



Food Production Operations



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About the Tutorial

Food Production Operations is an activity of preparing food products on mass scale and all the operations pertaining to it. This tutorial introduces you to various cereals and pulses as well as culinary seeds, spices, nuts, and herbs. It also introduces you to various equipment, cooking methods, menus, and Indian cookery.

This tutorial teaches basic terms used in food production. After going through this tutorial, you will find yourself at a moderate level of expertise of retail management basics from where you can take yourself to next levels.

Audience

This tutorial has been prepared for beginners to help them understand the basics of Food Production Operations. It is going to be quite useful for the ones who are keen on making a career in Hospitality and Tourism. For all other enthusiastic readers, this tutorial is a good learning material.

Prerequisites

We assume the readers of this tutorial have a passion for food, cooking, and creativity. The reader must also possess a strong desire to pursue culinary arts as a career. Creativity, punctuality, and excellent interpersonal skills are a plus.

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Part 1 – Introduction

1. FPO – Introduction to Cookery

Cooking is like painting or writing a song. Just as there are so many notes or colors, there are only so many flavors – it's how you combine them that sets you apart.

...Wolfgang Puck, American Chef, Restaurateur, and Occasional Actor.

Food Production and its related operations are integral elements of hospitality management, hotel management, and restaurant businesses. It requires a skilled staff who can produce a wide variety of quality foods.

In addition, the culinary staff of a hotel or a restaurant is also required to produce food in a large quantity. Let us start with understanding the basic term 'Cookery' in detail.

What is Cookery?

Cookery is an art and science of preparing food for consumption by using heat. Cookery is an age-old practice. A primitive human must have found a piece of meat or vegetable cooked in the bushfire by chance. He must have found it edible, chewable and easy to consume. Probably, he even must not have cooked deliberately until he knew how to create fire.

The simplest method of cooking was holding a piece of meat or vegetable in the fire directly, which is still in practice, with a little sophistication. From the age-old cooking practices to cooking for fine dining, cookery has come a long way with the evolution of humans, their skills, diverse cultures, and the equipment. Today, cookery is an inseparable part of our lives that rules our tongues and hearts.

Why Cook Food?

We can have some foods in the raw form too, such as salads and fruits but we need to cook certain foods such as beans and meat to make them edible.



In addition, if we eat some vegetables without cooking, they can transfer harmful bacteria or substances into our bodies. For example, uncooked beans contain anti-digestive enzymes. Uncooked capsicum (Bell Pepper) contains **Capsaicin** that can create burning of stomach lining. Cooking helps to destroy unwanted substances present in the food and unwelcomed effects of consuming it.

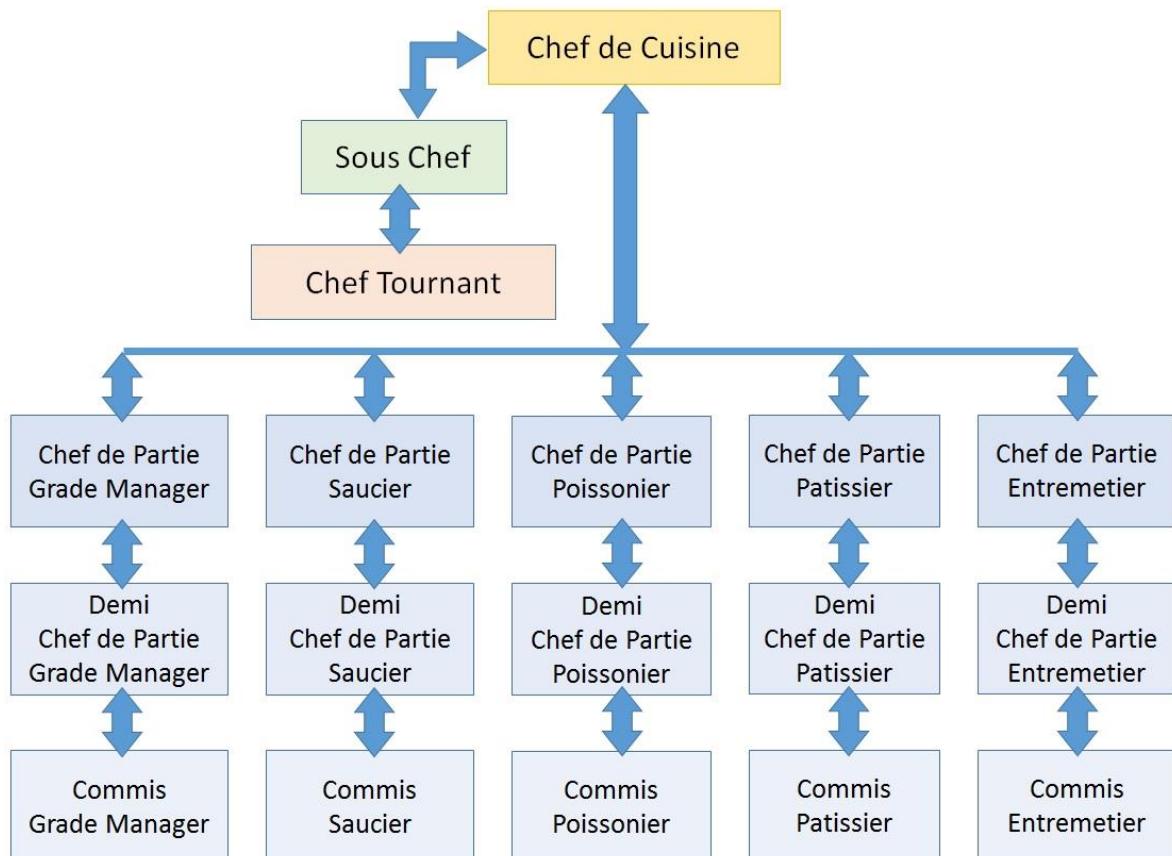
There are many reasons behind cooking food. Some of them are:

- To make the food digestible.
- To kill any harmful bacteria present in it.
- To make appearance of the food pleasant.
- To change its physical and chemical form.

Let us now see the organization of the Kitchen Department.

Kitchen Staff (Brigade de Cuisine)

The kitchen staff (brigade de cuisine) needs to work harmoniously to avoid possibility of any error. The kitchen staff is organized in the following way:



The responsibilities of kitchen staff are as follows:

| Role | Responsibilities |
|--------------------|---|
| Chef de Cuisine | Main cook. Overall management of kitchen and staff, supervising, creating new recipes, and training apprentice. |
| Sous Chef | Deputy cook. Takes charge in the absence of Executive cook. |
| Chef Tournant | Has skills and knowledge of every section. Takes charge as and when required. |
| Chef Grade Manager | Prepares all cold savory food. |
| Chef Saucier | Prepares sautéed items. |
| Chef Poissonier | Fish and Seafood cook. Prepares sea food dishes. |
| Chef Patissier | Pastry cook. Prepares cakes, breads, and pastries. |
| Chef Entremetier | Hot appetizers cook. Prepares soups and stocks. |
| Commis | Junior cook. |

Design Considerations of a Commercial Kitchen

Since a large quantity and variety of food is produced in the professional kitchens, various designs are considered before setting up a kitchen. The food production managers must consider the following factors with respect to the kitchen.

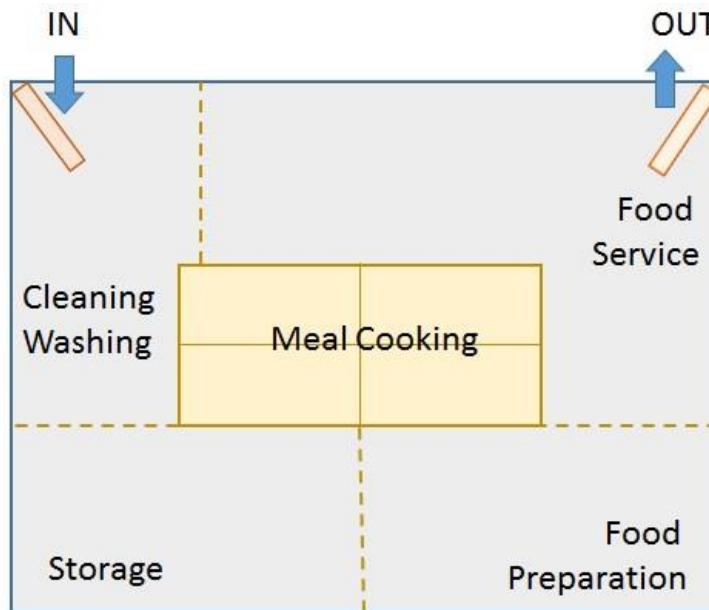
- Restaurant menu and service types
- Heating, ventilation, and air conditioning
- Employee workflow
- Storage, food production, cleaning, and service space
- Equipment
- Drainage and plumbing
- Communication among employees
- Safety of employees and property

Typical Layouts of a Commercial Kitchen

Some typical layouts of a commercial kitchen are given below.

Island Layout

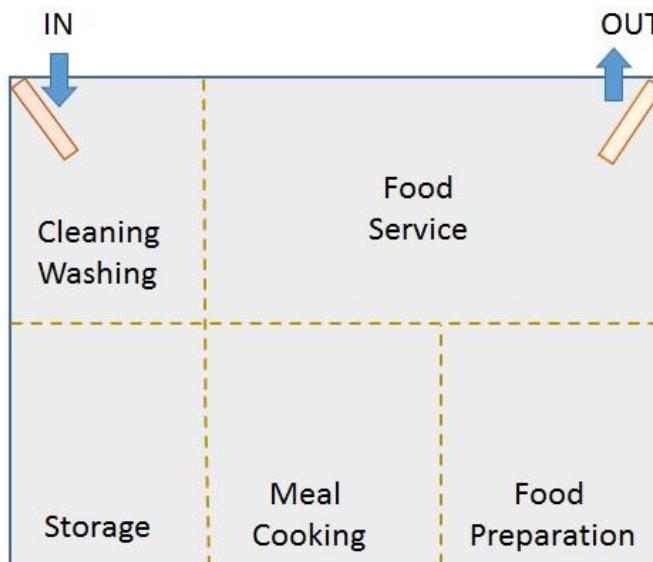
In this type of layout, the cooking ranges, ovens and other cooking equipment are placed together at the center of the kitchen. The other sections are placed along the wall in order to follow a concentric design. Any section can be an island depending on the requirements.



It is an open layout that favors staff communication. It also leaves an adequate open floor space for cleaning. This layout is followed in large kitchens.

