maintained by management. Quality, not short-term profit, should be at the heart of organisational purpose. Profit will follow when quality becomes the objective and purpose.
2. **Adopt the new philosophy of quality.** The modern era demands ever increasing quality as a means of survival and global competitiveness. Inferior material, poor workmanship, defective products, and poor service must be rejected. Reduction of defects is replaced by elimination of defects. The new culture of quality must reflect a commitment to quality and must be supported by all employees.
3. **Cease dependence on mass inspection.** Quality cannot be inspected during production, it must be built in from the start. Defects discovered during inspection cannot be avoided - it is too late; efficiency and effectiveness have been lost, as has continuous process improvement. Continuous process improvement reduces costs incurred by correcting errors that should not have been made in the first place.
4. **End the practice of choosing suppliers based on price.** Least cost is not necessarily the best cost. Buying from a supplier based

on low cost rather than a quality/cost basis defeats the need for a long-term relationship. Vendor quality can be evaluated with statistical tools.

5. **Identify problems and work continuously to improve the system.** Continuous improvement of the system requires seeking out methods for improvement. The search for quality improvement is never ending and results from studying the process itself, not the defects detected during inspection should be noted.
6. **Adopt modern methods of training on the job.** Training involves teaching employees the best methods of achieving quality in their jobs and the use of tools such as statistical quality control.
7. **Change the focus from production numbers (quantity) to quality.** The focus on volume of production instead of quality leads to defects and rework that may result in inferior products at higher costs.
8. **Drive out fear.** Employees need to feel secure in order for quality to be achieved. Fear of asking questions, reporting problems, or making suggestions will prevent the desired climate of openness.
9. **Break down barriers between departments.** When employees perceive themselves as specialists in one function or department without too much regard for other areas, it tends to promote a climate of parochialism and set up barriers between departments. Quality and productivity can be improved when there is open communication and coordination based on the common organisation goals.
10. **Stop requesting improved productivity without providing such methods to achieve it.** Continuous improvement as a general goal should replace motivational or inspirational slogans, sign, exhortations, and work force targets. The major cause of poor productivity and quality is the management systems, not the work force. Employees are frustrated when exhorted to achieve results that management systems prevent them from achieving.
11. **Eliminate work standards that prescribe numerical quotas.** Focus on quotas, like a focus on production, may encourage and reward people for numerical targets, frequently at the expense of quality.

12. **Remove barriers to pride of workmanship.** A major barrier to pride of workmanship is a merit or appraisal system based on targets, quotas, or some list of personal traits that have little to do with incentives related to quality. Appraisal systems that attempt to coerce performance should be replaced by systems that attempt to overcome obstacles imposed by inadequate material, equipment, or training.
13. **Institute vigorous education and retraining.** Deming emphasises training, not only in the methods of the specific job but in the tools and techniques of quality control, as well as instruction in teamwork and the philosophy of a quality culture.
14. **Create a structure in top management that will emphasise the preceding 13 points everyday.** An organisation that wants to establish a culture based on quality needs to emphasise the preceding 13 points on a daily basis. This usually requires a transformation in management style and structure. The entire organisation must work together to enable a quality culture to succeed.

### 3.3 Juran's ten steps

Juran, like Deming, was invited to Japan in 1954 by the union of Japanese Scientists and Engineers (J U S E). His lectures introduced the managerial dimensions of planning, organising, and controlling and focused on the responsibility of management to achieve quality and the need for setting goals. Juran defines quality as fitness for use in terms of design, conformance, availability, safety, and field use. Thus, his concept more closely incorporates the point of view of the customer. He is prepared to measure everything and relies on systems and problem-solving techniques. Unlike Deming, he focuses on top – down management and technical methods rather than worker pride and satisfaction.

Juran's ten steps to quality improvement are:

1. Build awareness of opportunities to improve.
2. Set goals for improvement.
3. Organise to reach goals.
4. Provide training.
5. Carry out projects to solve problems.
6. Report progress.
7. Give recognition.
8. Communicate results.

9. Keep score.
10. Maintain momentum by making annual improvement part of the regular systems and processes of the company.

Juran is the founder of the Juran Institute in Wilton, Connecticut. He promotes a concept known as Managing Business Process Quality, which is a technique for executing cross-functional quality improvement. Juran's contribution may, over the longer term, be greater than Deming's because Juran has the broader concept, while Deming's focus on statistical process control is more technically oriented.

Armand Feigenbaum, like Deming and Juran, achieved visibility through his work with the Japanese. Unlike the latter two, he used a total quality control approach that may very well be the forerunner of today's TQM. He promoted a system for integrating efforts to develop, maintain, and improve quality by the various groups in an organisation. To do otherwise, according to Feigenbaum, would be to inspect for and control quality after the fact rather than build it in at an earlier stage of the process.

#### **4.0 CONCLUSION**

Total quality control cannot be overemphasised in any organisation. Starting a business may be fine but what about continuity? To keep your business going, you must ensure proper quality management.

#### **5.0 SUMMARY**

I will summarise these in the words of Philip Crosby.

Philip Crosby, author of the popular book *Quality is Free*, may have achieved the greatest commercial success by promoting his views and founding the Quality College in Winter Park, Florida. He argues that poor quality in the average firm costs about 20 percent of revenues, most of which could be avoided by adopting good quality practices. His "absolutes" of quality are:

- Quality is defined as conformance to requirements, not "goodness".
- The system for achieving quality is prevention, not appraisal.
- The performance standard is zero defects, not "that's close enough."
- The measurement of quality is the price of non-conformance, not indexes.

## **6.0 TUTOR-MARKED ASSIGNMENT**

Describe the steps to be taken to achieve total quality management

## **7.0 REFERENCES/FURTHER READING**

John S. Oakland, (1998). *“Total Quality Management”*. Butterworth:Heinemann Publisher, UK.

Bank, J. (1992). *The Essence of Total Quality Management*. Prentice Hall: Hemel Hempstead (UK).

## UNIT 5 QUALITY AUDIT AND MEASUREMENT

### CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
  - 3.1 Error or Defect Investigations and Follow-up
  - 3.2 Internal and External Quality-System Audits and Reviews
  - 3.3 TQM Standard for Assessment
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
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### 1.0 INTRODUCTION

#### *Securing prevention by audit and review of the system*

Error or defect prevention is the process of removing or controlling error/defect causes in the system. There are two major elements of this:

- checking the system.
- error/defect investigation and follow-up

These have the same objectives – to find, record and report possible causes of error and to recommend future corrective action.

#### **Checking the system**

There are six methods in general use:

- a. *Quality audits and reviews*, which subject each area of an organisation's activity to a systematic critical examination. Every component of the total system is included, i.e., quality policy, attitudes, training process, decision features, operating procedures, documentation. Audits and reviews, as in the field of accountancy, aim to disclose the strengths and weaknesses and the main areas of vulnerability or risk.

- b. *Quality survey*, a detailed, in-depth examination of a narrower field of activity, i.e. major key areas revealed by quality audits, individual plants, procedures or specific problems common to an organisation as a whole.
- c. *Quality inspection*, which takes the form of a routine scheduled inspection of a unit or department. The inspection should check standards, employee involvement and working practices, and that work is carried out in accordance with the procedures, etc.
- d. *Quality tour*, which is an unscheduled examination of a work area to ensure that, for example, the standards of operation are acceptable, obvious causes of errors are removed, and in general quality standards are maintained.
- e. *Quality sampling*, which measures by random sampling, similar to activity sampling, the potential error. Trained observers perform short tours of specific locations by prescribed routes and record the number of potential errors or defects seen. The results may be used to portray trends in the general quality situation.
- f. *Quality scrutiny*, which is the application of a formal, critical examination of the process and technological intentions for new or existing facilities, or to assess the potential for mal-operation or malfunction of equipment and the consequential effects of quality.

## **OBJECTIVES**

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

- detect errors during investigations and follow up
- differentiate internal and external quality-system audits and reviews
- state TQM standard for self-assessment.

## **3.0 MAIN CONTENT**

### **3.1 Error or Defect Investigations and Follow-up**

The investigation of errors and defects can provide valuable error prevention information. The method is based on:

- collecting data and information relating to the error or defect.
- checking the validity of the evidence.



- selecting the evidence without making assumptions or jumping to conclusions.

The results of the analysis are then used to:

- decide the most likely cause(s) of the errors or defects.
- notify immediately the person(s) able to take corrective action.
- record the findings and outcomes.
- report them to everyone concerned, to prevent a recurrence.

The investigation should not become an inquisition to apportion blame, but focus on the positive prevention aspects.

### **3.2 Internal and External Quality-System Audits and Reviews**

A good quality system will not function without adequate audits and reviews. The system reviews, which need to be carried out periodically and systematically, are conducted to ensure that the system achieves the required effect, while audits are carried out to make sure that actual methods are adhering to the documented procedures. The reviews should use the findings of the audits, for failure to operate according to the plan often signifies difficulties in doing so. A re-examination of the procedures actually being used may lead to system improvements unobtainable by other means.

A schedule for carrying out the audits should be drawn up, different activities perhaps requiring different frequencies. All procedures and systems should be audited at least once per year. There must be, however, a facility to adjust this on the basis of the audit results.

A quality-system review should be instituted, perhaps every 12 months, with the aims of:

- ensuring that the system is achieving the desired results.
- revealing defects or irregularities in the system.
- indicating any necessary improvements and/or corrective actions to eliminate waste or loss.
- checking on all levels of management.
- uncovering potential danger areas.
- verifying that improvements or corrective action procedures are effective.

Clearly, the procedures for carrying out the audits and reviews and the results from them should be documented, and be subject to review.

The assessment of a quality system against a particular standard or set of requirements by internal audit and review is known as a first-party assessment or approval scheme. If an external customer makes the assessment of a supplier against his own or a national or international standard, a second-party scheme is in operation. The external assessment by an independent organisation not connected with any contract between customer and supplier, but acceptable to them both, is known as an independent third-party assessment scheme. The latter usually results in some forms of certification or registration by the assessment body.

One advantage of the third-party schemes is that they obviate the need for customers to make their own detailed checks, saving both suppliers and customers time and money, and avoiding issues of commercial confidentiality. Just one knowledgeable organisation has to be satisfied, rather than multitude with varying levels of competence. This method often certifies suppliers for quality assurance based contracts without further checking.

Each certification body usually has its own recognised mark, which may be used by registered organisations of assessed capability in their literature, letter headings, and marketing activities. There are also publications containing lists of organisations whose quality systems and/or products and services have been assessed. To be of value, the certification body must itself be recognised and, usually, assessed and registered with a national or international accreditation scheme, such as the National Accreditation Council for Certification Bodies (NACCB) in the UK.

Many organisations have found that the effort of designing and implementing a written quality system good enough to stand up to external independent third-part assessment has been extremely rewarding in:

- encouraging staff and improving morale.
- better process control.
- reduced wastage.
- reduced customer service costs.

This is also true of those organisations that have obtained third-party registrations and simply companies that still insist on their own second-party assessment. The reason for this is that most of the standards on quality systems, whether national, international, or company-specific, are now very similar indeed. A system that meets the requirements of

the ISO 9000 series will meet the requirements of all other standards, with only the slight modifications and small emphasis here and there required for specific customers. It is the author's experience, and that of his immediate colleagues, that an assessment carried out by one of the independent certified assessment bodies is at least as rigorous and delving as any carried out by a second-party representative.

Internal system audits and reviews must be positive, and conducted as part of the preventive strategy and not be carried out only before external audits, nor should they be left to the external auditor – whether second or third party. An external auditor discovering discrepancies between actual and documented systems will be inclined to ask why the internal review methods did not discover and correct them. As this type of behaviour in financial control and auditing is commonplace, why should things be different in the control quality?

Managements, anxious to display that they are serious about quality must become fully committed to operating an effective quality system for all personnel within the organisation, not just the staff in the quality department. The system must be planned to be effective and achieve its objectives in an uncomplicated way. Having established and documented the procedures, an organisation must ensure that they are working and that everyone is operating in accordance with them. The system once established is not static; it should be flexible, to enable the constant seeking of improvements or streamlining.

### **3.3 Quality Auditing Standard**

There is a British and International Standard Guide to quality-systems auditing (BS 7229, ISO 10011: 1991). This points out that audits are required to verify whether the individual elements making up quality systems are effective in achieving the stated objectives. The growing use of standards internationally emphasises the importance of auditing as a management tool for this purpose. The guidance provided in the standard can be applied equally to any one of the three specific and yet different auditing activities:

- a. First-party or internal audits, carried out by an organisation on its own systems, either by staff who are independent of the systems being audited, or by an outside agency.
- b. Second-party audits, carried out by one organisation (a purchaser or its outside agent) on another with which it either has contracts to purchase goods or services or intend to do so.
- c. Third-party audits, carried out by independent agencies, to provide assurance to existing and prospective customers for the product or service.

ISO 10011 (BS 7229) over audit objectives and responsibilities, including the roles of auditors and their independence, and those of the 'client'. It provides the following detailed guidance on audit.

- Initiation, including its scope and frequency..
- Preparation, including review of documentation, the programme, and working documents.
- Execution, including the opening meeting, examination and evaluation, collecting evidence, observations, and closing the meeting with the auditee.
- Report, including its preparation, content and distribution.
- Completion, including report submission and retention.

Attention is given at the end of the standard to corrective action and follow-up, where it is stressed that the improvement process should be continued by the client for a verification audit of the implementation of any corrective actions specified.

#### **4.0 CONCLUSION**

There have been many recent developments and there will continue to be many more, in the search for a TQM standard or framework against which organisations may be assessed or measure themselves, and carry out the so-called 'gap analysis'. To many companies, the ability to judge their TQM progress against an accepted set of criteria would be most valuable and informative.

#### **5.0 SUMMARY**

- Investigations proceed by collecting, checking and selecting data, and analysing it by deciding causes, notifying people, recording and reporting findings and outcomes.
- A good quality system will not function without adequate audits and reviews.
- System assessment by internal audit and review is known as first-party, by external customer as second-party, and by an independent organisation as third-party certification.

#### **6.0 TUTOR-MARKED ASSIGNMENT**

Discuss the internal quality-system audits

## **7.0 REFERENCES/FURTHER READING**

John S. Oakland, (1998). *Total Quality Management*. Butterworth:Heinemann Publisher, UK.

Bank, J. (1992). *The Essence of Total Quality Management*. Prentice Hall: Hemel Hempstead UK.

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## **UNIT 1 PRINCIPLES OF COOKING: DRY HEAT METHODS**

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## **1.0 INTRODUCTION**

Cooking is simply the transfer of energy from a heat source to a food. To cook foods successfully, you must understand the ways in which heat is transferred: conduction, convection and radiation. Energy alters the food's molecular structure, changes its texture, flavour, aroma, and appearance. When food is cooked, the process destroys microorganisms and makes food easier to ingest and digest.

In this unit, you shall learn about the methods used to transfer heat (broiling, grilling, roasting and baking, sautéing, pan-frying, deep-frying, poaching, simmering, boiling, steaming, braising and stewing) and learn how to cook different foods with using the right methods of cooking.

## **2.0 OBJECTIVES**

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

- differentiate between the three main methods of heat transfer
- describe the effects of heat on food nutrients
- identify and analyse the dry heat methods of cooking.

## **3.0 MAIN CONTENT**

### **3.1 Heat Transfer**

According to the principles of cooking, heat is a type of energy. When a substance gets hot, the molecules have absorbed energy, which causes the molecules to vibrate rapidly. The molecules start to expand and bounce off one another. As the molecules move, they collide with nearby molecules, causing a transfer of heat energy.

Heat can be transferred to foods through conduction, convection, or radiation. Heat travels through foods by conduction.

#### **3.1.1 Conduction**



Conduction, one of the most basic principles of cooking, is the movement of heat from one item to another through direct contact. For example, when a flame touches the bottom of a pan, heat is conducted to the pan.

Generally, metals are good conductors. Copper and aluminium are the best conductors, while liquids and gases are poor conductors.

Conduction is a slow method of heat transfer because there must be physical contact from one molecule to another.

### **3.1.2 Convection**

Convection is the transfer of heat through a fluid. The fluid may be in a liquid or gas state. According to the principles of cooking, there are two types of convection: natural and mechanical.

Natural convection causes a natural circulation of heat because warm liquids and gases have a tendency to rise while cooler ones fall.

Mechanical convection causes heat to circulate more evenly and quickly through fans or stirring. True or pure convection ovens, usually found in higher-end ovens, have an additional element that surrounds the fan and circulates heated air inside the oven. The fan forces heated air horizontally through the oven racks around the food, cooking it evenly. Oven position is relatively unimportant. Any rack in a true convection oven should yield the same cooking results, with foods on the bottom rack getting no browner than others.

Virtually any food that you cook in a regular oven benefits from convection cooking. Actually, your wallet might benefit, too. With convection cooking the oven heats faster and cooks food 25 percent faster - and usually at 25 degrees lower than ordinary ovens. Poultry skins are crispy because they render faster while meat stays juicy, roasted vegetables caramelize more quickly, and baked goods brown evenly.

### **3.1.3 Radiation**

Radiation is energy transferred by waves of heat or light striking the food. Two types of radiant heat are infrared and microwave.

Infrared cooking is commonly used with toasters and broilers. These devices use an electric or ceramic element heated to such a high temperature that it gives off waves of radiant heat.

Microwave cooking relies on radiation generated by an oven to heat the food.

## **3.2 The Effects of Heat on food nutrients**

### **3.2.1 Proteins Coagulate**

Coagulation is when proteins transform from a liquid state to a solid state. Examples: the firming of meat fibres and egg whites changing from a clear liquid to a white solid when heated.

### **3.2.2 Starches Gelatinise**

When a mixture of starch and liquid is heated, starch granules swell. The liquid thickens because the starch granules swell to occupy more space. Examples: The thickening of sauces when starch is added.

### **3.2.3 Sugars Caramelize**

As sugars cook, they turn brown and change flavour. Caramelised sugar is used in many sugars, candies, and desserts. In fact, caramelisation is used in most flavours we associate with cooking.

### **3.2.4 Water Evaporates**

All foods contain some water. The evaporation of water dries foods during cooking.

### **3.2.5 Fats Melt**

Fats are greasy, smooth substances that do not dissolve in water. Oils are fats that remain liquid at room temperature. Fats melt when heated and then gradually liquefy. Fats will not evaporate.

## **3.3 Cooking Methods**

- Steaming
- Sautéing
- Braising
- Pan-frying
- Stewing
- Deep-frying
- Broiling
- Poaching

- Grilling
- Simmering
- Roasting
- Boiling
- Baking

### **3.4 Classifying Cooking Methods**

Dry-heat

Moist-heat

Combination

#### **3.4.1 Dry-Heat Cooking Methods**

Definition— this is any cooking method that does not use moisture as a cooking medium

Broiling

Grilling

Roasting

Baking

Sautéing

Stir-frying

Pan-frying

Deep-frying

##### **3.4.1.1 Grilling and broiling**

Grill - to cook with heat from below

Broil - to cook with heat from above

Both utilise very hot - radiant heat, therefore only tender cuts should be used.

Fuels used:

Broilers and Salamanders - Gas and Electric

Grills - Electric (closed)

- Gas with metal; heat deflectors
- Gas with lava rock
- Charcoal-compressed and natural
- Wood-hard woods

Method

Grilled foods can be cooked over heat (charcoal, barbecues, gas or electric heated grills/griddles), under heat (gas or electric salamanders, over-heated grills) or between heat (electrically heated grill bars or plates).

- Grilling over heat – preheat grill bars and brush with oil prior to use, otherwise food will stick to them the bars should char the food on both sides to give the distinctive appearance and flavour of grilling. Barbecuing is a type of grilling over heat.
- Grilling under heat/salamander – preheat salamanders (sometimes called over-heated grills) and grease the bars. Steaks, chops and items that are likely to slip between the grill bars of an under-heated grill may be cooked under a salamander.
- Grilling between heat – this is grilling between electrically heated grill bars or plates and is used for small cuts of meats.

#### **3.4.1.2 Grilling Procedures**

1. Preheat the grill.
2. Clean the grill with a wire brush.
3. Brush item to be grilled with oil or clarified butter.
4. Place the item on a hot area of the grill. Allow grill marks to form.
5. Turn the product 90° and allow cross marks to form.
6. Flip the product\* and finish cooking over moderate heat. After searing the second side, larger or pieces to be better done, may be finished in the oven.

Some fish and other delicate products may be seared on only one side and then finished in the oven.

#### **3.4.1.3 Effect of grilling**

The food keeps most of its nutrients and flavour because it is cooked so quickly. When grilling meat, the fierce heat seals the surface of the meat, helping to keep the juices in the meat. Grilled meat lose less of their juices than meat cooked any other way, as long as they are not pierced by a fork while they are cooking. Grilling is only suitable for certain cuts of best-quality meat – inferior meat cooked this way will be tough and inedible.

### 3.4.1.4 Advantages

The speed of grilling means that food can be cooked quickly to order. Charring foods gives a distinctive appearance and improves the flavour. You have good control of the cooking process because the food is visible and accessible while it is being grilled.

Grills may be situated in view of customers, which mean that they can see the food cooking, which adds to the entertainment in a restaurant.

### 3.4.1.5 General rules

Smaller, thinner items should be cooked very quickly.

Seal and colour food on the hot part of the grill, then move to a cooler part to complete cooking.

Do not grill foods for too long. Cooking the food slowly will dry it out. Basting of foods and oiling of bars will help to prevent the food from drying out and sticking to the grill.

### 3.4.1.6 Grilling Fish

- The most important consideration in grilling fish is the texture of the product to be grilled.
- Firm fleshed fish with adequate oil content are best:
 

|          |           |       |
|----------|-----------|-------|
| Salmon   | Swordfish | Tuna  |
| Sturgeon | Redfish   | Wahoo |
| Shark    | Halibut   |       |
| Grouper  | Catfish   |       |
- Fish filets or steaks are most commonly grilled
- Smaller whole dressed fish may also be grilled
 

|          |          |      |
|----------|----------|------|
| Mackerel | Sardines | Sole |
| Snapper  | Sea bass |      |
- Shellfish and crustaceans can also be grilled
 

|         |         |              |
|---------|---------|--------------|
| Lobster | Shrimp  | Sea Scallops |
| Abalone | Octopus |              |

### 3.4.1.7 Broiling Fish

Any fish regardless of texture can be broiled

1. Place fish filet on a buttered sizzle plate
2. Season and brush with butter
3. Cook under broiler until filet is flaky.

4. Generally oilier fish hold up best in the dry heat of the broiling process.

### **3.5 Roasting**

Roasting is cooking in dry heat in an oven or on a spit, with the aid of fat or oil.

#### **Purpose**

Roasting creates a distinctive taste and provides interesting variety to the menu.

Method of heat transfer - convection

#### **Two Methods:**

##### **3.5.1 A. Searing method**

Red meats are seared first to seal in the juices and give colour by means of:

1. Browning in a small amount of fat on top of the stove
2. Starting the roast at a high temp. (450-500°) in the oven then finished at lower temperature.

Advantage - meat is well caramelised - good appearance

Disadvantage - higher shrinkage - less yield

##### **3.5.2 B. Low temperature or constant heat method**

Meat is cooked at a moderate temperature throughout

Advantage - Better yield - less shrinkage

Disadvantage - Longer cooking time; caramelisation may not be as pronounced

##### **3.5.3 Procedure**

Always preheat the oven before roasting.

There are two main methods of roasting food:

1. Roasting on a spit – this roasts meat using radiated heat. Place prepared meat or poultry on a rotating spit over or in front of fierce radiated heat.
2. Roasting in an oven – this roasts the food using applied dry heat. Force-air convected heat or convected heat combined with microwave energy.

During the cooking process, baste the product regularly with the cooking medium (fat or oil) and any other juices that come out of the product. This will help to keep the food moist. The basting liquid will also caramelize the surface of the product, which will enhance both the flavour and the visual appeal of the dish.

### **3.5.4 The effect of roasting**

The initial heat of the oven seals the food. This prevents too many natural juices from escaping. Once the food is lightly browned, reduce the oven temperature (or the temperature of the heat source when spit roasting) to cook the inside of the food without hardening the surface.

### **3.5.5 Advantages**

Good-quality meat and poultry is tender and succulent when roasted.

Meat juices from the joint can be used for gravy and to enhance flavour.

Both energy (the amount of gas or electricity used) and oven temperature can be controlled easily. You can cook different foods in the oven together, saving fuel.

Ovens with transparent doors allow you to check what is happening in the oven.

You have easy access to the food so it is straightforward to reach it, move it around and remove it from the oven.

With spit roasting, you can see exactly how the cooking is progressing and you have easy access to the food.

There is minimal fire risk because a thermostat is used to control the temperature so there is no risk of overheating.

### 3.5.6 Temperature and time control

Always preheat ovens to the required cooking temperature.

Always follow the oven temperature and shelf settings given in recipes.

The cooking time will be affected by the shapes, size, type, bone proportion and quality of the food you are cooking.

Meat thermometers or probes can be inserted to determine the exact temperature in the joint.

### 3.5.7 Determining Doneness:

- A. Touch - experience needed
- B. Time / Weight / Temperature
- C. Insert a metal skewer
  - 1. Temperature of skewer (vs. body temperature)
  - 2. Observing the colour of juice that flows out
- D. Thermometer

Carry-over Cooking - the cooking that occurs after a food has been removed from the heat source. It is accomplished by the residual heat remaining in the food.

In roasting, the larger the piece of meat the more heat energy it holds. Therefore the larger the piece of meat the more carry-over cooking will take place. Carry-over cooking can account for as much as 20°F.

Resting - after removing them from the oven, roasted meats should be allowed to rest 20 min. before carving to:

- 1. Finish carry-over cooking
- 2. Allow meat fibres to relax. Juice will flow back to outer tissue from the roast.

Meat carved too soon will lose its colour, moisture and flavour; and will appear to be overcooked.

### Pan Gravies

Principle - to dissolve drippings left in roasting pan (fond) to make a sauce

- A. Apply low heat to roasting pan to clarify fat. Meat drippings that are suspended in the fat will cling to the bottom of the pan.



- B. Fat is removed from the pan or “degreased”
- C. Deglase roasting pan with stock to prepare:
  1. Jus Clair (natural juice, “au jus”)
  2. Jus lié - jus clair thickened with cornstarch or arrow root
  3. Gravy - jus clair thickened with roux (degreased fat from the roast is sometimes used to make the roux)

### Deglasing

Excess fat is removed from the pan

Liquid is added to the pan

The liquid “washes” the deglased drippings (fonds) which are then used to make a sauce.

The greatest problem in sautéing is moisture. If moisture is allowed to accumulate, meat will boil and toughen.

### **Remedies to avoid excess moisture:**

Heat pan and fat before adding meat

Make sure meat is dry

Don't overload the pan

Once meat is added to a hot pan, do not stir or shake until heat is recovered.

If sauce is made from the deglasing, the meat may be added back to the pan to mix it, but do not return it to a boil or the meat will toughen and lose moisture.

## **3.6 Sautéing**

### **Sauté (Fr.) - to jump**

#### **Sautéing Proteins**

The key to sautéing proteins is to sear the meat to create colour and preserve moisture.

Procedure:

Put a small amount of fat in a hot pan (just enough to coat the bottom of the pan).

White meats are dredged in flour, dark meats are not. Only use tender cuts of meat

Cook to order, do not hold.

### **3.7 Shallow frying**

Shallow frying is cooking food in a small quantity of pre-heated fat or oil in a shallow pan (a frying pan or a sauté pan) or on a flat surface (a griddle plate).

#### **Purpose**

The purpose of shallow frying is to brown food, giving it a different colour and an interesting and attractive flavour.

#### **3.7.1 Methods**

There are four methods of shallow frying: shallow frying, sautéing, griddling and stir-frying.

To shallow fry, cook the food in a small amount of fat or oil in a frying pan or sauté pan. Fry the presentation side of the food first (the side that will be seen when it is on the plate). The side that is fried first will have the better appearance because the fat is clean. Then turn the food to cook and colour the other side.

To sauté tender cuts of meat and poultry, cook them in a sauté pan or frying pan in the same way as for shallow frying.

To griddle foods such as hamburgers, sausages and sliced onions, place them on a lightly oiled, pre-heated griddle (a solid metal plate). Turn them frequently during cooking. Pancakes can also be cooked this way but should be turned only once.

Stir-fry vegetables, strips of fish, meat and poultry in a wok or frying pan by fast frying them in a little fat or oil.

If shallow-fried food needs to be cooked in butter, you should use clarified butter. This is because clarified butter has a higher burning point than unclarified butter, so it will not burn as easily. To clarify butter, melt it and then carefully strain off the fat, leaving behind the clear liquid.

### **3.7.2 Effects of shallow frying**

The high temperature used in shallow frying seals the surface of the food almost instantly and prevents the natural juices from escaping. Some of the frying medium (oil or butter) will be absorbed by the food, which will change its nutritional content (in other words, will make it more fatty).

#### **Advantages**

Shallow frying is a quick method of cooking prime cuts of meat and poultry because suitable fats or oils can be heated to a high temperature without burning. As the food is in direct contact with the fat, it cooks rapidly.

### **3.7.3 Temperature and time control**

This is particularly important, as all shallow-fried foods should have an appetising golden-brown colour on both sides. This can be achieved only by carefully controlling the temperature, which should initially be hot. The heat should then be reduced and the food turned when necessary.

#### **General rules**

When shallow-frying continuously over a busy period, prepare and cook the food in a systematic way.

Clean the pans after every use.

### **3.8 Stir-frying**

- Always high heat
- Use a wok or sauteuse
- Product is always cut in small pieces
- Used for either cooking or finishing

Some products in the stir-fry may be pre-cooked partially or fully as the situation requires.

Most of the concerns that apply to sauté also apply to stir fry.

### 3.9 Pan-Frying

- Larger or portion size pieces are used in pan frying (chops, steaks, filets etc.)
- Use enough fat to cover the product by half.
- Food does not “jump”.

Items are cooked for a longer time than sautéed items, in some cases they are finished in the oven.

Usually there are no drippings in the pan to make a sauce.

#### 3.9.1 Smoking Point of Fats

- Whole butter 250° F
- Clarified butter 270-280° F
- Animal fats 290 - 320°F
- Lard 400°F
- Goose Fat - 430°F
- Coconut oil - 480°F
- Vegetable oil - 520°F
- Olive oil - 550°F

### 3.10 Deep-frying

Deep frying is cooking small tender pieces of food, which are totally immersed in hot fat or oil, and cooked quickly. The heat of the oil penetrates the food and cooks it. Although oils and lards are 'wet' deep frying is classified as a dry method of cookery. This is because it has a drying effect on the food.

#### Methods

When we think of deep fried foods, we tend to think first of fish and chips, which are probably the most popular kind of fried food. However, many things can be deep fried, such as morsels of lean meats, chicken fillets, whole or filleted fish, cheese and vegetables.

Most deep-fried foods need to be coated in a batter to protect them from the effect of the extremely high temperature of the fat or oil. Conventional deep-fried foods, with the exception of potatoes, are coated with milk, flour, egg and crumbs, batter or pastry to:

- Protect the surface of the food from intense heat
- Prevent moisture and nutrients escaping
- Modify (slow down) the penetration of the intense heat.

### 3 10.1 Coating Methods

- *à la Francaise* - dredged in flour
- *à l'Anglaise* – “Standard Breeding Procedure”:  
Flour → Egg Wash → Bread Crumbs
- *à l'Orly* - battered (beer batter, tempura, egg batter)
- The purpose of coating or breading food to be deep fried is twofold:
  - To keep the moisture in the product.
  - To keep the fat out of the product.

### 3.10.2 Frying Methods

- **Basket method** - Product is placed in the basket and lowered into the fat in the basket.
- **Double basket method**- Same as 1, but a second basket is placed over the product to keep it from floating.
- **Swimming method**- product is dropped directly into the fat and allowed to float freely; usually done with battered foods that might stick to the basket

### 3.10.3 Procedure

- Pre-heat the oil or fat
- Once it has reached the required temperature, place the food carefully into the oil or fat
- Fry it until it is cooked and golden brown
- Drain the food well before serving

Partially cooking food before deep frying is known as blanching. This method may be used with chipped potatoes. The food is partly cooked (usually by boiling) in advance of service and then finished by deep frying to order. This works particularly well with certain types of potato, where it gives the chips a floury texture inside and a crisp exterior.

#### **Purpose**

The purpose of deep frying is to produce food with an appetising golden-brown colour, which is crisp and enjoyable eat.

#### **The effect of deep frying**

Deep frying food coated with milk or egg seals the surface so that the food absorbs the minimum amount of fat.

## **Advantages**

Blanching or partial cooking prior to deep frying enables certain foods (e.g. chips) to be prepared in advance and cooked later. This helps during a busy service and saves time.

Coating the food means that a wide variety of foods can be cooked in this way.

Foods can be cooked quickly and handled easily for service. Coated foods are sealed quickly, preventing the enclosed food from becoming greasy.

### **3.10.4 Temperature and time control**

When deep fat frying, it is essential to maintain the fat at the right temperature. When batches of food are being fried one after another, the temperature of the fat must be allowed to recover after one batch has been removed before the next batch is cooked. If the fat is not allowed to reheat sufficiently, the food will look pale and unappetising and will be soggy to eat. This is especially important if you are cooking food from frozen.