Zonal Layout

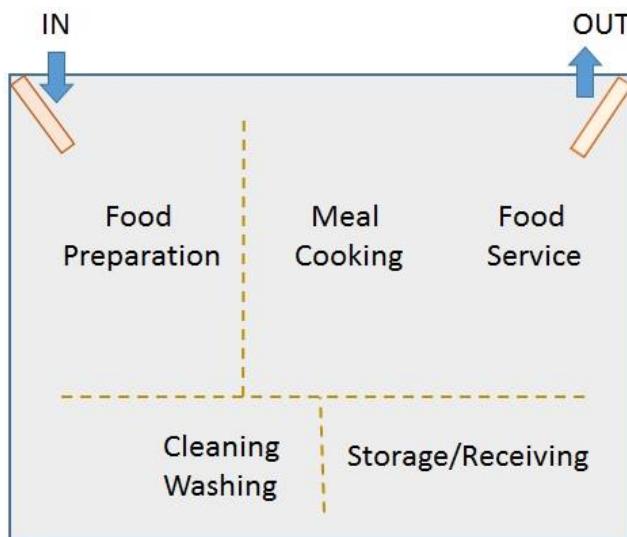
The total kitchen space is divided into different zones for various activities. The principle equipment are located along the walls. This layout follows an appropriate order.



In this layout, staff communication and supervision are easy as the central space is completely open.

Assembly Line Layout

In this layout, kitchen equipment is organized in a row. The food preparation space is kept at one end and the service space at the other. The areas for cleaning/washing and storage/receiving are behind the assembly line to keep them separate from the main busy space. This allows the cooks to send the food quickly down the line. This layout provides very high efficiency, and excellent communication and workflow.



This layout is very effective in case of the establishments with a limited menu with large momentum.

Terms Used in Food Production Operations

Here are some common terms used in the domain of Food Production and Operations:

| Term | Meaning |
|-------------------------|---|
| Bacteria | Unicellular organisms that can be harmful or useful to our body. They multiply very fast. |
| Blanching | Putting food substance into hot water for some time and transferring into cold/running water to halt the cooking process. |
| Calorific Value of Fuel | The amount of heat generated in Kilocalorie or Kilojoules by the complete combustion of 1 Kg of fuel. |
| Chhonk | A cooking and seasoning technique used in the cuisines of India, Bangladesh, and Pakistan. In this process, oil or ghee is heated in a pan and whole spices, curry leaves, and sometimes minced ginger or garlic are fried briefly in it to liberate their essential flavors. The chhonk is then poured on stews, cooked beans, or lentils. |
| Chopping | Cutting quickly with heavy blows of knife into fine pieces without paying attention to the shape of the resulting food. |
| Commodity | Valuable material used or traded. |
| Consumer | A person who buys goods for family or personal use. |
| Curing | A food (meat, fish and vegetables) preservation and flavoring process by the adding salt, nitrates, or sugar. It also involves smoking, drying, or cooking. |
| Dicing | Cutting into square pieces. |
| Grating | Making small particles or stripes by rubbing against a rough surface or a surface with many sharp-edged openings. |
| Kneading | Making flour dough into a uniform compound by pressing, folding, and stretching. |
| Maillard Reaction | A chemical reaction between amino acids and reducing sugars that gives the browned food its desirable flavor when cooked around 140°C to 165°C |
| Marination | The process of soaking foods in a seasoned liquid of acidic properties before cooking. It helps to add flavor. |
| Mashing | Reducing to soft pulpy mass by applying pressure. |
| Mincing | Cutting into very small pieces such as mutton mince (<i>Keema</i>). |
| Organic Food | Food made without using preservatives, chemicals or artificial colors. |
| Peeling | Removing the skin of moist food item, say potatoes, and carrots. |
| Poaching | Cooking egg without shell in boiling water. Cooking in small amount of liquid. |

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| | |
|-----------------|---|
| Popsicle | Color and flavorful ice candy with a stick to hold. |
| Praline | A confectionary containing cream, sugar, and nuts. |
| Rotisserie | Mechanically rotated stainless steel rods that are positioned near heat source. They hold meat to cook in the ovens evenly. |
| Roux | Flour and fat cooked together and used to thicken soups. |
| Shelling | Removing shells of peas, beans, oysters, and mollusks. |
| Shredding | Cutting into small stripes. |
| Sifting/Sieving | Putting flour through sieve in order to separate fine particles from coarse ones. |
| Simmering | Cooking liquid food just below boiling point. |
| Spikelet | A unit of grass flower. |
| Stirring | Moving solid/liquid food in the circular motion. |
| Tandoor | A cylindrical clay oven used in Indian cookery. |
| Tempering | Unwanted filling of griddle plate with grease. |
| Thawing | Bringing a frozen food item to room temperature. |

2. FPO – Kitchen Equipment & Fuel

Good kitchen equipment is expensive but most items last a lifetime and will pay for themselves over and over again.

...Delia Smith, English Cook and TV Personality.

Commercial kitchen equipment need to produce food for a large number of consumers. It needs to be robust, durable, and easy to operate. The equipment should consume less electricity, improve the productivity of food production operations, and must be eco-friendly. Last but not the least, it should serve its purpose effectively.

Most kitchen equipment are operated electronically. There is a wide range of cooking, cutting, baking, and cleaning equipment available for the kitchen staff.

Let us introduce ourselves to some typical kitchen equipment.

Commercial Food Production Equipment

Here are some basic food production equipment.

Burners

They are used for cooking, boiling, and steaming. They often operate on Liquid Petroleum Gas (LPG). Now induction burners and hot plates are available, which operate on electricity. They come with open top, mesh top, or flat top.



Cooking Ranges

Cooking range is the most versatile equipment operating on either LPG or electricity. The name implies, it can perform a range of functions such as cooking, frying, boiling, grilling, and baking. It comes in two basic versions:

- **Restaurant range** – Less expensive, good for less food volume, and is stand alone.
- **Heavy duty range** – Expensive, suits a large volume of food production, and can be banked with other ranges using a battery.



Cooking ranges come with multiple burners usually 4 to 8, depending upon the volume of food to be handled.

Ovens

They are used for cooking, baking, roasting, and browning. They operate either on LPG or electricity. There are various oven models such as **Rack** with the option of rotating or steady racks, **Deck**, and **Tunnel** depicting their shape and working style.



Rack Oven



Deck Oven



Electric Tunnel Oven



Direct Fire Tunnel Oven

- **Rack oven** – It contains a set of stacked racks often placed equidistant, one above the other in a tall stainless steel frame. This oven is good to produce large volume of food items such as breads, cookies, and croissants.
- **Deck oven** – It contains racks or rotisseries that can cook various meats such as chicken, duck, lamb, etc. simultaneously and evenly. They also come in baking deck and pizza deck variants. The number of decks are generally up to four.
- **Tunnel oven** – It comes in direct heat and indirect heat variants. It is suitable for high temperature baking.

There are myriad number of ovens available in the market, which vary according to the energy they consume, the manner of heating food, sizes, and shapes.

Griddles

They are flat plates made of iron, stainless steel, or aluminum, which transfer heat to the food. Griddles are prone to heat loss when the plate is partially unused.



Grill top, Gas operated



Flat top, Electric

They are mainly used for preparing breakfast items such as omelets, scrambled eggs, patties, sandwiches, burgers, and pancakes. Normally, the residual grease needs to be wiped out occasionally from the surface to prevent tempering. In case of steel griddles, caramelization occurs if the surface is not kept clean. Teflon surface griddles are more durable and efficient.

Pans and Cooking Spoons

There are a wide range of pans, pots, and spoons used for cooking.

- **Pans:** Depending upon the type of cooking, the cook selects a pan. The pans serve the purpose of shallow frying, boiling, and stir frying.
- **Pots:** The pots are used for cooking and preparing stocks. They are generally accompanied with lids. The steamer is used to prepare steamed food such as rice, momos, and idlis (fluffy rice dumplings). There are two variants: shallow and deep.



- **Spoons:** The spoons help to check the thickness of liquids, tenderness of solids, stir, and turn the food in the pots and pans. Various spoons used during cooking are skimmer, turner, masher, ladle, fork-spoon, and utility spoon.



Kettles

The kettles are used for cooking, warming, and storing food. They are two layered pots- one inside the other with a gap in between for steam. They are usually jacketed, agitator tilting for better view and food handling. The kettles also have a product discharge valve that provides an efficient transfer of kettle product to a service area without damaging delicate food items.



Deep kettles are best for soups, gravies, spaghetti sauces, pie fillings, and puddings as the quality of these food items remains the same irrespective of their volume and frequent stirring. Lentils, beans, and pasta can be cooked in deep kettles.

The shallow kettles are best for cooking and warming stews, patties, steamed vegetables, where this kettle offers better view and less food handling.

Vegetable Cutters/Choppers

The cutters or choppers are used in cutting, dicing, shredding, and slicing vegetables in various shapes and sizes. They are also used to cut bread into small pieces for puddings or soups. The handheld cutters are used for cutting fruits, salads, etc. for presentation.

Cutters are made of either plastic or stainless steel. Some cutters come with single or multiple wheels with zig-zag or plain edge. Some cutters have round small bowl-like shape to cut round pieces of fruits.



Mixers

The overhead motor vertical mixer is most commonly used in commercial food production units. Mixers are used for mixing and blending. There are broadly two types of mixers: table mounted and floor mounted.



Mixer Attachments

Mixers have the following standard accessories:

- **Flat beater:** Mashing and beating foods of medium consistency such as boiled potatoes.
- **Wire whipper:** whipping cream, eggs, frosts and other light foods that contain air. It works on high speed.
- **Dough arm:** It handles heavy and bulky ingredients such as bread dough at low speed.

Cookers and Steamers

Commercial cookers and steamers largely operate on electricity. The cooks use these for cooking rice, lentils, and vegetables.



The steamers are used for preparing steamed food such as Idli (a type of fluffy rice dumpling), momos, and dhokla.

Fryer

Some food items are prepared by immersing them in heated oil in a fryer. There are two basic versions of a fryer: **Electric fryer** and **Gas fryer**. The frying time and oil temperature varies directly with the food type and the size of the fryer. It consists of a fryer basket and heating element and a thermostat controls a fryer.



The fryers are used to fry potato chips, *Pooris* (fried Indian bread), doughnuts, begels, onion rings, shrimp, fish, chicken, okra, and zucchini.

Juicer

Juicers extract juices and pulps from fruits and vegetables. It operates on electricity and speeds up the juice production process. The fruits are added in the juicer from the top. It separates the juice and left over peels and unused fibers from the fruits. There are three types of juicers:

- **Centrifugal:** It works by crushing fruits. It is quick and yields plain juice.
- **Masticating:** It works longer to yield juice of specified texture and consistency.
- **Twin-gear:** It uses various gears and membranes to yield best quality juice of almost any fruit, carrot, tomato, or leafy vegetables. It also helps to prevent oxidation of the juice.



It is very useful in preparing juices and pulps for breakfast, for meals as appetizers, and for using them in cocktails, mocktails, and smoothies.

Maintenance Equipment in Commercial Kitchen

We will discuss here a few important maintenance equipment used in professional kitchens.

Dish Washer

It can wash multiple dishes and bowls simultaneously. It is an automatic machine but needs human interaction for loading used dishes into dish racks and unloading clean dishes after wash cycle. It eliminates a great effort required for traditional dish washing. There are two basic types of dishwasher:

- **Door-type:** It is large machine. It can clean from 50 to 125 dish racks depending upon the size of the machine.
- **Under-counter:** It is smaller and can fit under the kitchen platform.



Both dishwashers give sparkling clean dishes.