Timing is important too. If you are cooking thicker pieces of food, you should lower the temperature. This allows the food to cook thoroughly on the inside without burning on the outside.

The reverse is also true – the smaller the pieces of food, the hotter the frying temperature needs to be and the shorter the cooking time.

### **3.10.5 Oils for Deep-frying**

In the past, chefs used rendered beef suet for deep fat frying. Today, commercially manufactured shortenings specifically for deep-frying are recommended.

Most of these shortenings are vegetable based; the most popular types are made from soy bean oil and canola oil which are healthier.

There are several varieties of vegetable oil:

- Sunflower
- Corn
- Maize
- Rapeseed
- Olive

Often a mixture of vegetable oils is used.

Some establishments deep fry in goose fat. This has become popular because of the flavour it adds to the fried food, in particular chips.

### **3.10.6 General rules**

Never over-fill fryers with fat or oil, or with the food to be cooked.

The normal frying temperature is between 175°C and 195°C. A slight heat haze will rise from the fat when it reaches this temperature.

Do not attempt to fry too much food at one time.

After removing a batch of food, allow the fat to heat up again before adding the next batch.

Ensure that you are using the right amount of fat for the amount of food you are cooking. If you cook too much food in too little fat, the amount of food will reduce the temperature drastically and spoil the food.

Reduce frying temperatures during slack periods to conserve fuel.

Do not fry the food too far in advance of serving it – fried foods soon lose their crispness.

Strain oil and fat after use to remove any food particles. If these are left in the fat they will burn when the fat is next heated, spoiling the appearance and flavour of the food. Always cover oil or fat when not in use to prevent exposure to the air making it rancid.

### **3.10.7 Smoke point**

Smoke Point - the temperature at which an oil or fat visibly begins to smoke and chemically begins to break down

Canola Oil - smoke point - 425 °F

Many commercial fryer shortenings are fully or partially hydrogenated. Hydrogenation is the process of adding hydrogen to oil, which makes it solid (fully hydrogenated) or creamy (partially hydrogenated) and resistant to oxidation and chemical breakdown.

## **SELF-ASSESSMENT EXERCISE**

- i. Visit four different food and beverage establishments and observe 20 dishes on their menu
- ii. Analyse the above into the different cooking methods

## **4.0 CONCLUSION**

The success or failure of your cooking is not only determined by the right choice of ingredients but also depends on the right cooking methods, it is therefore imperative that you make the right choices.

## **5.0 SUMMARY**

To cook foods successfully, you must understand the ways in which heat is transferred: conduction, convection and radiation. Conduction, one of the most basic principles of cooking, is the movement of heat from one item to another through direct contact. For example, when a flame touches the bottom of a pan, heat is conducted to the pan. With convection cooking the oven heats faster and cooks food 25 percent faster - and usually at 25 degrees lower than ordinary ovens. Radiation is energy transferred by waves of heat or light striking the food. Two types of radiant heat are infrared and microwave.

There are several cooking methods which are classified into dry heat, moist heat and combination cooking methods.

Dry heating methods are:

Broiling  
Grilling  
Roasting  
Baking  
Sautéing  
Stir-frying  
Pan-frying  
Deep-frying

## **6.0 TUTOR-MARKED ASSIGNMENT**

1. Differentiate between baking, grilling and roasting
2. Why should foods be coated before deep frying?
3. Suggest four types of fats that can be used for deep frying



## **7.0 REFERENCE/FURTHER READING**

Foskett, D. et al. (2008). *Functional Practical Cookery*. UK: Hodder Education.

## **UNIT 2 PRINCIPLES OF COOKING: MOIST HEAT/COMBINATION**

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### 1.0 INTRODUCTION

Moist heat and combination methods of cooking are used for a wide range of products (vegetables, meats, eggs, fish), they are also used to both tenderise tough pieces of meat and gently cook delicate fish and vegetables.

In the last unit, you learnt about the basic principles heat transfer and the dry heat methods of cooking. In this unit, you shall learn about the moist heat and combination methods of cooking.

### 2.0 OBJECTIVES

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

- identify the different moist heat and combination methods of cooking
- describe the moist heat and combination methods of cooking
- cook different dishes with the above methods.

### 3.0 MAIN CONTENT

#### 3.1 Moist heat methods of heat transfer

Poaching  
Simmering  
Boiling/Blanching  
Steaming

##### 3.1.1 Poaching 160 - 185°F (71 -82°C)

Poaching is when food is cooked in a liquid that is very hot but not boiling. It should be below boiling point. Poaching means to gently cook in a flavoured liquid and relatively low temperature. It is usually applied to tender or delicate products:

Eggs  
Fish  
Young Poultry

### 3.1.1.1 Poaching media

A poaching medium is the liquid in which the food is cooked. Media is the plural of medium. Several different media can be used, depending on the food.

- Water: eggs are usually poached with a little vinegar added. Fruit is poached in water with sugar.
- Milk: fish fillets, such as smoked haddock, may be poached in milk.
- Stock: some foods may be poached in stock. The stock should be suited to the food. For example, fish fillets can be poached in fish stock and chicken breast fillets in chicken stock. You can also poach poultry and fish in a rich vegetable stock.
- Wine: some fruit, such as pears, may be poached in wine.

Sometimes a tasty sauce can be made with cooking liquid, e.g. parsley or other sauce can be made from the mild in which fish is poached.

#### Purpose

The purpose of poaching is to cook food so that is:

- Very tender and easy to eat
- Very easy to digest

#### Methods

For most foods, heat the poaching liquid first. When it reaches the right temperature lower the prepared food into the barley simmering liquid and allow it to cook in the gentle heat.

There are two ways of poaching: shallow and deep.

### 3.1.1.2 Shallow poaching

Cook the food, such as cuts of fish and chicken, in only a small amount of liquid (water, stock, milk or wine) and cover it with greased greaseproof paper. Never allow the liquid to boil – keep it at a temperature as near to boiling as possible without actually boiling. To prevent the liquid from boiling, bring it to the boil on top of the stove, then take it off the direct heat, then place the food in the water and complete the cooking in a moderately hot oven, approximately 180°C.

### **3.1.1.3 Deeper poaching**

Cook eggs in approximately 8cm of gently simmering water. (When eggs are cooked in individual shallow metal pans over boiling water this is actually poaching. whole fish (e.g. salmon), slices of fish on the bone (e.g turbot), grilled cod and salmon, and whole chicken. All of these should be covered with the poaching liquid.

### **3.1.1.4 The effects of poaching**

Poaching helps to tenderise the food, keep it moist and improve the texture.

#### **Temperature and time control**

The temperature must be controlled so that the cooking liquid does not become too cool or too hot. Poaching is cooking at just below simmering point.

It is important to time the cooking correctly so that food is neither undercooked nor overcooked. If it is undercooked it will not be pleasant to eat and can sometimes be dangerous (e.g. undercooked chicken). If it is overcooked it will break up and lose some of its nutrient.

The time and temperature needed to cook the food correctly will vary slight for different types of food.

## **3.2 Simmering 185 - 205°F (85 -96°C)**

Often mistakenly called “boiling”

As water is a much better conductor of heat than air, moist heat cooking is generally applied to tougher cuts of meat. Moist heat is very effective in breaking down connective tissue.

Used for meats that require wet methods

Broth is sometimes used for soups or sauces Examples: Pot au Feu or Chicken & Dumplings.

## **3.3 Blanching - 212°F (100°C)**

Cooking quickly in rapidly boiling liquid for the purpose of:  
Par-cooking (vegetables)

Removing impurities (offal meats and bones)

Removing bitterness from vegetables (greens and cabbage)

### **3.4 Boiling**

Boiling is when food is covered in water or stock, which is then heated up until the liquid starts to bubble vigorously. At that point it is boiling. Usually the heat is then turned down so that the liquid is just bubbling gently (also known as simmering).

#### **Purpose**

Boiling is a healthy method of cookery as it does not use any fat but when done properly will keep the flavour and nutritional value of the food.

#### **Methods**

There are two ways of boiling

1. Place the food in boiling liquid. The liquid will stop boiling when you put the food in, so heat it up to bring back to boiling. Then reduce the heat so that the liquid just bubbles gently (this is known as simmering) and boil the food.
2. Cover food with cold liquid. Heat it up and bring it to the boil then reduce the heat to allow the food to simmer.

#### **3.4.1 The effects of boiling**

Gentle boiling helps to break down the tough fibres of certain foods. When boiling meats, some of the meat extracts dissolve in the cooking liquid.

#### **3.4.2 Advantages of boiling**

Older, tougher, cheaper joints of meat and poultry can be made more tasty and tender.

It is an economical way of cooking lots of food as it does not use too much fuel. Nutritious, well-flavoured meat and vegetable stock can be produced from the cooking liquor.

It is labour saving, as boiling food does not need much attention from the cook.

#### **3.4.3 Temperature and time control**

The temperature must be controlled so that the liquid is brought to the boil and then adjusted so that it goes to a gentle boil (simmer) until the

food is cooked. Stocks, soups and sauces must only simmer. Pasta should not be overcooked but left slightly firm (called al dente). Meat and poultry should be well cooked and tender. Vegetables should not be overcooked but left slightly crisp.

### **3.4.4 General rules**

- Choose pans that are neither too small nor too large.
- When you put food into boiling liquid (e.g. when you cook green vegetables), make sure that there is enough liquid in the pot and that it is boiling before you add the food.
- When boiling meat, skim the surface of the liquid regularly during the cooking.
- You should simmer rather than boil vigorously whenever possible. This will mean that less water evaporates, so the amount of liquid will stay more or less the same and the food will not shrink too much.

### **3.5 Steaming – above 212°F (100 °C)**

This is the act of using steam, not water vapour, as a heat transfer agent. Steaming is another method of cooking using moist heat. Food is cooked under pressure in the steam produced by a boiling liquid (rather than placing the food itself in the boiling liquid).

Adding pressure accelerates the cooking process

Due to the fact that high heat toughens proteins, this method is rarely used with meats.

Steam is best for Shellfish Starches (rice and potatoes) Vegetables (except fresh green)

#### **Purpose**

- The purpose of steaming food is to cook it so as to keep it as nutritious as possible (steaming keeps most of the nutrients in the food).
- Also, because the steaming process is gentle, it prevents the food from becoming too saturated with water.

### 3.5.1 Methods

There are four main methods of steaming:

1. **Atmospheric steaming** – Steam is produced by placing water in the bottom of a saucepan and bringing it to a rapid boil. Food is placed in a container above the boiling water. The steam from the boiling water heats the container and cooks the food inside it.
2. **High – pressure steaming** – This is done in high-pressure steamers, such as pressure cookers. The high pressure in the steamer produces higher temperatures and forces steam through the food, which makes the food cook faster.
3. **Low-pressure steaming** – Because the pressure is lower in these steamers the steam is also at a lower temperature, so the food cooks more slowly and gently.
4. **Combination steaming** – This is done in a combination (‘combi’) oven. This combines dry heat and steam in the oven, which helps to add a little moisture to the food as it cooks.

### 3.5.2 The effects of steaming

When food is steamed, its texture is changed and it becomes edible. The texture will vary according to the type of food, type of steamer and level of heat. Sponges and puddings are lighter in texture if steamed rather than baked.

Note: meat and sweet pudding basins must be greased. Once they have been filled they must be covered with greased greaseproof or silicon paper and foil to prevent moisture getting in and making the pudding soggy.

### 3.5.3 Advantages

The food keeps more of its nutritional value (retains its goodness).

It makes some foods lighter and easy to digest, for example, it is a good way of cooking for people who are ill.

Low-pressure steaming reduces the risk of overcooking, which can cause food to go soft and fall apart.

High pressure steamers are also used for ‘batch’ cooking, where small quantities of vegetables are cooked frequently throughout the service. This means the vegetables are always freshly cooked, so they keep their colour, flavour and nutritional content.



The natural juices that result from steaming fish can be served with the fish or used to make the accompanying sauce. Steaming uses a low heat, and multi-tiered steamer where several containers are placed one on top of the other in the steamer) can be used, making it economical on fuel.

### **3.5.4 Temperature and time control**

When using steamers, timing and temperature is very important to make sure that the food is not undercooked. Food cooks much faster in high-pressure steamers and so there is a great danger of the food overcooking very quickly. When you are using a high-pressure steamer, wait until the pressure gauge shows that it has reached the correct pressure, then open the door very carefully to allow the steam to escape before you place the food in the steamer. This way you will be sure that the necessary cooking temperature has been reached.

Certain reheating operations

High pressure – usually 10 – 15mins

Good for cooking vegetables fast especially frozen

Good for fast cooking of meats that require wet methods

Low pressure – usually about

For every 1g of pressure you gain about 3°F

“No Pressure” steaming does not work well for green vegetables.

## **3.6 Combination Cooking Methods**

Stewing

Braising

Braising and some stewing of meats are considered combination cooking methods because they employ both dry and moist heat:

### **3.6.1 Stewing/Casseroling**

Stewing and casseroling are slow, gentle, moist-heat methods of cooking in which the food is completely covered by a liquid. Both the food and the sauce are served together. Stews are cooked on top of the stove. Casseroles are stews cooked in the oven.

#### **3.6.1.1 Stewing**

Stew - a liquid food containing meat, poultry, fish or vegetables; or any combination.

Stewing is a moist cooking method carried out with smaller cuts of meat by:

- Braising
- Simmering

Stews can be divided into two classifications

**Brown stews** (red meats)

**White stews** (white meats)

Blanquettes

Fricassees

*Ragout* - a general term referring to white or brown stews.

Fricassee - a white ragout usually made from white meat or small game, seared without browning and garnished with small onions and mushrooms.

Chili (con carne) - a ragout of diced or ground meat, cooked with chilies, onions and spices. Served with beans in the stew or on the side.

Navarin - a brown ragout generally made with lamb, turnips, peas, onions and other root vegetables.

Blanquette - a white stew in which the meat is first blanched, then added to a stock or sauce to complete cooking. Blanquettes are finished with an egg and cream liaison.

Goulash/paprikash - a Hungarian stew made with red meat, onions and paprika.

### **3.6.1.2 Purpose**

The purpose of stewing is to:

- Cook cheaper cuts of meat and poultry in a way that makes them tender and palatable.
- Keep many of the nutrients from the food, which go into the cooking liquid.
- Give a rich flavour to the food.

### 3.6.1.3 Methods

Stews can be cooked on a hob or in an oven:

1. When cooked on a hob, meat and vegetables are placed in a saucepan and covered with liquid (water or stock). The liquid is brought to the boil then turned down to a low simmer. A lid is placed on the pan and the food is left to cook slowly.
2. A stew may also be cooked in the oven, when it is referred to as a casserole. The term 'casserole' refers to both the baking dish and the ingredients it contains. Casserole dishes are usually deep, round, ovenproof dishes with handles and a tight-fitting lid. They can be made of glass, metal, ceramic or any other heatproof material.

Both are slow, moist methods of cooking.

### 3.6.1.4 The effect of stewing

This is the slow process of cooking in gentle heat, the connective tissue in meat and poultry is changed into gelatine so that the fibres fall apart easily and become tender. Less liquid is used for stewing than for boiling, and the cooking temperature is slightly lower. The effects of boiling also apply to stewing.

### 3.6.1.5 Advantages of stewing

Stewing can make cheaper, tougher cuts of meat and poultry tender and palatable, so it is an economical method of cooking. The tougher cuts of meat often have more flavour than more tender cuts of meat, which tend to dry out in stews due to the long cooking times.

If stews and casseroles are cooked correctly, very little liquid will evaporate, leaving plenty of sauce to serve up as part of the stew. The meat and vegetable juices that escape from the food during cooking stay in the liquid. This means that any vitamins and minerals are not lost, but are served up in the tasty and nutritious sauce.

Usually, everything in a stew can be eaten, so there is little waste. Also, because it is a gentle cooking method the food does not shrink much and keeps its flavour. Stews reheat easily.

Stews and casseroles are labour saving because foods can be cooked in bulk and do not need to be monitored too closely.

### **3.6.1.6 Temperature and time control**

Good stews are cooked slowly, so it is important to control the temperature properly. The liquid must barely simmer. Use a tight-fitting lid to keep in the steam. This helps to keep the temperature correct and reduces evaporation.

### **3.6.1.7 General rules**

All stews should have a thickened consistency. This comes from thickening agents. Unparsed ingredients can cause thickening. For example, in stews such as Irish stew all the vegetables are left in the stew and help to make it the right consistency.

Flour can be added to the sauce, for brown lamb stew (navarin), for example.

Egg yolks and cream can also be used to thicken white stews, such as blanquette. However, stews should not be over-thickened and the sauce should stay light. Make sure you use the correct amount of thickening agents.

Adjust the consistency during cooking if necessary by adding more liquid or more thickening agent.

Do not overcook stews as this:

- Causes too much liquid to evaporate
- Causes the food to break up
- Causes the food to lose its colour
- Spoils the flavour and makes the food feel dry when it is eaten.

## **3.7 Braising**

Braising is a moist-heat method of cooking larger pieces of food. The food is only half covered with liquid, and can be cooked on the stovetop or in the oven. The food is cooked very slowly in a pan with a tightly fitted lid, using very low temperatures. A combination of steaming and stewing cooks the food. Food is usually cooked in very large pieces and carved before serving.

### **Purpose**

The purpose of braising food is to enhance the flavour and texture.

## Methods

Whole joint of meat, whole chickens and game (meat or fowl) can all be braised, as can vegetables. Tougher cuts of meat and other foods can also be braised. There are two methods of braising: brown braising and white braising.

1. Brown braising is used, for example, for joints and portion-sized cuts of meat.
2. White braising is used, for example, for vegetables. The first thing you should do is to blanch the vegetables, then place in a braising pan with mirepoix and white stock.

For both methods, the liquid used for braising is usually a stock, but it may also be water, wine or beer. Once you have added the liquid, place a heavy, tight-fitting lid on the cooking pan. The lid keeps the moisture in the pan and around the food, and creates steam. This prevents the food from becoming dry and tough.

### 3.7.1 The effects of braising

Braising breaks down the tissue fibre in certain foods, which soften them and make them tender and edible. Cooking them in the braising liquid also improves the texture.

### 3.7.2 Advantages

Tougher, less expensive meats and poultry can be used. Maximum flavour and nutritional value are retained.

### 3.7.3 Temperature and time control

It is essential to cook the food slowly. The liquid must barely simmer. Use a tight-fitting lid to reduce evaporation and maintain the temperature. The time needed for braising will vary according to the quality of the food. The ideal oven temperature for braising is 160°C.

### 3.7.4 General rules

These are the same as for stewing. However, if the joint is to be served whole, you should remove the lid three-quarters of the way through cooking. Then baste the joint frequently to protect it from burning and glaze it – this makes it look attractive when it is served.

### 3.7.5 Ideal Items to be Braised

Typically tough pieces of meat that require long, slow cooking.

Collagen-rich meats contribute gelatine.

Examples: shoulder, leg, breast, and shank cuts.

Braising can be done with:

Large pieces (Pot roast)

Portion size pieces (Swiss steak)

Small pieces (stews)

### 3.7.6 Procedure for Braising

Meat must be seared by browning it at high heat in a small amount of fat.

After searing mirepoix is added and placed on the bottom of the pan meat is placed on top.

- Red meats - mirepoix is browned
- White meat - mirepoix is sweated

Tomato product is added (red meats only) usually meat is seared in the pan it is to be braised in, if not the pan should be deglazed.

Liquid is added - stock, wine, marinade, beer, light sauce, or water. The amount of liquid added is in direct relation to the amount of sauce needed for the finished product. Recommended ratio is to cover the meat by 1/3 to 2/3.

Herbs and spices are added.

Pan is brought to a simmer. A lid is placed on it and it is placed in the oven.

Meat should be turned or basted occasionally during the braising process to produce a nice glaze.

#### White Braising

This is different from standard braising in that the items are either lightly coloured (seared) or not coloured at all.

This is done with some poultry items and occasionally with large pieces of fish.

### 3.7.7 Test for doneness

“fork tender” insert a meat fork, if it pulls off easily the meat is done. After the meat is done, a sauce can be made from the degreased cooking liquid (cuisson).

- Served as is
- Reduced to thicken and/or intensify flavour
- Thickened with corn starch or with roux to make a sauce (jus lié)

### SELF-ASSESSMENT EXERCISE

Differentiate between boiling, poaching and stewing

## 4.0 CONCLUSION

Different foods can be cooked in different cooking methods to give variety to our menus and our diets, to make food easy to digest and safe to eat and also to make food pleasant to eat with an agreeable flavour.

## 5.0 SUMMARY

Moist heat methods of cooking are used for a wide range of products (vegetables, meats, eggs, fish), they are also used to both tenderise tough pieces of meat and gently cook delicate fish and vegetables. Moist heat methods include poaching, boiling, steaming, while combination methods are stewing/casseroling and braising.

Foods can be poached in milk, water stock and wine. Boiling is a healthy method of cookery as it does not use any fat. The purpose of steaming food is to cook it so as to keep it as nutritious as possible (steaming keeps most of the nutrients in the food).

There are four main methods of steaming: atmospheric, high pressure, low pressure and combination steaming. Combination Cooking Methods are Stewing/casseroling and braising.

Stews can be cooked on a hob or in an oven. When cooked on a hob, meat and vegetables are placed in a saucepan and covered with liquid (water or stock).

A stew may also be cooked in the oven, when it is referred to as a casserole. The term ‘casserole’ refers to both the baking dish and the ingredients it contains.

Typically tough pieces of meat that require long, slow cooking are the ideal items to braise.

## **6.0 TUTOR-MARKED ASSIGNMENT**

1. Use three different methods of moist heat and combination cooking to prepare the following:
  - a. Fish
  - b. Egg
  - c. Fresh tomatoes and onions
2. Report the differences observed

## **7.0 REFERENCE/FURTHER READING**

Foskett, D. et al. (2010). *Foundational Practical Cookery*. UK: Hodder Education.



## UNIT 3 COOKING MEAT AND POULTRY

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### 1.0 INTRODUCTION

In unit two, you looked at the moist heat and combination methods of cooking. In this unit, we shall study the different methods of cooking meat and how to prepare different cuts of meat.

There are two basic methods of cooking meat:

- moist heat, and
- dry heat

It is important to select the proper cooking method for the cut of meat. Less tender cuts of meat require moist heat cooking methods to help break down the tough connective tissues. Moist heat cooking means moisture is added to the meat and the meat is cooked slowly over a long time; it includes: braising, and cooking in liquid, such as stews or other slow cooker recipes.

## **2.0 OBJECTIVES**

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

- describe different methods of cooking meat
- prepare and cook different cuts of meat.

## **3.0 MAIN CONTENT**

### **3.1 Methods of cooking meat**

Tender cuts of meat do not require moisture and long, slow cooking. They are usually cooked with a dry heat method, including roasting, broiling, pan-broiling, pan-frying and grilling.

The method chosen to cook a certain cut of meat should relate directly to the inherent tenderness of that cut. Tenderness is determined by:

- where on the animal the meat comes from
- the degree of marbling
- the age of the animal
- how the meat was stored and
- how the meat was prepared for market.

In general, cuts from the loin section are the tenderest; the farther away from this section the less tender the meat will be.

#### **3.1.1 Cooking Tender Cuts of Meat**

##### **3.1.1.1 Roasting**

Roasting is a cooking method in which meat is surrounded and cooked by heated air, usually in an oven. Meat is not covered and no water is added. Follow these steps:

- place meat fat side up on a rack in a shallow open roasting pan
- season as desired
- insert meat thermometer; be sure tip does not rest in fat or on a bone
- do not add water, do not cover
- roast in a slow oven at 325°F until the thermometer reaches the desired doneness
- baste with drippings during cooking.

To test for doneness, use a meat thermometer. The internal temperature shows exactly how done the meat is. Look up the roasting time tables in

a cookbook. The more tender cuts of meat will remain tender if cooked to rare rather than well-done. On the other hand, less tender cuts may be tenderer if they are cooked to medium or well-done, rather than rare.

### **Broiling, Pan-broiling, or Pan-frying**

The basic rule for broiling, pan-broiling or pan-frying meat is to use enough heat to brown the outside without overcooking the inside of the meat. A moderate temperature is best for broiling and frying most meats.

#### **3.1.1.2 Broiling**

Broiling is cooking by direct heat from a flame, electric unit, or glowing coals. Meat is cooked one side at a time. Choose tender beef steaks, lamb chops, cured ham slices, and bacon for broiling. Use steaks or chops cut 1 to 2 inches thick. If steaks or chops are less than 1 inch thick, pan-broil them.

Consult the manufacturer's instructions for broiling since equipment varies. Usually the door is left open when broiling in an electric range and closed when broiling in a gas range:

- place meat on a rack in a broiler pan
- place pan two to five inches from heat, the thicker the cut, the farther the meat should be placed from the heating unit to assure even cooking
- broil one side until browned, season cooked side, if desired
- turn meat; cook second side to desired doneness and until meat is browned, season, if desired.

#### **3.1.1.3 Pan-broiling**

Pan-broiling is cooking in an uncovered pan over direct heat. Fat that cooks out of the meat is drained off:

- place meat in preheated heavy frying pan
- do not add oil or water, do not cover
- cook slowly, turn occasionally, pour off fat as it accumulates
- cook to desired doneness, until both sides are browned
- season, if desired.

### **3.1.1.4 Pan-frying**

Pan-frying is similar to pan-broiling, except that meat is cooked in a small amount of fat:

- heat a small amount of oil in a skillet over medium heat
- when oil is hot, add meat; do not cover
- turn occasionally until done as desired and browned on both sides
- season, if desired.

The easiest way to tell when steaks and small pieces of meat are done when you broil, pan-broil, or panfry is to make a small cut in the meat near the bone and check the interior colour:

- rare beef will be reddish pink with lots of clear red juice
- medium beef has a light pink colour and less juice than rare
- well-done beef is light brown with slightly yellow juice, fresh pork should be cooked until the juice is no longer pink.

### **3.1.2 Cooking Less Tender Cuts**

#### **3.1.2.1 Braising**

Braising is cooking in steam trapped and held in a covered container or foil wrap. The source of the steam may be water or other liquid added to the meat, or it may be meat juices. Large, less tender cuts, such as chuck, round, and rump, are braised as pot roasts:

- in a heavy frying pan, brown meat on all sides in a small amount of oil; pour off fat
- season, if desired
- add a small amount of liquid to the meat; cover pan tightly
- simmer on top of the range or cook in the oven at 350°F until tender.

#### **3.1.2.2 Cooking in Liquid**

This method involves covering a less tender cut of meat with liquid and simmering in a covered kettle until tender and well-done:

- in a Dutch oven or heavy pan, brown meat on all sides in a small amount of oil; pour off fat
- season, if desired
- add enough liquid to cover meat completely; cover pan tightly
- simmer on top of the range or in the oven until tender
- add vegetables just long enough before serving to be cooked.

## 3.2 Cooking Poultry

The type of method to use for cooking poultry depends on the bird. Young poultry is best for roasting, broiling, and frying. Older poultry requires braising or stewing methods. Either way, slow, even heat should be used for tender, juicy, evenly done poultry. Do not overcook; it results in tough, dry meat.

### 3.2.1 Broiling

- cut chicken broiler in half lengthwise, in quarters, or in pieces, quarter young turkey fryers or roasters, or cut in pieces
- fold wing tips across back side of poultry quarters
- set oven control to broil
- brush poultry with one tablespoon margarine or butter
- place poultry skin side down on rack in broiler pan
- place broiler pan so top of chicken is seven to nine inches from heat
- broil 30 minutes, sprinkle with salt and pepper
- turn chicken and brush with one tablespoon margarine or butter. Broil 15 to 25 minutes longer or until chicken is brown and juices run clear.

### 3.2.2 Poaching (in the microwave)

An easy way to be prepared for any recipe that calls for cooked chicken is to poach chicken in the microwave ahead of time and have it stored in the freezer. That way, cooked chicken is available for use in casseroles, sandwiches, and salads.

- Place four chicken breast halves, skin side up, in a 12x8-inch (2 quart) microwave-safe baking dish, with the thickest portions placed toward the outside edges of the dish. If desired, sprinkle the chicken lightly with seasoned salt, paprika, and pepper.
- Cover the dish with waxed paper. Microwave on HIGH for 12 to 14 minutes or until it is fork tender and juices run clear.
- Use the chicken immediately, or cool it completely before removing the meat from the bones. Package the cooked chicken in freezer bags or containers in the amounts needed in recipes. Store in the refrigerator up to two days or in the freezer up to two months.
- Thaw the frozen cooked chicken in one of two ways:
  - a. Place chicken in a microwave-safe covered casserole and microwave it on DEFROST for four to six minutes or until the chicken is thawed. Break up and rearrange the chicken

halfway through thawing. When thawed, the chicken will feel cool to the touch.

- b. Leave chicken in its moisture/vapour resistant freezer container and thaw overnight in the refrigerator.

Note: Chicken breasts can also be poached in a large saucepan on top of the stove. Add cold water just to cover chicken, bring to a boil, and simmer for 30 to 40 minutes or until chicken is tender. Skim off any scum that rises to the surface.

### 3.2.3 Roasting

- Place poultry breast side up on a rack in a shallow roasting pan. Do not add water. If desired, brush poultry with cooking oil or melted margarine or butter.
- Cover poultry with a loose tent of heavy-duty aluminium foil. To make a tent, tear off a sheet of foil 5 to 10 inches longer than the poultry. Crease foil crosswise through the place over the bird, crimping loosely onto sides of pan to hold it in place. This prevents overbrowning, keeps the bird moist, and reduces oven spatter.
- Insert a meat thermometer through the foil into the thickest part of the thigh muscle without touching the bone. The inner thigh is the area that heats most slowly. For turkey parts, insert the thermometer in the thickest area.
- Roast at 325°F according to the timetable. To brown poultry bird, remove the foil tent 20 to 30 minutes before roasting is finished, and continue cooking until the thermometer registers 185°F.
- Basting is usually not necessary during roasting since it cannot penetrate the turkey; it does help brown the skin.

**Table 3.1**

| <b>Timetable for Roasting Fresh or Thawed Poultry or Poultry Parts</b> |                          |                        |
|--|--------------------------|------------------------|
| <b>Weight (kgs)</b>  | <b>Unstuffed (Hours)</b> | <b>Stuffed (Hours)</b> |
| 1.8-2.7 (breasts)  | 1 1/2 to 2 1/4           | not applicable         |
| 2.7-40.4   | 2 1/4 to 3 1/4           | 3 to 3 1/2             |
| 23.6-5.4   | 3 to 4                   | 3 1/2 to 4 1/2         |
| 5.4-7.3  | 3 1/2 to 4 1/2           | 4 1/2 to 5 1/2         |
| 7.3-9.1  | 4 to 5                   | 5 1/2 to 6 1/2         |
| 9.1-10.9   | 4 1/2 to 5 1/2           | 6 1/2 to 7             |
| 10.9-12.7  | 5 to 6 1/2               | 7 to 8 1/2             |
| Drumsticks, quarters,  | 2 to 3 1/2               | not applicable         |

|        |  |  |
|--------|--|--|
| thighs |  |  |
|--------|--|--|

### 3.3 Oven Cooking Bags

Preparing poultry in an oven cooking bag is a moist heat cooking method. It is the best way to produce a moist, tender bird. It also helps reduce oven spatter. Using ordinary brown bags for roasting is not recommended because they may not be sanitary, the glue and ink used on brown bags have not been approved for use as cooking materials, and the juices formed as the poultry cooks may saturate the bag and cause it to break.

- Preheat oven to 350°F.
- Shake 1 tablespoon of flour in the bag to prevent bursting.
- Place celery and onion slices in the bottom of the bag to help prevent poultry from sticking to the bag and to add flavour.
- Place poultry on top of the vegetables, close the bag with the enclosed twist-tie, and make 6 half-inch slits in the top to let steam escape. Insert meat thermometer through a slit in the bag. The poultry is done when it reaches 180°F.
- When poultry is done, cut or slit the top of the bag down the centre. Loosen the bag from the turkey so there is no sticking and carefully remove the poultry to the serving platter.

**Table 3.2**

| <b>Roasting Chart for Fresh or Thawed Poultry Cooked in an Oven Cooking Bag</b> |                          |                        |
|---|--------------------------|------------------------|
| <b>Weight (kg)</b>  | <b>Unstuffed (Hours)</b> | <b>Stuffed (Hours)</b> |
| 3.6-5.4   | 1 3/4 to 2 1/4           | 2 1/4 to 2 3/4         |
| 5.4-7.3   | 2 1/4 to 2 3/4           | 2 3/4 to 3 1/4         |
| 9.1-10.9  | 2 3/4 to 3 1/4           | 3 1/4 to 3 3/4         |
| 10.9-12.7   | 3 1/4 to 3 3/4           | 3 3/4 to 4 1/4         |

### 3.4 Thawing Frozen Turkeys

- The preferred method for thawing a turkey is in the refrigerator. Simply place the turkey in its original wrap on a tray or in a pan to catch moisture that accumulates as it thaws.
- If time is a factor, place the turkey in its unopened bag in the sink or a large container and cover it with cold water. If the wrapping

is torn, place the turkey in another plastic bag, close securely, and then place in water.

Change the water frequently to assure safe effective thawing. The National Turkey Federation recommends every 30 minutes as a rule of thumb.

**Table 3.3**

| <b>Thawing Time in the Refrigerator</b> |             |
|---|-------------|
| <b>Whole turkey</b>                     |             |
| 3.6-5.4 kg                              | 1 to 2 days |
| 5.4-7.3 kg                              | 2 to 3 days |
| 7.3-9.1 kg                              | 3 to 4 days |
| 9.1-10.9                                | 4 to 5 days |
| <b>Pieces of Large Turkey</b>           |             |
| half, quarter, half breast              | 1 to 2 days |

**Table 3.4**

| <b>Thawing Time in Cold Water</b> |               |
|-----------------------------------|---------------|
| 3.6-5.4 kg                        | 4 to 6 hours  |
| 5.4-7.3                           | 6 to 9 hours  |
| 7.3-9.1                           | 9 to 11 hours |
| 9.1-10.9                          | 11 o 12 hours |

### 3.4 Cooking a Frozen Turkey

A whole frozen turkey without giblets and neck can be roasted, braised, or stewed without thawing. Turkey parts can also be cooked without thawing. The turkey should be cooked in a preheated 325°F oven.

**Table 3.5**

| <b>Timetable for Roasting Frozen Turkey</b> |                             |
|---|-----------------------------|
| <b>Weight (kg)</b>                          | <b>Cooking Time (Hours)</b> |
| 5.4-7.3                                     | 7 1/2 to 8 1/2              |
| 7.3-9.1                                     | 8 to 9 1/4                  |
| 9.1-10.9                                    | 9 to 10                     |
| Half, breast                                | 4 1/4 to 6 1/4              |



|                              |            |
|------------------------------|------------|
| Drumsticks, quarters, thighs | 2 to 3 3/4 |
|------------------------------|------------|

### **SELF-ASSESSMENT EXERCISE**

- i. What three methods do you prefer in cooking meat and poultry?
- ii. Justify your reasons for choosing these methods

### **4.0 CONCLUSION**

Wise choice of method of cooking meat and poultry is very important.

### **5.0 SUMMARY**

It is important to select the proper cooking method for the cut of meat. Less tender cuts of meat require moist heat cooking methods to help break down the tough connective tissues. Moist heat cooking means moisture is added to the meat and the meat is cooked slowly over a long time; it includes: braising, and cooking in liquid, such as stews or other slow cooker recipes.

The method chosen to cook a certain cut of meat should relate directly to the inherent tenderness of that cut.

### **6.0 TUTOR-MARKED ASSIGNMENT**

1. Choose 4 different cuts of meat and cook them using different methods of cooking
2. Describe the methods used

### **7.0 REFERENCE/FURTHER READING**

Foskett, D. et al. (2008). *Functional practical cookery*. UK: Hodder Education.

## UNIT 4 FISH

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### 1.0 INTRODUCTION

In unit three, we studied the different methods of cooking meat and how to prepare different cuts of meat. This unit shall teach you how to buy, store and cook fish.

Fish is an excellent source of protein and other food nutrients. The fats in fish, especially fatty fish like salmon, tuna, and mackerel, help to prevent heart disease, and can even aid in preventing diseases like Alzheimer's and strokes. Buying, storing, and cooking fish is not difficult; it just requires a little knowledge.

### 2.0 OBJECTIVES

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

- identify how to recognise good quality fish
- describe methods of storing fish

- prepare several fish dishes.

### **3.0 MAIN CONTENT**

#### **3.1 Types of fish**

There are two types or varieties of fish:

- Oily – round in shape e.g. herring, mackerel, sardine, salmon.
- White – of which some are flat (e.g. plaice, lemon sole and some round haddock, hake).

##### **3.1.1 Buying and storing fish**

Fresh fish should smell sweet: you should feel that you're standing at the ocean's edge. Any fishy or strong flavours means the fish is past its prime; do not buy it.

Whole fish should look as they were just pulled from the water; bright eyes and firm flesh are signs of freshness. Fish fillets or steaks should be firm and bright looking, with no brown spots or discolouration.

Fresh fish should be stored in your refrigerator for only a day or two; it is very perishable. Any longer than that, wrap the fish well in freezer paper and freeze it. Unless you live near a coast with a reliable supply of freshly caught fish, most fish that you buy will be sold frozen. Keep it frozen until you're ready to cook it. Fish can be thawed in the refrigerator, or under cold running water, or in the microwave. Be sure to cook it as soon as it's thawed.

A great trick - thaw frozen fish in milk! Place the frozen fish in a bowl and cover with fresh milk, then cover and let stay in refrigerator overnight. The fish will have a wonderful fresh-caught taste. Discard the milk after the fish thaws.

##### **3.1.2 Methods of cooking fish**

There are many common methods used to cook fish; the most popular are described below. There is one important point to make about cooking fish: leave it alone! When you place the fish in the pan or on the grill, let it cook undisturbed for 2-4 minutes before you touch it. The fish will develop a nice crust and will release perfectly when it's ready to turn.

### 3.1.2.1 Boiling

This is rather wasteful, as so much of the nutrients and juices of the fish is lost in the process; never less than 5 percent., and as much as 30, going into the water in which the fish is boiled. To reduce this-loss to the minimum the fish should be placed in absolutely boiling water containing plenty of salt, which seasons and also keeps in the nutrient. The fish should be washed well in cold water, rubbed with salt, wrapped in a cloth, and dropped into the boiling water; a slice of onion added and allowed to simmer gently for ten minutes to each pound weight; then carefully lifted out, drained, and the cloth unfastened. Boiled fish is garnished with parsley and slices of lemon, and served with boiled potatoes or potato-balls, lettuce with French dressing, or cucumbers, and either sauce Hollandaise, shrimp or oyster sauce, or plain drawn butter in a sauce-boat.

From the cold boiled fish, left-over fish cut-lets, devilled fish, creamed fish, salad, or croquettes can be made.

### 3.1.2.2 Steaming

Steaming fish is far more economical than boiling. A simple steamer consists of a cylinder with perforated bottom which can take the place of the lid of a saucepan, when that is removed. The saucepan is kept supplied with boiling water until the fish placed in the upper compartment is cooked; about twenty minutes will usually suffice, or until the fish easily removes from the bone. By this process far less of the nutrient is lost. Garnish the same as boiled fish. Large fish are the ones usually boiled or steamed.

A bamboo steamer is a great investment if you like this method of cooking fish. To steam fish, place water or stock in a large saucepan and add seasoning ingredients; everything from lemons to ginger will work. Bring the liquid to a simmer, place the fish in the steamer(s) and place over the simmering water. Do not let the liquid boil; this will cook the fish too quickly and it could overcook in seconds.

### 3.1.2.3 Broiling

Broiled fish can be really delicious, especially if you season the fish well before cooking. Be sure to preheat the broiler before adding the fish. Make sure the fish is 4-6" away from the broiler and watch carefully. Thinner fillets (1/2") probably won't have to be turned over; thicker fillets (1") should be carefully turned halfway through cooking. The fish is scaled, split down the back, washed, dried, and dusted with salt and pepper. The middle thin portion is folded over to give an even

thickness, and the fish placed on a wire broiler. Butter is brushed- on the flesh side, and it is held near a perfectly clear fire until nicely browned, then turned and browned on the skin side. Then for twenty minutes it is slowly broiled on the flesh side at a distance of six or eight inches from the fire, raised on a couple of bricks or a broiler-stand, and afterwards on the skin side for ten minutes; care being taken not to burn it. The fish is finally basted with butter and should be served at once.

To broil on a gas stove, prepare the fish as above and put under the flames in an iron baking-pan, and when it is very hot grease lightly with butter. Put the fish in skin side down, baste.

**Table 3.1**

| <b>Microwaving fish and shellfish</b> |               |   |                   |
|---------------------------------------|---------------|---|-------------------|
| <b>Fish</b>                           | <b>Amount</b> | <b>Time</b>   | <b>Stand Time</b> |
| Fillets,<br>1/2 to 1/3-inch thick     | 1 pound       | 5 to 7 minutes,<br>rotate dish 1/2 turn<br>after 3 minutes  | 2<br>minutes      |
|                                       | 1 1/2 pounds  | 7 to 9 minutes,<br>rotate dish 1/2 turn<br>after 4 minutes  | 3<br>minutes      |
| Steaks, 1 inch thick                  | 1 pound       | 5 to 7 minutes,<br>rotate dish 1/2 turn<br>after 3 minutes  | 3<br>minutes      |
|                                       | 2 pounds      | 8 to 10 minutes,<br>rotate dish 1/2 turn<br>after 4 minutes | 3<br>minutes      |
| Scallops, sea                         | 1 1/2 pounds  | 6 to 9 minutes, stir<br>after 4 minutes                     | 3<br>minutes      |
| Shrimp<br>peeled and deveined         | 1 pound       | 6 to 8 minutes, stir<br>after 3 minutes                     | 3<br>minutes      |
| in shells                             | 1 pounds      | 5 to 7 minutes, stir<br>after 3 minutes                     | 3<br>minutes      |

With butter, dust lightly with salt and pepper and put it under the flame in the broiling oven on the very bottom of the stove, turn the lights down as low as possible, and broil slowly for half an hour. Lift out carefully, spread butter over it, sprinkle with a little lemon juice, and serve quickly.

For broiling with an oil stove the oven must first be made very hot, the fish prepared in the same way, and a long baking-pan put over a strong-flame. When the pan is hot, put in a little butter and place the fish skin side down, afterward baste with butter and sprinkle with, salt and pepper. Put it into the oven near the top and cook for half an hour, basting with melted butter once or twice; serve when brown.

If a narrow, heavy iron pan or a narrow, long asbestos mat is placed on the lower shelf over the flame, the heat will be driven round the sides to the top of the oven, and reflected from the top on the fish, which will then brown on the upper side.

#### **3.1.2.4 Grilling**

The sturdier and fattier fish, including grouper, salmon, tuna, swordfish, and shark, grill beautifully. Make sure that your grill is very clean and oil it lightly before adding the fish. Then leave the fish alone! If the grill is properly preheated and prepared, the fish will develop a nice crust and will release when cooked. For more delicate fish fillets, using a grill basket will make grilling any type of fish much easier. Just be sure to remove the fish from the basket as quickly as possible so it doesn't stick. When cooking thinner fillets on the grill, simply put a sheet of heavy duty foil on the grill and cook the fish on that. Don't cover the grill as the fish is cooking; the cover traps too much of the smoke and over seasons the flesh.

#### **3.1.2.5 Microwaving**

The microwave oven will cook fish very well as long as you follow a few rules. First, make sure that you rotate the fish halfway through the cooking time so the fish cooks evenly. If the fillets are of uneven thickness, fold the thinner parts under each other so the fish is about the same thickness throughout. And standing time is very important; let the dish stand on a flat surface according to the recipe so the food finishes cooking.

Arrange fish fillets or steaks, thickest parts to outside edges, in a shallow microwaveable dish large enough to hold pieces in a single layer. Cover tightly and microwave on HIGH as directed in the chart below or until fish flakes easily with a fork.

It is common to microwave two kinds of shellfish, scallops and shrimp. Cut large scallops in half. Rinse shrimp. Place in microwaveable dish. Cover tightly and microwave on HIGH as directed in the chart or until scallops are opaque; shrimp are pink.

### **3.1.2.6 Roasting**

Baking at a high oven temperature really concentrates the flavours of fish and helps the sugars on the surface caramelize for superior flavour. Roasting is baking at temperatures above 400 degrees F. You can season the fish with just about anything you like before roasting.

### **3.1.2.7 Poaching or simmering**

Poaching fish is a cooking method whereby fish is simmered in liquid.

- Use a shallow frying pan that is wide enough to hold fish without overlapping.
- Barely cover the fish with a liquid, such as water or milk; season with salt, herbs, or spices.
- Cover the pan and simmer the fish
- Serve poached fish as a main course or use it in casseroles or chilled and flaked cold dishes.

Fish is poached in a flavoured liquid called a court bouillon. Just about any aromatic herb or vegetable can be used in the poaching liquid. There's one important rule for poaching: do not let the water boil! The liquid should be barely simmering. If the water boils the outside of the fish will overcook quickly.

Poaching is suitable for:

- Whole fish e.g. salmon, trout
- Certain cuts on the bone e.g. salmon, cod
- Certain fillets, whole or cut into portions e.g. haddock or lemon sole.

### **3.1.2.8 Crockpot Fish**

Most Crockpot recipes call for adding the fish toward the end of cooking time. At high temperatures, 1" pieces of fish will cook in about half an hour. Be sure to carefully follow the recipe instructions when cooking fish in a Crockpot or slow cooker.

### 3.1.2.9 Baking

Baking is one of the easiest ways to cook fish. Just follow the recipe instructions for cooking, covering, and standing times.

Open the fish at the gills and draw all the intestines through the opening; clean the in-side. Stuff the fish with a mixture of bread-crumbs, butter, and parsley, the beaten yolk of an egg with salt and pepper, and sew down the head firmly, or if pork is used, make gashes down to the bone two inches apart and fill these gashes with larding-pork; dust the fish thickly with bread crumbs, pour a little water and some butter over it and bake as you would a fowl, with frequent basting for an hour or hour and a half. Lift out carefully with a long fish slice and garnish with slices of lemon and water-cress.

Bluefish is usually served with tomato sauce, but an excellent sauce for most fish is made from the gravy in which the fish was baked; a large tablespoonful of catsup, a tablespoonful of brown flour moistened with water, the juice of a lemon, and a glass of sherry or Madeira. It is served in a sauceboat. This method serves for bluefish, shad, and all fish except carp, which is treated a little differently.

Clean the carp as before; wash the flesh all over with vinegar; let it stand for fifteen or twenty minutes. Fill the fish with bread-stuffing and sew down the head, then brush the fish all over with egg and cover it thickly with bread crumbs, and put over it a few lumps of butter. Place the fish in a granite pan with two chopped onions, a bunch of parsley, a cup of water, with a teaspoonful of Worcestershire sauce, and a teaspoonful of anchovy sauce, if you have it. Bake in a moderate oven for an hour with frequent basting. Lift carefully out when done, garnish with parsley and lemon. For sauce, use the liquor from the baking-pan, and to it add a tablespoonful of butter and one of flour well rubbed together; make up to half- a pint with boiling water, turn the whole back into the pan, cook for a moment and strain; add the - juice of a lemon, season with salt and pepper, and serve in a sauceboat.

For establishments having an open fire, the plan of roasting produces a 'dish which shows the fish at its best. The fish after cleaning is put in a shallow pan which fits in a Dutch -or American oven, is lightly spread with butter, roasted in front of a clear fire, and basted with its own juices. The whole flavour of the fish is retained, and the action of the fire browns the surface and gives the appetizing flavour known as "tasting of the fire."



### 3.1.3.0 Sautéing

Using just a bit of olive oil and making sure to preheat the pan are the two tips for a perfectly sautéed piece of fish. Also remember to let the fish cook undisturbed for 2-3 minutes to develop a nice crust. Be sure not to crowd the fish; cook it in batches rather than overcrowd the pan. The best way to sauté thin fillets is to cook over medium high heat for 2-3 minutes, then turn, cook for another minute or two, then remove the pan from heat and let the residual heat cook the fish. Cook thick fillets 5-6 minutes on the first side, then reduce heat to medium and cook for 4-5 minutes longer.

### 3.1.3.1 Frying

By frying is not meant the work in the ordinary household frying-pan, from which the most greasy, unpalatable, and indigestible dishes are turned out. Frying means immersion in oil or fat at a temperature of 360° Fahr.

Well-clarified beef-dripping is the best fat to use; lard the worst, as it is easily absorbed and leaves the fish greasy; olive is the best oil; but a cocoanut product called "Konut," and several cotton-seed oils, are good. Small fish are the ones most often fried, but cutlets of larger fish are often used. The fish are washed and cleaned, washed again and wiped dry inside and out. Sufficient oil or fat 'must be put in the pan to completely immerse the fish.

Brush the fish or portions with egg beaten without separating,' and cover with bread 'crumbs made as fine as possible. Heat the oil, and before placing the fish in it 'test the temperature by throwing in a crumb of bread; if it browns in half a minute the oil is hot enough, and it must not be heated until it smokes.

Put the prepared fish into the wire frying-basket and place them in the oil, and when they are browned and the outside crisp, lift out and drain on blotting paper in a hot place.

Dish fried fish on a folded napkin and garnish with lemon and parsley. The egg-and-crumbs coating forms, as soon as it touches the hot oil, an impenetrable coating which keeps the oil out and the fish juices in; the crumbs are made very fine so that little oil may be absorbed by them, and the fish does not become greasy.

Deep fried fish is usually battered, then gently lowered into 375 degree oil and cooked for about 4 minutes per side, turning once and carefully.

### 3.1.3.2 En Papillote

Cooking fish encased in parchment paper or foil is a wonderful way to get the best results. The paper or foil holds in the moisture, concentrates the flavour, and protects the delicate flesh. Follow the folding and cooking instructions carefully. The packets can be cooked in the oven or on the grill.

Fish generally takes 10 minutes to cook per inch of thickness. Just to be sure it won't overcook, start checking the fish at 7-8 minutes. Steaming is the one method where this rule doesn't apply; if you steam your fish, check for doneness starting at about 7 minutes. With all the knowledge and cooking skills you've learned, these will be the best fish recipes you've ever tasted.

## 3.2 Best Fish Recipes

- Mexican Fish Packets

Cooking en papillote concentrates the flavours in this wonderful recipe.

- Microwave Salmon with Orange Sauce

This super easy microwave recipe uses butter, nutmeg, and orange juice to make a flavourful sauce for moist and tender salmon.

- Crockpot Salmon with Caramelised Onions and Carrots

The crockpot may seem like a strange way to cook salmon, but this recipe is simply superb. The low, moist, and slow heat is perfect to cook salmon that is tender, moist, and so flavourful.

- Lemon Salmon Pasta

Lemon, leeks, bell peppers, and dill weed flavour the sauce in this easy one dish meal.

- Grilled Mahi Mahi with Vegetable Slaw

Your dual sided indoor grill cooks the fish to perfection in this mostly make-ahead recipe. You can also double the cooking time and cook the fish on an ordinary charcoal or gas grill.

- Grilled Dilled Salmon

This super simple four ingredient recipe can be made with just about any fresh herb you'd like. The lemon adds wonderful flavour and tenderises the flesh of the salmon.

- Spinach Rice Fish Rollups

This delicious recipe, using spinach, rice, and cheese to stuff thin fillets, cooks to perfection in your microwave oven.

- Tuna Artichoke Kabobs

You could substitute swordfish or halibut for the tuna in this delicious and unusual recipe.

- Red Snapper Veracruz

Onion, salsa, tomatoes, and olives add flavour to this healthy and hearty fish entree.

- Orange Roughy with Red Peppers

This simple four ingredient recipe is full of flavour and is so easy! Use any colour of bell peppers you like.

- Curried Fish Fillets

Fish is coated with lemon juice and curry, and then cooked in the microwave. This beautiful dish is finished with a chutney grape sauce. Yum.

- Veggie Fish Skillet

Halibut fillets are perfectly seasoned with dill, lemon, onion, and tomatoes in this easy skillet recipe.

- Oven Fried Fish Fillets

The bread crumb coating makes a crisp crust on these easy baked fillets.

- Salmon Fillet with Avocado Sauce

This beautiful and colourful recipe is very delicious; the broiler cooks the fish to perfection.

- Grilled Fish with California Sauce

Tomato, avocado, and a vinaigrette salad dressing are the secret ingredients in this simple five ingredient recipe.

- Crockpot Fish Chowder

This healthy and delicious recipe is packed full of vegetables. The fish stays very tender when cooked in the moist heat of a crockpot.

- Tangy Glazed Fish Fillets

Horseradish, mustard, and lemon juice season thin fish fillets in this super easy recipe.

- Roasted Salmon Fillets

This very easy recipe concentrates the flavours of salmon and the seasonings into a perfect presentation.

- Mustard Grilled Salmon Salad

This delicious and easy recipe is perfect for company in the summer or fall.

- Fish Fillets with Mushroom Sauce

This easy baked dish uses fillets bathed in a creamy mushroom sauce to add flavour and moisture.

- Grilled Swordfish with Tomato Salsa

Tuna or salmon steaks can be substituted for the swordfish in this easy and fresh recipe.

- Tomato and Cheese Fillets

Another microwave recipe! You can use your favourite flavour of cheese in this simple recipe.

- Poached Salmon Fillets

Poaching is the most delicate method of cooking; the fish stays so moist and tender, with wonderful flavours.

### Orange Roughy en Papillote

This beautiful recipe is wonderful for entertaining. A white sauce seasoned with thyme, bell pepper, and mushrooms seasons the fillets to perfection.

### **SELF-ASSESSMENT EXERCISE**

Try out 15 of the fish recipes you have learnt.

### **4.0 CONCLUSION**

To get the best out of fish, it is important for fish to be as fresh as possible and kept in a refrigerator below 5°C. If freshness is lost, the quality and flavour can be affected by ammonia, which if eaten could result in food poisoning.

### **5.0 SUMMARY**

Fish is an excellent diet for everyone.

There are two types or varieties of fish:

- Oily – round in shape e.g. herring, mackerel, sardine, salmon.
- White – of which some are flat (e.g. plaice, lemon sole and some round (e.g. cod, haddock, hake).
- Most methods of cooking can be applied in fish cookery. There are so many fish recipes which one can choose from, examples include: Curried Fish Fillets, Veggie Fish Skillet., Oven Fried Fish Fillets, Salmon Fillet with Avocado Sauce, Grilled Fish with California Sauce., Crockpot Fish Chowder, Tangy Glazed Fish Fillets, Mustard Grilled Salmon Salad ,Fish Fillets with Mushroom Sauce

### **6.0 TUTOR-MARKED ASSIGNMENT**

Find out 20 fish recipes different from the examples given in this unit and classify the methods of cooking them.

### **7.0 REFERENCE/FURTHER READING**

Foskett,D. et al. (2010). *Foundational Practical Cookery*. UK: Hodder Education.

## UNIT 5 COOKING EGGS

### CONTENTS

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### 1.0 INTRODUCTION

In unit four, you learnt how to buy, store and cook fish. This unit shall teach you how to choose and store eggs and also how to make different egg dishes.

Eggs make a valuable contribution to a healthy, balanced diet. Eggs provide protein, vitamin A, riboflavin, and other vitamins and minerals. The yolk contains all the fat, saturated fat, and cholesterol in an egg.

Eggs are an excellent source of high-quality protein and are far less expensive than most other animal-protein foods. Although eggs contain a significant amount of cholesterol, they need not be excluded from the diet.

### 2.0 OBJECTIVES

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

- identify and describe how to choose and store eggs
- enumerate different egg dishes

- prepare some egg dishes.

### **3.0 MAIN CONTENT**

#### **3.1 Egg Sizes**

Eggs are sold in a range of standard sizes, the most common being jumbo, extra large, large, and medium. Check out Egg Equivalents. Large eggs are used in most recipes. Chicken eggs are most commonly used.

In some areas, duck, goose, and quail eggs are also available. Shell colour-brown or white-is purely superficial; there is no difference in quality. Refrigerate in the carton for up to 5 weeks.

#### **3.2 Egg Storage**

Eggs are a perishable food and need to be refrigerated. Keep eggs in the original carton in the coldest part of your refrigerator. Throw away any eggs that are cracked, broken, or leaking.

It is best not to wash eggs before storing or using them. Washing is a routine part of commercial egg processing and the eggs do not need to be rewashed.

Fresh eggs in the shell - 3 to 4 weeks

Fresh egg whites - 2 to 4 days

Fresh egg yolks (unbroken and covered with water) - 2 to 4 days

Hard-cooked eggs - 1 week

Deviled eggs - 2 to 3 days

Leftover egg dishes - 3 to 4 days

#### **3.3 Quality points**

- Egg shells should be clean, strong, well shaped and slightly rough.
- When broken, there should be a high proportion of thick white to thin white. As an egg ages, the thick white gradually changes into thin white and water passes from the white into the yolk.
- The yolks should be firm, round (not flattened) and of a good, even, fresh-looking colour. As an egg ages, the yolk loses strength and begins to flatten. Water evaporates from the egg and is replaced by air.

### 3.4 Nutritional information

Eggs provide the energy, fat, minerals and vitamins needed for the body to grow and repair itself. Hens can pass salmonella bacteria into their eggs, which could cause food poisoning. To reduce this risk, pasteurised eggs may be used where appropriate e.g. in omelettes and scrambled eggs.

### 3.5 How to test for freshness of an egg



Firstly, fill a deep bowl with water and carefully lower the egg into the water.

A very fresh egg will immediately sink to the bottom and lie flat on its side. This is because the air cell within the egg is very small. The egg should also feel quite heavy.

As the egg starts to lose its freshness and more air enters the egg, it will begin to float and stand upright. The smaller end will lie on the bottom of the bowl.

whilst the broader end will point towards the surface. The egg will still be good enough to consume, however, if the egg fully floats in the water and does not touch the bottom of the bowl at all, it should be **discarded**, as it will most likely be bad.

The second method to test the eggs freshness is by breaking the egg onto a flat plate, not into a bowl.

The yolk of a very fresh egg will have a round and compact appearance and it will sit positioned quite high up in the middle of the egg. The white that surrounds it will be thick and stays close to the yolk.

A less fresh egg will contain a flatter yolk, that may break easily and a thinner white that spreads quite far over the plate.



## 3.6 Egg recipes

### 3.6.1 Poached eggs

#### Method 1

The egg is cracked into a bowl of any size, and then gently slid into a pan of simmering water and cooked until the egg white has mostly solidified, but the yolk remains soft. It is quite common for a small pat of butter or margarine to be added to the container for the egg, to prevent the egg sticking to its container. The 'perfect' poached egg has a runny yolk, with a hardening crust and no raw white remaining.

Fresh eggs will yield the best results. Broken into simmering water, the white will cling to the yolk, resulting in cooked albumen and runny yolk.

To prevent dispersion of the white of the egg, a small amount of vinegar may be added to the boiling water. Stirring the water vigorously to create a vortex may reduce dispersion. Special pans, with several small cups, allow a number of eggs to be poached at the same time. Other methods of producing poached eggs, such as using cling film to keep the egg perfectly formed have been documented.

If the eggs are at room temperature, the cooking time is 2 mins 30s to 2 mins 40s. If the eggs are taken from a refrigerator, then a longer time of about 3mins is required, though the exact time depends on the size of the egg, and other factors such as altitude and the design of the poaching apparatus. Dipping the eggs into cold water for a few seconds immediately after taking them out of the boiling water helps prevent over-cooking.

#### Method 2

The term is also applied to a method whereby the egg is placed in a cup, suspended over simmering water, using a special pan called an "egg-poacher". This is usually a wide-bottomed pan with an inner lid, with holes containing a number of circular cups that each holds one egg, with an additional lid over the top. To cook, the pan is filled with water and brought to a simmer, or a gentle boil. The outer lid holds in the steam, ensuring that the heat surrounds the egg completely. The cups are often lubricated with butter in order to effect easy removal of the cooked egg, although non-stick egg poachers are also available.

The result is very similar to the traditional coddled egg, although these steamed eggs are often cooked for longer, and hence are firmer. Eggs so prepared are often served on buttered toast.

Poached eggs are used in Eggs Benedict and Eggs Florentine.

Poached eggs are the basis for many dishes in Louisiana Creole cuisine, such as Eggs Sardou, Eggs Portuguese, Eggs Hussarde and Eggs St. Charles. Creole poached egg dishes are typically served for brunches.

Several cuisines include eggs poached in soup or broth and served in the soup. In parts of central Colombia, for instance, a popular breakfast item is eggs poached in a scallion/coriander broth with milk, known as *changua* or simply *caldo de huevo* ("egg soup").

The Libyan dish Shakshouka consists of eggs poached in a spicy tomato sauce.

In Italy poached eggs are typically seasoned with grated Parmigiano reggiano and butter (or olive oil).

### 3.6.2 Scrambled eggs

The reason for removing the eggs from the heat when they are only lightly cooked is because after the pan is removed from the stove it will still be hot and the eggs will continue cooking. Cooking scrambled egg is a delicate task, and they can easily be overcooked and spoiled.

| Ingredients              | 4 portions | 10 portions |
|--------------------------|------------|-------------|
| Eggs (medium or large)   | 6 – 8      | 15 -20      |
| Salt – use sparingly     |            |             |
| Milk (optional)          | 2tbsp      | 5tbsp       |
| Butter, margarine or oil | 50g        | 125g        |

#### Cooking

1. Break the eggs into a basin, lightly season with salt and thoroughly mix using a whisk, adding the milk if using.
2. In a thick- bottomed pan, melt half of the fat.
3. Add the eggs and cook over a gently heat, stirring continuously with a heat-proof spatula or wooden spoon until the egg is lightly cooked.
4. Remove from the heat, taste and correct the seasoning.
5. Mix the remaining in fat.

### 3.6.3 Fried eggs

#### Ingredients

Butter, margarine or oil – 25g per egg

Eggs – allow one or two eggs per portion.

- Only fresh, top-quality eggs should be used for frying.
- For the best flavour use butter or sunflower oil.

#### Cooking

1. Melt the butter, margarine or oil in a small non-stick frying pan.
2. Remove the eggs from their shells and add them carefully and gently to the pan, without breaking the yolks.
3. Cook slowly over a moderate heat and serve on a warm plate.

### 3.6.4 Soft-boiled eggs

1. Place the eggs in a saucepan, cover with cold water and bring to the boil.
2. Simmer for 2 -  $2\frac{1}{2}$  minutes.
3. Remove from the water and serve in egg cups.

For medium-soft eggs:

1. Place the eggs carefully into a pan of boiling water.
2. Re-boil, simmer for 4 – 5 minutes and remove.

For hard-boiled eggs:

1. Place the eggs carefully into a pan of boiling water.
2. Re-boil and simmer for 8 – 10 minutes.
3. Refresh until cold under running water.

### 3.6.5 Omelette

#### Ingredients

2 – 3 eggs per portion

Small pinch of salt

Butter, margarine or oil

There are many variations that can be made by adding other ingredients to the eggs when mixed, such as:

- Chopped soft herbs – parsley, chives, chervil
- Mushrooms – sliced and cooked in butter
- Cheese – grated and added to the omelette before it is folded.

### Cooking

1. Break the eggs into a basin and season lightly with salt.
2. Mix thoroughly with a fork or whisk and yolks are thoroughly combined and no streaks of white can be seen.
3. Heat a non-stick omelette pan and wipe thoroughly clean with a dry cloth.
4. Add the butter, and then turn up the heat to maximum until the butter is foaming but not brown.
5. Add the eggs and cook quickly, stirring continuously with a fork or heat-proof spatula until lightly set. Remove from the heat.
6. Using the fork, carefully fold the mixture in half at a right angle to the handle of the pan.
7. Pointing the pan slightly downwards, sharply tap the pan handle with the other hand to bring the edge of the omelette up to the bottom of the pan.
8. Carefully using the fork, bring up the opposite edge of the omelette as near to the first edges as possible.
9. Take a warm plate in one hand and, holding the pan under the handle, carefully tip the folded omelette onto the plate.
10. Neaten the shape if necessary, using a clean tea cloth, and serve immediately.

### 3.6.6 Steamed eggs with chicken and spring onions

1. Cook and shred the chicken.
2. Lightly beat the eggs.
3. Peel the shallots, slice them thinly and fry until crispy.
4. Chop the garlic and spring onion.

Table 3.1

| Ingredients                         | 4 portions | 10 portions |
|-------------------------------------|------------|-------------|
| Whole eggs, lightly beaten          | 400ml      | 1litre      |
| Chicken or fish stock               | 400ml      | 1 litre     |
| Salt and pepper to taste            |            |             |
| Chicken breast, cooked and shredded | 100g       | 250g        |

|  |          |          |
|--|----------|----------|
| Shallots, thinly sliced and fried until crispy | 4        | 10       |
| Garlic, chopped                                | 2 cloves | 5 cloves |
| Light soy sauce                                | 10 ml    | 25 ml    |
| Sesame oil                                     | 1 tsp    | 2 tsp    |
| Spring onions, chopped                         | 2        | 5        |

### Cooking

1. Combine the eggs, salt, ground pepper and chicken/fish stock.
2. Using a fork, gently stir the mixture, slowly breaking the yolks. Mix well without creating too many air bubbles
3. Pass the mixture through a fine strainer.
4. Stir in the cooked chicken.
5. Pour the mixture into small ramekins and steam on a medium heat for 20 minutes or until set.

### Serving suggestion

Remove the contents from the ramekins (or serve them in the ramekins) and drizzle with light soy sauce and sesame oil, then sprinkle with fried shallots, garlic and chopped spring onions.

**fried egg** is a cooked dish commonly made using a fresh hen's egg fried whole with minimal accompaniment. They are traditionally eaten for breakfast in western countries, but may be eaten at other times of the day.

### SELF-ASSESSMENT EXERCISE

Try the following:

1. Cook two scrambled eggs following the recipe
2. Cook two scrambled eggs as quickly as possible
3. Cook two scrambled eggs using butter
4. Cook two scrambled eggs using margarine or oil

Taste, compare and discuss the four versions.

## 4.0 CONCLUSION

Eggs are one of the most widely used and versatile food commodities in any commercial cookery operation and indeed, in households around the world. They can be cooked using a variety of methods and may be served as a feature item in their own right. However, it is their unique culinary properties they bring to food that makes them indispensable.