Glass Washer

It washes and dries almost 2000 glasses per hour. There are two types of glass washers: rotary and pass-through. They are mostly used at bars for washing glasses of various shapes meant for various beverages.



Dish Warmer

It can dry as many as 1800 dishes an hour and eliminates the possibility of contamination caused by conventional drying methods. It conducts speedy washing of dishes. It also keeps the micro organic particles depositing at bay for long time.



Special Equipment in Commercial Kitchen

There are a few special equipment used in commercial kitchen to make the tasks easy.

Nut cracker

It is used to crack the shells of hard nuts such as almonds, walnuts, hazelnuts, pine nuts, palm nuts, and pistachio. Some machines are also capable of shelling watermelon and pumpkin seeds, and peeling peanuts, cashew nuts and almonds.



Shredders

A shredder cuts the fruits and vegetables into string-like fine pieces, which are useful in salads and vegetarian cookery.



Kitchen Knives

Knives are used across various small volume dicing, cutting, slicing, carving, and filleting. There are various knives used for different cutting and carving purposes:

- **Paring knife:** It is used for fine cutting work, removing onion skins, and cutting small fruits.
- **Utility knife:** It is used in general purpose cutting and scraping.
- **Steak knife:** It is used for cutting steaks.

- **Santoku knife:** Originated in Japan, this knife is used for cutting, dicing, and mincing. (Santoku=Three virtues)
- **Chef's General knife:** It is a multi-purpose knife used on multiple commodities such as vegetables, fruits, meat, and poultry.



- **Serrated knife (Bread Knife):** It has a long thin blade with serrated edge that provides sawing-like motion. It is used to slice certain foods with firm skins or outer layers such as bread, tomatoes, and capsicums.
- **Boning/Filleting knives:** They come with a narrow, sharp, and flexible blade and a protruding heel near the handle. They can run along the bones of flat fish or ribs smoothly.
- **Carving knife:** This knife comes with a long, thin and sharp blade to ensure neat and accurate cutting.
- **Slicing knife:** It has a long sharp blade that tapers at the end and helps slicing fruits and vegetables finely.

- **Turning knife:** It is an essential component to present the food in a unique way. This knife has a small curved blade that is used to carve the vegetables into the shape of a container.
- **Cleaver:** It is a butchers' knife. It is very strong and sharp to cut through large pieces of meat such as pork and beef.

Now let us see the fuels typically used in commercial kitchen for cooking.

Fuels and Energy Used for Cooking

Fuel is a prime necessity in cookery. There are various types of fuels used for cooking food. Mainly two types of fuels are used in food production: **Solid fuels** and **Liquid fuels**.

Wood Fuel

It can be acquired from logs, wood chips, and bamboo pellets. Seasoned logs are more popular in commercial kitchen as they contain less moisture. The more the moisture, more is the smoke created while burning.

Though it is easily available, it requires a separate storage space at commercial food production end. Its calorific value is around 3500 Kcal/kg for moist wood and up to 4700 Kcal/kg for dry wood.

Charcoal

It is obtained by slow heating of wood, animal or vegetable remains in the absence of oxygen. Charcoal is easily available and widely accepted as commercial cooking fuel. It produces less smoke than wood fuel. It also requires separate storage space. Its calorific value is around 7500 Kcal/kg.

Solid fuels are useful in direct heating ovens, three stone stoves, tandoor, and barbeques. This fuel can emit carbon or ash particles while burning. Solid fuels give gradual heating. The initial cost is low. It also gives a tempting smoky aroma to the baked/roasted food.

Liquid Propane

It is nothing but LPG, a mixture of propane and butane gases that exist in liquid state at room temperature. The LPG is highly inflammable and burns with a blue flame without emitting smoke, and it can be controlled precisely. Its calorific value is around 1000 Kcal/kg.

Kerosene

It is also a petroleum product used in commercial kitchens for cooking. The liquid fuels produce heat almost instantly. The initial cost can be high. They are convenient to use but risky if proper safety precautions are not followed while handling these fuels.

Electricity

Though electricity is considered as an alternative fuel under energy power, it is the most commonly used heat energy for cooking. Most of the commercial cooking appliances operate

on electricity. Electricity provides instant heating. The heat can be regulated as per the requirement. It is easy to access, though the initial cost of wiring may be considerable.

Part 2 – Basic Food Operations

3. FPO – Vegetarian Cookery

To be interested in food but not in food production is clearly absurd!

...Wendell Berry, American environmentalist, a Poet and a Farmer.

Vegetarian cookery involves preparing food by using cereals, grains, lentils, vegetables, fruits, soya, tofu, seeds, spices, herbs, and nuts. Animal products such as milk, curd and honey are also used in this cookery.

Vegetables are very important ingredients in various cuisines around the world. Vegetarian cookery provides a wide range of eye-pleasing colors, texture, fiber, and vitamins. It also provides low calories as compared to non-vegetarian cookery.

Introduction to Grains

Grains are small dry seeds consumed worldwide. They are popular as one of the important ingredients of vegetarian cookery due to their nutrient value and ease of availability. The grains are of two types:

Cereals

They are the seeds obtained from various grass plants such as Wheat, Rice, Barley, Ragi (Malt), Jowar, Bajra, Maize, and Millet. In most of the countries, they are consumed as a part of staple food.

Pulses

They are the seeds obtained from vain and shrub plants such as peas, Bengal Gram, Horse Peas, Chick Peas, and Indian Beans. They have an important place in vegetarian staple food consumed around the world.

Difference between Cereals and Pulses

We have listed here some of the basic differences between cereals and pulses:

| Cereals | Pulses |
|--------------------------------------|--|
| They contain carbohydrates. | They contain protein. |
| They are found as spikelets. | They are found inside pods. |
| They are grown in larger quantities. | They are grown in smaller quantities as compared to cereals. |
| They provide energy. | They provide muscle strength. |

Introduction to Cereals

Cereals are either roasted or made to flour. There are numerous ways in which cereals are used in cookery. Take a look at the following table.

| Cereal | How it Looks | Culinary Uses |
|--|---|--|
| Bajra (Olive/Gray colored small oval grains) |  | Its flour is used to make bajra rotis. |
| Jowar (Cream colored round grains like chick heads.) |  | It is ground to make fine flour, which is used to make Jowar rotis. |
| Maize (Bright yellow colored round and flat grains) |  | Maize or dried corn nibbles are used to make popcorn and maize flour. The flour is used to make bread and porridge. |
| Oats Light brown colored thin and long grains) |  | Oats are used as low calorie breakfast food all over the world. |
| Ragi (Also called Malt, maroon/red colored tiny round grains) |  | It is red millet rich in calcium and iron. Its flour is used in soups and gravies. |
| Rice (White/Cream/Light brown colored long grains) |  | It is cooked and used in rice based dishes. Rice flour is used for pancakes and dumplings. |
| Wheat (Light brown colored long grains) |  | Wheat flour is used in making various types of breads, broken wheat is used for making porridge, and finely broken wheat (semolina) is used to make snacks and desserts. |

Introduction to Pulses or Beans

The beans need to be cooked before consuming. Beans can be soaked in water to bring out sprouts, which are very healthy food. Beans can be used in direct/husked/split forms too. There are numerous ways in which the beans are used in cookery.

| Pulse | How it Looks | Culinary Uses |
|---|---|---|
| Black Eyed Peas (light brown capsule shaped medium beans with black eye in the middle. Also called <i>Lobia</i> .) |  | The cooked beans are mostly used in curries, gravies, and salads all over the world. Brazil and West Africa: Mashed to prepare Akara, a fried bean cake. |
| Black Grams (black with husk, white without husk, small cylindrical beans, also called <i>Urad</i> or <i>Maah</i> .) |  | It is native to and consumed in India. North India: It is consumed as cooked beans curry. South India: the split and husked version of Urad is used in preparing Vada, Idli, and rice pancakes. |
| Chick Peas (green/deep brown colored with husk, bright yellow without husk, round heart shaped peas. Also called <i>Chana</i> . The larger version of cream color is also called <i>Kabuli Chana</i> .) |  | They are used in the following cuisines around the world in stews, gravies, curries, tofu, and salads. Cooked chick peas are used as snacks. Chick pea flour is also used in desserts and snacks. India: used in spicy curries and snacks. Arabic: Pasted to make a spread, Hummus. Portugal: used in Rancho. Italy: chickpea flour is used in Faranita, a pancake. Israel: used in falafel. |
| Field Beans (Brownish –yellow oval shaped beans. Also called <i>Vaal</i> .) |  | It is mostly cultivated and used in coastal region of Maharashtra state in India. Its gravy with coconut and spices is consumed with rice. |
| Green Grams (green colored cover, small cylindrical shaped, light yellow without cover. Also called <i>Moong</i> .) |  | It is native to the Indian subcontinent, and mainly cultivated and used in India, China, and Southeast Asia. |
| Green Peas (lush green spherical peas of 5 to 8mm diameter. Also called <i>Mutter</i> .) |  | They are consumed around the world as a part of breakfast, snacks, and main meals. India: used in spicy mixed vegetable stew named <i>PaoBhaji</i> , and spicy rice called <i>Mutter Pulao</i> . Phillipines & Malaysia: roasted and used as snacks. |
| Horse Grams (light brown/red/ black with glossy husk, circular, flat beans. Also called <i>Kuleeth</i> .) |  | They are spiced with chilies and coconut milk. They are consumed in stews and curries in India. |

| | | |
|--|---|--|
| Kidney Beans (white/red/black long, large, and thick beans. Also called <i>Raajmaah.</i>) |  | The cooked beans are used in salads, gravies, and curries. India: Spicy beans curry paired with rice in northern region. |
| Lima Beans (white/green flat large beans, more than 1 ½ inches when cooked. Also called Indian Beans) |  | They are mainly consumed in India. They provide creamy texture and dramatic presentation to the dish. |
| Moth Beans /Turkish Gram (Brown glossy husked, 2 to 4mm long, cylindrical grams. Also called <i>Matki</i> or <i>Moath.</i>) |  | It is native to South Asian subcontinents. It is consumed in Rajasthan, Gujrat, and Maharashtra states of India. It is sprouted before consumption. |
| Pigeon Peas (Bright yellow when husked and split, round around 3mm diameter. Also called <i>Toor Daal.</i>) |  | It is a staple food component in south Asia, mainly India. It is used in typically husked and split form, seasoned with spices, and eaten with flatbreads or rice. |
| Pinto Beans (beige colored beans with reddish splashes.) |  | They are used in America, Europe, and Asia. They are cooked and paired with rice/pasta/salads. |
| Red Grams (light brown with husk, red without husk, round flat beans. Also called <i>Massoor.</i>) |  | They are very fast to cook. They are used directly or in split form in Indian cuisines. |

Use of Vegetables in Cuisines

The vegetables are an integral component in stews, soups, gravies, and curries. They are best when consumed cooked. Some vegetables such as sun-dried tomatoes are used in Italian cuisines. To make pickles, vegetables are often for longer shelf life. Vegetables are often used not only in fresh form but also in dried or pickled form.

Classification of Vegetables

In vegetarian cooking, vegetables are the prime ingredients. Let us see their classification on the basis of their place in the context of plant structure.