Some of their culinary properties include binding, emulsify, glasing, aerating and enriching.

Your ability to correctly select, cook and prepare these foods in a professional manner for a range of menu items is vital to your overall success and reputation in the kitchen.

## **5.0 SUMMARY**

Eggs are an excellent source of high-quality protein and are far less expensive than most other animal-protein foods. Although eggs contain a significant amount of cholesterol, they need not be excluded from the diet.

Eggs are sold in a range of standard sizes, the most common being jumbo, extra large, large, and medium. Check out Egg Equivalents. Large eggs are used in most recipes. Chicken eggs are most commonly used.

It is best not to wash eggs before storing or using them. Washing is a routine part of commercial egg processing and the eggs do not need to be rewashed.

## **6.0 TUTOR-MARKED ASSIGNMENT**

1. Poach two eggs: one as fresh as possible, the other stale and out of its 'sell by' date. Assess the result.
2. Visit three catering operations and compile all the egg dishes served

## **7.0 REFERENCE/FURTHER READING**

John D. F. (2004). *The Encyclopedia of Cajun & Creole Cuisine*. Chef John Folse and Company Publishing, December 2004, ISBN 0970445717

**MODULE 2**

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| Unit 2 | Cake Making                   |
| Unit 3 | Cake: Types and common faults |
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**UNIT 1 GRAINS USED IN COOKERY****CONTENTS**

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## **1.0 INTRODUCTION**

In the previous unit, we examined how to choose and store eggs and also how to make different egg dishes. In this unit, you shall learn about the different types and forms of grain available.

Grains are cereal crops, mostly grasses cultivated for their edible seeds or grains.

Grains are rich in nutrients and can make a good contribution to a healthy diet. The different types of grains can be used in several different forms.

## **2.0 OBJECTIVES**

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

- describe the different types of grains and their uses
- analyse the different forms of grain.

## **3.0 MAIN CONTENT**

### **3.1 Types of Grain**

#### **3.1.1 Barley**

After wheat, rice, and corn, barley is the most important cereal crop in the world. It is very hard, so it is grown in a variety of climates. Like wheat, it is planted in the spring or fall. It is a staple food crop in Asia and in many of the countries surrounding the Mediterranean. In the United States, the important growing area is the northwest quarter of the contiguous states, extending from Minnesota to Washington.

Barley has a nutty and somewhat sweet flavour and the colour of the grain ranges from a light tan to various shades of brown or purple. The



outer husk and bran layers are often removed from the barley grain before it is processed further. This is referred to as "pearled" or "polished" barley, which is used to produce barley flour, barley flakes, or barley malt and malt syrup.

### **3.1.2 Buckwheat**

Sometimes considered a cereal grain because it is processed and prepared in similar ways, buckwheat, which is a native plant of Russia, is actually an herb that is related to rhubarb and sorrel. It does not require top grade soil to grow and it can actually do quite well in poor, rocky soil. The crop is ready for harvesting in less than 60 days, so farmers in colder climates are often able to harvest two crops per season. It is also naturally pest resistant and it doesn't require fertilizer to grow properly.

Buckwheat is grown in many temperate areas of the world including north Eastern Europe, Russia, the north eastern United States, areas near the Great Lakes, and in parts of Canada. Three-fourths of the Canadian crop is exported to Japan for the production of the popular soba noodles. Buckwheat seeds or grains are triangular-shaped and are used for hot cereal, sausage filler, soups, and savoury side dishes. It is most often ground into flour and used in pancakes, crepes, muffins, and soba noodles. Buckwheat has an earthy, grassy flavour with a slight cocoa taste and it tastes best when the kernels are roasted. It is very hearty and flavourful, although it may seem overpowering to some people. Buckwheat that has been roasted is known by the Russian name "kasha" and unroasted buckwheat is simply called "buckwheat". Roasted buckwheat is darker in colour and has a stronger flavour than unroasted.

### **3.1.3 Dent corn**

In addition to rice and wheat, corn is one of the three most important grain crops in the world. It is a tall cereal plant (growing to a height of up to 10 feet) that is immediately recognisable because of its long, drooping leaves extending from an inner stalk and strong jointed stems supporting large ears ranging in length from a half foot to one foot, which contain the corn kernels. Corn is native to the Western Hemisphere and most of the world's production occurs in the Midwest and Plains states of the United States. In most of the world, corn is known as maize. Outside the United States, the word corn is often used as a generic term to describe any type of cereal grain grown in a particular region. The different varieties of corn are usually among one of the following main types:

### **3. 1.4 Flint**

Flint corn is a type of corn that is usually associated with the multicoloured ears that are used as a popular decoration in the autumn months. The decorative ears are often referred to as "Decorative Corn" or "Indian corn" and contain kernels of vibrant colours ranging from yellow, orange, and red to blue, purple, and black. The kernels are very hard, but they can be ground into meal and used for human consumption. The Italian dish polenta is most often made from cornmeal ground from flint corn. Hominy, or posole, is usually made from flint corn, as is masa harina, which is dried posole meal, used for making tamales and tortillas.

### **3.1.5 Flour Corn**

As the name indicates, flour corn is grown solely as a source for the production of corn flour. The kernels are starchy and much softer than other types of corn, which allows flour milling to be an easier process. Corn varieties that have drier, harder kernels, such as flint corn, are often ground into coarse meal, but can be difficult to grind into fine flour.

### **3.1.6 Pop corn**

Popcorn is a special variety of dried corn that contains high moisture content. About 14% of the composition of the kernel is water, which creates steam when the kernel is heated. This causes the popcorn kernels to explode and pop open because the steam cannot escape

### **3.1.7 Sweet Corn**

Sweet corn is often considered to be a vegetable rather than a grain because it is most often eaten fresh like a vegetable. Sweet corn has higher sugar content than other types of corn, but the sugar begins to convert to starch after it is harvested, so it is best when it is eaten fresh. Although there are many different varieties, the three types of sweet corn that are readily available are white corn (white kernels), yellow corn (yellow kernels), and a hybrid of both white and yellow, often referred to as peaches and cream or butter and sugar corn

### **3.1.8 Farro**

Farro is an ancient Italian grain that is similar in taste to barley. In the United States, farro is known as a type of spelt or wheat. It is a hulled grain, meaning that the hull adheres to the grain when harvested, similar to barley and oats. The hull is then removed during processing. Most

people consider farro to be a type of wheat and although they are related, farro is of a different species.

Farro is processed in a whole or cracked form, either of which can be found in specialty food stores or mail order suppliers. The whole farro cooks slower than the cracked variety and the texture differs considerably when cooked. The cracked form has the appearance of bulgur.

### **3.1.9 Flaxseed**

Flax is a plant native to Europe and Asia that is grown for its fiber or its seeds. The plant grows to a height of 4 feet in climates where the summers are cool and moist. Like several other plants that are not really considered grains (amaranth and buckwheat, for example), flax is often used like one. In ancient times, the seeds were ground into flour or meal. Today, this is less common, but flaxseed meal can still be found. The small, brown seeds are more often used as a food additive because of the delicious nutty flavour and the nutritional benefits.

Flaxseed is often used as an additional ingredient in yeast breads or sprinkled on cereal and salads. In the United States, most of the flax crop is used to produce linen cloth, paper, twine, and linseed oil, which is an inedible version of flaxseed oil and is used specifically for paints and varnishes

Farro grain that has not had the hull removed should be soaked before cooking. When cooked, the texture of farro is firm and chewy, while some American varieties (spelt) become softer. In European countries, farro is often used for polenta and bread recipes. Farro provides a nutty flavour to salads, soups, stews, side dishes, and meat stuffing.

### **3.1.10 Job's Tears**

Job's tears are tall cereal grass cultivated in Asia and Africa, but rarely found in the Western world. The grain is named "Job's Tears" because its shape is similar to a teardrop. When the hull is removed and the grain is polished, it resembles polished barley and it is often considered a form of barley. Like many other grains, Job's tears can be prepared by boiling or steaming. It can be served as is or it can be added to soups and casseroles.

### **3.1.11 Kamut Grain**

Kamut is a brand name for an ancient Egyptian grain that is closely related to durum wheat and is often considered a specialty grain. Kamut kernels are two to three times larger than a typical wheat kernel. Most of

the Kamut crop in the North America is grown in Montana and adjacent areas of Canada. The grain has a nutty, buttery flavour and is sold as a whole grain, as flour, and in the form of flakes. The delicious chewy grain is excellent in soups, salads, pilafs, or savoury side dishes. Kamut wheat is also found in commercially prepared cereals, crackers, and breads and like durum wheat, it is excellent for pasta making.

### **3.1.12 Millet**

Millet is a variety of related plants bearing small seeds used as a grain. The plants may grow to a height of up to six feet and feature large seed heads, which bear many tiny seeds ranging in colour from bright yellow to rust, depending on the variety. Millet was a popular food source in Europe and Asia for centuries and today it has become an important food source for developing nations in Africa. In the United States, millet is most often used as a popular variety of birdseed.

The numerous varieties of millet are cultivated in different areas of the world based on the type of climate in the area. Some varieties favour tropical locations, while other varieties are able to withstand drought. Millet may remain dormant for an extended period and is then able to quickly sprout with the first rainfall, which is one reason why it is such an important food crop in some of the hot, arid nations of Africa. Other varieties thrive in semi-arid, but cool climates (such as the northern Great Plains of the United States and southern Plains of Canada) where the growing season is shorter, allowing a millet crop to be planted as late as early summer and still be ready for harvesting in early fall.

Some of the varieties of millet include foxtail, which is most often used for birdseed or for brewing beer (especially in Russia), Pearl, which is primarily used in India as a food source, and Proso, which is the variety most widely available in the United States for human consumption and for various animal feeds. A red coloured variety is most often found in Eastern Europe or Asia where it is known as finger millet, also referred to as Bajra, Kel-varagu, Nacher, or Ragi. Another variety found mainly in Europe, Africa, and Asia is light tan in colour and more cylindrical in shape and is known as Bulrush millet.

Millet has a mild sweetness and crunchy texture and is eaten as a cereal, a side dish, polenta, and as an addition to soups and stews and desserts. The seeds are especially good if they are toasted.

### **3.1.13 Oats**

The oat plant thrives in temperate climates, preferring cool, moist conditions and it is able to grow in areas where other important cereal

grains, such as wheat and corn, do not grow well. In the United States, the northern tier of states provides a majority of the oat crop in the country. Winter oats and summer oats are the two main classifications into which the hundreds of varieties are grouped. The colour of the different varieties ranges from light beige or yellow grains to reddish-gray and black. When oat grains are processed, the outer hull is removed, but the nutritious bran and germ are kept.

Nearly nine-tenths of the oat crop in the United States is used for animal feed. The remainder is processed with a number of methods including steaming, rolling, cutting, and grinding to produce products for human consumption, such as oat bran, oat flakes, oatmeal, and oat flour.

### **3.1.13 Quinoa**

Quinoa (pronounced "KEEN-wah") is not a true grain, but the seeds are used as one. The plant, which is part of the same botanical family as beets, reaches a height of up to 10 feet. It produces clusters that contain thousands of tiny bead-shaped seeds that range in colour from light beige to yellow to rust to almost black. The plant can grow well in poor soil conditions, and favours cool climates and high altitudes, such as the Andes Mountains of South America. It was the most important grain for the Incan civilisation. Much of the quinoa used in the United States is imported from South America. A small quantity of quinoa is cultivated on the slopes of the Rocky Mountains in Colorado. When cooked in water, the seeds increase in size significantly, swelling three or four-fold. The cooked seeds become tender, with a springy texture.

### **3.1.14 Rice**

Rice is such an important part of the diet of half the world's population that nearly 50% of their daily intake of calories is provided by it. Rice is grown in river deltas, flooded or irrigated coastal plains, or terraced hillsides. It can be grown in many climate conditions, but it is most often cultivated in subtropical locations and in temperate areas with long, hot and humid growing seasons. There are thousands of varieties of rice and many of the plants grow as high as 12 feet.

Asia supplies most of the world's rice and most of the rice produced in the United States is grown in the lower Mississippi valley and California. Over half of the rice produced in the United States is exported.

Rice varieties are available in both white and brown forms. White rice has had the husk, bran, and germ removed (polished), which allows it to cook rapidly. This makes it the most popular, but it is also the least

nutritious because of the removal of the bran and germ. White rice is often enriched with nutrients (especially in Western nations), such as iron, niacin, thiamin, and riboflavin, to help restore some of the lost nutritional value. The bran and germ are used to produce rice oil, also known as rice bran oil, which is used as cooking oil.

### **3.1.15 Rye**

Rye is the one of most widely used grains in many of the northern and eastern European countries including much of Scandinavia and Russia, due in part to the cool climate, which is not suitable for growing wheat. Rye grain has a very assertive and hearty flavour with a slightly bitter taste. The colour of the grain may range from beige to dark gray.

Rye is processed into a variety of forms including whole kernels (berries), flakes, meal, and flour. When the outer hull is removed, the whole grains can be cooked, although they require longer cooking times than other grains. Soaking the berries overnight will decrease the cooking time.

Rye berries are used in stews, rice, and vegetable stir-fries. Rye flakes will cook faster and can be used in a variety of dishes, such as soups and stews. Rye flour is available in varieties ranging from light to dark and textures ranging from coarse to fine. Because rye ferments easily, it is also used in the creation of various alcoholic beverages, such as whiskey and in blends used for some brands of vodka.

### **3.1.16 Sorghum**

Sorghum is a cereal plant that is native to Africa, but is cultivated in many parts of the world. Sorghum is sometimes confused with millet. The plant is similar to other cereal grasses in that it has leaves that are long and flat and grain heads that have a feathery appearance. There are several varieties that are cultivated with some growing to a height of 20 feet, however most are much shorter, making harvesting easier. Sorghum grows in a variety of climates and seems to thrive in hot, arid locations.

The grain ranges in colour from white to red depending on the variety of sorghum grown. The white grain is generally used as a food source and the red grain is used for brewing beer. Sorghum grain has a sweet, nutty flavour that is delicious when steamed or added to soups and casseroles. In the United States, most of the sorghum is used for animal fodder and syrup production with very little of the grain used as food. The grain is much more popular in India and China and it is especially popular in some of the arid African nations where it is a staple food crop.

### 3.1.17 Spelt

Spelt is an ancient cereal grain related to modern wheat that originated in southern Europe. Many people think of spelt as a type of wheat and although they are of the same family, spelt is of a different species. It was widely cultivated in the United States at the end of the 19th century, but it became less popular when new high yield varieties of wheat were developed. Spelt also lost favour in the United States because converting the grain into flour requires more time than processing wheat flour. The outer hull of the spelt grain remains intact until the grain is processed, which contributes to the additional time required when milling spelt. This differs from wheat, which loses its hull when it is harvested. Although in terms of processing, it is a disadvantage for the hull to remain on the grain after harvesting, there are advantages as well. The hull protects the kernel from insects and pollutants and it also allows the grain to maintain freshness and retain its full flavour and nutrients.

The flavour of spelt is mild and nutty with a slight hint of hazelnut. It goes well with earthy ingredients and strong sauces, such as those made with garlic and olive oil. European countries use spelt for polenta, whole grain bread recipes, and pasta. In Italy, spelt is known as "farro" and in Germany, it is known as "dinkel."

### 3.1.18 Teff

Teff is a type of grain cultivated in Ethiopia where it is a staple food crop. Teff is difficult to find in great quantities anywhere else in the world. Teff grows well in poor soil conditions and rugged highlands. The word "teff" means, "lost" in the Amharic language. This refers to the fact that because the grains are so tiny, they are lost if dropped. The teff grain is so small that nearly 150 are equivalent to the weight of one grain of wheat. The grains range in colour from white to red and brown. The white grains have a mild flavour while the red and brown grains have a very pronounced flavour that goes well with full-flavoured, spicy foods. Teff is often prepared as porridge and also as polenta, because the stickiness of the grain after cooking allows it to be easily formed and remain shaped. In Ethiopia, a thin, very sour flatbread called injera is the most common dish made with teff grains that have been ground into flour

### 3.1.19 Triticale

Triticale is a high protein man-made grain produced by crossbreeding wheat and rye for the intended purpose of duplicating the protein and bread-making merits of wheat and the durability and high lysine content of rye. Pronounced "trit-i-KAY-lee", the name is a combination of the

Latin botanical names of wheat and rye - "triti," referring to triticum for wheat and "cale", referring to secale for rye.

Experimentation began in the late 19th Century, but triticale was not perfected until the mid 20th Century and the first commercial variety did not go on the market until after 1970. For all of the time and effort in research and experimentation, triticale still has not caught on with the general public.

The plant looks like wheat, but the heads are larger and the grain resembles wheat or rye kernels. Triticale is able to adapt to a variety of climates ranging from temperate to tropical. The grain doesn't taste like rye, but it has a stronger, nuttier flavour than wheat. It is a delicious ingredient for breads and other baked goods.

### **3.1.20 Wheat**

In addition to rice and corn, wheat is one of the three most important grain crops in the world. Unlike some grains (especially corn), most of the wheat that is cultivated is used as food for humans. There are thousands of varieties grown in many parts of the world. The wheat plants grow to height of 4 feet or more and the mature grain is approximately one-quarter inch in length. Most wheat is grown in temperate climates, with a large portion grown in the Great Plains region of the United States, an area also known as the "breadbasket of the world".

#### **3.1.20.1 How wheat is categorised**

Wheat is categorised according to:

##### **3.1.20.2 Kernel Hardness**

Hard wheat varieties are high in protein. The more protein in the wheat, the more gluten is formed when flour milled from the wheat is combined with liquid. Gluten provides dough with elasticity and the ability to stretch as the leavening agent produces carbon dioxide gas, which enables dough to rise effectively. Soft wheat varieties have less protein than hard wheat so the gluten forming capacity of the flour milled from soft wheat is not as great, making soft wheat flour a good choice for cakes and pastries.



### 3.1.20.3 Bran Colour

The bran is the fibrous outer layers of the inner kernel that are either a variation of red or white.

### 3.1.20.4 Growing Season

Spring wheat is planted in the spring and harvested in the late summer and fall in locations where the winters are cold. Winter wheat is best suited to locations where the winters are shorter and less severe. It is planted during the autumn months, lies dormant during the winter, sprouts in the late winter or early spring, and is ready for harvesting in the early summer.

### 3.1.20.5 Basic classifications of wheat are:

1. **Hard Wheat:** varieties of hard wheat include hard white, hard red winter, and hard red spring, all of which are used for yeast breads and similar products. The protein content of hard wheat usually ranges from 10 to 14 percent.
2. **Soft Wheat:** varieties of soft wheat include soft white and soft red winter, which are both used for products, such as cakes, cookies, and pastries that do not require the same level of leavening capability as yeast breads. The protein content of soft wheat varieties usually ranges from 6 to 10 percent.

**Durum:** The hardest wheat grown. Durum wheat is used almost exclusively for making pasta and is most often ground into granular flour with a light yellow colour known as semolina, which has the ideal properties for making the best pasta. (Italian pasta makers never refer to semolina as flour - they refer to it as grain.) Durum is high in protein and gluten, which are necessary for making good pasta. It is occasionally used for baked goods (especially risen breads), but it is not used as often for this purpose as other wheat varieties.

### 3.1.20.6 Wild Rice

Wild rice is not actually a type of rice, but an aquatic grass bearing edible seeds that grows wild in marshy areas of lakes and rivers. Wild rice is native to the northern waters of Minnesota, parts of Wisconsin, and adjacent areas of Canada. For the Native Americans of the area, wild rice is known as "Mahnomen" (or manomin) meaning, "good berry". It is manually harvested, which makes true wild rice quite expensive. Cultivated wild rice is less expensive, but it is grown in controlled paddies, most of which are located in California and

Minnesota. Only about one-tenth of the wild rice harvested in Minnesota is true hand-harvested lake rice.

Wild rice requires specific conditions to grow properly. The only way that wild rice can germinate in its native environment is for the seed to lie dormant in the winter months under water that is no warmer than 40°F, which is why the cold water below the ice of frozen lakes of northern Minnesota is an excellent environment for wild rice to rest during the winter. After germination, clear, shallow water (about three feet deep) and a slight current are excellent conditions for proper growth. As harvest time approaches in late summer and early autumn, high winds can blow all of the grain into the water and birds often eat the grain, so it can be difficult to achieve optimum yields.

The harvesting of lake rice usually takes place in the late summer and early autumn. The harvesting is done manually, which contributes to the expense of the rice. Canoes are used to reach the rice beds and they also serve as the containment vessels for the grain as it is harvested. Because the marsh grasses often grow in a dense mass in large areas of a lake, canoes are pushed through the grasses with the use of long poles rather than being paddled, which would not be practical. The grain is manually shaken into the canoes with the use of wood sticks. One stick is used to bend the grasses over the canoe and another stick is used to knock the grains from the grass. The grain does not all ripen at the same time so some of it remains on the plants. Harvesting occurs repeatedly in the same area as more grain ripens. The grain that falls into the water is the seed that germinates the following year (some seeds lie dormant for several years before germinating). The rice is dried and then roasted, or parched, to loosen the hull, which is then removed before it is packaged. Wild rice grains harvested from the lakes of Minnesota are of varying lengths and colours and usually vary from one body of water to another. The grains of lake rice are much longer than actual long-grain rice varieties, averaging  $\frac{1}{2}$  to  $\frac{3}{4}$  inch in length. The colour may range from varying shades of yellow, tan, brown, to almost black. After harvesting, the drying process darkens the colour of lake rice.

The grains of Canadian wild rice tend to be longer and are often referred to as jumbo Canadian wild rice. Some grains of Canadian wild rice may reach a length of one inch or longer.

Cultivated wild rice (the type most commonly found in food stores) is less expensive, but it is grown in controlled paddies and is more consistent in length and colour. Cultivated wild rice may become nearly black in appearance after drying.

Wild rice has a very pleasing chewy texture and a distinctive nutty flavour. The flavour of lake rice can vary from one lake to another and sometimes from one area to another in the same lake. More than half of the wild rice that is consumed is blended with other types of rice that are less expensive, however wild rice has such a distinctive flavour that a small quantity is sufficient to provide adequate flavour to the rice blend. Wild rice is popular when eaten on its own or used as an ingredient for soups and casseroles. A small quantity added to steamed vegetables makes an excellent side dish. It adds flavour to tossed salads and it is one of the best accompaniments for poultry and fish.

### **3.2 Forms of grains**

#### **3.2.1 Whole Grains**

Whole grains undergo the least amount of processing of any form of grain because only the outer hull is removed. This means that whole grains require the longest cooking time of any form of grain, but they are the most nutritious form of grain because the nutrient-rich bran and germ are left intact. Whole grains are also referred to as hulled grains

#### **3.2.2 Pearled Grains**

Grain that has been pearled refers to the removal of the bran layers resulting in grain with much less fiber. One advantage of pearled grain is that it cooks faster and is tenderer than whole grain. Pearled grain is also known as polished grain.

#### **3.2.3 Grits**

Grits are a form of grain in which the kernels have been cut into smaller pieces so that they cook much more quickly. Grits are also known as steel-cut or cracked grains.

#### **3.2.4 Grain Flakes**

Grain flakes are created with a process in which the grain is steamed and rolled to produce flattened or flaked kernels, which allows the grain to cook at a much faster rate. Grain flakes are also known as rolled grains.

#### **3.2.5 Meal Grain Flakes**

Meal refers to grain that has been ground until it has a coarse, sandy texture. The meal is often used in breads and cereals.

### **3.2.6 Bran**

Bran is the nutrient packed layers covering the inner kernel of grain. Bran is basically indigestible, but it is loaded with fibre, which is important for digestive health. Some types of bran are as popular as a food supplement that they are sold as a separate product. Oat and rice bran are two of the more popular examples of grains in which some of the bran is removed during processing and ground into a meal to be used as a supplement or food additive.

### **3.2.7 Germ**

The germ is the embryo of a kernel of grain, located at the bottom of the kernel. It is the oily part of a kernel or seed from which a new plant sprouts. It is loaded with vitamins and minerals so it is highly nutritious. The germ also contains fat, which decreases the shelf life of the grain and any grain product containing the germ.

### **3.2.8 Flour**

Flour is a form of grain created by grinding and sifting grain into a powdered form that varies from very soft to coarse in texture. It is used as the main ingredient for making many types of bread, cakes, pastries, and other types of baked goods.

## **SELF-ASSESSMENT EXERCISE**

Visit a grocery shop and find out the types and forms of grain available

## **4.0 CONCLUSION**

Grains are indispensable in our diet. Good selections of them deliver the important nutrients that are needed for healthy living.

## **5.0 SUMMARY**

Grains are cereal crops, mostly grasses cultivated for their edible seeds or grains.

Grains are rich in nutrients and can make a good contribution to a healthy diet. The different types of grains can be used in several different forms.

## **6.0 TUTOR-MARKED ASSIGNMENT**

1. Classify grains
2. Identify the forms of grains available in the Nigerian market

## **7.0 REFERENCE/FURTHER READING**

Campbell et al. (2008). *Practical Cookery*.(11<sup>th</sup> ed.),UK: Bookpower

## UNIT 2 CAKE MAKING

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### 1.0 INTRODUCTION

In unit one, we studied the different types and forms of grain available. In this unit, you shall learn the history of cakes, the ingredients used in baking cakes and the steps to cake making.

Cakes are made from various combinations of refined flour, some form of shortening, sweetening, eggs, milk, leavening agent, and flavouring. There are literally thousands of cakes recipes (some are bread-like and some rich and elaborate) and many are centuries old. Cake making is no longer a complicated procedure.

Baking utensils and directions have been so perfected and simplified that even the amateur cook may easily become an expert baker. . Decorated cakes are used to celebrate special occasions including weddings, birthdays, anniversaries etc.

## **2.0 OBJECTIVES**

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

- identify the basic ingredients used in cake making
- describe the functions of ingredients used in cake making
- analyse the steps involved in making cakes.

## **3.0 MAIN CONTENT**

### **3.1 History of Cakes**

The most primitive peoples in the world began making cakes shortly after they discovered flour. In medieval England, the cakes that were described in writings were not cakes in the conventional sense. They were described as flour-based sweet foods as opposed to the description of breads, which were just flour-based foods without sweetening.

Bread and cake were somewhat interchangeable words with the term "cake" being used for smaller breads. The earliest examples were found among the remains of Neolithic villages where archaeologists discovered simple cakes made from crushed grains, moistened, compacted and probably cooked on a hot stone. Today's version of this early cake would be oatcakes, though now we think of them more as a biscuit or cookie.

Cakes were called "plakous" by the Greeks, from the word for "flat." These cakes were usually combinations of nuts and honey. They also had a cake called "satura," which was a flat heavy cake.

During the Roman period, the name for cake (derived from the Greek term) became "placenta." They were also called "libum" by the Romans, and were primarily used as an offering to their gods. Placenta was more like a cheesecake, baked on a pastry base, or sometimes inside a pastry case.

The terms "bread" and "cake" became interchangeable as years went by. The words themselves are of Anglo Saxon origin, and it's probable that the term cake was used for the smaller breads. Cakes were usually baked for special occasions because they were made

with the finest and most expensive ingredients available to the cook. The wealthier you were, the more likely you might consume cake on a more frequent basis.

By the middle of the 18th century, yeast had fallen into disuse as a raising agent for cakes in favour of beaten eggs. Once as much air as possible had been beaten in, the mixture would be poured into molds, often very elaborate creations, but sometimes as simple as two tin hoops, set on parchment paper on a cookie sheet. It is from these cake hoops that our modern cake pans developed.

Cakes were considered a symbol of well being by early American cooks on the east coast, with each region of the country having their own favourites.

By the early 19<sup>th</sup> century, due to the Industrial Revolution, baking ingredients became more affordable and readily available because of mass production and the railroads. Modern leavening agents, such as baking soda and baking powder were invented.

### **3.2 Cake ingredients**

The ingredients used to make shortened (butter) and unshortened (foam) cakes differ. However, the goal is always the same: to create great cake recipes through a delicate balance of its ingredients - making sure they have the strength to hold the recipe together, but still create a tender, moist and flavourful cake.

Different mixing methods also result in different cakes, as do the type of pans used and their treatment, timing, temperature, baking, cooling and storage. Afterwards, cakes can be filled, frosted or glazed and decorated. A cake's structure is created mainly from the combination of the flour's starches, by the proteins in whole eggs, egg whites, and/or in milk. The melt-in-your-mouth texture comes from tiny air holes left in the cake's structure, created through mixing, serving as nuclei and enlarged through the carbon dioxide gas from the chemical leaveners, heat and/or steam during baking. The sugar and fat in the recipe, as well as any acids, tenderise the cake, as well; they interfere with gluten formation and egg protein coagulation, interrupting the network of gelled starch. But, if the recipe is unbalanced, for example, if there's too much sugar and fat, the cake's structure is weakened so much it cannot support its own weight and will collapse. Too much flour and too many eggs may make the cake tough and/or dry.



**Table 3.1**

|                    |   |
|--------------------|---|
| <b>Tougheners</b>  | Flour, Milk Solids, Egg Whites will make your cake tougher or stronger  |
| <b>Tenderizers</b> | Sugar, Fats, Egg Yolks, Chocolate, Leavenings, Emulsifiers, Starches, Gums will make your cakes more tender or weaker |
| <b>Moisteners</b>  | Water, Liquid Milk, Liquid Eggs, Syrups, Liquid Sugars  |
| <b>Driers</b>      | Flour, Milk Solids, Instant Starch, Gums, Egg Whites  |
| <b>Flavours</b>    | Salt, Sugar, Cocoa, Chocolate, Butter, Vanilla, other flavours  |

Overall, the flour mixtures that produce cakes and cookies are very similar to those used to make breads, although they are sweeter and often have added flavourings not typically used in breads. Cakes have a higher proportion of sugar, milk and fat to flour than do breads, and the flour used is usually cake flour.

**Standard cake proportions (%) and qualities:**

**Table 3.2**

| <b>TYPE</b>       | <b>FLOUR</b> | <b>EGGS</b>  | <b>FAT</b> | <b>SUGAR</b> | <b>QUALITIES</b>             |
|-------------------|--------------|--------------|------------|--------------|------------------------------|
| <b>SHORTENED:</b> |              |              |            |              |                              |
| POUND CAKE        | 100          | 100          | 100        | 100          | Moist, soft, rich            |
| BUTTER CAKE       | 100          | 40           | 45         | 100          | Moist, soft                  |
| <b>FOAM:</b>      |              |              |            |              |                              |
| GENOISE           | 100          | 150 - 200    | 20 - 40    | 100          | Light, springy, somewhat dry |
| BISCUIT           | 100          | 150 - 220    | 0          | 100          | Light, springy, dry          |
| SPONGE CAKE       | 100          | 225          | 0          | 155          | Light, springy, sweet        |
| ANGEL FOOD CAKE   | 100          | 350 (whites) | 0          | 260          | Light, springy very sweet    |
| CHIFFON           | 100          | 200          | 50         | 135          | Light, moist                 |

### 3.2.1 Wheat flour

Seed in high ratio cakes where the sugar is higher than the flour level, by weight. Most cakes - with the exception of cheesecakes, foam cakes and gluten-free cakes - contain wheat flour as the main ingredient. It establishes the crumb structure in cakes and is used to bind all of the other ingredients together during the cake making process. Wheat flour contains two very important proteins, glutenin and gliadin, when mixed with moisture and stirred, create its structural network. The flour's starches gelatinise or set when baked. The bad part about gluten is that too much creates a tough, dry and flavourless cake. To help prevent this, cake recipes especially high-ratio ones are typically made with chlorinated soft wheat flours, such as bleached cake flour, a potentially containing low-gluten forming proteins. Other types include Southern bleached all-purpose and pastry flour. It's gluten from the wheat flour that gives dough its strength and elasticity - qualities we want in yeast breads, but not in cakes. Soft wheat flours are generally low in water absorption and do not require harsh mixing or a long mix time.

Chlorination of cake flour provides two great benefits. First is bleaching, which gives a whiter crumb colour to your cakes but second and more importantly it lowers the gelatinisation temperature of the starch within the cake flour. This makes it possible for the cake to set faster and therefore reduces the loss of leavening during baking. Bleaching also gives the cake flour the ability to carry more sugar and fat (as well as water), without their tenderising (collapsing) effects, balancing the recipe. Bleached flour must be used.

### 3.2.2 Sweeteners

Sugar's typical role in a cake recipe is to add sweetness, but it also plays other important roles depending upon whether it is in the crystalline (granulated white or brown) or liquid form (honey or corn syrup).

All sugar acts as a tenderiser by preventing the wheat flour proteins from forming an excessive amount of gluten. It does this because sugar is hygroscopic (ability to absorb or attract moisture from the air), honey and some liquid sugars are better than crystalline sugar which dissolves readily. By doing so, sugar essentially absorbs available water in the recipe, until saturated, leaving the rest for the wheat's available gluten forming proteins.

Gluten is formed when the wheat flour proteins are moistened and agitated or mixed; the higher the flour's gluten-forming potential, the more available water or liquid and the more mixing (agitation) that takes

place and the less tenderisers, such as sugar and fat, (and the warmer the ingredients), the more gluten is formed. Because sugar is also a hygroscopic substance, it helps with a recipe's moisture retention and thus increases its shelf life by slowing the staling process. Sugar also tenderises by slowing down the coagulation of the egg white and milk proteins, as well that also contribute to structure of the cake when baked.

Crystalline sugar plays an important role by incorporating air into the batter for leavening when beaten with solid, plastic fat, such as stick butter or margarine or solid shortening, called “creaming” (only when the fat is at an optimal temperature).

### **3.2.3 Fats**

There are two types of fat used in cake baking: solid and liquid. The primary function of solid fat, also known as plastic fat, such as solid shortening, stick butter or margarine, is to incorporate air bubbles into its malleable mass for volume. This is done through creaming, or beating the fat with crystalline sugar, also known as white granulated or brown sugar (white granulated sugar combined with molasses). But, it can only be done successfully if the right ingredients, ratios, mixing times and temperature, and using the proper tools are followed.

This makes fat a great tenderizer; expanding air cells help lift the cake's batter during baking, resulting in eventual cake tenderness. They are also known as shorteners; they also shorten the length of the gluten strands when the flour is stirred with that moisture.

Fats also tenderize by readily coating the flour proteins like a raincoat, during mixing, preventing moisture from reaching them, helping to reduce their gluten forming potential. Fat is also a good tenderiser because it slows down the coagulation of the egg, flour and milk proteins that set the structure of the cake when baked.

As the fat level in a cake goes up, more eggs are required to emulsify the fat. Eggs also add structure and thus increase the volume depending on the part of the egg used, if it is beaten and when it is added to the recipe; sometimes less flour and chemical leavening agents, such as baking soda or baking powder, is needed.

Fat is a lubricator. It coats the flour particles so the elastic formation slows down; it makes the gluten strands slippery so the gas bubbles can move easily; and it gives the final cake recipe a finer grain. It also lubricates other ingredients, allowing them to mix and disperse more readily and for the cake to rise more readily. Similarly, fat lubricates the inside of your mouth, giving you the perception that a high fat cake is

especially moist when you eat it because it glides easily on your tongue. Fat also increases a baked cake's shelf life by helping to retain the moisture in it.

Some fats, such as butter, add important flavour to a cake recipe, whereas margarine does not have as fine a texture and taste. Shortening does not contribute flavour, unless you use the "butter flavoured" type. Denser oil cakes such as carrot, zucchini, apple and pumpkin are commonly made with vegetable oil, called liquid fat. Cake mixes are also classified as oil cakes.

### **3.2.4 Eggs**

They perform a multitude of important functions in a cake recipe, depending on the part used. Foamed eggs provide leavening, especially separated and beaten whites. Whole eggs and whites contribute to structure. Egg yolk is also a rich source of emulsifying agents and, thus, is a tenderiser; it facilitates the incorporation of air and inhibits wheat starch gelatinisation. Egg yolks also add colour, nutrition, and flavour and help to retain moisture in the finished cake. On the other hand, whites can have a drying effect, but they contribute slightly more protein than yolks do, although with far fewer nutrients and without the fat and cholesterol.

Some white cake recipe can use 6 to 8 large egg whites, which have a drying effect on the recipe. When you substitute some of the egg whites with whole eggs, it results in a flavourful and moister cake that does not affect the colour of the cake. Many of the changes from old-fashioned cakes to the recipes we see today, started with the development of cake mixes and the addition of emulsifiers(found naturally in egg yolks) to the shortenings such as Crisco. Before then, cakes tended to be heavier, more like the pound cake consistency. Shortening used today gives better aeration when mixed and with the addition of liquids, make a light and fluffier cake.

### **3.2.5 Leavening Agents**

The leavening source used in cakes may serve to produce gas by physical, chemical or biological methods. It starts with the creation of millions of tiny air bubbles from various mixing methods, trapped in the structural framework of the cake's batter by the gluten strands. Air incorporation comes from beating eggs, creaming butter and sugar together, from folding ingredients together, and from any agitation. Cakes are then leavened when the air bubbles in their batters expand when heated from water vapour or steam from liquids; carbon dioxide produced from chemical leaveners (baking soda and/or baking powder);

general expansion from heat from the oven and in some cakes, from yeast activity. In many baked items, one or more of these agents participate in the leavening process.

A chemical leavening agent (carbon dioxide) provides a source of gas to the recipe. When moistened (baking soda and double acting baking powder) and/or heated it expands the millions of air bubbles previously created in a batter or dough from mixing or any agitation made to the cake's ingredients, trapped in the structural framework by the gluten strands. If the batter is over mixed, becomes too warm or not baked promptly, the gas will escape and the final recipe will have poor texture and low volume. One of the biggest failures of a cake recipe is using baking powder or baking soda that has been weakened from being moistened previously in the cabinet or refrigerator from humidity. Another failure can be caused by pre-wetting a chemical leavened batter because they start to release carbon dioxide bubbles immediately (double acting baking powder will again leaven when heated). Refrigeration will slow their release, but not stop it. Also, when a batter is placed in an oven that has not been preheated, baking powder fails to act until the oven reaches over 120 degrees °F. Using the wrong flour can also affect leavening.

### **3.2.6 Dairy and liquids**

Milk is usually the main liquid used in cake recipes. It hydrates the dry ingredients, dissolves the sugar and salt, provides steam for leavening and allows for the baking powder and/or baking soda to react and produce carbon dioxide gas. Milk contains proteins (caseins) that set or coagulate from the oven's heat and help form the structure of the cake, as do flour and eggs. Other dairy products, such as buttermilk, sour cream or cream cheese add more moisture and flavour to a cake, consequently those made with them keep well. The acid in the buttermilk and sour cream help tenderise the gluten in the recipe, producing a finer crumb. Sour cream and cream cheese add richness to a recipe, which makes them moist and almost springy.

### **3.2.7 Flavourings**

They come in different forms: ground spices, extracts (especially pure vanilla extract), citrus zest (peel), citrus oil and even liqueurs. Alcohol adds sugar and counts as a liquid ingredient. Be careful how much you add; too much in proportion to the other ingredients in the mix can cause your cake to fail. Salt is an important ingredient because it is a flavour enhancer.

### **3.3 Steps in baking a cake**

Start by reading the ingredient list and directions before you begin. It is important to have every ingredient you need ready to go. You do not want to be running to the grocery store during preparation. The final product can flop if a key ingredient is left out.

#### **3.3.1 Things you will need**

- Cake recipe
- All ingredients listed in the recipe
- Flour
- Butter (or shortening)
- Measuring implements
- Mixer
- Baking pans
- Tooth pick (or wooden skewer)
- Butter knife
- Oven
- Oven mitts or protective gloves
- Cooling rack

#### **3.3.2 Prepare your cake pans**

- Be sure to have the correct size or shape of the pan.
- Grease pans to avoid sticking. Use about a half of tablespoon of butter or vegetable shortening on a paper towel and rub the inside of the pan. Sprinkle about a tablespoon or two of flour on top. Flour the pans on the sides to help the cake adhere to the sides as it bakes. This will ensure that the top is flatter, which is important for layered cakes. Shake and dump out any excess flour and set the pans to the side.

#### **3.3.3 Have all ingredients at room temperature, unless the recipe directs otherwise**

Key ingredients such as flour, sugar, vegetable oil, and water are typically stored at room temperature, while others such as butter and milk needs to be cold prior to using.

- Double check the recipe concerning eggs, while many box mix cakes request cold, other recipes such as cheesecakes require eggs to be at room temperature. This is to avoid any curdling and affecting the cake texture<sup>1</sup>

### **3.3.4 Preheat the oven**

Preheat the oven to the required temperature from the recipe.

### **3.3.5 Measure the Ingredients**

Measure ingredients as accurately as possible and add them in the order specified. Most cake recipes begin by combining dry ingredients (flour, baking powder, cocoa, etc.), then adding wet ingredients (eggs, oil, and milk). Be sure to take special prerequisites such as sifting, whisking or beating, and packing before adding to the main bowl.

### **3.3.6 Mixing the Ingredients**

Mix the cake batter as specified on the recipe. Some recipes can be mixed with a stand or hand mixer. Be cautious as steps can instruct to fold in flour or other ingredients with a rubber spatula. While mixing, stop occasionally to scrape down the sides of the bowl with a spatula or spoon to ensure that everything is mixed thoroughly.

### **3.3.7 Pour the batter evenly into the prepared pans**

Fill the pans 2/3 of the way full, as the cake will rise during baking. Gently tap the cake pan on the counter top to release any large air bubbles in the batter.

## **3.4 Baking**

### **3.4.1 Place the pans in the oven**

Place the pans on the centre rack of the preheated oven. Do not allow pans to touch each other or the oven wall.

### **3.4.2 Close the oven door**

Close the oven door and immediately set a timer to the specified baking time. If there's a time range, use the median or middle number (bake it for 35 minutes for a range of 34 to 36 minutes or 53 minutes for a range of 50 to 55 minutes). Using the median will ensure that the cake won't under or over cook. Resist the urge to open the oven door during baking, as the heat will escape and may cause the cake to cook unevenly. If applicable, turn the oven light on and view through the oven window.

### 3.4.3 Check for doneness

Gently insert a toothpick or wooden skewer in the centre of the cake. If it comes out clean or with a few small crumbs on it, the cake is done. If not, place it back in the oven for another 3-4 minutes. Keep testing for the same amount of time until you get the correct result.

### 3.5 Cooling

Place the pan on a wire rack to cool for 15 to 30 minutes. Run a butter knife around the pan edges to loosen the sides. Place the wire rack over the top of the pan, invert it, and tap it lightly to remove the cake.

Let it cool completely before decorating since the heat will melt frosting and icing.

### 3.6 Baking Tips

- When recipes calls for cold ingredients such as butter or cream cheese to be at room temperature, unwrap the item and leave it in a bowl on the counter for a few hours to soften. You can test the softness by poking a fork in it.
- Double check your measurements before adding them to mixing bowls. A few tablespoons of missing or extra flour can have dramatic and undesired effects on the finished cake.
- If you attempt to remove a hot cake from the pan, it may crack and fall apart.
- Use high quality, heavy duty aluminium baking pans for even heating and best results.
- Always wash your hands before baking.
- If you like moist cakes, substitute the oil for yogurt.
- If there is salt in the recipe, be very careful. A quarter of a teaspoon extra salt can make it more salty than it should be.

If you're using a different recipe, follow the directions you find in it

### SELF-ASSESSMENT EXERCISE

Find out the ingredients for making a sponge cake and practice baking it

## 4.0 CONCLUSION

Different types of cakes are available for different occasions therefore it is advisable that we determine the types of cake we want to prepare so as to guide are selection of the ingredients because careful selection of these would make the cakes we make to come out great.



## 5.0 SUMMARY

Cakes are made from various combinations of refined flour, some form of shortening, sweetening, eggs, milk, leavening agent, and flavouring. There are literally thousands of cakes recipes. The most primitive peoples in the world began making cakes shortly after they discovered flour. In medieval England, the cakes that were described in writings were not cakes in the conventional sense. Bread and cake were somewhat interchangeable words with the term "cake" being used for smaller breads. By the early 19<sup>th</sup> century, due to the Industrial Revolution, baking ingredients became more affordable and readily available because of mass production and the railroads. Modern leavening agents, such as baking soda and baking powder were invented. The ingredients used to make shortened (butter) and unshortened (foam) cakes differ. However, the goal is always the same: to create great cake recipes through a delicate balance of its ingredients.

The main ingredients for cake making are flour, fat, eggs, and sugar. For you to bake cake successfully you have to prepare your cake pans, measure the ingredients accurately, pre-heat the oven and generally follow the directions of the recipe.

## 6.0 TUTOR-MARKED ASSIGNMENT

Find out and compile the recipe and methods of making 20 different types of cakes.

## 7.0 REFERENCES/FURTHER READING

Campbell, et al. (2008). *Practical cookery*. (11<sup>th</sup> ed.). UK: Bookpower

Stradley, L. (2004). *Whatscookingamerica.net*. Retrieved on 18<sup>th</sup> October, 2012

## **UNIT 3      CAKES TYPES AND COMMON FAULTS**

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- 2.0 Objectives
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### **1.0 INTRODUCTION**

In unit two, we studied the history of cakes, the ingredients used in baking cakes and the steps to cake making. In this unit, we shall examine the different types of cakes, and common faults in cake making.

Cakes are distinguished from breads in that they are usually sweet, with many other ingredients besides flour. Flour, fat, raising agents, eggs, sugar and fruit are the most common ingredients but other ingredients are limited only by the ingenuity of the baker.

Cake is a form of bread or bread-like food. In its modern forms, it is typically a sweet and enriched baked dessert. In its oldest forms, cakes were normally fried breads or cheesecakes, and normally had a disk shape. Determining whether a given food should be classified as bread, cake, or pastry can be difficult.

Cake is often the dessert of choice for meals at ceremonial occasions, particularly weddings, anniversaries, and birthdays. There are countless cake recipes; some are bread-like, some rich and elaborate, and many are centuries old.

## 2.0 OBJECTIVES

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

- identify the different categories of cakes
- differentiate the different methods of mixing cakes
- analyse the different faults in cake making
- bake cakes using the three basic methods.

## 3.0 MAIN CONTENT

### 3.1 Varieties of cakes

Cakes are broadly divided into several categories, based primarily on ingredients and cooking techniques:

- Yeast cakes are the oldest and are very similar to yeast breads. Such cakes are often very traditional in form, and include such pastries as babka and stollen.
- Cheesecakes, despite their name, aren't really cakes at all. Cheesecakes are in fact custard pies, with a filling made mostly of some form of cheese (often cream cheese, mascarpone, ricotta or the like), and have very little flour added, although a flour-based or graham cracker crust may be used. Cheesecakes are also very old, with evidence of honey-sweetened cakes dating back to ancient Greece.
- Sponge cakes are thought to be the first of the non-yeast-based cakes and rely primarily on trapped air in a protein matrix (generally of beaten eggs) to provide leavening, sometimes with a bit of baking powder or other chemical leaven added as insurance. Such cakes include the Italian/Jewish *pan di Spagna* and the French G noise. Highly decorated sponge cakes with lavish toppings are sometimes called *gateau*; the French word for cake.
- Butter cakes, including the pound cake and devil's food cake, rely on the combination of butter, eggs, and sometimes baking powder or bicarbonate of soda to provide both lift and a moist texture.

Beyond these classifications, cakes can be classified based on their appropriate accompaniment (such as coffee cake) and contents (e.g. fruitcake or flourless chocolate cake).

Some varieties of cake are widely available in the form of cake mixes, wherein some of the ingredients (usually flour, sugar, flavouring, baking powder, and sometimes some form of fat) are premixed, and the cook needs add only a few extra ingredients, usually eggs, water, and sometimes vegetable oil or butter. While the diversity of represented styles is limited, cake mixes do provide an easy and readily available homemade option for cooks who are not accomplished bakers.

### 3.1.1 Special-purpose cakes

Cakes may be classified according to the occasion for which they are intended. For example, wedding cakes, birthday cakes, Christmas cakes and Passover *plava* (a type of sponge cake sometimes made with matzo meal) are all identified primarily according to the celebration they are intended to accompany. The cutting of a wedding cake constitutes a social ceremony in some cultures. The Ancient Roman marriage ritual of *confarreatio* originated from the sharing of a cake.

Particular types of cake may be associated with particular festivals, such as stollen or chocolate log (at Christmas), babka and simnel cake (at Easter), or mooncake. There has been a long tradition of decorating an iced cake at Christmas time; other cakes associated with Christmas include chocolate log and mince pies.

### 3.1.2 Shapes

Cakes are frequently described according to their physical form. Cakes may be small and intended for individual consumption. Larger cakes may be made with the intention of being sliced and served as part of a meal or social function. Common shapes include:

- Bundt cakes
- Cake balls
- Conical, such as the Kransekake
- Cupcakes and madeleines, which are both sized for a single person
- Layer cakes, frequently baked in a springform pan and decorated
- Sheet cakes, simple, flat, rectangular cakes baked in sheet pans
- Swiss roll cakes

### 3.1.3 Cake flour

Special cake flour with a high starch-to-gluten ratio is made from fine-textured, soft, low-protein wheat. It is strongly bleached, and compared to all-purpose flour, cake flour tends to result in cakes with a lighter, less dense texture.<sup>[2]</sup> Therefore, it is frequently specified or preferred in cakes meant to be soft, light, and or bright white, such as angel food cake. However, if cake flour is called for, a substitute can be made by replacing a small percentage of all-purpose flour with cornstarch or removing two tablespoons from each cup of all-purpose flour.<sup>[3][4][5]</sup> Some recipes explicitly specify or permit all-purpose flour, notably where a firmer or denser cake texture is desired.

### 3.2 Cake mixing methods

Cakes fall into two basic categories: those made with fat, and the sponge types made without fat. The exception of the sponge type is the Genoese sponge which combines both types.

In fat-type cakes, the fat is creamed, melted or rubbed in. Rub-in mixtures are generally used for plain, every day cakes such as Tyrol cake, while creamed cakes are rich and soft with a fairly close, even grain and soft crumb as in a Victoria sandwich.

In melted cakes, for example gingerbread, the fat, often with liquid, sugar, syrup or treacle added, is poured into the dry ingredients to give a batter-like consistency.

The majority of cakes are mixed using an electric mixer, however, mixing by hand, or with a food processor is also acceptable for many methods.

Mixing is a very important aspect of successful cake making. There are several methods and all have the same aims:

- to blend the ingredients into a smooth, even batter
- to beat the maximum amount of air into the batter
- to form a batter that will hold the air until it is baked i.e be stable
- to develop a desirable visual texture, volume and mouth-feel texture in the baked product
- Some of the most commonly used mixing methods include 'whisking' or 'whipping', 'creaming', and the 'all in' method.

Overall, for anyone baking cakes, experience is the best teacher. The problem of under or over mixing is always present and understanding mixing is the key to successful cake making.

### **3.4 Butter or Shortened Cakes Recipe**

#### **3.3 Key points to ensure successful cake-making**

Always use the correct size tin, or ensure that the cake batter fills the tin to half its depth so that the cake will rise, but not over the top.

- Test the cake frequently near the recommended baking time to see if it is baked.
- Prepare the tin ahead of mixing by lining or greasing with butter and sprinkling with flour.
- Set the oven to the correct temperature before mixing.
- Assemble all the necessary ingredients. Remember that butter, margarine and eggs should be at room temperature (20°C) before use.

Butter cakes consist of taking the most basic of ingredients butter, sugar, eggs, flour, and a leavening agent (baking powder or baking soda) and transforming them into a baked good with a wonderful taste and texture.

There are three methods used in making butter cakes and the goal of each method is to incorporate the maximum amount of air into the batter (produces the volume and texture of the cake), to restrict the development of gluten in the flour (provides tenderness, texture and volume), and to have a uniform batter.

- 1) Creaming Method
- 2) One Bowl, Quick or Blending Method
- 3) Combination Method

#### **3.4.1 Creaming method**

Of the three methods, the creaming method is the most common and produces the lightest cake with the greatest volume. To start, the butter should be unsalted, of good quality, and at room temperature (65 - 70 degrees F) (18 - 21 degrees C). Butter that has high butterfat content produces more air bubbles and tends to produce less curdling. The type of sugar used can vary by recipe from regular granulated white sugar to superfine (castor) white sugar.

To begin, place the butter and sugar in a mixing bowl and start beating these two ingredients on low speed. The creaming of the butter and sugar produces air bubbles in the fat created by the rubbing of the sugar crystals against the fat. These holes will get larger and multiply as you continue beating. Starting on low speed and then gradually increasing

the speed allows the air bubbles to form and strengthen. Starting at too high a speed could damage or break the fragile air bubbles which will cause the finished cake to be heavy with a compact texture. The goal is to have maximum aeration, that is, lots of air bubbles in the fat. A well aerated batter means a cake with good volume and a soft crumb. Beating time can range anywhere from 5 to 10 minutes so be sure to follow your recipe.

**Butter and sugar** have different jobs in cake making. Butter provides flavour, tenderises the batter and provides volume. Sugar, on the other hand, helps to tenderise the batter (slows down the gluten development in the flour) but also sweetens the batter, moistens the batter which helps keep the cake fresh, and helps with browning.

At the point where the butter and sugar mixture is light and fluffy, room temperature eggs are added. (The use of cold eggs will reduce the volume of your finished cake.) You may have noticed that there may be curdling of the butter at this stage. This is particularly so when the recipe is for a high-ratio cake (see below). This is caused by the addition of more liquid (eggs) than the butter can handle at one time. Once the flour has been added it will smooth out the batter so don't worry. One solution is to add the eggs to the batter more slowly as opposed to one egg at a time as most recipes state. Lightly beating each egg first and then slowly adding the egg down the side of the bowl as the mixer is running will help. If you see curdling, stop adding the egg and beat the butter a little to smooth it out before continuing the addition of more egg.

**Eggs** play a major role in cake making. Not only do they add needed aeration to the batter, they also provide structure to the cake, help to bind the ingredients together, keep the cake moist, add flavour, and tenderness.

Once the eggs have been combined and you have a smooth butter, flavourings, such as extracts are added. The flour is then sifted with a leavening agent (baking powder/baking soda) and salt. This is done not only to aerate the flour and remove any lumps, but to evenly distribute the leavening agent and salt throughout the flour. If the leavening agent is not evenly distributed throughout the cake batter, holes in the baked cake can occur. Baking powder's role is to enlarge the bubbles created in the fat during the creaming of the fat and sugar.

The flour mixture and room temperature liquid (milk, water, etc.) are added alternately, beginning and ending with the flour mixture to ensure a smooth and light batter. It is very important not to over mix the batter at this point. Over mixing will develop too much gluten in the flour and

the result will be a tough cake. Mix only to incorporate the ingredients. The first addition of flour will be fully coated with the fat and does not form gluten, so it is a good idea to add the largest amount of flour in the first addition. When you add the liquid any uncoated flour will combine with the liquid and form gluten. Continue adding the flour and liquid alternately, making sure you mix on low speed just until blended. This will enable enough gluten to develop to provide structure but not enough to make a heavy and compact cake.

**Liquids** are used in butter cakes to dissolve the salt and sugar, to add colour and richness, and to not only moisten and therefore activate the baking powder/baking soda in the batter, but to also create steam when the cake batter is placed in the oven so the cake will rise and reach its full volume.

### **3.4.2 One bowl/quick method**

The one bowl or quick method produces a cake which is very moist, dense, with a fine and velvety texture. As the name implies, this method is faster and easier than the creaming method as the creaming step of the butter and sugar is eliminated. All the dry ingredients are first put into a mixing bowl and then soft butter and a little liquid are added. This is thoroughly beaten together and then the eggs, flavouring, and remaining liquid are added. Since the liquid is added after the butter and flour are combined, it reduces the gluten formation in the flour because the fat has had a chance to coat all the flour before the toughening action from the liquid can take place. This is why this method produces a melt-in-your-mouth cake (less gluten is formed). However, using the one bowl method does not produce a cake with as much volume as the creaming method. This is because the butter tends to melt into the batter, so it doesn't form as many air bubbles needed for maximum volume as in the creaming method. The temperature of the ingredients plus the mixing speed is very important with this method so be sure to follow your recipe's instructions.

### **3.4.3 Combination method**

The combination method is when whipped egg whites are added to the creamed ingredients. This method gives additional volume and light texture to your cake. Some recipes that call for the creaming method can be changed to this method by simply separating the eggs, beating the whites separately with a little of the recipe's sugar, and then adding the whites to the finished butter.

With all three methods, once the butter is mixed it is then placed in greased and floured pan(s) (sometimes lined with parchment paper). The



batter should fill approximately 1/2 to 2/3 of the cake pan(s) to allow room for the batter to expand. If you have a problem with over browning of the edges of your cake, you can place reusable Bake-Even Strips (available at most cake supply stores) around the outside of the cake pans. Make sure you take into account that dark and/or dull coloured pans absorb more heat than aluminium and/or shiny pans and therefore the batter will bake faster. Lower the oven temperature by 25 degrees F if using a glass pan to prevent over browning.

The oven temperature affects both the texture and look of the cake. How hot the oven temperature determines how long it takes for the batter to set. The longer it takes for the eggs, milk and flour to coagulate, the more time the air cells in the batter have to grow larger and produce volume in the cake. Too hot and the outer edges of the cake will set before the middle has a chance to fully bake. This is why it is important to have an accurate oven temperature. Having a free standing oven thermometer in your oven will give you a proper reading on temperature as some ovens are not calibrated properly.

The oven should always be preheated about 15 minutes before placing the pans in the oven. If baking more than one layer at a time, arrange the cake pans so they are about 2 inches (5 cm) apart and 2 inches (5 cm) from the sides of the oven. This ensures adequate air circulation and promotes even baking. Do not open the oven door, especially during the first 15 minutes of baking, as the oven temperature drops about 25 degrees F every time the oven door is opened.

Butter cakes are done when a toothpick inserted in the centre of the cake comes out clean. Remove the baked cake from the oven and cool on a wire rack for about 10 minutes before releasing.

There are formulas for butter cakes that professionals follow and deviations from these formulas of about 20% can be supported. This is why you have so many different recipes for one type of cake. Some alterations in using eggs can be made. Egg whites and yolks play different roles in cake making and changes in the balance of whites and yolks will affect the baked cake. For example, in layer cakes you can replace one whole egg with either 2 egg yolks or else 1 ½ of egg whites to change the texture. Using yolks will produce a more flavourful cake with a darker colour, but a cake with less structure. Using whites will produce a softer cake because egg whites do not firm up as much as egg yolks when baked. Types of fats (butter, margarine, shortening), sugars (regular, superfine or brown) and flours (all-purpose or cake) used also affect the cake.

### 3.5 Formula for regular butter cake

- Weight of sugar is equal or less than weight of flour
- Weight of eggs is equal or greater than weight of fat
- Weight of liquids (egg and milk) is equal to weight of flour

Formula for high ratio butter cake:

- Weight of sugar is equal or greater than weight of flour
- Weight of eggs is greater than weight of fat
- Weight of liquid (egg and milk) is equal or greater than weight of sugar

Leavening: (This is a general guideline as the other ingredients used in a recipe also affect the amount of baking powder/baking soda used.)

1 - 1 1/4 teaspoons of baking powder for each cup of flour OR

1/4 teaspoon baking soda for each cup of flour

### 3.6 General cake faults

| Symptom                     | Causes  |
|-----------------------------|---|
| Batter over-flowed the pans | <ul style="list-style-type: none"> <li>• Wrong adjustments to recipes (too much liquid, flour etc.)</li> <li>• Wrong size pan used. Mixture should fill 2/3 of pan.</li> </ul>  |
| Poor flavour                | <ul style="list-style-type: none"> <li>• Improper mixing procedure.</li> <li>• Improper cleaning and greasing of the pans.</li> <li>• Faulty baking conditions.</li> <li>• Improper cleaning of the equipment.</li> </ul> |
| Cakes too tough             | <ul style="list-style-type: none"> <li>• Excessive mixing</li> <li>• Batter too stiff (insufficient water).</li> <li>• Batter too thin (excessive water).</li> </ul>  |
| Lacks body/structure        | <ul style="list-style-type: none"> <li>• Excessive mixing</li> <li>• Insufficient liquid.</li> </ul>  |
| Dries out too soon          | <ul style="list-style-type: none"> <li>• Excessive baking time.</li> <li>• Insufficient liquid.</li> <li>• Improper mixing procedures.</li> <li>• Cooled in a drafty location.</li> </ul>                                 |

### 3.7 External Cake Appearance

| Symptom                      | Causes  |
|------------------------------|---|
| Crust too dark               | <ul style="list-style-type: none"> <li>• Oven too hot.</li> <li>• Excessive top heat.</li> </ul>  |
| Cake too small               | <ul style="list-style-type: none"> <li>• Scaling weight too low.</li> <li>• Oven temperature too high.</li> <li>• Batter temperature too high.</li> <li>• Batter temperature too low.</li> <li>• Incorrect amount of water.</li> </ul>  |
| Cake burned on top           | <ul style="list-style-type: none"> <li>• Oven temperature too hot.</li> <li>• Incorrect amount of water.</li> </ul>   |
| Crust is shiny and sticky    | <ul style="list-style-type: none"> <li>• Oven temperature too cool.</li> <li>• Not baked long enough</li> <li>• Too much sugar in recipe.</li> </ul>  |
| Crust too thick              | <ul style="list-style-type: none"> <li>• Excessive baking time.</li> </ul>  |
| Cake falls during baking     | <ul style="list-style-type: none"> <li>• Excessive jarring or moving of the cake during baking.</li> <li>• Oven temperature too low. Excessive mixing of the batter.</li> </ul>   |
| Top of cake peaks and cracks | <ul style="list-style-type: none"> <li>• Oven temperature was too hot. (the outside of the cake baked to form a crust too quickly. As mixture in centre of the cake continued to cook and rise, it burst up through the top of the cake.)</li> <li>• Cake wasn't baked on the centre rack of the oven.</li> </ul> |
| Cake shrinks                 | <ul style="list-style-type: none"> <li>• Excessive liquid.</li> <li>• Batter too cold.</li> <li>• Oven too hot.</li> <li>• Improper mixing procedure.</li> <li>• Baked too long.</li> </ul>   |
| Cake rose unevenly           | <ul style="list-style-type: none"> <li>• Flour was not blended sufficiently into the main mixture.</li> <li>• Temperature inside the oven was uneven</li> <li>• Oven temperature too high.</li> </ul>   |
| Cake stuck to the pan        | <ul style="list-style-type: none"> <li>• Improper greasing/flouring of pan.</li> <li>• Layers were cooled too long before</li> </ul>  |

|  |                        |
|--|------------------------|
|  | trying to remove them. |
|--|------------------------|

### 3.8 Internal Cake Appearance

| Symptom  | Causes   |
|--|--|
| Coarse and irregular grain                         | <ul style="list-style-type: none"> <li>• Improper mixing procedures.</li> <li>• Stiff batter.</li> <li>• Careless or poor depositing in the pans.</li> <li>• Oven too cool, (baked too slowly).</li> </ul>   |
| Dense grain  | <ul style="list-style-type: none"> <li>• Excessive liquid in the batter.</li> <li>• Improper mixing procedure.</li> </ul>  |
| Off-colour cakes                                   | <ul style="list-style-type: none"> <li>• Improper mixing procedure.</li> <li>• Oven too cool, (baked too slowly).</li> <li>• Unclean equipment.</li> </ul>   |
| If raisins, nuts or dried fruit sunk to the bottom | <ul style="list-style-type: none"> <li>• Pieces of fruit were too large and too heavy.</li> <li>• Sugary syrup on the outside of the fruit was not washed off- causing the pieces of fruit to slide through the mixture as it heated.</li> <li>• Washed and dried fruit was not dusted with flour before being added to the mixture.</li> <li>• Cake mixture was over beaten or was too wet so it could not hold the fruit in place.</li> <li>• Oven temperature was too low, causing the mixture to melt before it set to hold the fruit in place.</li> </ul> |

### 3.9 Baking Hints for Cakes

| Item   | Hint  |
|--------|---|
| Baking | <ul style="list-style-type: none"> <li>• Set your ovens about 20 minutes before baking. Use an oven thermometer to test the temperature inside.</li> <li>• When you use a spray release agent on your cake pans, be sure the spray contains flour, or if it doesn't, light dust your own flour over the sprayed pan.</li> </ul> |

|               |  |
|---------------|--|
|               | <ul style="list-style-type: none"> <li>• Bake cakes at 350 to 360 degrees in regular oven.</li> <li>• Bake cakes at 330 to 335 degrees in convection oven.</li> <li>• Handle the cakes carefully when removing from the oven.</li> <li>• Place cakes on the center rack in the middle of the oven.</li> <li>• Pans should not touch the sides of the oven.</li> <li>• If your oven bakes unevenly on one side, do not pick up the pan, but rotate it about 2/3 into the baking time.</li> <li>• Make sure the batter is level in the pans.</li> <li>• Cakes will spring back when touched, when they are done. The sides will shrink slightly away from the pan and a cake tester or toothpick inserted into the center comes out clean.</li> <li>• Baking times will vary with pan size and batter weight.</li> </ul>   |
| <p>Mixing</p> | <ul style="list-style-type: none"> <li>• Batter temperature should be 70 to 75 degrees.</li> <li>• ALL equipment should be clean and grease free.</li> <li>• Make sure your measuring cups and spoons actually hold the same volume if you are using them from different sets.</li> <li>• Measure all ingredients as accurately as possible.</li> <li>• Pans should be greased properly.</li> <li>• When using a stand-up kitchen mixer, use a paddle (not a wire whip) to mix the batter.</li> <li>• Use a rubber or soft plastic spatula to scrape the sides of the mixing bowl after each addition of ingredients. (Scraping ensures proper ingredient distribution.)</li> <li>• Follow the formula exactly as to mixing times.</li> <li>• Always use fresh, high quality ingredients</li> <li>• Follow the formula exactly as to method. Use precise mixing times. If</li> </ul> |

|          |   |
|----------|---|
|          | not, disaster may result!   |
| Handling | <ul style="list-style-type: none"> <li>• Cool cake in pan 10-15 minutes before loosening the edge and turning it onto a wire rack.</li> <li>• To easily remove a cake from the pan, place a double thickness paper towel over the wire rack. The towel prevents the wire bars from breaking the crust or leaving imprints on the top of the cake</li> <li>• Turn hot cakes out gently.</li> <li>• Cool cake at least 1 hour before decorating.</li> <li>• When frosting a cake, chill the cake before spreading filling and/or frosting. (Cake will be much easier to work with.) Also, apply a thin layer of frosting to the cake and then refrigerate until it is set before applying the final, heavier layer of frosting. This will seal in the crumbs and ensure a clean final appearance.</li> <li>• Make only enough to last 3 or 4 days.</li> </ul> |

### SELF-ASSESSMENT EXERCISE

From the recipes you compiled in the previous unit, prepare cakes using the following methods:

- A. One bowl/quick or blending method
- B. Creaming method
- C. Combination method

### 4.0 CONCLUSION

Cake making is not difficult, but having an understanding of the role ingredients and technique play in the quality of your finished cake will help you to have consistent and excellent results every time.