Leafy Vegetables

They are the leaves of the vegetable plant. They can be either consumed directly or cooked. They can be used in salads for direct consumption, in gravies, soups, and other foods. They have short shelf life, say a couple of days.

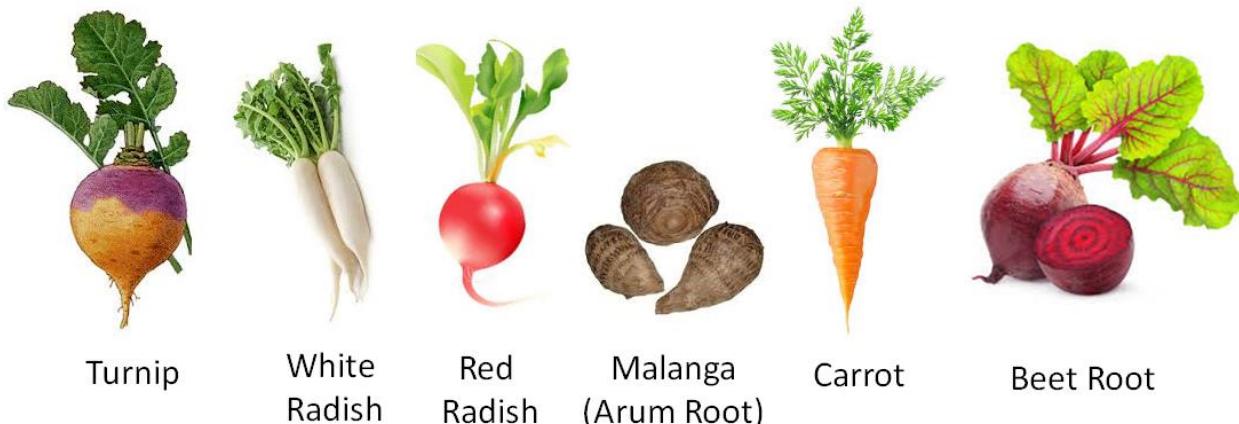


For example, fenugreek, spinach, dill, curry leaves, cilantro, parsley, mint, oregano, thyme, basil, and leeks of onion and garlic.

These vegetables may have pests on the back of their leaves. Hence while selecting the fresh and good quality leafy vegetable, the buyer needs to be careful. In addition, they must be cleansed thoroughly before using to wash off any pesticides present on the leaves.

Root Vegetables

They are the roots of the plant. For example, Radish, beet root, turnip, Malanga, and carrot. They can be consumed raw or cooked after cleaning off the soil properly. Root vegetables must be preferably peeled before using.



They are used for preparing stews, side dishes and salads.

Stem Vegetables

They are the useful stems of the plant and have high quantity of mass. They can be cut, chopped, or diced. They can be consumed raw or cooked. Their shelf life is longer than leafy vegetables but shorter than bulb vegetables.



For example, Asparagus and lotus stem. The North Indians use lotus stem in pickles.

Tuber Vegetables

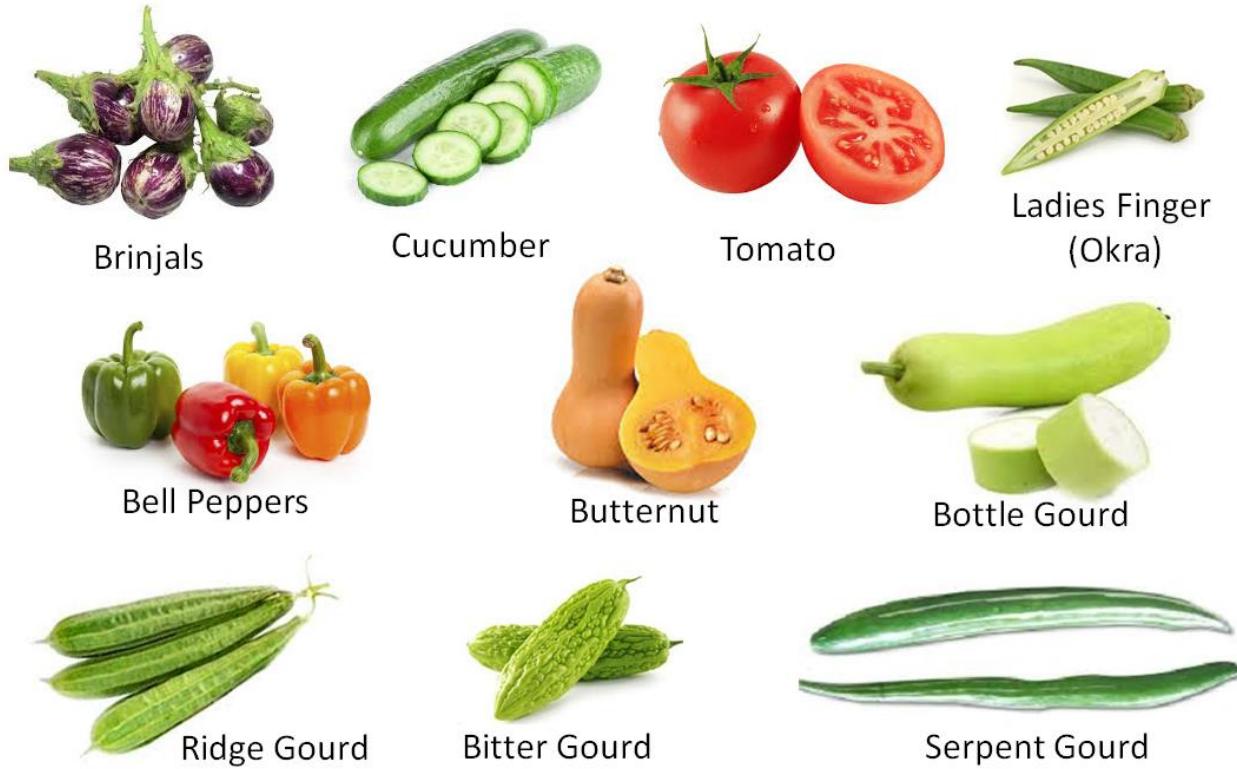
Tuber vegetables are the swollen part of the stem that grows underground. Potatoes are used all over the world in a wide range of cuisines. Fresh ginger and turmeric are used to prepare pickles and pastes.



For example, Potato, Ginger, Turmeric, and artichoke are some of the stems, which grow underground.

Fruit Vegetables

They are the fruits of a plant and are called **culinary fruits**. They grow in large quantity. Some of them can be eaten raw and rest all need cooking. They need to be cleaned, cut into pieces, and grilled or cooked for consumption. The chefs require to pay extra attention while cutting for the presence of any pests inside these vegetables.



For example, Eggplant, green chilies, coconut, Ladies finger (okra), tomatoes, cucumber, various types of gourds, pumpkin, and various colored bell peppers (capsicums), drumsticks. Fruit vegetables are used to make stock, soups, and stews.

Bud Vegetables

They are prominently the bud part of their plant. For example, Lettuce and cabbage. They appear as if unopen or bloomed at the time of their harvesting. They are mostly consumed

directly. Lettuce is used in sandwiches and salads. Cabbage is an important ingredient in South Asian cuisines.



Cabbage



Lettuce

Bulb Vegetables

A bulb is an underground part of the plant where nutrients are stashed. These bulbs are one of the main ingredients in cookery. They are used to flavor soups and stews. They are also used in seasoning various dishes. They have longer shelf life than any other type of vegetable. For example, onion and garlic.



Onions



Garlic

Flower Vegetables

They are the flowers of vegetable plant. They are cut into pieces and cooked to make stews. They also need thorough washing to remove the pests or tiny insects. For example, Cauliflower, Broccoli, Moringa (Flower of drumstick plant), Artichoke.



Cauliflower



Broccoli



Moringa



Artichoke

Fungi Vegetable

Commonly used fungi is mushroom. They are consumed as staple diet all over the world. There are many types of edible mushrooms with various shapes and colors. Mushrooms are also used in preparation of sauce.



Button/White



Chanterelle



Shitake



Oyster



Portobello

Fruits used in Cuisines

The fruits are dominant ingredient in fruit salads, smoothies, desserts, and gravies. They are best when consumed ripe and fresh.

In Asian subcontinents, some fruits like raw jackfruit and papaya are cooked into stew. Raw bananas are used to make crispy chips. Raw mango and ripe tamarind are dried and powdered to use in Indian kitchen.

Sweet fruits and berries are preserved in sugar syrup to increase their shelf life. They are also used as ingredients in dessert preparation.

Classification of Fruits

Fruits can be divided into the following categories depending on the context of their culinary prospects.

P pulpy Fruits

They are mostly hard in raw form and become tender when they ripe. These fruits yield soft pulp of thick consistency when crushed. The pulp is often used in preparing desserts, cakes, tarts, pies, candies, ice creams, and smoothies.

For example, Mango, Papaya, banana, muskmelon, pineapple, custard apple, wood apple, mud apple, kiwi, fig, passion fruit, apple, pear, and plum.



Papaya



Mud Apple
(Chickoo)



Mango



Custard Apple



Banana



Guava

Some pulpy fruits such as fig and passionfruit have small soft seeds, which bring crunchiness; but some fruits like guava and wood apple contain multiple small and hard seeds. Such seeds need to be separated while getting pure pulp of the fruit.

Juicy Fruits

These fruits give juice of thin consistency when squeezed or crushed. The juice is strained to separate any small fruit particles left while crushing. The clear juice is then used for sorbets, mocktails, and organic colored ice cubes. Juices are combined with corn syrup and sugar to prepare **juice drinks** and **fruit nectars** or **nectar blends**.

- **Citrus Fruits:** These fruits are often divided into segments that contain small sacks filled with juice. Citrus fruits contain Citric Acid, a natural preservative that adds sour taste to the sweet ripen fruit. They have leathery and colorful outer peel. Their peel (also called zest) has a strong aroma. The zest is often used in cuisines for presentation and in preparing marmalades. Some citrus fruits are shown below



Sweet Lime



Orange



Lemon



Grape Fruit



Finger Lime



Moroccan Citron



Clementine

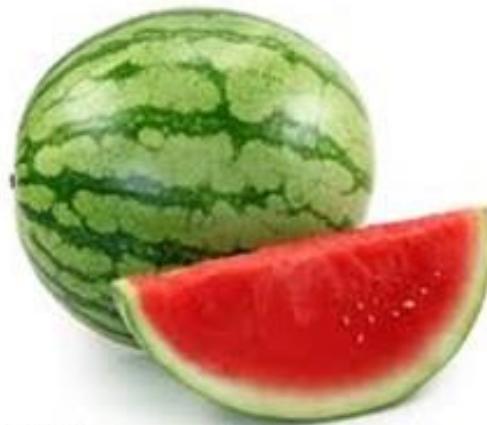


Budhha's Hand

- **Non-Citrus fruits:** They are non-acidic alkaline fruits. Ripen non-citrus fruits taste sweeter than ripen citrus fruits. Here are some non-citrus fruits:



Grapes



Water Melon

Dry Fruits

They are fruits with no water content. Their water is removed by either natural or artificial method of drying. They shrink with mild change in color after drying and have longer shelf life than fresh fruits.