### 5.0 SUMMARY

Cake is often the dessert of choice for meals at ceremonial occasions, particularly weddings, anniversaries, and birthdays. There are countless cake recipes; some are bread-like, some rich and elaborate, and many

are centuries old. Cakes are broadly divided into several categories, based primarily on ingredients and cooking techniques.

Mixing is a very important aspect of successful cake making. There are several methods and all have the same aims:

- to blend the ingredients into a smooth, even batter
- to beat the maximum amount of air into the batter
- to form a batter that will hold the air until it is baked i.e be stable
- to develop a desirable visual texture, volume and mouth-feel texture in the baked product
- some of the most commonly used mixing methods include 'whisking' or 'whipping', 'creaming', and the 'all in' method.

Common faults in cake making includes poor flavour, peaked tops, fruit sinking, shrinking etc.

## **6.0 TUTOR-MARKED ASSIGNMENT**

1. Compare and contrast the different cake making methods
2. Highlight the faults you observed in the cakes you made
3. Suggest ways you can remedy the faults highlighted

## **7.0 REFERENCES/FURTHER READING**

Campbell,J.et al. (2008). *Practical Cookery*.(11<sup>th</sup> ed.). UK: Bookpower.

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## UNIT 4 FARINACEOUS DISHES

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### 1.0 INTRODUCTION

In unit three, you learnt the different types of cakes, and common faults in cake making. In this unit, you shall learn what farinaceous dishes are and learn how to prepare them.



Farinaceous foods such as rice, pasta, noodles and gnocchi are both important to the diet and popular menu items in most establishments. Such is their importance; the eating patterns of most regions around the world depend on at least one type of farinaceous food for their daily carbohydrate intake and as an affordable food to satisfy the appetite.

## **2.0 OBJECTIVES**

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

- define farinaceous dishes
- classify farinaceous dishes
- describe the uses of farinaceous dishes
- prepare some farinaceous dishes.

## **3.0 MAIN CONTENT**

### **3.1 What is a farinaceous dish?**

A farinaceous dish refers to dishes made from pasta, noodles, rice, polenta or gnocchi.

Farinaceous commodities are highly nutritious and provide energy and dietary fibre and they include starchy flours, cereals, pulses, starchy vegetables and even parts of trees!

Let's have a look at some farinaceous dishes.

### **3.2 Types of farinaceous dishes**

#### **3.2.1 Pasta and Noodles**

Before Marco Polo brought the art of noodle making to Italy from China, 700 years ago, Italians made flour into various kinds of dumplings. Italian pasta and all the shapes that we use like spaghetti, fettuccini, were based on the shapes of Chinese noodles.

Basic pasta/noodle dough is made from flour and water or flour and eggs.

Pasta can be cooked after it is made, to be eaten fresh dried and stored for later use.

There are many different pasta shapes that are based on the same basic dough.

The two basic ingredients for pasta are flour and water. Quality pasta is made from semolina which is produced from 100% durum wheat. This wheat is especially bred and grown for this product worldwide.

The protein of durum wheat is mainly responsible for the cooking quality of pasta products. High protein content and 'strong' gluten is required to process semolina into a suitable final pasta product.

The industry also makes wide use of flours obtained by milling different varieties or semi durum, hard and soft wheat, maize and various cereals, striving to produce new flavours and top quality pasta.

Today supermarkets offer a wide range of pasta products and many delicatessens import an enormous variety of pasta shapes. New shapes are frequently introduced or revived. A very popular food, pasta is eaten either as the basis of a main meal, or as a welcome addition to the wide variety of nutritious sauces made.

However it is still the Italians who love pasta most. They say that pasta is like poetry. For nearly 400 years they kept the secret of pasta while making it into over 300 shapes and countless recipes. They love it so much there is a museum just for pasta, the Museo Storico Degli Spaghetti in Pontedassio, Italy.

### **3.2.1.1 Methods used to make pasta**

1. Wheat is milled into semolina and coarsely ground flour then delivered to the pasta factory (called *pastificio* in Italy) where it is checked for impurities and stored in silos.
2. The coarsely ground flour and semolina are gently mixed with water to form a stiff paste perfect for shaping. This is usually done in large tubs, the last of which is under vacuum which contributes to the amber colour of the pasta. Egg may also be added for noodle mix - usually two eggs for every 454g of pasta.
3. Pasta dough then moves into pressing machines where mixing, kneading and blending continues. When the dough is just right it is pressed through metal plates with holes in them, which are called die plates. The shape of the holes in the die plate decides the shape of the pasta. A process where dough is extruded through various different shapes of nozzles to form the type of pasta required is also used overseas.
4. Two types of extruding nozzles, teflon and bronze, can be used. Teflon nozzles give the pasta a smooth, translucent surface, whereas the bronze one gives the pasta a rough, opaque surface. Factories using teflon nozzles can produce far more pasta in a

shorter time than that using the bronze ones, because the dough passes through teflon much more quickly than it does through bronze.

One of the oldest pasta factories in Naples, Voiello, still uses the old-fashioned bronze variety and although the slower production raises the price, the factory owners say that real pasta lovers are willing to pay a little more to get perfect pasta.

From here the type of pasta being made determines the rest of the process. To make long goods such as spaghetti, the die plate or extrusion nozzles have round holes. As the pasta moves through the holes it forms long strands. They hang down to form a curtain. A rod moves behind the strands. At the die plate the spaghetti is cut with a sharp blade.

To make short goods (such as macaroni) there are a huge variety of die plates. The tube shape of macaroni comes from a hole with a pin in the. For alphabet macaroni the holes are shaped into letters. As the pasta moves out of the die plate it is cut by a rotating knife. The short pasta falls over a steam heated vibrator and moves into the drying line.

To make noodles, lasagne and kluski, the pasta is pressed through special die shapes and cut to the required length.

A combination of drying processes can be used. The pasta is first pre-dried at very high temperatures, rested (or cured), and then dried in a final dryer just enough to keep the moisture it needs.

Before pasta is packaged it is carefully examined and some of it is tested by cooking to ensure that everything is perfect. Good pasta should not become soft or slimy while cooking and should hold its perfectly cooked state, al dente, for up to ten minutes, once drained, before being classed as 'overcooked'. After testing it is then weighed and, if necessary, cut.

Pasta is then sent to other food manufacturers for use in noodle soups, canned spaghetti and fry-pan dinners. The rest is packaged and sent to stores and supermarkets for sale.

Pasta has a shelf life of two years, provided it is stored in a cool, dry place away from other products which could contaminate it.

### 3.2.1.2 Pasta recipes

#### 3.2.1.2.1 Spaghetti with a vegetable and meat sauce

Clean, peel and chop the vegetables.

| Ingredients                     | 4 portions          | 10 portions          |
|---------------------------------|---------------------|----------------------|
| Light olive oil                 | 1 tbsp              | 2 $\frac{1}{2}$ tbsp |
| Beef or pork mince              | 200g                | 500g                 |
| Onion, cut into neat pieces     | 100g                | 250g                 |
| Carrot, cut into neat pieces    | 100g                | 250g                 |
| Celery, cut into neat pieces    | 50g                 | 125g                 |
| Tomato puree                    | 1 tbsp              | 2 $\frac{1}{2}$ tbsp |
| Beef stock or thickened gravy   | 100ml               | 250ml                |
| Salt, and freshly ground pepper |                     |                      |
| Spaghetti, dried                | 100g                | 250g                 |
| Parsley, freshly chopped        | $\frac{1}{2}$ tbsp. | 1 $\frac{1}{2}$ tbsp |

There are many variations to this recipe, such as:

- Adding chopped mushrooms to the vegetables
- Adding a small pinch of oregano or rosemary, or a small pinch of chopped chives etc.
- Using half beef and half pork.

#### Cooking

1. Heat the olive oil in a thick-bottomed pan to a medium heat
2. Add the minced meat and cook, stirring well for ten minutes
3. Add the chopped vegetables and continue cooking, stirring well until they are softened
4. Mixed in tomato puree and add the stock
5. Simmer until the meat is tender then season lightly with salt and pepper and taste. Adjust seasoning if necessary.
6. Cook the spaghetti in plenty of slightly salted boiling water until al dente, then drain in a colander.
7. Mix the chopped parsley into the meat sauce.

## Serving suggestion

1. Serve the spaghetti in a serving dish or individual dishes and pour the sauce into the.
2. Serve immediately, offering freshly ground Parmesan cheese and freshly ground pepper.

### 3.2.1.2.2 Pasta spirals with stir-fried asparagus and peanut sauce

1. Trim the asparagus and cut into  $2\frac{1}{2}$  cm lengths
2. Cut the beans into  $2\frac{1}{2}$  cm lengths
3. Deseed and finely chop the chilli
4. Peel and crush the garlic
5. Peel the ginger and chop this and the spring onions.

Table 3.1

| Ingredients   | 4 portions        | 10 portions`        |
|---|-------------------|---------------------|
| Pasta spirals   | 375g              | 1kg                 |
| Asparagus, trimmed and cut into $2\frac{1}{2}$ cm lengths | 225g              | 675g                |
| French beans, cut into $2\frac{1}{2}$ cm lengths          | 225g              | 675g                |
| Vegetable oil   | 1tbsp             | $2\frac{1}{2}$ tbsp |
| Red chili, deseeded and finely chopped                    | 1                 | $2\frac{1}{2}$      |
| Clover of garlic, crushed and chopped                     | 1                 | $2\frac{1}{4}$      |
| Ginger, fresh and chopped                                 | $\frac{1}{2}$ tsp | $1\frac{1}{4}$ tsp  |
| Spring onions, chopped                                    | 1tsp              | $2\frac{1}{2}$ tsp  |
| Water   | 2tbsp             | 5tbsp               |
| Light soy sauce   | 2tbsp             | 5tbsp               |
| Peanut butter   | 2tbsp             | 5tbsp               |
| Fresh basil, chopped                                      | 1tsp              | $2\frac{1}{2}$ tsp  |
| Toasted sesame seed oil                                   | 1tbsp             | $2\frac{1}{2}$ tbsp |

## Cooking

1. Cook the pasta spirals in boiling water until al dente. Drain and keep warm.
2. Blanch the asparagus and French beans in boiling water and drain.
3. Heat the oil in a wok. Quickly fry the chilli, garlic, ginger and spring onions for 1 minute
4. Add the asparagus and French beans. Cook for another minute
5. Mix the water, light soy sauce and peanut butter together. Stir into the vegetables.
6. Add the basil and sesame seed oil.
7. Stir in the pasta and toss all the ingredients together.

### 3.2.2.3 Tuna pasta bake

1. Peel and finely chop the onion.
2. Dressed the peppers and cut them into  $\frac{1}{4}$ cm dice.
3. Slice the mushrooms.
4. Chop the tinned tomatoes.

**Table 3.2**

| <b>Ingredients</b>   | <b>4 portions</b> | <b>10 portions</b> |
|--|-------------------|--------------------|
| Pasta spirals  | 125g              | 300g               |
| Onion, finely chopped  | 80g               | 200g               |
| Oil for frying   | 1tbsp             | 2tbsp              |
| Red pepper, deseeded and finely diced into $\frac{1}{4}$ cm  | $\frac{1}{2}$     | 1                  |
| Green pepper, deseeded and finely dice into $\frac{1}{4}$ cm | $\frac{1}{2}$     | 1                  |
| Canned plum tomatoes, chopped                                | 80g               | 200g               |
| Tomato juice   | 250ml             | 625ml              |
| Fresh oregano, chopped                                       | 1 tsp             | 2tsp               |
| Sugar  | Pinch             | Pinch              |
| Flaked cooked tuna or drained canned tuna                    | 160g              | 400g               |
| Cheddar cheese, grated                                       | 160g              | 400g               |
| Button mushrooms, sliced                                     | 40g               | 100g               |
| Tomato puree   | 40g               | 100g               |

## Cooking

1. Cook the pasta in boiling water. Refresh in cold water and drain.
2. Fry the onions in the oil without colouring.
3. Add the peppers and chopped tomatoes and cook for another 3 minutes.
4. Add the juice tomatoes or use tomato juice.
5. Chop the fresh oregano and add this and the sugar.
6. Add the tuna and season with pepper.
7. Stir three-quarters of the cheese into the sauce and mix well.
8. Reheat the pasta by plunging it into boiling water. Drain well and place in an ovenproof serving dish.
9. Pour over the tomato mixture and sprinkle with the remainder of the cheese.
10. Finish in an oven at 200°C until the cheese is golden brown.

### 3.3 Rice

Rice is grains obtained from a cereal plant. It is a very versatile product and is used extensively throughout the world. Rice is one of the most widely eaten foods in the world. It can be served as an accompaniment or as part of a main dish.

Rice is the main food crop for about half of the world's population. There are around 250 varieties of rice, but initially we need only deal with two types.

1. Short grain – a short, rounded grains with a soft texture, suitable for sweet dishes and risotto (an Italian speciality). Arborio is a type of short grain rice.
2. Long grain – a narrow long grain with a distinctive flavour, such as basmati. It has a firm structure, which helps to keep the grains separate when cooked. It is used for plain boiled or steamed rice served with savoury curry-type dishes.

A third variety used in cooking is whole grain, used for savoury dishes, but the recipes in this chapter all use either short or long grain rice. You may also have heard of wild rice. In fact this not rice, but an aquatic grass used for special dishes or salads. Rice flour can be used for thickening soups.

Rice can be cooked by steaming. This can be done in a rice cooker following the manufacturer's instructions.

### 3.3.1 Nutritional information

Rice is a very useful and versatile carbohydrate. When added to dishes it helps to proportionally reduce the fat content (i.e. because you are eating more carbohydrate you are likely to eat less fat).

### 3.3.2 Recipes

#### 3.3.2.1 Plain boiled rice

**Table 3.3**

| <b>Ingredients</b>       | <b>4 portions</b> | <b>10 portions</b> |
|--------------------------|-------------------|--------------------|
| Basmati rice, dry weight | 100g              | 250g               |

#### Cooking

1. Pick and wash the rice and place in a saucepan. (Picking the rice means checking that there is nothing in it that should not be there).
2. Add plenty of lightly salted boiling water.
3. Stir to the boil then simmer gently until tender (approximately 12 – 15 minutes).
4. Pour into a sieve and rinse well, first under cold running water then very hot water.
5. Drain off all water and leave the rice in a sieve placed over a bowl and covered with a clean tea cloth.

#### 3.3.2.2 Braised rice (pilau)

Peel the onion and chop finely

**Table 3.4**

| <b>Ingredients</b>             | <b>4 portions</b> | <b>10 portions</b> |
|--------------------------------|-------------------|--------------------|
| Oil, butter or margarine       | 50g               | 125g               |
| Onion, finely chopped          | 25g               | 60g                |
| Rice, long grain               | 100g              | 250g               |
| Whit stock, preferably chicken | 200ml             | 500ml              |
| Salt                           |                   |                    |



### Cooking

1. Place half the fat into a thick-bottomed pan.
2. Add the onion and cook gently without colouring until the onion is soft (2 – 3 minutes).
3. Add the rice and stir to mix. Cook over a gentle heat without colouring for 2 – 3 minutes.
4. Add exactly twice the amount of stock to rice.
5. Season lightly with salt, cover with greased paper and bring to the boil.
6. Place in a hot oven (230 – 250°C) until cooked (approximately 15 minutes).
7. When cooked, remove immediately to a cool container or pan. If the rice is left in the pan in which it was cooked, the heat will be sufficient for the rice to continue cooking, which will result in it overcooking and being spoilt.
8. Carefully mix in the remaining half of the fat using a two-pronged fork.
9. Taste, correct the seasoning and serve.

#### 3.3.2.3 Risotto (traditional Italian rice)

Peel the onion and chop finely.

**Table 3.5**

| Ingredient                     | 4 portions    | 10 portions          |
|--------------------------------|---------------|----------------------|
| Onion, finely chopped          | $\frac{1}{2}$ | 2                    |
| Butter                         | 75g           | 150g                 |
| Short grain rice, e.g. Arborio | 200g          | 500g                 |
| Chicken stock                  | 1 litre       | $2\frac{1}{2}$ litre |
| Salt                           |               |                      |

### Cooking

1. In a thick-bottomed pan, lightly sweat the onion in half the butter, without colouring.
2. Add the rice and stir with a heat-resistant spatula until it is thoroughly coated with butter.
3. Pour in a large ladle of boiling stock and stir until completely absorbed.
4. Repeat this procedure, adding more stock until the rice has swollen and is almost cooked. Check by tasting it. It will usually take about 20 minutes.

5. When cooked, remove the pan from the heat and stir in the other half of the butter, half the Parmesan and season lightly.
6. Leave to rest for 2 – 3 minutes to allow the rice to swell.

Serving suggestion

Serve with more parmesan.

Try something different

This is a basic dish that lends itself to many additions, e.g. sliced mushrooms, prawns.

### 3.3.2.4 Risotto with lemon grass, capers and green olives

1. Peel the onion and chop finely.
2. Crush and chop the garlic and lemon grass.

**Table 3.6**

| <b>Ingredients</b>               | <b>4 portions</b> | <b>10 portions</b> |
|----------------------------------|-------------------|--------------------|
| Onion, finely chopped            | 50g               | 125g               |
| Vegetable oil                    |                   |                    |
| Garlic, crushed/chopped          | 1 clove           | 2 cloves           |
| Lemon grass, crushed and chopped | 3 stalks          | 6 stalks           |
| Arborio rice                     | 450g              | 1125g              |
| White stock                      | 650ml             | 1625ml             |
| Ground black pepper              |                   |                    |
| Capers                           | 2 tbsps           | 5tbsps             |
| Stoned green olives              | 100g              | 250g               |

Cooking

1. Sweat the onions in the vegetable oil with the garlic until soft.
2. Add the lemon grass to the onions.
3. Add the rice and stir for two minutes until the rice is translucent.
4. Add a little stock and cook the rice until the stock has been absorbed.
5. Repeat with more stock until it has all been used and/or the rice is soft. Season with ground black pepper.
6. Add the capers and olives to the rice and serve.

### 3.4 Polenta

Polenta is made from ground yellow cornmeal. The grains are graded according to its texture into fine, medium or course and are sold in these grades. Polenta is made by adding water or milk to the cornmeal and simmering to produce a stiff golden porridge like mixture.

**Polenta** is coarsely or finely ground yellow or white cornmeal (ground maize) <sup>[1]</sup> used as a foodstuff. It is cooked by boiling to a paste in water or a liquid such as soup stock, and may be eaten with other ingredients. After boiling it may be baked or fried; left-over polenta is often used this way. As is common with many foods, the term may refer to the ingredient or a cooked dish made with it (as with rice, beans, etc.).

"Polenta" is originally an Italian word, derived from the Latin for hulled and crushed grain, especially barley-meal. Maize was not cultivated in Europe until the early 16th century<sup>1</sup>—and comes from the same base as "pollen"

### 3.4.1 Description

As it is known today, polenta derives from earlier forms of grain mush (known as pulis or pulmentum in Latin or more commonly as gruel or porridge) commonly eaten in Roman times and after. Before the introduction of corn from the New World in the 16th century, polenta was made with such starches as farro, chestnut flour, millet, spelt or chickpeas

Polenta has a smooth, creamy texture due to the gelatinisation of starch in the grain, though it may not be completely homogeneous if a coarse grind or a particularly hard grain such as flint corn is used.

Polenta was originally and still is classified as a peasant food. Sometimes topped with sauces, in the 1940s and 1950s polenta was often eaten with just a little salted anchovy or herring. The reliance on maize as a staple food caused outbreaks of pellagra throughout much of Europe until the 20th century and in the American South during the early 1900s. Maize lacks readily accessible niacin unless cooked with alkali, which nixtamalises it.

### 3.4.2 Preparation

Polenta is cooked by simmering in a water-based liquid; it may be cooked with other ingredients, or eaten with them once cooked. It is often cooked in a huge copper pot known in Italian as paiolo. Polenta is known to be a native dish of and to have originated from Friuli. Boiled polenta may be left to set, then baked or fried; leftover polenta may be used this way. Some Lombard polenta dishes are polenta taragna (which includes buckwheat flour), polenta uncia, polenta concia, polenta e gorgonzola, and missultin e polenta; all are cooked with various cheeses and butter, except the last one, which is cooked with fish from Lake Como. It can also be cooked with porcini mushrooms, rapini, or other vegetables or meats, such as small songbirds in the case of the Venetian

and Lombard dish polenta e osei. In some areas of Piedmont it can be also made of potatoes instead of cornmeal (polenta bianca).

The variety of cereal used is usually yellow maize, but buckwheat, white maize or mixtures thereof are also used. Coarse grinds make a firm, coarse polenta; finer grinds a creamy, soft polenta.

Polenta takes a long time to cook, typically simmering in four to five times its volume of watery liquid for about 45 minutes with almost constant stirring, necessary for even gelatinisation of the starch. There are alternative cooking techniques meant to speed up the process, or not to require supervision. Quick-cooking (pre-cooked, instant) polenta is widely used and can be prepared in a few minutes; it is considered inferior to cooking polenta from unprocessed cornmeal and not ideal for eating unless baked or fried after simmering.

In his book *Heat*, Bill Buford talks about his experiences as a line cook in Mario Batali's Italian restaurant Babbo. Buford details the differences in taste between instant polenta and slowly cooked polenta, and describes a method of preparation that takes up to three hours, but does not require constant stirring: "polenta, for most of its cooking, is left unattended. If you don't have to stir it all the time, you can cook it for hours—what does it matter, as long as you're nearby? *Cook's Illustrated* magazine has described a method using a microwave oven that reduces cooking time to 12 minutes and requires only a single stirring to prepare 3½ cups of cooked polenta. Cooked polenta can be shaped into balls, patties, or sticks and fried in oil, baked, or grilled until it is golden brown; fried polenta is called *crostini di polenta* or *polenta frita*. This type of polenta became particularly popular in Southern Brazil as a consequence of Northern Italian immigration.

### 3.4.3 Basic Polenta Recipe

Total Time:  
30 min  
Prep  
5 min  
Cook  
25 min  
Yield:  
6 servings  
Level:  
Easy

## Ingredients

- 6 cups water
- 2 teaspoons salt
- 1 3/4 cups yellow cornmeal
- 3 tablespoons unsalted butter

## Directions

Bring 6 cups of water to a boil in a heavy large saucepan. Add 2 teaspoons of salt. Gradually whisk in the cornmeal. Reduce the heat to low and cook until the mixture thickens and the cornmeal is tender, stirring often, about 15 minutes. Turn off the heat. Add the butter, and stir until melted.

### 3.5 Gnocchi

(English pronunciation: /'nɒki/, /'njɒki/; Italian: ['nɔkki], singular *gnocco*) are various thick, soft dumplings. They may be made from semolina, ordinary wheat flour, flour and egg,<sup>[3]</sup> flour, egg, and cheese potato breadcrumbs or similar ingredients.

Like many Italian dishes, there is considerable variation in recipes and names across different regions. For example, the Tuscan malfatti are a sort of flour, ricotta, and spinach gnocchi; the Pugliese *cavatielli* are flour-based, etc.

Gnocchi are eaten as a first course (*primi piatti*), alternatives to soups (*minestre*), or pasta. They are generally home-made in Italian and diaspora Italian households. They may also be bought fresh from specialty stores. In supermarkets, industrially-produced packaged gnocchi are widely available refrigerated, dried, or frozen. Common accompaniments of gnocchi include tomato sauces, pesto, and melted butter (sometimes fried butter) with cheese.

#### 3.5.1 Origin

The word *gnocchi* may derive from the Italian word *nocchio*, meaning a knot in wood, or from *nocca* (meaning knuckle). It has been a traditional Italian pasta type of probably Middle Eastern origin since Roman times. It was introduced by the Roman legions during the enormous expansion of the empire into the countries of the European continent. In the past 2,000 years, each country developed its own specific type of small dumplings, with the ancient gnocchi as their common ancestor. In Roman times, gnocchi were made from a semolina porridge-like dough

mixed with eggs, and are still found in similar forms today, particularly Sardinia's *malloreddus* (although they do not contain eggs).

The use of potato is a relatively recent innovation, occurring after the introduction of the potato to Europe in the 16th century. Potato gnocchi are particularly popular in Abruzzo, Friuli-Venezia Giulia, Ciociaria and other provinces of Latium; they are best prepared with red potatoes.<sup>1</sup>

The name is also used in France in the dish known as "gnocchis à la parisienne", a hot dish comprising gnocchi formed of choux pastry, and served with Béchamel sauce.

### 3.6 Couscous

us is o One of the staple foods of the Maghrib (western North Africa). Couscous is made from two different sizes of the husked and crushed, but ungrounded, semolina of hard wheat using water to bind them. Semolina is the hard part of the grain of hard wheat (*Triticum turgidum* var. *durum*), that resisted the grinding of the relatively primitive medieval millstone. When hard wheat is ground, the endosperm—the floury part of the grain—is cracked into its two parts, the surrounding aleurone with its proteins and mineral salts and the central floury mass, also called the endosperm, which contains the gluten protein that gives hard wheat its unique properties for making couscous and pasta—that is, *pasta secca* or dried pasta, also called generically macaroni. *Couscous* is also the name for all of the prepared dishes made from hard wheat or other grains such as barley, millet, sorghum, rice, or maize.

Althoh The word *couscous* might derive from the Arabic word *kaskasa*, "to pound small," it is generally thought to derive from one of the Berber dialects because it does not take the article indicating a foreign language origin. It has also been suggested that the word derives from the Arabic name for the perforated earthenware steamer pot used to steam the couscous, called a *kiskis* (the French translation *couscoussière* is the word English-speaking writers have adopted), while another theory attributes the word *couscous* to the onomatopoeic—the sound of the steam rising in the *couscoussière*, the most unlikely explanation.

#### 3.6.1 Preparation

The ke The key to preparing an authentic couscous is patience and care. Experience will prove the best guide, but these instructions are meant to cut that time down for the novice. There are two basic steps in preparing couscous before the cooking process: forming the couscous and humidifying and drying the couscous. The first of these steps, forming

the couscous--that is, preparing couscous from "scratch"--is rarely done anymore, even by Moroccans, Algerians, and Tunisians. Only poorer folk, some rural populations, and Berber tribes still make couscous from scratch. The original "from scratch" process involves rubbing and rolling together large grains of hard wheat semolina with finer grains of semolina sprayed with salted water to raise the humidity of the semolina so the two sizes affix to each other to form couscous, the large grain serving as a kind of nucleus for the smaller grains. But today when one buys couscous, whether you are buying it in North Africa or at a whole food store in this country, in a box or in bulk, this first step has been done, and it is this made-from-scratch couscous you are buying. I recommend buying the bulk couscous rather than the boxed couscous. Boxed couscous is usually pre-cooked too much and the directions often (but not always) require you to boil the product. This so-called instant couscous should not be used for any of the recipes for couscous on this web site or in any of my books. Couscous is *always* steamed and *never* boiled. So when a recipe calls for couscous, you will find it sold in bulk bins at whole food or grain stores or boxed without the word "instant" on the package. At the time of this writing (2001) bulk couscous is not sold in American supermarkets, only in whole food stores. In North Africa, there are a variety of couscous products, but in this country you are likely only to find fine wheat (white) couscous and whole wheat couscous.

In Mor This rolling and rubbing process to form the couscous is done in a platter called a *gas<sup>c</sup>a*, a large earthenware faience platter traditional in Fez, but sometimes made of wood. In Algeria, this platter is known by the same name, as well as *lyān*. In Morocco, the couscous is then dried in a *midūna*, a latticework basket of palm or esparto grass. Afterwards it is transferred to a *tabaq*, a finer kind of basket. After drying a bit, the couscous is returned to the *midūna* for more rolling. The couscous is then sieved in three stages through sieves with progressively smaller holes called the *ghurbal qamiḥ*, *ghurbal kusksi*, and *ghurbal tala<sup>c</sup>* in Morocco and Tunisia, and the *kharaj*, *rafaḍ* and *tanay* in Algeria. It is sieved numerous times to form a uniform grain. The couscous is then left for four or five days to dry in the sun on a white sheet with occasional light sprays of water. It must be completely dry before storing. Today, modern North African couscous factories do all of this by machine, including the drying process.

The second basic step, which is the only step you need to be concerned with for the couscous you buy, is the moistening process before cooking. Your ultimate goal is to have tender, light couscous swollen with the steam vapours of the particular broth the recipe calls for.

Put half the couscous on a large earthenware platter with shallow, angular sides and sprinkle or spray with some salted water (1 cup water salted with 1 ½ teaspoons salt for every 3 cups couscous) and olive oil (¼ cup olive oil for every 3 cups couscous). Work the grains with your fingers to separate and moisten them evenly. Work in a circular rotating motion, constantly raking and forming small “pearls” of soft dough. Rake with one hand and rub with the other, picking the couscous up with your hand and letting it fall back onto the platter, breaking up the lumps as you go. Rake the couscous to form pellets the size of peppercorns. If the mixture becomes too wet, add a little dry couscous and start again.

Add the remaining couscous and continue raking with your fingers, adding water and oil as needed. Continue in this manner until all the grains are moistened. The couscous should be evenly wet, not soggy, and uniform in size, about 3 millimetres in diameter. It may be necessary to shake the couscous through a flat sieve, breaking apart any pellets with your hand. You may wish to sieve two to three times to make sure each pellet is separate. On the other hand, you can get each pellet to its correct size by lengthening the raking and rubbing time. The final size of each pellet should, ideally, be about 1 millimetre in diameter and the pellets should be separate from one another. If you have not achieved this, rub and rake some more.

Arrange the couscous on white kitchen towels and leave to dry for 1 to 2 hours, depending on the humidity that day. With your fingers, rub the couscous with olive oil.

Couscous is steamed one, two, or three times over broth. The number of times one steams is based on cultural preferences. I always steam couscous at least twice, but only because that is how I was taught by Tunisian and Algerian friends. The couscous is *never* submerged in the liquid; it is always steamed.

Couscous is cooked in a special kind of cooking ensemble called a *kiskis*, known by the French word *couscousière* in the West, except in Italy, where it is called a *couscousière*. A *kiskis* consists of two parts: the bottom portion is a pot-bellied vessel for the broth while the top part fits snugly over the bottom part and has holes in its bottom for the steam to rise through, which cooks the couscous. In North Africa, they are often made of earthenware or aluminium. Fine kitchenware stores, such as Williams-Sonoma or Sur la Table, sell aluminium *couscousière*. A makeshift *couscousière* can be made by placing a colander over a like-sized pot. The Berbers of Morocco call this bottom portion the *ikineksu*,



while the top portion is the *tikint*, the bottom portion of the *kiskis* or *couscousière* is called a *makfūl* in Tunisia, a *pignata* in western Sicily, and a *qidra* in Morocco and Algeria. The top portion is also called a *kiskis* in Morocco, Algeria, and Tunisia.

Cover the holes of the top portion of the *couscousière* with cheesecloth and transfer the couscous on top of the cheesecloth. The reason I recommend using the cheesecloth is not because the grains fall through the holes (they don't) but because it is easier to move the couscous around for its several dryings. Add whatever spices, herbs, vegetables, meat or fish the recipe calls for, if any, and bring the water or broth in the bottom portion of the *couscousière* to a gentle boil. Mix the couscous gently. Mix ½ cup flour with enough water to form dough that can be rolled out into a rope as you would roll out play dough. This flour-and-water rope is used to seal the top and bottom portions of the *couscousière* together so steam doesn't escape. (This step is not always necessary and is up to the cook, depending on how much steam appears to be escaping.) Cook over low heat for 1 hour. Remove the couscous to a large platter and rub with salted water or butter or whatever the recipe calls for and leave to cool 15 to 30 minutes. This step is necessary; the initial steaming should not be too long because you do not want the couscous to become sticky and form pasty dough.

Traditionally, the cook knows the couscous is done when the sound of a spoon hit against the *kiskis*, the top portion of the *couscousière*, makes a "heavy, coarse" (so they say) sound. The way I tell whether the couscous is done is by tasting it. The couscous should taste tender, not al dente and not mushy; the grains should be separate and taste moist, not wet and not dry.

Put the couscous back into the top portion of the *couscousière* and steam another 30 minutes. This second steaming can continue until the couscous is fully cooked. The couscous can rest for 30 minutes, covered, if desired, before serving. Some Algerian cooks steam the couscous a third time.

### 3.7 Spätzle

Spätzle is another type of dumpling similar to gnocchi, though smaller in size. These dumplings are made from flour, eggs and milk. The mixture is passed through a large holed vegetable strainer.

### **3.8 Sago and Tapioca**

Sago and Tapioca are both starch extracts, sago from various southeast Asian palms and tapioca from the cassava plant. Sago is processed into flour or granulated into small balls called pearl sago. Sago is used to make sweet dishes, including steam pudding. Tapioca is made into flour or whitish small pearl shapes called "pearl tapioca". The flour can be used as a thickener in soups, while the pearl tapioca is used in sweets such as a pudding or egg custard.

### **3.9 Spaghetti Squash**

Belonging to the marrow family this squash has a hard yellow skin with fibrous fibres. Once steamed or baked these fibres resemble spaghetti and can be gently separated using a fork. A suitable sauce can then be added.

### **SELF-ASSESSMENT EXERCISE**

1. Cook and compare a dish of plain boiled rice and a dish of steamed rice.
2. Cook two dishes of pilau, one with a good, richly flavoured chicken stock and the other with water. Taste and compare them.

### **4.0 CONCLUSION**

Farinaceous dishes offer a great deal of variety to the resourceful cook, therefore you are implored to take advantage of them.

### **5.0 SUMMARY**

Farinaceous foods such as rice, pasta, noodles and gnocchi are both important to the diet and popular menu items in most establishments. Farinaceous dishes include pasta, rice, noodles.

Gnocchi, polenta etc. The two basic ingredients for pasta are flour and water.

To make noodles, lasagne and kluski, the pasta is pressed through special die shapes and cut to the required length.

Rice is grains obtained from a cereal plant. It is a very versatile product and is used extensively throughout the world. Rice is one of the most widely eaten foods in the world. It can be served

as an accompaniment or as part of a main dish.

Rice is the main food crop for about half of the world's population. There are around 250 varieties of rice, but initially we need only deal with two types.

1. Short grain – a short, rounded grains with a soft texture, suitable for sweet dishes and risotto (an Italian speciality). Arborio is a type of short grain rice.
2. Long grain – a narrow long grain with a distinctive flavour, such as basmati. It has a firm structure, which helps to keep the grains separate when cooked. It is used for plain boiled or steamed rice served with savoury curry-type dishes.

Polenta is coarsely or finely ground yellow or white cornmeal (ground maize) <sup>[1]</sup> used as a foodstuff. It is cooked by boiling to a paste in water or a liquid such as soup stock, and may be eaten with other ingredients. After boiling it may be baked or fried; left-over polenta is often used this way. As is common with many foods, the term may refer to the ingredient or a cooked dish made with it (as with rice, beans, etc.).

## 6.0 TUTOR-MARKED ASSIGNMENT

1. Find out about other farinaceous dishes especially in your community and compile them.
2. Try out some of these recipes,
3. Invite two of your friends to taste them and report their comments

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## UNIT 5 SANDWICHES

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### 1.0 INTRODUCTION

In unit four, we learnt what farinaceous dishes are and how to prepare some of them. In this unit, we shall examine what sandwiches are, different sandwich recipes and how to prepare some of them.

A sandwich is a food item, typically consisting of two or more slices of bread with one or more fillings between them, or one slice of bread with a topping or toppings, commonly called an open sandwich. Sandwiches are a widely popular type of lunch food, typically taken to work or school, or picnics to be eaten as part of a packed lunch. They generally contain a combination of salad vegetables, meat, cheese, and a variety of sauces or savoury spreads. The bread can be used as it is, or it can be coated with any condiments to enhance flavour and texture. They are widely sold in restaurants and cafes.

## **2.0 OBJECTIVES**

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

- trace the history of sandwiches
- enumerate different types of sandwiches
- prepare different types of sandwiches
- formulate new sandwich recipes.

## **3.0 MAIN CONTENT**

### **3.1 History of Sandwiches**

The first recorded sandwich was made by the famous Rabbi, Hillel the Elder, who lived during the 1st century B.C. A poor man, but a great scholar, he began the Passover custom of sandwiching a mixture of chopped nuts, apples, spices, and wine between two matzohs to eat with bitter herbs. This sandwich is the foundation of the Seder and is named after him. But matzoh, being unleavened bread, is not absorptive of sauces and juices as today's sandwich has become.

Before the Renaissance and the invention of the fork, any object that moved between plate and mouth, lifting cooked food and its sauce without spills was a necessary utensil. From the Dark Ages to the Renaissance, bread was an integral part of a table setting. Thick slices of bread, called trenchers, were set on wooden plates (also called trenchers) to soak up the sauces accompanying pieces of meat. The word comes from the French verb *trenchier* or *trancher*, which means to cut. Each trencher was eaten at each meal, and a new one made for the subsequent meal by simply cutting off a new slice from the loaf. If the meal was formal and elaborate, trenchers might be changed more than once during the meal. The advent of the fork, however, dictated that using fingers to lift food was bad manners. The trencher became passé.

John Montagu (1718-1792), the Fourth Earl of Sandwich, revived the concept of bread as utensil giving us the name we use today. Montagu was First Lord of the Admiralty and patron to Capt. James Cook who explored New Zealand, Australia, Hawaii, and Polynesia. Capt. Cook named the Hawaiian Islands after him, calling them the Sandwich Islands. Legend holds that Montagu was addicted to gambling, so addicted that he gambled for hours at a time at a restaurant, refusing to get up for meals. To believe this legend, we can only imagine that he was so intent on scooping up winnings that he could not listen to the growls in his stomach demanding food. Supposedly, he ordered his valet to bring him meat tucked between two pieces of bread. His fellow gamblers, no doubt looking for a lucky charm, began to order "the same as Sandwich!" The original sandwich would have been nothing more than a piece of salt beef between two slices of toasted bread. Whatever the truth of the legend, the name sandwich is inscribed for all time.

In her book, *English Bread and Yeast Cookery*, Elizabeth David tells us that while France and Italy remained true to the freeform bread, the British were quick to adapt to making a fine loaf of white bread in tins. This ensured uniformity and slices that were evenly cut. In addition, bread made in a tin is less crusty and offers more dough to absorb juices or spreads and hold ingredients together. The British loved their **sarnies**, the nickname given to sandwiches. Another slang word for sandwich, one that predates sarnie, is 'butty' as in jam butty, chip butty, ham butty etc., and that was a contraction of 'bread and butter'. That came from northern regions, possibly Yorkshire.

In 1840, the sandwich was introduced to America by Elizabeth Leslie (1787-1858). In her "Directions for Cookery", she offers a recipe for ham sandwiches that she deemed them worthy to be a main dish. In the 1900's, with the industrial revolution underway, bakeries began to sell pre-sliced bread. The American public jumped at the ease of making a sandwich. The sandwich as institution was born. Human beings, being adventurous, have developed the sandwich into both a quick and easy meal, and an art form. How long would it take for us to reconfigure the possibilities: we toast the bread or serve it plain; we pile high the sandwich with the maximum ingredients, or keep it simple with one or two.

## **3.2 Types of Sandwiches**

### **3.2.1 Beef on Weck Sandwich or Beef on Wick**

This is a unique staple of Buffalo, New York's bars and taverns. Few, if any, restaurants outside of the Buffalo area serve this sandwich or even know what it is. It is a roast beef sandwich on a salty kummelweck roll

which is a Kaiser roll, seeded with caraway and topped with an abundance of chunky salt. Kummelweck is simply shortened to “weck.” The sandwich is usually served with horseradish, kosher dill pickle slices, and French Fries on the side.

### **3.2.2 Bierock**

This is a specialty from Kansas with roots in the German and Russian. A yeasted pocket bread would be stuffed with beef, sauerkraut, onion and seasonings. It is similar to the Runza (scroll down).

### **3.2.3 Club Sandwich**

This is a sandwich with cooked chicken breast and bacon, lettuce and tomato. They are layered between two, possibly three slices of toasted bread with mayonnaise. This was quite fashionable in New York, and was a favourite with the Duke and Duchess of Windsor.

### **3.2.4 Cuban Sandwich**

Toasted Cuban sandwiches are Miami's favourite snack. The best places to buy them are from street corner-snack bars called loncherias. The sandwiches have a submarine-style layering of ham, roast pork, cheese, and pickle between a sliced length of Cuban bread. Cuban sandwich shops make these sandwiches using a sandwich iron similar to a Panini press.

### **3.2.5 Dagwood Sandwich**

This sandwich is named after the popular comic strip character of the 1930's, Dagwood Bumstead. Rather inept in any domestic duty, Dagwood was only able to pile leftovers between bread.

### **3.2.6 Falafel**

Falafel is the national street food of Israel and the whole Middle East. It is served in a pita, dressed with tahini sauce and smothered in a variety of add-ons. One may find chopped salad, pickled vegetables, even the fiery Yemenite condiment called zhug. Every Falafel stand has its own style. Some people love it topped with sauerkraut.

### **3.2.7 Finger Sandwiches for Tea**

The origin of the mid-afternoon tea is credited to Anna, the Duchess of Bedford, who conquered the weak feeling at four in the afternoon by having tea and breadstuffs. In time she invited friends and the tea party

was born. 1840 is the given date for this historic moment, and by 1880, the country was following the Duchess' lead, and tea shops were in vogue.

There are a few caveats for tea sandwiches or finger sandwiches: choose thinly sliced, sandwich bread of a tight grain; use a thin layer of butter to seal the bread from the moist ingredients; cut away all crusts.

### **3.2.8 French Dip**

Invented in Los Angeles by Philippe Mathieu, the owner of a shop called "Philippe the Original," the "French Dipped Sandwich" is the specialty of the house and is made with either roast beef, roast pork, leg of lamb, turkey or ham served on a light French roll dipped into au jus sauce, made from the pan drippings of roast beef.

### **3.2.9 Gyro**

The gyro is a Greek specialty. A proper Greek gyro is made with meat cut off a big cylinder of well-seasoned lamb or lamb and beef. (This meat is on a slowly rotating vertical spit the name gyro, implying the circular spinning motion of a gyroscope). Gyro is probably the most often mispronounced food name.

Even its fans usually do not get it pronounced correctly - whether it is mispronounced as "jee-rohs," "jai-rohs," "gee-rohs," The correct Greek pronunciation is "yee-rohs."

### **3.2.10 Hoagie**

The hoagie comes from Philadelphia and has developed several legends as to its origins, but the word 'hoagie' seems to have derived from 'hoggie' (an apt term for anyone downing this supersize sandwich). The term "Hoagie" refers to the men who worked on Hog Island. Hog Island was famous for shipbuilding. The shipbuilders liked their sandwiches big and local shopkeepers accommodated by creating a Sandwich which would satisfy their appetites. A correctly made Philadelphia Hoagie has some of the soft interior of the bread removed, to accommodate more ingredients.

It is related to the Poor Boy, the Hero and the Submarine. In other parts of the country it is called a Zep or Zeppelin. They are all made on full loaves of crusty French bread filled with various cold cuts and many different trimmings.



### **3.2.11 Horseshoe**

This is a specialty in Springfield, Illinois, and is a thick sandwich with two or three slices of bread encasing fried ham steak or 2 large hamburgers. It is served with thick French fries, and a special sauce. A 'Pony Shoe' uses one slice of very thick bread.

### **3.2.12 Hot Brown Sandwich**

The Hot Brown is an open-faced sandwich made from turkey, bacon, pimientos, and Mornay sauce. The sandwich is placed under the broiler to melt the cheese. Chef Fred K. Schmidt at the Brown Hotel in Louisville, Kentucky, created The Hot Brown sandwich in 1926. In the 1920s, the Brown Hotel drew over 1,200 guests each evening for its dinner dance. The band played steadily, the dancers grew hungry. At midnight, when the band took its break, the crowd headed for the restaurant to eat. Chef Schmidt delighted his guests (and prepared them for more dancing) by creating the Hot Brown. Today the Hot Brown sandwich is still a Louisville favourite and still the signature dish of the Camberley Brown Hotel.

### **3.2.13 The Hot Dog**

Though the hot dog is a classic invention of its own, it must be included here as it conforms to Webster's definition. Controversy surrounds the origin of the hot dog. Who really created the first hot dog? Although the city of Frankfurt, Germany lays claim to being the origin of the first frankfurter in 1852, some argue that Johann Georghehner, a butcher from Coburg, Germany created the first frankfurter as early as the 1600s.

Several legends surround the American hot dog. Some claim that the first stall selling hot dogs was in Coney Island in 1916, others shout, no, the St. Louis World Fair of 1904 was the starting point, while yet others claim it was first sold by a food concessionaire named Harry Stevens at New York's Polo Grounds, the home of the New York Giants, in the early 1900s. Whatever the truth of its origins, the hot dog is forever allied with the American baseball game.

The name appears to be credited to the cartoonist TA (Tad) Dorga who drew the oddly presented sausage as dachshunds in buns, and called them hot dogs because he couldn't spell frankfurter. Another variant says that around 1894-95, students at Yale University began to refer to the wagons selling hot sausages in buns as dog wagons. One such wagon was nicknamed "The Kennel Club." It was only a short step from this campus use of dog to hot dog, and this fateful move was made in a

story in the issue of the Yale Record for 19 October 1895, which ended, "They contentedly munched hot dogs during the whole service." Fittingly, July is National Hot Dog Month. Statistics say that the average American eats 60 hot dogs a year.

### **3.2.14 A Hot Dog called a 'Coney Island'-**

This is a specialty from Cincinnati and is often called a 'Coney.' The history is somewhat vague, but a Macedonian immigrant, Tom Athanas Kiradjieff gets the credit for this, also. En route to Cincinnati, he passed through the Coney Island area of New York. Later when he decided to cover one of his hot dogs on a bun with mustard, Cincinnati Chilli, and onions, and top it all off with a lot of finely grated Cheddar Cheese, he named it a 'Coney Island' and the name sticks to this day. 'Cones', as the locals call them, are now made with a hot dog that is a bit smaller and shorter than a regular wiener, to allow more room for the chilli and other goodies that go thereon.

### **3.2.15 Monte Cristo**

The Monte Cristo Sandwich has creative variations from one restaurant to another. The basic sandwich is made of two slices of white bread with ham, turkey, or chicken, and a slice of cheese. It is then dipped in beaten egg and fried in butter. A classic Monte Cristo sandwich should come with a side of jelly to dip it in. The original grilled cheese sandwich, this consisted of Gruyere cheese and lean ham between two slices of crustless bread, fried in clarified butter. It was originally served in 1910 in a Paris cafe. This sandwich is still a popular snack or casual meal throughout France and Switzerland in most bars and cafes.

### **3.2.16 Muffuletta**

The muffuletta is a specialty of the French Quarter of New Orleans. It could be called olive salad on bread. Despite the name 'French' this is a gift of the Italian immigrants who settled in New Orleans. To be authentic, it should be served on a round 10-inch roll, at room temperature. It is frequently called simply a 'Muff.'

### **3.2.16 Panini, Crostini & Bruschetta**

Italians have always eaten bread with everything. In the history of Italian food the concept of a sandwich was, most likely, peasant fare. Having gifted the world with 'open-face' inventions, such as pizza or foccaccia, the flavoured and dressed toast known as bruschetta, we would demand nothing more of the Italians. But Panini are there, crunchy breads holding warm meats and cheeses. There lots of Panini

sandwich recipes that use ingredients that are totally healthy. Though the Italians may, indeed, prefer Panini plain, they are quite popular grilled in a Panini press. Bruschetta is really garlic bread, though it has become a form of open-face sandwich. It is rubbed with fruity extra virgin olive oil then grilled. Garlic is rubbed lightly over the hot bread after grilling, and then drizzled with olive oil. Today we dress it and pile it high with ingredients of our own choice. Crostini are small, thin slices of toasted French or Italian bread topped with a few simple ingredients and served as an appetizer.

### **3.2.17 Philadelphia Cream Cheese Steak**

The Philadelphia Cheese Steak is a long-roll sandwich filled with chopped pieces of fried chip steak smothered in melted cheese. Its fame easily surpasses the Cubano and 'Beef on Wick' sandwiches you've included. I've seen it on menus in the Caribbean, Italy, and Scotland!

This sandwich has well documented legends. The story goes that the original cheese steak was made by a hot dog vendor (Pat Olivieri) who got tired of having hot dogs for lunch. One of his regulars smelled the steak and onions and asked if he could have some, too. That's the legend. Today, the descendants of Pat operate Pat's in the heart of South Philadelphia. The original Philly steak didn't have cheese. That came later. Pat's serves what they call the "original", made with chip steak and cheese whiz on a crusty Italian roll. If you want onions, you have to order "wit" (as in "Cheese steak wit"). Across the street is the rival Geno's. Geno's makes their Cheese steak with American cheese, unless you ask for provolone. They do NOT use cheese whiz. If you want onions, you ask for a "Cheese steak with onions". If you ask for a "Cheese steak wit", they'll politely correct your pronunciation of the word "with". At both, you can ask for it "scooped", which means they'll pull out virtually the entire soft interior of the roll.

### **3.2.18 Pita**

Pita, the ingenious pocket bread, is of Middle Eastern origin, and is today popular in Israel, Greece, Lebanon, and many Arab countries. This ingenious bread is a pouch as well as absorptive dough. It both carries food and soaks up juices and flavourings. It has been added to diets worldwide as a lunchtime staple.

### **3.2.19 Poor Boy (or Po' Boy)**

The Po' Boy or Poor Boy emanates from New Orleans. The fillings vary, ranging from fried oysters, shrimp, fish, soft-shelled crabs, crawfish, roast beef and gravy, roast pork, meatballs, smoked sausage and more. They are always made with French bread. It is related to the Hoagie, the

Hero and the Submarine. They are all made on full loaves of crusty French bread filled with various cold cuts and many different trimmings.

### **3.2.20 Reuben Sandwich**

The Reuben Sandwich is a grilled sandwich made with corned beef, Swiss cheese, sauerkraut, and Russian dressing on rye bread. There are two claims to the Reuben. The Midwestern claim states that it was created by Reuben Kolakofsky (1874-1960), a wholesale grocer in Omaha, Nebraska and co-owner of Central Market in Omaha sometime between 1920 and 1935. Like the Earl of Sandwich at his gaming tables, Kolakofsky belonged to a weekly poker group for whom he fixed this sandwich. One of the players, Charles Schimmel, was owner of the Blackstone Hotel in Omaha, and he put the Reuben on his menu.

But Reuben's was a landmark Manhattan delicatessen, first established around 1908. Arnold Reuben's daughter claims that a Reuben Special sandwich was created in 1914 for Annette Seelos, Charlie Chaplin's leading lady.

### **3.2.21 Runza**

This is a specialty from Nebraska, similar to the bierock mentioned above. It also has its roots in the German and Russian, and is a yeasted pocket bread stuffed with beef, sauerkraut, onion and seasonings.

### **3.2.22 Schnitters and Sangers,**

In parts of South Australia, a sandwich is called a schnitter, while in other places it is called a Sanger. Sangers can be sandwiches in one state and sausages in another. But hopefully, they will be served with Fritz. Fritz and Tomato Sauce is a favourite of all South Australian school children for a lunchbox sandwich.

### **3.2.23 Sharwarma**

Similar to a gyro, the traditional Middle Eastern Sharwarma sandwich is made with marinated pieces of meat which have been pressed, stacked onto a rotisserie and cooked slowly. The cooked meat is then shaved off and made into a sandwich with yogurt, tomatoes and lettuce.

### **3.2.24 Sloppy Joe**

H.K. Heinz in Pittsburgh says their research at the Carnegie Library suggests that the Sloppy Joe began in a Sioux City, Iowa, cafe as a "loose meat sandwich" in 1930, the creation of a cook named Joe..."

Since ground meat, stretched as best as possible, was a staple throughout the depression, we will credit the creation of the sloppy joe to the general spirit of all people who use their imagination to make food taste good without cost.

### 3.2.25 Submarine

The sub is a king-sized sandwich on an Italian loaf of bread approximately 12 inches long and 3 inches wide. It is filled with ham, salami, cheese, lettuce, tomatoes, onions, and usually flavoured with garlic powder and oregano. It is thought that the original concept of these sandwiches came from the Italians who immigrated to New York in the late 1800s and brought with them their favourite Italian sandwich recipes. It is related to the Poor Boy, the Hero and the Hoagie. They are all made on full loaves of crusty French bread filled with various cold cuts and many different trimmings.

### 3.3 Sandwich Recipes

- [arugula grilled cheese sandwich](#)
- [avocado sandwich](#)
- [avocado, pecorino and watercress baguettes](#)
- [brie and peach sandwich](#)
- [grilled bacon, cheddar & hot pepper jelly](#)
- [beef - steak sandwich - a spicy one](#)
- [smoky barbecued beef sandwiches](#) (a 'fast' slow cooker recipe from Pillsbury)
- [bruschetta](#)
- [bruschetta with peppers and basil](#)
- [bruschetta - asparagus bruschetta](#)
- [bruschetta with pomodoro](#)
- [bruschetta with sun-dried tomato](#)
- [chicken - hot chicken salad open faced sandwich on a kaiser roll](#)
- [chicken - grilled chicken sandwich with honey-mustard dressing](#)
- [Chicken Panini](#)
- [berghoff's club sandwich](#)
- [cornbread - turkey cornbread sandwich](#)
- [crostini with red peppers](#)
- [crostini with porcini](#)
- [crostini with smoked salmon and capers](#)
- [crostini with chicken livers](#)
- [stacked chopped cobb salad with chipotle vinaigrette](#) - David Burke's fantastic spin - salad that is also a sandwich
- [coney island - how to make](#)
- [falafel](#)
- [fried fish po' boy](#) (for catfish, perch or snapper fillets)

- grilled Reuben sandwich
- grilled cheese - hog island grilled cheese
- grilled cheese - Camembert and Comté with mushrooms
- grilled cheese - alpine grilled cheese
- gyro
- Italian sausage and provolone sandwich
- lamb samm - created by Peter Gordon - wow!
- lobster-mango rolls with soy -ginger vinaigrette from David Burke
- Lobster Club Sandwich - from Rick Tramonto
- maine lobster roll
- middle eastern sandwich spread
- monte cristo sandwich I
- monte cristo sandwich II
- muffuletta bread - the basic bread
- onion muffuletta
- oyster - New Orleans oyster loaf
- panini - turkey & Jarlsberg cheese panini
- pita pocket sandwich
- Sharwama
- sloppy jose
- sloppy rachels - turkey based 'sloppy joe's'
- shrimp rolls
- grilled steak and stilton sandwich
- tofu mayonnaise spread
- tofu sandwich Italian Style
- turkey - salad in a sandwich
- turkey - roasted pepper and turkey sandwich
- turkey - open-face turkey, brie, gouda & sun-dried tomato sandwich - toaster oven recipe
- turkey monte cristo sandwich
- turkey breast sandwich with 'lone star' mayo
- turkey Reuben sandwich
- thai turkey roll-up
- baked turkey rolls
- turkey melts with apple-pepper relish
- waldorf turkey sandwich
- zucchini & ricotta sandwich

### **SELF-ASSESSMENT EXERCISE**

Formulate five different types of sandwiches and give them appropriate names

## 4.0 CONCLUSION

With so many types of recipes, sandwiches can be used to show one's versatility.

## 5.0 SUMMARY

A sandwich is a food item, typically consisting of two or more slices of bread with one or more fillings between them, or one slice of bread with a topping or toppings, commonly called an open sandwich. Sandwiches are a widely popular type of lunch food, typically taken to work or school, or picnics to be eaten as part of a lunch. There are so many types of sandwiches that one can choose from. Majority of them are easy to practice.

## 6.0 TUTOR-MARKED ASSIGNMENT

Find out:

1. The history of sandwiches in Nigeria
2. Make a list of the sandwiches peculiar to Nigeria

## 7.0 REFERENCES/FURTHER READING

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**MODULE 3**

- Unit 1 Desserts: pudding  
 Unit 2 Desserts: pastries

**UNIT 1 DESSERTS: PUDDING****CONTENTS**

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    - 3.2.2 Creamy puddings
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    - 3.2.5 The pudding bag
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      - 3.2.6.4 Cooking time
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  - 3.4 Carrot plum pudding
  - 3.5 Ice cream pudding
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    - 3.8.1 Vanilla custard
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    - 3.8.3 Dark chocolate sauce
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/ Further Reading



## 1.0 INTRODUCTION

In the previous units, we examined what sandwiches are, different sandwich recipes and how to prepare some of them. In this unit, we shall study what desserts are, different types of desserts and how to prepare puddings using locally available products.

In cultures around the world, dessert is a course that typically comes at the end of a meal, usually consisting of sweet food. The word comes from the French language as *dessert* and this from Old French *desservir*, "to clear the table" and "to serve." The etymology is linked to the medieval practice of a two part meal. During the first nobles (at a high) and servants (separate) would eat together in the same room. During the second - dessert, the noble family would retreat in separate private quarters for an intimate part of the meal without servants. The food consumed during dessert included but was not limited to sweets.

Common Western desserts include cakes, biscuits, gelatine dessert, pastries, ice cream, pies, Pudding, and candies. Fruit may also be eaten with or as a dessert. Variations of desserts can be found all around the world, such as in Russia, where breakfast foods such as bliny, oladi, and syrniki served with honey and jam are also popular as desserts. Desserts are sometimes eaten with a dessert spoon, intermediate in size between a teaspoon and a tablespoon, or a "fruit spoon".

## 2.0 OBJECTIVES

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

- identify desserts
- enumerate the different types of pudding
- make different kinds of pudding
- develop a pudding using local products.

## 3.0 MAIN CONTENT

### 3.1 History of desserts

The first desserts were crusty, made from raw honeycomb and dried dates. It was not until the Middle Ages, when sugar was manufactured, that people began to enjoy more sweet desserts, but even then sugar was so expensive that it was only for the wealthy on special occasions. Early origins of popular frozen desserts, such as ice cream, trace back to the Middle Ages when royalty would request fresh ice flavoured with honey or a fruit syrup

The word *dessert* is most commonly used for this course in U.S., Canada, Australia, New Zealand and Ireland, while sweet or (informal) afters are alternative terms that may also be used in the UK and some other Commonwealth countries, including India.

## 3.2 Puddings

Pudding most often refers to a dessert, but it can also be a savoury dish. In the United States, *pudding* characteristically denotes a sweet milk-based dessert similar in consistency to egg-based custards, though it may also refer to other types such as bread and rice pudding.

In the United Kingdom and some Commonwealth countries *pudding* refers to rich, fairly homogeneous starch- or dairy-based desserts such as rice pudding and Christmas pudding, or, informally, any sweet dish after the main course. The word pudding in this context is also used as a synonym for the dessert course. The word is also used for savoury dishes such as Yorkshire pudding, black pudding, suet pudding and steak and kidney pudding.

The word *pudding* is believed to come from the French *boudin*, originally from the Latin *botellus*, meaning "small sausage," referring to encased meats used in Medieval European puddings.

### 3.2.1 Baked, steamed and boiled puddings

The original pudding was formed by mixing various ingredients with a grain product or other binder such as butter, flour, cereal, eggs, suet, resulting in a solid mass. These puddings are baked, steamed or boiled. Depending on its ingredients such a pudding may be served as a part of the main course or as a dessert.

Boiled pudding was a common main course aboard ships in the Royal Navy in the 18th and 19th centuries. Pudding was used as the primary dish in which daily rations of flour and suet were prepared.

#### 3.2.1.1 Suet pudding

Steamed pies consisting of a filling completely enclosed by suet pastry are also known as puddings. These may be sweet or savoury and include such dishes as steak and kidney pudding.

### 3.2.2 Creamy puddings

#### 3.2.2.1 Instant dessert pudding

The second and newer type of pudding consists of sugar, milk, and a thickening agent such as cornstarch, gelatine, eggs, rice or tapioca to create a sweet, creamy dessert. These puddings are made either by simmering on top of the stove in a saucepan or double boiler or by baking in an oven, often in a bain-marie. These puddings are easily scorched on the stovetop, which is why a double boiler is often used; microwave ovens are also now often used to avoid this problem and to reduce stirring.

Creamy puddings are typically served chilled, but a few, such as zabaglione and rice pudding, may be served warm. Instant puddings do not require boiling and can therefore be prepared much quicker. Kraft Foods, under its gelatine dessert brand Jell-O, is the primary producer of pudding mixes and prepared puddings in North America.

This pudding terminology is common in North America and some European countries such as the Netherlands, whilst in Britain egg-thickened puddings are considered custards and starch-thickened puddings called blancmange.

### 3.2.3 The Christmas pudding

#### Ingredients(Makes 2 puddings)

- 3 cups flour (unbleached)
- 1/2 lb suet (see below)
- 1 cup bread crumbs
- 1 cup brown sugar
- 3/4 lb sultanas
- 3/4 lb raisins
- 1/4 lb currants
- 2 tablespoons rum or brandy
- 2 tablespoons orange juice
- 2 tablespoons lemon juice
- 1 tablespoon grated orange rind
- 1 tablespoon grated lemon rind
- 1 tablespoon golden (cane) syrup
- 5 eggs
- 1/2 teaspoon baking soda
- 1 teaspoon mixed spice
- 1 tablespoon milk

## Procedure

Combine the suet, flour, sugar, breadcrumbs, fruit, spices, juice and brandy. Cover, and allow stay overnight. Add the syrup and slightly beaten eggs. Dissolve the baking soda in the milk, and add to mixture. Stir until everything's combined. It's a good time to get help at this stage by telling the family that if they stir it three times and make a wish, the wish would come true. Place in two 1 1/2 quart pudding basins, cover with calico, and boil for 4 hours.

### 3.2.4 Boiling the pudding

Prepare the mixture according to recipe and place it on the calico. Bring the corners together, leaving room on the top for the mixture to rise. Tie with string. Tie another string around the top, long enough to tie it to both handles of the pan. The pudding must not touch the pan. Now, in a container large enough to hold both pudding and displaced water add boiling water. Keep the pan topped up with boiling water. The water must be already boiling or the pudding will get soggy.

Boiling water helps keep the pudding dried. The pudding will have a better crust than one steamed in a pudding bowl. A good crust means that the brandy won't soak in when you light it. So it will burn for longer. Age the pudding by hanging it in a cool dry and dark place (up to 4 months) if the weather is humid, you will need to refrigerate.

Preparation time: 1 hour + overnight standing + overnight hanging.

Total cooking time: 1.15 hour

Serves 10.

### Ingredients (Makes 10 small puddings)

- 185g plain flour
- 60g self-rising flour
- 1 teaspoon baking soda
- 2 teaspoons ground cinnamon
- 1 teaspoons ground nutmeg
- 1 teaspoon lemon rind
- 2 teaspoons mixed spice
- 1 teaspoon lemon rind
- 80ml lemon juice
- 80ml orange juice
- 125ml of brandy
- 1 tablespoon treacle
- 185g dark brown sugar
- 320g chopped raisins

- 200g currants
- 160g sultanas
- 110g chopped pitted dates
- 75g chopped glace ginger
- 100g finely chopped dried pears
- 100g chopped dried apricots
- 175g dark chocolate bits
- 75g chopped pistachios
- 80g bread crumbs (dry, not toasted)
- 250g butter
- 4 eggs, lightly beaten.

### **Procedure**

Mix the fruits chocolate and pistachios with brandy. Cover with a plastic wrap and leave overnight.

Cut piece of calico into ten 30cm squares. Put the calico in boiling water.

Add the butter in a large bowl and add in turn the sugar, treacle, rinds, juices and the eggs. Combine the soda, flours and spices and add them in the bowl. Mix in the fruit and bread crumbs.

Two great advantages with puddings are that they can be served cold and that many of them can be prepared well in advance.

Boiled puddings need a bit more skills and patience to prepare.

When making a boiled pudding, be sure that the water is on a constant low boil. If the water goes off the boil, water gets into the pudding and it goes soggy.

### **3.2.5 The pudding bag**

Get a large piece of calico (you can use a cotton or linen cloth), and boil it for a 20 minutes. Wring out well. Rub flour generously into the inner surface using about 60g. Leave a border around the edge.

### **Boiling the pudding**

Prepare the mixture according to the recipe and place it on the calico. Bring the corners together, leaving room on the top for the mixture to rise. Tie with string. Tie another string around the top, long enough to

tie it to both handles of the pan. The pudding must not touch the pan. Now, in a container large enough to hold both pudding and displaced water add **BOILING** water. Keep the pan topped up with boiling water. The water must be already boiling, or the pudding will get soggy. Yes, boiling water helps keep the puddings dried.

The pudding will have a better crust than one steamed in a pudding bowl. A good crust means that the brandy won't soak in when you light it, so it'll burn for longer.

Age the pudding by hanging it in a cool, dry and dark place (up to 4 months). If the weather is humid, you will need to refrigerate.

### **Reheating**

When you're going to eat it, steam it for a further two hours and hang it 15 minutes to dry a little bit. Serve by turning it out of the bowl, and pouring flaming brandy over it (see below). Serve with brandy butter (hard brandy sauce).

Serve by turning it out of the bowl, and pouring flaming brandy over it. Serve with brandy butter

## **3.2.6 Steamed pudding preparation**

### **3.2.6.1 Steamed Puddings**

The good thing with puddings is that you can make them three months in advance. Wrap them in a plastic wrap and foil and keep them in a cool, dark place or in the fridge.

Steamed puddings are made by pouring the mixed ingredients into a tightly covered mold. It then goes into a pot where the water only comes halfway up the side of the mold. The pudding is then steamed with the heat on low until done.

### **3.2.6.2 The mold**

The mold will contain the mixture. It's important that it has the correct size so that the pudding doesn't expand out of the mold. Steamed pudding can be cooked in a variety of containers: they can be made of aluminium, steel, glass or ceramic. The pudding will cook slowly in a ceramic mold and faster in a metallic one. Check it 30 minutes before the end of the cooking time.