For example, Raisins are made by drying good quality grapes. Dried Apricots, Figs, Kiwis, (Prunes) and Dates are the most common varieties of dry fruits.



Raisins



Figs



Black Currants



Kiwis



Apricots



Dates

Dry fruits are used in ice creams, and healthy milk based cold drinks. They are best paired with chocolates and cakes. They are used in preparing desserts and presentation of food.

Berries

They are small, pulpy and juicy fruits of bright glossy colored peels. They are consumed worldwide. They can be eaten fresh or used in preparing tarts, pies, cakes, and candies. Some of them are used in preparing jams and sweet pickles. Here are some berries:



Strawberries



Gooseberries



Raspberries



Blueberries



Blackberries



Cranberries



Black Currants

Vegetable Stock and Broth

Stock is a flavored liquid obtained by boiling vegetables in water or other liquid such as wine. It is the basis of soups and sauces.

In classic vegetarian stock preparation, the chef often simmers portions of vegetables such as carrots, onions, garlic, pumpkin, and celery (often called mirepoix) accompanied with a small porous bag of cotton that contains spices or herbs. The aroma of spices or herbs is introduced into the stock enhancing its flavor.



The stock preparation is started with immersing pieces of desired vegetables into cold water and boiling them on low flame slowly. The stock is boiled for 20 to 30 minutes. Once it reaches room temperature, the stock is stored in a container without adding salt. Its shelf life can be 3 to 4 days if stored in the refrigerator. The shelf life can be extended by boiling it again.

The difference between the stock and the **broth** is that the broth is served as a finished dish whereas stock is the base for further cooking. Also, the stock does not contain any solids but the broth may contain vegetable pieces or noodles.

Vegetable Soups

Soup is a type of liquid food prepared using vegetable stock. There are three types of soups. They are:

Clear Soup

It is a see-through watery soup without pieces of vegetable or noodles in it. This soup can quench hunger and fulfil the requirement of liquid in the body. It is a good appetizer.

Thick Soup

It is thickened by use of roux, rice flour, potato starch, or cream. These agents blend well with other foods. The thickening may vary depending upon the agent used. Use of a roux creates a smooth and even texture. The roux is cooked along with the longer-simmering vegetables until the desired color is reached. Then the stock is added slowly by stirring constantly to avoid lump formation. As the soup warms, it thickens.



Pureed Soup

It is prepared by cooking starchy or leafy vegetables in the stock and pureeing the ingredients finely. It generally does not require thickening agent.

Some famous vegetable soups around the world are:

- **Borscht:** It is a soup prepared from beetroot puree from England.
- **Faki Soupa:** Red Lentils + onions, parsley, and carrots + olive oil + tomato sauce. It is from Greece.
- **Gazpacho:** concoction of bread, tomato, bell pepper, garlic, olive oil, salt and vinegar. It is a Spanish soup.
- **Ginataan:** Made of coconut milk, from Philippines.
- **Sambar:** A South-Indian soup made of pigeon peas + vegetables + tamarind pulp + spices.

Sauces

Sauce is a liquid, semi-liquid, or creamy food cooked by blending multiple foods. Sauces are essential culinary components all over the world. Sauce coats the food such as pasta or bread. It enhances the taste and moisture in the main food. Their tempting bright colors also add visual appeal to various dishes.

Five Mother Sauces

The five mother sauces are the heads of their own unique families of small sauces. There are five mother sauces in classic food preparation:

- **Bechamel:** Blend of Roux and milk or cream.
- **Veloute:** Roux + White Vegetable Stock.
- **Espagnole:** Roux + Brown Vegetable Stock + Butter + Tomato Puree.
- **Tomato:** Roux + Tomatoes or tomatoes pureed and thickened on heat.
- **Hollandaise:** Egg Yolks + Melted Butter + Acid (lemon juice or white wine)



From these basic sauces, a chef can make hundreds of various sauces to dress or compliment the dish.

Some famous vegetable sauces are:

- **Rujak:** Palm sugar + peanuts + tamarind pulp + chilli.
- **Salsa:** cooked tomatoes + bell peppers + onion and garlic + fresh cilantro.
- **Wine Sauce:** White/Red/Burgundy wine + mushrooms + spices.
- **Mustard Sauce:** Husked mustard seeds + Egg + Vinegar + Pepper Powder.
- **Blue Cheese Sauce:** Butter + Milk + Chopped Blue Cheese.

Salads

Salad is an important part of the menu. Salads are considered as a separate course during fine dining. Vegetable salad is prepared by combining shreds, slices, or stripes of salad vegetables such as tomatoes, celery, cabbage, lettuce, onions, carrots, and cilantro, often pairing them with flavorful salad dressings.



Various versions of veg salads can also be prepared using cubes of Tofu or Cottage cheese, bean sprouts, cooked beans, olives, boiled sweetcorn nibbles, diced fruits, dried fruits, and citrus fruit juices. For example, Green salad, Carrot-Raisin salad in orange juice, Coleslaw are some famous salads.

4. FPO – Non-Veg Cookery

"The only time to eat diet food is while you are waiting for the steak to cook."
... Julia Child, Late American Chef, Author, and TV Personality.

Non-veg cookery involves preparing food using eggs, meat, pork, and seafood. There is a very wide variety of non-vegetarian cookery around the world. In some parts of the world, the meat of wild animals is barbequed (often called *Brai* in Africa) and consumed.

A large number of snacks, breakfast items, and main course non-veg dishes can be cooked using various meats. Let us learn about different types of non-veg items.

Classification of Eggs

Eggs are staple non-veg food. They are used in baking and preparing desserts like mousse. There are many varieties of labelled eggs in the market. Let us understand what those labels mean.

Omega-3 Eggs

The hens are fed with omega-3 fatty acid sources, such as flax seed. The hens are enclosed in cages, and are kept away from accessing litter, perches or nests.

Nest-laid Eggs

This means the hens can access their nests or perch within their cage.

Eggs of Cage-free Hens

Cage-free hens are not confined to a cage, however, that does not mean they have access to the outdoors.

Eggs of Free-run Hens

Free-run hens can wander around a confined open space, perch, access their nests, but may not access outdoors or natural light.

Eggs of Free-range Hens

Under good weather conditions, the free-range hens are permitted to wander in open-range barns, and access their nests, perches, litter, outdoors, and natural light.

Organic Eggs

The hens are fed with 100% organic feed. They are always provided with clean, fresh water. These eggs are most costly.

The hens with white feathers and white ear lobes lay white eggs. The ones with brown feathers and red ear lobes lay brown eggs. There is zero nutritional difference between the two eggs.

Eggs Sizes

Eggs are sized according to their weight. There are various sizes of eggs such as: between 53 - 63gm are Medium, between 63 - 73gm are Large, and the ones weighing more than 73g are Extra Large.

Classification of Meats

Meat comes from cattle and poultry. They are raised at farms with proper feeding and care. The meat from cattle is more commonly known as red meat. There are various types of meats.



Red Meats

Red meat can be of the following types:

- **Beef:** It comes from cattle over 12 months old. This meat is dark red in color with a thick layer of white fat. The meat is hard and thick.
- **Veal:** It is the meat of cattle less than 3 months old. It is deep pink with medium layer of white fat. Veal is lean and tender as compared to beef.
- **Pork:** It is the meat of domestic swine (pig). The meat is light pink in color with a thick layer of creamy-white colored fat.

- **Ham:** It is the meat of pork leg.
- **Bacon:** It is the tender meat of pig's belly.
- **Pork ribs:** It is the meat around pig's ribs.
- **Lamb:** It is the tender meat of sheep or goat aged less than one year. It is light red and soft as compared to mutton.
- **Mutton:** It is the meat of sheep or goat older than one year. It is maroon-red colored meat, harder than lamb meat and gives strong flavor.
- **Game Meat (Venison):** It is the meat of any animal that is hunted for food instead of raised in the farms. It includes the meat of Rabbit, Pheasant, Wild duck, deer, or sometimes a bigger animal like bison. It has strong flavor. The game meat is widely consumed in Africa.

Meats take longest time to cook in non-veg cookery. Shelf life of meat is 3 to 4 days in refrigerator or a couple of months in freezer.

Poultry

It is the meat of domestic fowls such as chicken, duck, goose, or turkey. Good poultry meat comes from well-fed hygienic hens. The poultry must be with well distributed fat and blemish free skin. The dressed poultry is slaughtered, de-feathered, and ready to roast whole bird without head and clamps. Poultry gets cooked faster than red meats but quicker than fish and shell fish.

Dressed Chicken



Drumsticks



Wings

Sausage

The sausages are cured and uncooked meat rolls. Sausages are prepared by blending any ground or minced meat with breadcrumbs, starch or flour, and spices, and filling the mixture into casings of various diameter and lengths. At the time of consumption it is cut into slices, often called **salamis**.

Classification of Sea Foods

The sea foods mainly is divided into two categories:

- **Fish:** They are fish with fins and internal skeleton. For example, Tuna, Mackerel, and King fish.
- **Shell Fish:** They are fish with shell but no internal bone structure. For example, Crabs.

Let us understand more about Fish.

Fish

Fish can be cut for cooking in the following form:

- **Complete:** As caught.
- **Dressed:** Fins, tail, scales, and head removed.
- **Drawn:** Viscera removed.
- **Steak:** Cut into cross section slices, each slice containing a part of bone.
- **Fillets:** Boneless sides of fish; with or without skin.
- **Tranches:** Pieces of fillets.
- **Butterfly Fillet:** Both sides fillets kept naturally joint while cutting.



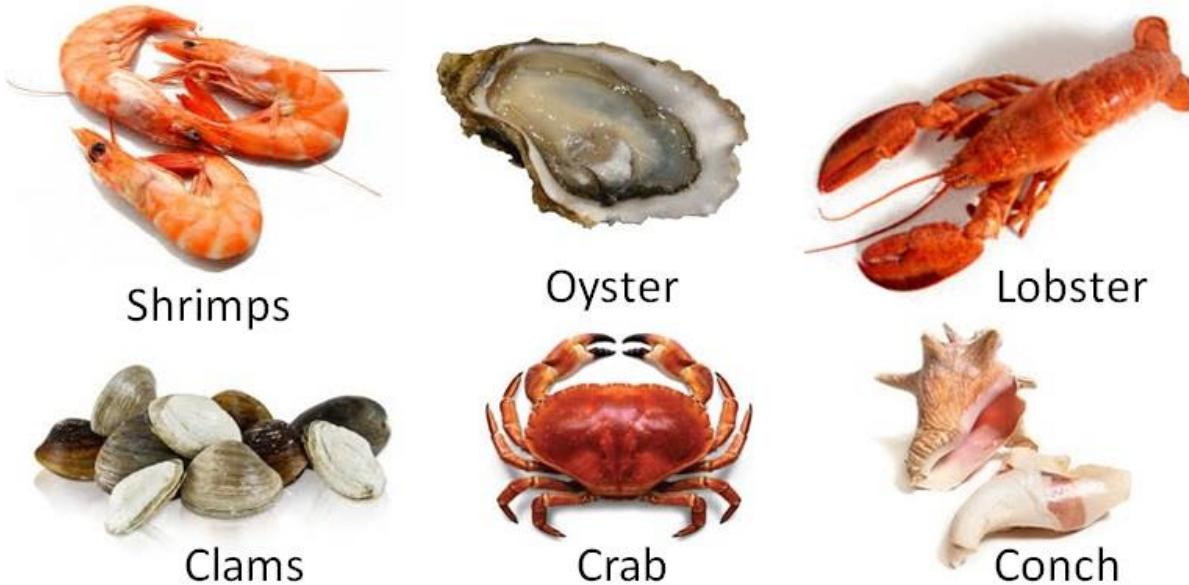
Fish with clear and bulging eyes, firm body, and without foul odor is considered fresh. Let us discuss more about shellfish:

Shellfish

Shellfish can be further divided into the following categories:

- **Mollusks:** They are soft sea animals with shell. There are three types of mollusks namely:

- **Bivalves:** They have a pair of hinged shells. For example, Clams, Scallops, and Oysters.
- **Univalves:** They have a single shell. For example, Abalone and Conch.
- **Cephalopods:** They have prominent head and tentacles. For example, Octopus and Squid.
- **Crustaceans:** They have segmented shells and joint legs. For example, Lobster, Shrimp, and Crab.