To prevent the pudding to stick to the basin, apply a thin lay of melted butter and put a circle of baking paper on the bottom.

Some special steamed-pudding molds have decorative sides and bottom. Many molds have a central tube that helps cooking the pudding more evenly.

### **3.2.6.3 Steaming the pudding**

Fill a large pot with water so that it comes halfway up the mold when placed inside. Remove the mold and put the pot of water to boil. Prepare the mixture according to the recipe and spoon it into the mold. To cover the pudding, prepare a sheet of foil covered with a piece of baking paper and brush it well with melted butter. Fold a pleat across the foil to allow it to expand. Place it foil side up over the mold and smooth it down the side of the mold. Tie a string around the mold. This will prevent any moisture to go in the pudding and make it soggy.

Make a handle with another string so that you can lower it carefully in the boiling water.

Cover the pot and cook according to the recipe instructions. Add more boiling water from time to time to maintain the water level.

### **3.2.6.4 Cooking time**

Steamed pudding can take up to three hours on the stovetop. When the cooking time is up, remove the mold carefully using the string handle. Remove the foil and pick a knife in the centre. It should come out clean (it may be sticky if you touched a piece of fruit).

If the pudding is not cooked, replace the foil top and cook it until it's done.

Wait five minutes and then turn it out of the mold gently. Remove the baking paper.

### **Reheat**

Fill a large pot with boiling water, place it on the heat and when it comes back to the boil, put a steamer on the top of the pot and turn it down to a gentle simmer. Put the Christmas pudding in the steamer, cover and leave to steam away. Check from time to time and top up the water if needed. Two hours later, remove the pudding from the steamer, take off paper and foil, slide a knife round the side and turn out on a warmed plate.



### 3.3 Fig pudding

Preparation time: 1 hour  
 Total cooking time: 3.30 hours  
 Serves 8.

#### Ingredients

- 500g chopped dried figs
- 440ml of milk
- 370g mixed dried fruits
- 250 bread crumbs
- 250 self-rising flour
- 140g brown sugar
- 2 eggs
- 150g of butter

#### Procedure

Prepare a 2 litre pudding mold (follow instructions on 'Preparing' page).

Place the milk and figs in a small pot. Bring to boil, cover and cook for 10 minutes.

Add and mix the fig mixture, the eggs and the melted butter. Cover the mold.

Place the mold into the boiling water, cover tightly and cook for 3.30 hours.

Add water every hour if necessary.  
 Serve with a hard sauce, custard or cream

### 3.4 Carrot plum pudding

Preparation time: 30 minutes + overnight hanging.  
 Total cooking time: 6 hours (Precision: no need to measure).  
 Serves 8.

#### Ingredients

- 185g plain flour
- 1-1/2 teaspoons baking soda
- 1/2 teaspoon ground cloves

- 1-1/2 teaspoons ground nutmeg
- 1-1/2 teaspoons cinnamon
- 1 teaspoon ground cardamom
- 375g sugar
- 270g chopped raisins
- 125g finely chopped walnuts (black walnuts are wonderful if you can get them)
- 60g butter
- 80g bread crumbs (dry, not toasted)
- 390g raw, ground carrots (use medium blade)
- 85g raw, grated, or ground potatoes
- 3 eggs, lightly beaten.

### **Procedure**

Mix the flour, baking soda, sugar, spices, raisins and walnuts in a large bowl.

Make a well in the flour and mix the eggs and butter. Then, in turn, add the orange rind, the bread crumbs, carrot, and potato making sure that you mix well after adding each ingredient. This matters, so do it!

Prepare an 80 cm square dry clean piece of calico or old tea towel. Simmer for 6 hours. Can be served with ice cream

### **3.5 Ice cream puddings**

Preparation time: 15 minutes + overnight refrigeration  
Serves 8-10.

#### **Ingredients**

- 500g finely chopped dried fruits like toasted almonds, raisins, sultanas, currants.
- 45g grated orange rind
- 30ml cocoa
- 120ml rum or brandy
- 10ml gelatine
- 1 teaspoon mixed spices
- 1 teaspoon cinnamon
- 15ml boiling water
- 1 litre good quality vanilla ice cream
- 1 litre chocolate ice cream

## Procedure

Combine fruit, orange rind, cocoa, spice and rum in a large saucepan. Bring almost to a boil while stirring occasionally.

Cool while stirring occasionally. Mix gelatine and 15ml of boiling water; simmer in a small pan for a few seconds, until evenly melted. Blend into fruit, chill.

Chill a 2 litre pudding mold in the freezer overnight. Soften the vanilla ice cream and quickly press it around the inside of the chilled mold so that it covers bottom and sides. Return the mold in the freezer and chill overnight. Check it a couple of times and spread the ice cream evenly to the top. The next day, fold the fruit into the softened chocolate ice cream, blending evenly with the spices. Spoon it into the centre of the pudding mold. Smooth the top with the back of the spoon. Freeze overnight or longer.

To serve, turn the pudding out on a chilled serving plate. Cut into wedges and serve with cinnamon-flavoured whipped cream.

### 3.6 Summer pudding

This classic English dessert consists of fruit topped with slices of bread. It's then covered with a plate and weighted overnight in the refrigerator. The cold dessert is then unmolded and served with whipped cream.

Preparation time: 20 minutes + overnight refrigeration  
Total cooking time: 5 minutes Serves 8.

#### Ingredients

- 1.5 litre bramble fruit: raspberries, blackberries, huckleberries, ollalie berries, blackcurrants and redcurrants. No strawberries.
- 500g good quality, whole wheat bread.
- Raw sugar (not brown sugar)
- Heavy cream

#### Procedure

Put all the berries in a large pan with 125ml of water and heat gently for five minutes. Add the sugar and leave it to cool. Drain a little of juice from the fruit mixture.

Use a two-litre pudding mold.

Tear into small fingers of whole-wheat bread, crust and all to cover the bottom and sides of the mold.

Dip one side of each piece of bread in the juice before fitting it.

Fill the centre of the mold with the fruit. Remaining fruit that doesn't fit can be served with the pudding.

Cover with small pieces of bread.

Refrigerate overnight.

Turn out the pudding and serve with any leftover fruit mixture. This is delicious with cream heavy unsweetened cream

### **3.7 Puddings from around the world**

Although English puddings such as the plum pudding are popular Christmas desserts, there are quite a lot of different types of puddings which incorporate regional or cultural variations.

Indian sweet, rich, creamy puddings may be chilled or hot cream, rice, tapioca, milk, vermicelli and carrot bases are flavoured with ghee, nuts, rose petals, kewra essence, golden raisins and green cardamoms. Halwa pudding contains grated carrots cooked in milk until tender, with ghee, cashews, golden raisins, sweetened condensed milk, cardamon and nutmeg. Milk-based payasams contain semolina, green split peas or vermicelli, flavoured with spices and nuts and thickened with tapioca flour or almond paste.

Mediterranean cooks make sweet, rich rice puddings using whole or ground rice flavoured with cinnamon stick, lemon peel, orange blossom, honey, pistachio, almonds or hazelnuts. Traditional examples include: Turkish fried semolina pudding, a pale brown, rich, soft pudding with pine nuts and vanilla; and Tunisian couscous pudding made from semolina, nuts, dates, rose water, seasonal fruits, pomegranate seeds and black raisins.

Caribbean puddings include: carrot with raisins, allspice and dark rum served warm with hot rum sauce; banana and breadfruit; chipolata made with cream, vanilla and candied fruit topped with maraschino cherries; and Christmas steamed pudding served with brandy butter or brandy sauce.

In Southeast Asia, puddings include: bubur pulot hitam, a sweet, chewy, sticky, black rice pudding from Malaysia; Cambodia's corn pudding; Indonesia's steamed green-coloured coconut and egg pudding; Burma's creamy sago pudding; and Philippines' sweet fruit and yam pudding. Latin American flan, a caramel pudding, varies regionally, and may include cinnamon, grated lemon rind and coconut, blanched almonds, cocoa or dark rum. Sweet, caramelized milk pudding, or dulce de leche, is made with simmered milk, sugar and vanilla and/or condensed milk. Mexican capirotada, a hot, baked bread pudding has repeated layers of toasted, cubed white bread, butter and a layer of sliced apples, almonds, raisins and coarsely chopped cheese, topped with piloncillo syrup (brown sugar) and spices.

Return the mold in the freezer and chill overnight. Check it a couple of times and spread the ice cream evenly to the top. The next day, fold the fruit into the softened chocolate ice cream, blending evenly with the spices. Spoon it into the centre of the pudding mold. Smooth the top with the back of the spoon. Freeze overnight or longer. To serve, turn the pudding out on a chilled serving plate. Cut into wedges and serve with cinnamon-flavoured whipped cream.

### **3.8 Pudding toppings**

#### **3.8.1 Vanilla custard**

Serves 6-8.

- 1 vanilla pod
- 275ml double cream
- 3 egg yolks
- 1 teaspoon corn flour
- 25g caster sugar

Split the vanilla pod lengthways and remove the seeds. Place the pod and the seeds in a small saucepan with the cream. Heat the cream just below simmering point.

In the meantime; whisk the egg yolks, sugar and corn flour in a bowl. Then remove the vanilla pod from the hot cream. Slowly pour the hot cream into the egg mixture, whisking continuously. Return to the saucepan and stir over low heat for five minutes or until the custard is thick and smooth. Do not boil.

Pour the custard into and freezer box, cover with Clingfilm to prevent a skin and leave to cool.

You can then freeze the custard in a freezer bag.

### 3.8.2 Brandy butter

Serves 6-8.

- 60g butter
- 3 tablespoons brandy
- 60g plain flour
- 150g double cream
- 425ml whole milk
- 50g caster sugar

Beat the softened butter, flour and milk in a saucepan with electric beaters over medium heat until smooth and creamy. Turn the heat down, add the sugar and let it cook uncovered for 10 minutes. Gradually add the rum and cream and put in the freezer.

### 3.8.3 Dark chocolate sauce

Place 150g chopped dark chocolate in a bowl. Boil 315ml of cream in a pan. Add two tablespoons of caster sugar, and then pour over the chocolate. Leave for three minutes then mix until smooth. Add a spoon of liqueur. Serve warm.

## SELF-ASSESSMENT EXERCISE

Make a list of the common desserts eaten in Nigeria

## 4.0 CONCLUSION

For the purpose of maintaining a healthy lifestyle, dessert should be eaten sparingly because they tend to contain plenty of starch and sugar

## SUMMARY

Dessert is a course that typically comes at the end of a meal, usually consisting of sweet food. The word comes from the French language as *dessert* and this from Old French *desservir*, "to clear the table" and "to serve."

Common Western desserts include cakes, biscuits, gelatin dessert, pastries, ice cream, pies, Pudding, and candies. Fruit may also be eaten with or as a dessert.

The word *pudding* is believed to come from the French *boudin*, originally from the Latin *botellus*, meaning "small sausage," referring to encased meats used in Medieval European puddings. Binder such as butter, flour, cereal, eggs, suet, resulting in a solid mass. These puddings are baked, steamed or boiled.

There are quite a number of puddings such as the Christmas pudding, carrot plum, etc.

## **5.0 TUTOR-MARKED ASSIGNMENT**

1. Try out at least three pudding recipes using the boiling, steaming and baking methods.
2. Compare and contrast the final products.
3. Develop a pudding recipe using local products

## **7.0 REFERENCES /FURTHER READING**

Mesnier, R. (2004). *Dessert University*. Simon & Schuster. ISBN 0-7432-2317-9.

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## UNIT 2 DESSERTS: PASTRY

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### 1.0 INTRODUCTION

In unit one, we studied what desserts are, different types of desserts and how to prepare puddings using locally available products. In this unit, we shall examine what pastries are and how to make different types.

Pastry is the name given to various kinds of baked products made from ingredients such as flour, sugar, milk, butter, shortening, baking powder, and/or eggs. Small cakes, tarts and other sweet baked products are called "pastries."

Pastry was originally made by the Egyptians. They made a flour and water paste to wrap around meat to soak up the juices as it cooked. Pastry was developed in the Middle East and it was brought to Europe by the Muslims in the 7th century. By medieval times local areas had their own puddings and pies. In the 17th century both flaky and puff pastries were used, and intricate patterns on the pies were a work of art.



Today the chief purpose of pastry is to complement the flavour of the fillings and to provide a casing.

## **2.0 OBJECTIVES**

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

- identify the ingredients for making pastries
- make different types of pastries.

## **3.0 MAIN CONTENT**

### **3.1 What is pastry?**

Pastry is differentiated from bread by having a higher fat content, which contributes to a flaky or crumbly texture. A good pastry is light and airy and fatty, but firm enough to support the weight of the filling. When making a short crust pastry, care must be taken to blend the fat and flour thoroughly before adding any liquid. This ensures that the flour granules are adequately coated with fat and less likely to develop gluten. On the other hand, over mixing results in long gluten strands that toughens the pastry. In other types of pastry, such as Danish pastry and croissants, the characteristic flaky texture is achieved by repeatedly rolling out dough similar to that for yeast bread, spreading it with butter, and folding it to produce many thin layers of folds.

Short crust, or short, pastry is the simplest and most common pastry. It is made with flour, fat, salt, and water. This is used mainly in tarts. It is also the pastry that is used most often in making a quiche. The process of making pastry includes mixing of the fat and flour, adding water, and rolling out the paste. The fat is mixed with the flour first, generally by rubbing with fingers or a pastry blender, which inhibits gluten formation and results in a soft, tender pastry. A related type is the sweetened sweet crust pastry.

Short pastry is a soft, tender pastry that is made from flour, fat, salt and water. It is made by mixing the fat and flour together, adding water and then rolling the paste. It is cooked at 180°C. Different types of short pastry are used for different foods. Short pastry is used to make meat and other savoury pies. Short sweet pastry with added sugar, and sometimes eggs, is used to make fruit pies, Christmas mince pies and other sweet recipes for desserts. Suet pastry is used as a delicious cover on stew.

### **3.2 History**

Pastries go back to the ancient Mediterranean with almost paper-thin, multi-layered baklava and filo. Northern Europe took on pastry-making after the Crusaders brought it back from the Mediterranean. French and Italian Renaissance chefs eventually perfected the Puff and Choux pastries, while 17th and 18th century chefs brought new recipes to the table. These new pastries included brioche, Napoleons, cream puffs, and air éclairs. French chef Antonin Carême reportedly was the first to incorporate art in pastry making.

### 3.3 Chemistry of a pastry

Different kinds of pastries are made by the nature of wheat flour and also due to certain types of fats. When wheat flour is kneaded into plain dough and made with water it develops strands of gluten, which are what make the bread tough and elastic. In a typical pastry, however, this toughness is unwanted so fat or oil is put in to slow down the development of gluten. It is common to use lard or suet here because they have a coarse, crystalline structure that is very effective. Using only unclarified butter does not always work well because of its water content; clarified butter is virtually water free. Short crust pastry using only butter may develop an inferior texture. If the fat is melted with hot water, or if liquid oil is used, the thin oily layer between the grains offers fewer obstacles to gluten formation and the resulting pastry is tougher.

European traditions of pastry-making are often traced back to the short crust era flaky dough that was in use throughout the Mediterranean in ancient times. These recipes were popularised in Western Europe by Crusaders returning home.

In the Mediterranean, the Romans, Greeks and Phoenicians all had filo-style pastries in their culinary traditions. There is also strong evidence that the ancient Egyptians produced pastry-like confections. It is very possible that Egyptians made and ate pastries. They had professional bakers that surely had the skills to do so, and they also had needed materials like flour, oil, and honey. In the plays of Aristophanes, in 5th century BC, there are mentions of sweetmeats including small pastries filled with fruit. The Roman cuisine used flour, oil and water to make pastries that were used to cover meats and fowls. They did this during baking to keep in the juices, but this was not meant to be eaten by people. A pastry that was meant to be eaten was a richer pastry that was made into small pastries and contained eggs or little birds. It was often served at banquets. Greeks and Roman both struggled in making a good pastry because they both used oil in the cooking process and oil causes the pastry to lose its stiffness.

In medieval cuisine of North Europe they were able to produce nice, stiff pastries because they cooked with shortening and butter. There were some incomplete lists of ingredients found in medieval cookbooks, but no full, detailed versions. There were stiff, empty pastries called coffins or 'huff paste', which were eaten by servants only and included an egg yolk glaze to help make them more enjoyable to consume. Medieval pastries also included small tarts to add richness to the snack. It was not until about the Mid 16th century that actual pastry recipes showed up.

These recipes were adopted and adapted over time in various European countries, resulting in the myriad pastry traditions known to the region, from Portuguese "pastéis de nata" in the west to Russian "pirozhky" in the east. The use of chocolate in pastry-making in the West, so commonplace today, arose only after Spanish and Portuguese traders brought chocolate to Europe from the New World starting in the 16th century. Many culinary historians consider French pastry chef Antonin Carême (1784–1833) to have been the first great master of pastry making in modern times.

Pastry-making also has a strong tradition in many parts of Asia. Chinese pastry is made from rice, or different types of flour, with fruit, sweet bean paste or sesame-based fillings. Beginning in the 19th century, the British brought western-style pastry to the far east, though it would be the French influenced Maxim in the 1950s that made western pastry popular in Chinese-speaking regions starting with Hong Kong. Still, the term "Western Cake" is used to differentiate between the automatically assumed Chinese pastry. Other Asian countries such as Korea have traditionally prepared pastry-confections such as tteok, hangwa, and yaksik with flour, rice, fruits, and regional specific ingredients to make unique type desserts. And Japan also has specialised pastry-confections better known as mochi and manju. Pastry-confection that originates in Asia are clearly distinct from those that originate in the West that are generally much sweeter.

For some, making pastry is deemed too time-consuming, and by others, too complicated and strenuous. However, this doesn't have to be the case. Only a few ingredients are needed to make all types of pastry and once the techniques and secrets to good pastry making have been learnt, you could be churning out tasty pies, quiches and tarts several days a week.

Pastry is basically dough, made from flour, fat, salt and water that is then rolled out and used as a base, cover or envelope for sweet or savoury fillings.

The most widely used pastry is shortcrust pastry, which is used in recipes such as cherry pie, pumpkin pie, quiche and banoffi fudge pie. Shortcrust pastry melts in the mouth, is rich in flavour and is delicious in sweet or savoury dishes.

As well as shortcrust pastry, there are also many other types of pastry, which are suited to different types of dishes and recipes.

### **3.4 Types of pastries**

#### **3.4.1 Flaky pastry**

Flaky pastry is a simple pastry that expands when cooked due to the number of layers. It bakes into a crisp, buttery pastry. The "puff" is obtained by beginning the baking process with a high temperature and lowering the temperature to finish.

#### **3.4.2 Puff pastry**

Puff pastry has many layers that cause it to expand or "puff" when baked. Pastries are made using flour, butter, salt, and water. Pastry rises up due to the combination and reaction of the four ingredients and also from the air that gets between the layers. Puff pastries come out of the oven light, flaky, and tender. Puff pastry is light, flaky and tender. It is made by mixing flour, salt, a little fat and water to form dough. The dough is then layered with fat, preferably butter, to form hundreds of layers of fat and dough by folding and rolling. When it is baked, water from the dough turns into steam and puffs up the pastry to produce lots of flaky layers. Flaky pastry is made in the same way but has less rolling and folding and is quicker to make. Puff pastry is used for pies and vol-au-vents and can be filled with meat or fruit and spices.

Puff pastry is a light, flaky and tender pastry made by mixing flour, water and salt into a dough and adding layers of fat. It is used to make pies, pasties, vol au vents, savouries and desserts.

There are many ways of making puff pastry. The aim is to produce a paste with many alternating layers of dough and fat which rise and form a layered pastry when baked. Specialist bakers and pastry cooks have their own way of making puff pastry. They use different proportions of butter and flour, and differ in the way they incorporate the butter and the number and type of folds they make to the pastry.

### 3.4.3 Choux pastry

Choux pastry is a very light pastry that is often filled with cream. The pastry is filled with various flavours of cream and is often topped with chocolate. Choux pastries can also be filled with ingredients such as cheese, tuna, or chicken to be used as appetisers.

This is a French speciality used for cream buns, chocolate eclairs and profiteroles. The feather-light pastry surrounds a large cavity which is filled with cream. The butter is boiled with a water/milk mix and then flour is added to it. This mixture is then beaten and eggs are added. The mixture is put in a forcing bag, and placed as rounds or lengths on a baking tray before being baked in a hot oven. When cool, the pastry is pierced to let out the steam.

The pastry is often cut and filled with cream.

It is delicious when filled with cream flavoured with essence – orange, coffee, caramel or chocolate. Chocolate can be used as icing.

### 3.4.4 Phyllo (filo) pastry

Phyllo pastries are usually paper-thin and greatly stretched. They involve several stretched out layers and are wrapped around a filling and brushed with butter. These pastries are very delicate and can break easily.

Leaved pastries are traditionally found in many parts of the world - Europe, the Mediterranean, the Middle East and China. All leaved pastries (apart from puff pastry) are made from a sheet of dough that is as thin as tissue paper – so thin you can read through it.

Traditionally, the dough is made by hand by gently rolling, stretching or pressing it into very thin sheets. Now we can buy it ready made.

Before baking, the dough is brushed with butter or oil. It is then used in different ways depending on the recipe. It can be cut into sheets and layered in a tin, cut to make individual rolls or rolled up as one large roll.

The pastry is filled with all sorts of delicious fillings – either sweet or savoury - for entrees, mains or desserts. These can include fruit, nuts and honey, meat or cheese and spinach. Popular recipes are traditional strudel from Austria, baklava from the Mediterranean, borek from the Middle East and spring rolls from China.

### 3.4.5 Other types of pastry are

- Puff pastry
- Rough puff pastry
- Choux pastry
- Filo pastry
- Flaky pastry
- Hot water crust pastry
- Suet crust pastry
- French flan pastry
- Rich flan pastry (pate brisée)
- Rich short pastry (pate sucrée)

Each pastry has a different method of preparation, may vary slightly in ingredients and quantities and has a completely different texture when baked. There's no doubt that some types of pastry are more difficult to make and will take much longer to prepare.

## 3.5 Pastry ingredients

### Flour

All types of pastry are made with flour, the main ingredient, which is almost always plain flour, giving the pastry a crisp and light result. With pastries that require the addition of yeast, then self-rising flour is likely to be used.

### Shortening

The other main ingredient in all types of pastry is shortening or fat. The fats that are used to make pastry are generally butter, margarine, lard, suet, vegetable fat or a combination. Many recipes call for half butter and half lard, but an all butter pastry will be much richer in flavour and taste.

### Liquid

Liquid is added to the flour and fat to bind the ingredients together and convert them into pliable dough. Usually water is the liquid agent although other ingredients such as milk, cream, eggs or buttermilk may be called for. Sweet dishes such as fruit tarts or flans will normally contain whole eggs or just egg yolks rather than or as well as water.

**Salt**

All pastry dough contains salt, usually just a pinch but sometimes up to one teaspoon. Salt is added to enhance the flavour of the other ingredients.

**Sugar**

Sugar is used to sweeten some of the pastry mixtures that are intended for the sweeter types of tart and flan.

**Flavourings**

Ingredients such as herbs, spices, nuts or cheese may be used to flavour shortcrust pastry for that extra something required to give a plain recipe a nice kick.

**3.6 Pastry glasing**

The tops of pies are usually glazed with certain ingredients to give a shiny and attractive finish. The glaze also aids to seal the surface of the pie covering and is applied using a pastry brush. To glaze pastry dough a number of ingredients may be used, including lightly beaten egg yolk for the shiniest finish, beaten egg white and sugar, milk or a beaten whole egg.

First, dough is made using a little dough fat and then more fat is added between the dough layers. The dough and fat are then laminated, which involves folding and rolling the dough and fat a few times to make many layers of dough and fat. The fat stays as separate layers and does not mix into the dough.

There are three different ways of adding the fat.

1. The quickest way is the Scotch or Blitz method. It is suitable for making pastry for pies, sausage rolls and pasties. Flour, salt, cold water and dough fat are mixed together in a mixing bowl. Walnut-sized lumps of fat are then added to the bowl and are mixed in a little, to ensure large lumps of fat are left whole in the dough. The fat is distributed throughout the dough in flat discs, rather than a continuous sheet as with the other methods. As a result this pastry does not always rise evenly and so is not suitable for products that must look exceptionally good.
2. In the English method the flour, salt, water and dough fat are mixed together. This dough is rolled into a long rectangular shape, three times as long as wide. Two-thirds of the dough is

covered by dabs of butter. The third without butter is folded into the middle first then the other end is folded on top.

3. The French method - The main feature of the French method is that a square layer of fat is wrapped in the basic dough. This dough is made by rubbing about 10% of the soft fat into the flour, then adding cold water and mixing well to make clear dough. After testing it is rolled into a square, making each side half the distance between opposite corners of the dough. The fat place of the dough in the diagram below and the corners folded into the dough so they meet and cover the join. The paste is then folded again.

Once the fat is placed on the dough during lamination, the layers are folded and rolled a number of times until you have the number of layers you want. This can range from 100 to about 700. If there are more than 700 layers the dough layers are too thin and break during baking, so the pastry does not rise evenly.

Dough is rolled into a rectangle three times as long as wide to a thickness of about 12 mm. When rolling the paste keep the unfolded edges closest to you and parallel to the rolling pin before you begin rolling. The dough is then folded as described below.

There are two different ways of doing this and any combination of the two ways can be used when making puff pastry:

- The half-turn method
- The book-fold method.

When there are enough layers the paste is rolled out to a final thickness of about 5 mm thick and left to rest so it will not shrink or become misshapen when baked. The paste is then used to cover tins or is cut into the shape needed. To line baking tins roll the paste carefully around a rolling pin and unroll it over the tin. Then trim off excess paste that is overhanging by cutting around the top of a tin with a knife. Finally, add fillings or toppings. Puff pastry is best baked at 220°C.

### **3.7 Height of pastry**

Bakers using the English or French method calculate the number of layers they want. About 130 layers often give the greatest height of pastry, but sometimes they want less height and more layers. Bakers may use different types of folds to get the number of layers they want. The number of dough layers is calculated using different formula for different folding methods. The three-fold method gives two layers of fat



after the first half turn. Each subsequent turn triples the total number of fat layers. However, there is always one more layer of dough than fat. The formula for the number of dough layers is  $2(3n-1)+ 1$  where  $n$  is the number of half-turns. The four-fold method quadruples the number of fat layers each time the dough is folded. Like the half-turn method there is one more layer of dough than fat after each 'half turn'. The number of dough layers is calculated as  $(4n) + 1$  where  $n$  is the number of book-folds. If the English method is used to add the fat then the number of dough layers is  $2(4n) + 1$ .

Unbaked puff pastry (paste) has many alternating layers of fat and dough to make it puff. As the pastry bakes water boils off as steam from the gluten in the dough layers and goes into the fat layers. As water turns into steam it expands, making large bubbles between the layers of dough. This inflates the pastry and it becomes about eight times higher.

### **3.8 Yeasted pastry**

Yeasted pastries are a cross between puff pastry and bread so a combination of techniques used for both bread and pastry making are involved in their production. To make high quality yeasted pastries it is important to understand the effects of ingredients on the quality of the final products. Information about the functions of ingredients can be found in the bread and puff pastry information sheets. First, dough is made with yeast in the same way as bread dough is prepared. This contains flour suitable for bread making, some sugar, dough fat, salt, yeast and cold liquid, which is usually water or milk. Some recipes include eggs, giving the baked pastry a beautiful golden colour. The flour needs to have fairly high protein content. When the ingredients are mixed into dough, the protein changes to gluten. The gluten is strong and elastic; producing layers that hold up the pastry after it is baked. After the dough has been kneaded it is covered and left in a cool place to relax. This helps prevent distortion and shrinking in the final product. After relaxing, the dough must cool for the lamination stage.

Yeasted pastries are light flaky pastries that are crisp on the outside, but soft and tender on the inside. The dough, which has yeast added, is layered with fat, so this pastry is a cross between bread and pastry.

Examples of yeasted pastries include croissants and Danish pastries. Croissants are made in a horseshoe shape, and are traditionally eaten warm filled with butter and jam for breakfast. Danish pastries are found in all sorts of shapes, such as swirls and figures of eight. They are

always sweet and can have a filling, such as custard, and icing on top, making a delicious snack or dessert.

Yeasted pastries are a delicious product that originated in Europe, where they are traditionally eaten in the morning freshly baked and still warm. They are a cross between bread and puff pastry and so they should be crisp on the outside, like puff pastry, and soft and tender inside, like bread, and should melt in your mouth, leaving no aftertaste. Two types of yeasted pastries are commonly eaten, Danish pastries and croissants.

### **3.8.1 Croissants**

Croissants are thought to have originated in Austria. In 1683 when the Turks were secretly digging tunnels under Vienna to make a surprise attack on the city they were heard by the bakers working early in the morning. The bakers, who raised the alarm and saving Vienna from being defeated by the Turks, then baked a special commemorative roll in the shape of the crescent on the Turkish flag. Marie Antoinette, a French princess, introduced the roll to France where it became known as the croissant, the French word for crescent.

Over the years the croissant developed into the product we know today. Because croissants are time-consuming and expensive to produce by hand, they were not widely eaten. Recently new technologies have been developed that allow less expensive, efficient, mass production of this delicious cereal product.

Croissants are made from a sweet yeasted paste (unbaked pastry) layered with fat. Nowadays they are eaten at any time of the day and can be filled with all sorts of delicious savoury or sweet fillings. They may also be pre-filled with delicious fillings such as chocolate, fruit or almond paste.

### **3.8.2 Danish pastries**

Little is known about the history of Danish pastries. They are popular throughout Europe and the USA. In different countries they have different names: the Danish call them Wienerbrod (Vienna bread, after the Austrian capital) and the Austrians call them Kopenhagener (Copenhagen, after the Danish capital). They were introduced to America by bakers from Denmark.

Like croissants, Danish pastries are made from yeast-leavened sweet dough's layered with butter or margarine. They are not needed for as long as croissants so they will have a softer mouth feel and will be

tenderer. They can have all sorts of fillings and/or toppings, such as nuts and fruits.

### **Danish pastry make-up**

To make Danish pastries the paste is rolled out to about 4mm thick, cut and folded into various shapes - from 'snails' and 'elephant ears' to 'swirls' and 'knots'. All sorts of fillings can be added; popular ones include almond paste, fruit, nuts or custard. Like croissants, danish pastries are then put on a baking tray and left to rise until about double in size. Toppings such as chopped nuts may be added and a beaten egg may be brushed on the surface just before baking. Danish pastries rise up and form flaky layers like croissants. After baking, the pastries are usually glazed to make them look attractive and to add flavour. Usually the glaze is diluted apricot jam, which is brushed on while the pastry is still hot. When cool the pastries may also be iced. Lemon icing is a delicious and popular icing.

### **3.9 The lamination process in yeasted pastries**

Lamination is a way of adding the 'roll-in' fat to the dough to produce a paste (unbaked pastry). This paste is made up of many very thin layers of dough and fat, which are made by rolling and re-rolling the dough in a similar way to making puff paste. The tastiest fat is butter and it leaves no aftertaste. The butter must be cool, but pliable. If it is too soft it soaks into the dough and layers will not form. One way to add the roll in fat is to use the English method.

The dough is then given four half turns. This is done by placing the paste on the bench so that the unfolded sides of the dough are parallel to the edge of the bench. The paste is then carefully rolled away from the edge of the bench into another rectangle and then folded into three, as in figure 2b. It is then covered and placed in a fridge for 10-15 minutes. Repeat this twice more. Finally the dough is rolled out ready for cutting. Croissants are made by rolling out the paste into a square about 3.5mm thick. This is cut into triangles that are rolled up, bent into the traditional crescent, put on a baking sheet and left to rise until they have doubled in size. This takes about 40 minutes at 32°C. Before being baked, croissants are brushed with a beaten egg so the baked croissant looks golden. During baking the dough rises a little more, as bread does during bread making. This is called oven spring. The moisture in the dough puffs up the pastry when it converts to steam. The steam is trapped between the layers of fat, turning the fat and dough laminations into flaky layers so the croissant looks like a cross between bread and puff pastry.

## **SELF-ASSESSMENT EXERCISE**

Choose a pastry recipe from each of the 4 categories of pastry and prepare them taking special note of the duration and the physical characteristics of the end products.

### **4.0 CONCLUSION**

The art of pastry making sets a good chef apart, it is advisable you learn the art so you can always choose the right type for different occasions

### **5.0 SUMMARY**

Pastry is the name given to various kinds of baked products made from ingredients such as flour, sugar, milk, butter, shortening, baking powder, and/or eggs. Small cakes, tarts and other sweet baked products are called "pastries." Short crust, or short, pastry is the simplest and most common pastry. It is made with flour, fat, salt, and water. This is used mainly in tarts. It is also the pastry that is used most often in making a quiche. The process of making pastry includes mixing of the fat and flour, adding water, and rolling out the paste.

### **6.0 TUTOR-MARKED ASSIGNMENT**

Compile a list of 20 pastry recipes and categorise them

### **7.0 REFERENCES/FURTHER READING**

Campbell, et al. (2008). *Practical Cookery*. (11<sup>th</sup> ed.). UK: Bookpower

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