If the tail of Lobster snaps back after pressing, it is fresh. If shrimps are odorless, shells attached firmly, and with bulging eyes, then they are fresh. If the clams and oysters are firmly closed, they are fresh.

Storing and Cooking Fish

Fish and shellfish are stored either cooked or raw in freezer, or just raw in crushed ice. Fish should be cleaned and scaled properly before cooking. Intestinal track of shrimps need removal.

Being tender, fish and shellfish need cooking at moderate temperatures. Small pieces of fish can be cooked directly from freezer. Cooked fish need careful handling to avoid them falling apart.

Meat Stock and Fish Stock

Meat or Fish Stock is a flavored liquid obtained by boiling meat or fish in water. It is the basis of non-vegetarian soups and sauces.

For stock preparation, the chef simmers portions of Veal, Beef, Chicken bones, or Fish bones. The simmering is carried out for longer time than vegetable stock. Bone simmering takes even longer than meat simmering. To shorten the simmering time of bones, they are pressure-cooked.



The spices or herbs and salt are added to enhance the flavor. The stock is boiled for 30 to 40 minutes and removed from heat. Once it reaches room temperature, the stock is stored in a container. It lasts fresh for 3 to 4 days if stored in the refrigerator. By boiling it again, its shelf life can be extended.

Meat and Fish Soups

Soups is a type of liquid food prepared using meat or fish stock as per the choice. There are two types of soups.

Clear Soup

It is the soup with thin consistency and transparent appearance without pieces of meat or noodles. It is made of meat stock. There is no thickening agent added either. This soup has high proteins and can quench hunger largely.

Thick Soup

It is thickened by use of roux, rice flour, or starch. The thickening agents blend well with other foods. Different thickening agents provide different consistency. The cartilage and connective tissue in the bones thicken the liquid and bring flavor to the stock. As the meat also provides some amount of fat, the meat soups appear oily too.



Some famous meat soups are:

- **Chicken Soup:** Juliennes of cooked chicken + chicken stock + vegetables.
- **Callaloo:** Thai soup made of cooked crab meat and okra.
- **Clam Chowder:** Cooked and scooped clams + potatoes and onions + bacon.
- **Egg Drop:** Chinese soup made of beaten eggs + chicken broth + black pepper powder+ spring onion.
- **Erwtensoep:** A traditional soup from Netherlands, served with sliced sausages.
- **Goulash:** Hungarian soup made of beef + onions + red peppers + paprika powder.
- **Lobster Bisque:** French soup made from Lobster stock.

Meat Sauces

Sauce is a liquid, semi-liquid, or creamy food cooked by blending multiple other foods with ground meat. They enhance the taste and moisture in the main food. Meat sauces coat pastas or steaks. Their vibrant colors also increase aesthetic appeal of the food.

Non-Veg Salads

Non-veg salad is made by combining shreds or stripes of cooked chicken, pieces of sausages, or small cubes of cooked mutton, beef, or pork. Egg salad is made up of boiled eggs or scrambled eggs chunks. Fish salads are made of cooked fish stripes in pair with various salad dressings.



The pieces of non-veg are often paired with salad vegetables such as tomatoes, celery, lettuce, onions, and cilantro, and some flavorful salad dressings. Pairing chopped salamis or sausages is a great way of preparing non-veg salad. For example, Tuna Salad, Scallops Salad, Chicken Salad.

5. FPO – Seeds, Nuts, Herbs, and Spices

Just as food absorbs the flavor of spices, it absorbs the attitude of those who cook and serve it.

...Anonymous.

Seeds, nuts, herbs, and spices have their own special places in food production. They all improve food value with respect to nutrition and fibers. They bring medicinal value to the food. They are the food additives that bring flavors, enhance taste and aroma, and increase beauty of the food.

Culinary Seeds

Seeds are used for making gravies and an important ingredient in cakes, desserts, and candies. Seeds provide variety of uses such as seasoning, baking, and pastes. Seeds are also used for preparing various sauces.

Introduction to Seeds

The following seeds are generally used for culinary purpose:

| Seed | How it Looks | Culinary Uses |
|--|---|--|
| Caraway (Dark brown 3-4mm long ridged grains. Also called <i>Shah Jeera</i> .) |  | They are often used for seasoning. Serbia: Used to sprinkle on breads. India: Used in rice dishes. Europe: Used in cake. Middle East: Used in Caraway pudding. |
| Carom/Royal Cumin (Greyish brown colored, 2mm long, pointed oval shaped, ridged, and spicy seeds. Also called <i>Ajwain</i> .) |  | Mostly used in India in seasoning to bring flavors to the food. Because of hot taste, cannot be consumed raw. It is often paired with lentils and beans to reduce gaseous effects. |

| | | |
|--|---|--|
| Coriander (Yellowish green colored, Oval round 3-4mm long, 2-3mm diameter seeds. Also called <i>Dhaniya Beej.</i>) |  | Used roasted and powdered as a flavorful condiment in Indian, Pakistani, Sri Lankan, and Bangladeshi Cuisines. |
| Cumin (Light brown colored, 2-4mm long, ridged seeds. Also called <i>Jeera.</i>) |  | In India, they are roasted and powdered, and used in tangy foods to enhance flavor. It is also one of the five ingredients of <i>Chhonk</i> . It is also used in curd based salad and other Indian cuisines. |
| Fennel (Green/Olive green colored 3-4mm long, 1-2 mm wide, ridged, sweet and spicy seeds. Also called <i>Saunf</i>) |  | Mostly used for flavoring all over the world. Used in Italian sausages, risotto, and Indian gravies from Gujurat and Kashmir. Eastern Indian states use it in five spices mix called <i>Panch Poran</i> . It is consumed as after meal digestive and mouth freshener. |
| Fenugreek (Dark yellow colored, twisted cylinder shaped matt finished 2-3mm long seeds. Also called <i>Methi Danaa.</i>) |  | Sprouted seeds and Microgreens are used in Indian Salads named <i>Pachhadi</i> . Also used on Chhonk. Powdered fenugreek seeds are used in crispy tea time Indian snack called <i>Mathhri</i> . Turkey: Paste is used in preparing <i>Pastirma</i> , a dish of air-dried and cured beef. Egypt & Persia: Used in Pita bread. |
| Flax (Dark brown or yellow glossy, oval shaped pointed at an end, 3-4mm long flat seeds. Also called <i>Alsi.</i>) |  | In India, they are roasted and powdered with paprika and salt to be eaten with boiled rice. Contain high amount of Omega-3 fatty acids. Often sprinkled on wheat breads. |
| Mustard (Black/Brown/White with husk and dark yellow without it, round seeds of 2mm diameter. Also called <i>Sarson.</i>) |  | Used as a main ingredient in <i>Chhonk</i> . Mustard leaves are used in vegetable preparation or stews in North India. Its oil is used in cooking and pickles. Europe: Used in Mustard sauce. |
| Nigella (Black seeds of 1-2mm length. Also called <i>Kalaunji.</i>) |  | Used in cooking flatbread in North Indian cuisine. Also used as a part of gravies, pulses, and curries in India and Middle East. Used in preparing Armenian string cheese. |

| | | |
|---|---|---|
| Pomegranate (Pale red/brown colored dried seeds with juicy coat that brings tangy taste. Also called <i>Anardana</i> .) |  | Dried seeds are used as an acidic agent for chutney and curry preparation in Indian and Pakistani cuisines. Used fresh in salads and food garnishing. Used dried or powdered in preparing syrups and spreads. |
| Poppy (Small creamy white or black colored kidney shaped seeds of 1mm size. Also called <i>Khaskhas</i> .) |  | Used as pastry filling when powdered and pasted with milk. Sprinkled on breads and cakes. It is used in preparing gravies and sweet breads in Indian cuisines. |
| Pumpkin (Creamy White with husk and Light Green meat inside, flat oval shaped 6-8mm long pointed seeds.) |  | Used extensively in US, Mexico, Europe, and Africa as a roasted snack or in cooking. |
| Sesame (Light brown colored 2-3 mm long, 2mm wide, oval shaped pointed flat grains. Also called <i>Til</i> .) |  | They are used as toppings on buns and breads. Japan: Unhusked seeds are used in <i>Gomashio</i> , a seasoning for rice. India: Roasted seeds are mixed with jiggery, rolled into balls or stuffed in flatbread, mixed with paprika to make <i>Malagai Podi</i> . Sesame oil is used in cooking and pickles. Middle East Cuisine: Ground into paste named <i>Tahini</i> . Mexico: Used as a food additive. |
| Water Melon (Black or Brown colored oval shaped flat seeds when unhusked, creamy white when husked.) |  | They are used for garnishing cakes and breads, in salads, and preparing white gravies. |

Culinary Nuts

Nuts are the edible seeds covered with hard kernel. They are used in preparing gravies, salads, and sauces. They are an important ingredient in cakes, desserts, chocolates, ice creams, and confectionery. Nuts have high amount of oils and high fat contents.

Introduction to Nuts

In the following table, we have discussed some commonly used culinary nuts:

| Nut | How it Looks | Culinary Uses |
|---|---|---|
| Almond (Cream colored with shell and deep brown without shell oval shaped flattish nut. Also called <i>Badam</i> .) |  | Can be consumed roasted, salted, or spicy as a snack. They are blanched to remove the coat and are used in Indian royal gravies and biryanis. Also used in <i>Falooda</i> , a dessert made of vermicelli cooked in milk and <i>Shreekhand</i> , a dessert made of hung curds. Used as an additive to cereal, cakes, ice creams, and pastries. Greece: Used in wedding sweet called <i>Amygdalota</i> . Iran: Sea salt dipped and dried almonds are consumed as snacks. India: Used extensively in Mughlai cuisine. Italy: Almond macaroons. |
| Cashew (Light Brown with coat and Creamy white colored without coat, kidney shaped nut. Also called <i>Kaju</i> .) |  | Consumed roasted, plain, salted, or spiced as snack. Also used in preparing <i>Kaju Katli</i> , a dessert made of cooking cashew powder in milk and sugar. India: Cashew powder is used as a base of various sweets and desserts named <i>Suji Halua</i> , and <i>Modak</i> . Used in gravies and curries such as <i>Khoya Kaju</i> and <i>Kaju Usal</i> . Also used in preparing Cashew vinegar and <i>Feni</i> , an alcohol. |
| Chestnut (Green hairy shell outside and a dark brown glossy, half onion shaped nut inside.) |  | Dried and milled into flour to add into breads, pancakes, pasta, and polenta. Used as a thickening agent in soups and sauces. Can be eaten candied, boiled, steamed, deep-fried, grilled, or roasted. Croatia: Used in fritters. Hungary: Used in dessert named <i>Gesztenyepüré</i> . Swiss: Along with Kirsch, used to make a dessert called <i>Vermecelle</i> . |

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|--|---|---|
| Coconut (Green when tender, brown when ripe, two shells-outer with coir, inner very tough kernel. Bigger than tennis ball without outer shell. Filled with sweet water. White fruit meat is seen when broken. (Also called <i>Nariyal</i> .) |  | Coconut is grated, dried, and powdered to use as ingredient in cakes, swiss rolls, and biscuits. Also used for presentation of food. India: Used in preparing sweets called <i>Coconut Burfi</i> and <i>Modak</i> . Also used in gravies and <i>chutneys</i> , the dip made of grated fresh coconut with herbs and chilli ground to paste. |
| Hazelnut (Onion shaped, reddish brown, hard outer shell. Light brown fruit meat inside.) |  | Used in pralines and chocolates. Also used in chocolate truffles, Nutella chocolate spread, and Frangelico liqueur. Hazelnut oil is used as a cooking oil. |
| Macademia (Milk chocolate colored shell of around 3 cm diameter with a white spherical seed of ½ to 1 inches.) |  | Used ground as a filler and flavor enhancer in minced meat, poultry, and seafood preparations. Used powdered nuts in pastry or as a topping of pies. Roasted nuts yield a strong flavor. Its oil is used as salad dressing. |
| Peanut (Light brown ridged thin shell contains 1-4 peanuts. Light pink or deep crimson pink nuts inside arranged in a row. Also called <i>Ground Nuts</i> .) |  | Used in peanut butter spread. They can be consumed raw, roasted, spiced, or salted as snack. First press oil is used in cooking. India: Used as an important ingredient in <i>Sabudana Khichri</i> , a snack made of soaking <i>Sago</i> , and <i>Chikki</i> , a sweet toffee. They are added to snacks named <i>Poha</i> and <i>Chiwra</i> , the wet and dry snacks made of beaten rice. Powdered or pasted peanuts are used in thickening gravies and chutneys. |
| Pistachio (Creamy white smooth and hard shell containing light olive green and violet colored seed meat inside. Also called <i>Pista</i> .) |  | Used for presenting Mughal sweets such as <i>Halwa</i> , <i>Firni</i> , <i>Faluda</i> , and <i>Sheerkurma</i> . Also used ground in Indian popsicle made of thick milk and sugar called <i>Kulfi</i> . |

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| Walnut (Spherical hard and rough shell of around 3cm diameter. Dark brown brain shaped nut meat inside.) |  | Used chopped in cakes, cookies, pralines, pie toppings, and brownies. Halves are used for salads, dressings, and food presentation. Middle East cuisine: Used in preparation of chicken. Italy: Pesto sauce. |
|--|---|--|

Herbs

Herbs infuse unparalleled aroma and flavors that enhance the taste of the food preparation. A hint of herbs is just enough to arouse the sense of hunger. They also bring medicinal value to the food. Knowledge and use of herbs brings glamour to the cookery and the dish itself.

Introduction to Herbs

Here are some popular herbs with culinary use:

| Herb | How it Looks | Culinary Uses |
|--|---|--|
| Cilantro (Fresh Lush green colored glossy leaves of frilled round shape on greenish white or purple soft stem plant. Also called <i>Dhaniya</i> .) |  | Leaves are used mainly for food garnishing. They are also used to prepare <i>Kothimbir Vadi</i> , a steamed snack made of wet mixture of gram flour and chopped cilantro, and <i>Kothimbir Bhaat</i> (Coriander rice) in Maharashtra state of India. Dried or fresh leaves are used in preparation of curries and pickles. |
| Parsley (Leaves are similar to Cilantro except they are pointed instead of round.) |  | Parsley is used all over the world as a food additive in various cuisines. It is used in soups, sauces, and salads. It also lessens the need for salt in soups. |

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| Basil (Lush green colored oval shaped and roundly pointed, thin glossy leaves. Also called <i>Tulsi</i> .) |  | Basil is mainly used in Italian cuisine such as <i>Pizzas</i> and <i>Pastas</i> . It is also used in Thai cuisine. It can be used dry or fresh. |
| Water Cress (Leaves are round, lush green and glossy.) |  | Used in salads, soups, and sauces. |
| Lemon Grass (Long dull green matte finish leaves originating from portion of stem near ground. Also called <i>Gavati Chaha</i> .) |  | It is used in Thai cuisine for flavoring spicy Thai curry. In India, it is used to prepare aromatic tea. |
| Mint (Dark green colored leaves of little rough surface are connected to deep purple colored stem. Strong herb. Also called <i>Pudina</i> .) |  | It is used in salads, salad dressings, yogurt dips, and soups that need sharp taste and aroma. In India, it is used in street food called <i>Pani Puri</i> . It is an important ingredient in <i>Mint Chutney</i> . It is also used in a chicken dish named <i>Mint Chicken</i> . It is also used in jellies, candies, and mint-based drinks. |
| Oregano/Pizza Herb (Spade-shaped, olive-green leaves on purple brown stalk.) |  | Dried leaves are more flavorful than fresh ones. It is used in authentic Italian and Mexican cuisine. In Turkey, it is used to flavor lamb and mutton. It is used with paprika and salt as a condiment in <i>Barbecues</i> and <i>Kebabs</i> . |
| Sage (Grayish-green colored, long oval shaped leaves with a silvery covering. Strong herb.) |  | Used as an additive in soups, sauces, and various dishes. Best used when fresh. Being highly aromatic, it is used sparingly. Stems are tossed to add aroma to barbecue or grilled dishes. |

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| Tarragon (Long, narrow pointed, flat, green leaves with licorice flavor.) |  | Used in mainly in Béarnaise Sauce for steaks or eggs Benedict. It goes well with mayonnaise to dress various veg and non-veg dishes. Used in preparing tarragon vinegar. Slovenia: Used as a cake condiment. Iran: Used to flavor in Sabzi Khoran, a side dish. Persia: Used in pickles. |
| Thyme (Small lush green paired leaves on the pinkish-purple stem. Medium flavored herb with 300 types.) |  | Mainly used in Southern Italian cuisine in pasta sauce. While cooking with Thyme, it is used at early stage to bring out the aroma. Also used in French cuisine for preparing various sauces. |
| Rosemary (Dark green needle shaped leaves) |  | Used in stuffing of duck, chicken, lamb, meat steaks, etc. Also used in sauces and dressings. |

Spices

Spices are used in cuisines mainly in South Asian cuisines such as Indian, Shree Lankan, Pakistani, Indonesian, Malaysian, and Bangladeshi. They are also used in Mediterranean, European, and American cuisines. A spice can be any part of the plant from a seed, fruit, root, bark, bud or vegetable substance, which is especially used to flavor and color the foods. Spices bring in exotic aroma to the cooked food and also promise health benefits.

Introduction to Spices

Let us now know about the commonly used spices:

| Spice | How it Looks | Culinary Uses |
|--|---|--|
| Asafoetida/Stinking Gum (Dried gum acquired from a tap root of the herb found in Iran and mountains of Afghanistan. Also called Hing.) |  | Used largely as a condiment in <i>Chhonk</i> in Indian cuisine and in preparing pickles. It is highly aromatic and can contaminate the taste of food hence it is used sparingly. |

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| Bay leaves (Aromatic leaves of Bay tree with bitter, sharp taste. Also called <i>Tez Patta</i> .) |  | The fragrance of leaves is more noticeable than their taste. They are used in soups, stews, meat, seafood, veg and non-veg dishes, and sauces. |
| Cardamom (Seeds of a plant named <i>Amomum</i> , comes in light green/brown colored ridged pods with dark brown or black seeds with intense aroma and sharp taste. Two types: Green and Black. Also called <i>Ilaichee</i> .) |  | Mostly used in Asia. Widely used in both sweet and savory dishes. Black and Green, both cardamom seeds are important components in spice mixes, such as masalas and curry pastes. Green cardamom is used in sweets and spiced tea. Seeds are also used in mouth fresheners and in confectionery. |
| Cinnamon (It is a light brown colored bark of a plant named <i>Cinnamomum Casia</i> with sweet and hot sharp taste and aroma. Also called <i>Daalchini</i> .) |  | It is used in both; sweet and savory cooking. Cinnamon powder is used in baking. It is one of the main ingredients of <i>Garam Masala</i> , an Indian spice mix. It is used for veg as well as non veg dishes. |
| Cloves (Dark brown colored aromatic buds of the flowers of a plant named <i>Syzygium Aromaticum</i> . Also called <i>Laung</i> .) |  | Used grated in Asian, African, Mexican, and Middle East cuisines. It lends hot flavor to the meat and vegetable stews, fruits, and hot beverages. |
| Dry Mango Powder (Pale yellowish green colored fine powder made of sun dried raw mangoes. Also called <i>Aamchur</i> .) |  | Used in Indian and Middle Eastern cooking. Also used to bring sourness to the stews and to tenderize meat. |
| Mace (Yellow/orange colored covering of the Nutmeg seed having delicate flavor as Nutmeg. Also called <i>Javitri</i> .) |  | Used to impart light orange color to the stew. |

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| Nutmeg (Egg-shaped seed around 20-30 mm long and 15 to 18 mm wide. Also called <i>Jaiphal</i> .) |  | Mainly used in Indian (Mughlai) cuisine. It is also a main ingredient in <i>Garam Masala</i> and <i>Pooran Poli</i> , a sweet flatbread made of mashed cooked grams and jiggery.) Used sugar coated shreds in Malaysian cuisine as a topping and in the ice cream like dessert named <i>Ise Kechang</i> . |
| Chili/Paprika (A long, thin, pointed fruit of the plant. Often comes in various colors and contains <i>Capsaicin</i> that produces intense burning sensation. Also called <i>Mirch</i> .) |  | Often used after having an idea about its hotness on the Scoville Heat Unit (SHU) when green, fresh red, or dried red. Dried chilies are ground into fine powder. Used in savory dishes in the cuisines of Mexico, Turkey, Hungary, Europe, South Asia, Pakistan, and Australia. |
| Saffron (Crimson red colored fragrant stigmas of the saffron flower from a plant named <i>Saffron Crocus</i> . Also called <i>Kesar</i> .) |  | One of the costliest spices available in the world. Used in Indian sweet and savory dishes and in Thick milk ice cream of south Asia named <i>Kulfi</i> . Used in Indian sweets for garnishing and bringing deep orange color to the food. |
| Star Anise (Flower like looking dry brown colored fruit with cluster of 8 sections each containing a seed. Also called <i>Chakra Phool</i> .) |  | Used in spiced tea in Indian subcontinent. Also used as an important ingredient in <i>Biryani Masala</i> and <i>Garam Masala</i> , the Indian spice mixes. It is also used to bring flavor to meat dishes. Vietnamese use it in soup, Chinese and Malaysians use it in their cuisines and French use it in preparing wine. |
| Turmeric (Tuber of turmeric plant that induces deep yellow color and sharp hot taste and aroma. Also called <i>Haldi</i> .) |  | Often used fresh for pickles. Dried and powdered for storing. It is one of the main ingredients in <i>Chhonk</i> . Used in marination of meat and seafood before cooking. |
| Vanilla (Long dark brown drumstick-like ridged pods derived from an orchid named Vanilla. It has sweet mild aroma.) |  | The aroma extracted from the plant is available as a liquid essence. Used in confectionary, ice creams, flavored yogurts, cakes, and cookies. |

6. FPO – Methods of Cooking

Cooking is like love, it should be entered into with abandon or not at all.

...Harriet Van Horne, American newspaper columnist & film critic

When it comes to the cookery part of food production operations, it is very important to select an appropriate cooking method. The cooking method has a direct impact on the taste, texture, appearance, and flavor of the resulting food product.

There are three types of cooking used widely:

- Dry heat cooking
- Moist heat cooking
- Combination cooking

Dry Heat Cooking

This cooking involves cooking food without using water or stock. It is a quick method to cook food, in which the food items come out a little crisp. Generally small, tender, and thin food items are cooked using oil under dry heat cooking methods. The resulting food has nice smoky aroma because of caramelization and browning. The following dry heat cooking methods are popular:

Broiling

It involves cooking the food items by exposing it directly to heat such as open fire, coal, grill or electric coil. Meat steaks and whole fish are broiled.

Grilling

It is a method of cooking by placing the food on a mesh of cast iron. Millard reaction brings flavor to the food being cooked. The resulting food is quite dry, reduced with oil. It is ideal for small to medium shaped meat cuts, vegetables, tofu, or cottage cheese.

Roasting

It is a way of cooking food by exposing it to dry radiant heat over open fire, in oven, or at times within surrounding hot embers, sand, or stones. Vegetables, meat, corn on cob, potatoes, and sweet potatoes are roasted.

Baking

It is a manner of cooking food by exposing it to prolonged dry heat, normally in an oven, hot embers, or on hot stones. The heat is gradually transferred from the surface of the food item being baked to its center which gives it a firm dry crust and a soft center. Baking needs high temperature control. Breads, cookies, pies, and tarts are baked.



Sautéing

It is frying the food items with little oil in a pan exposed to high heat. The food in the pan requires stirring and tossing so that it does not burn because of high heat.

Shallow Frying

It promotes browning and Maillard reaction. The food is cooked in more amount of oil than used in sautéing to that a surface of the food is always in contact with the oil. The food is turned occasionally till it gets cooked evenly.

Deep Frying

The food is immersed in the ample amount of oil that is heated up to its smoking point. The food is turned for even cooking. The resulting food is very crispy. Fritters, Potato chips, *Pakoras* (Onion-Chick Pea flour fritters), and *Vadas* are deep fried.

Moist Heat Cooking

This cooking is carried out by immersing the food item in a liquid such as water, stock, or wine; at various temperatures ranging between 60°C to above 100°C. Following are some of the essential stages of moist heat cooking:

Poaching

It is done by heating liquid to temperature around 70°C to 85°C where liquid in the pan is hot but not bubbling hot. The bubbles appear at the bottom of the pan or pot. Poaching is used for very delicate food items such as fish or eggs.

Simmering

It is done by immersing food item completely in the liquid and heating it at 85°C to 95°C; the temperature is hotter than that in poaching. Bubbles form and gradually rise to the surface. It is the standard method followed for preparing soups and stocks.



Boiling

It is carried out at the hottest temperatures of the three techniques; above 100°C. The high temperature toughens some foods such as meat and eggs. It breaks delicate food items such as fish and vegetables.

Steaming

It is carried out by heating the liquids like water past its boiling point (212° F) and generates steam. Steam carries more heat than boiling water. It is the most appropriate method for cooking seafood, vegetables, and other delicate food items.

Combination Cooking

It involves both; use of dry heat as well as moist heat cooking. Combination cooking is performed as slow cooking. It is an excellent way of cooking thick vegetables and tougher meat cuts. There are two basic types of this cooking:

Braising

It includes two step cooking with light frying of food and then immersing it in liquid to make stew. In the first step, the food is fried with adequate oil. While frying or sautéing, the heat is transferred to food via pan. In the next step, a liquid is added to it and the food is cooked while the pan is covered with a lid. This way, the steam is caught in the pan and the heat is transferred to the food by convection. Meat curries and stews are braised.

Braising is used to cook large portions of meats such as beef, pork, and game. The meat cuts are often immersed partially.



Stewing

This is also very similar to braising as far as the cooking steps are concerned. Stewing uses small to medium uniform cuts of tender meat such as poultry or lamb, or vegetables. In case of stewing, the cuts of meat or vegetables are completely immersed in the liquid. Stewing takes little lesser time than braising.

7. FPO – Planning Menu

What nicer thing can you do for somebody than make them breakfast?

...Anthony Bourdain, American Chef and TV Personality.

In food production and operations, planning of menu is an important task. If the chef plans the menu in advance, it is easy to deliver ready food items on time. A ready menu can help organize the food preparation and ensures the chef cooks not only tasty but also healthy and nutritious food. It also helps in reducing wastage of food items and cooking fuel resources, and thus saves money.

Menu planning also facilitates purchasing and storing required food items. If a food preparation organization is providing multiple cuisines from all over the world, menu planning makes the theme easy.

What is Menu?

Menu is the detailed list of food items offered at the food service establishment. Menu planning is nothing but selection of menu for an occasion or otherwise. Menu can be different for different meals of the day such as breakfast, lunch, brunch, and dinner.

What is Course?

It is a sequential serving of dishes or the sets of dishes under a meal. A meal can contain at least three to at the most eleven courses.

There are two prominent types of menus: The **food menu**, **beverage menu**, and **bar menu**.

Food Menus

The structure of food menus largely depends on the type of cuisine, time of the day, and serving styles. The dinner menu is generally arranged course wise. For Example, Appetizers, Starters, Main Course, Desserts, and Beverages.

Types of Food Menus

There are various types of food menus:

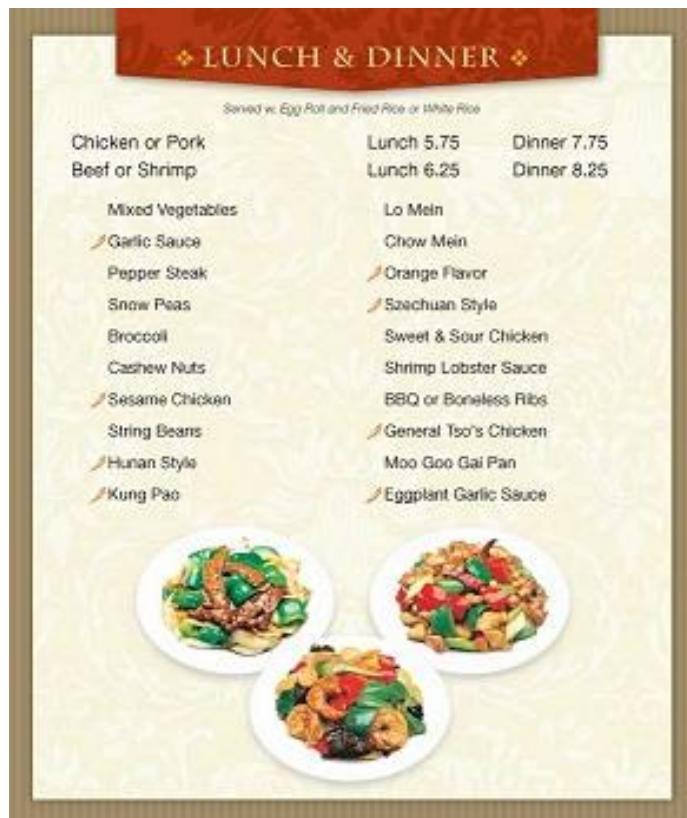
- **d' hôte:** In this type, multi-course meals with limited choice are charged at a fixed collective price. It is also called *prix fixe*, *set meal*, or *set menu*. Food in the menu is kept ready.
- **La' Carte:** An individual dish in the list is priced separately. Food is cooked to order and hence takes longer time to deliver.

- **Event Menus:** These are organized for events such as wedding, birthday, anniversary, and similar other. Such menus are designed well in advance by considering availability of seasonal ingredients.
- **Ethnic Menus:** They are designed as per the cultures, their eating preferences, tastes, and habits around the world. For example, Indian, Chinese, Thai, Kosher, African, and a few similar ones.
- **Theme Menus:** It reflects ambience of the theme based food joint.
- **Hospital Menus:** A dietitian is generally involved while compiling such menus to ensure the recipient eats healthy food always. The patient has least choice.
- **Institutional Menus:** It is the menu of meals offered for the staff or students at the college, school, or hostel. It is generally healthy breakfast and/or three course meal with some choice.

Structure of Food Menu

The menu must contain the following fields:

- **Name of the Food Item:** Preferably in English and in Local language.
- **Short Description on Preparation:** A classy description of what exactly the recipient is going to get.
- **The scale of Hotness:** In case the dish is savory.
- **Variants:** The subcategories of main food item.
- **Price:** Cost per unit dish/serving.



The menu card must be designed to catch the eyes and must be tempting. The description of food items must be easy to read and understandable.

Beverage Menu

Beverage is a refreshing drink other than water. It is divided into two broad categories:

- **Hot Drinks:** They mean tea, coffee, chocolate and their variants, milo, and plain milk.
- **Cold Drinks:** Carbonated cold drinks, lemon based drinks, local flavored drinks such as buttermilk, juices, cold coffee, iced tea, mocktails, etc.

The beverage menu must contain the following fields:

- **Name of the Beverage:** Preferably in English and in Local language.
- The Taste and Flavor: To build the mood.
- **Variants:** The subcategories of main beverage.
- **Price:** Cost per unit serving.

Bar Menu

If the food service establishment is serving alcoholic drinks, this menu is required. The bar menus contain the list of liquors, cocktails, mixed drinks, bartender's specialties, soft drinks, one plate meals, and snacks.

The bar menu must be composed of the following fields:

- **Name of the Drink:** Preferably in English and in Local language.
- **The Taste and Flavor:** To understand build the mood.
- **Variants:** The subcategories of main drink/dish/snack.
- **Price:** Cost per unit serving.

It must also contain a message for responsible drinking.

Factors Affecting Menu Compilation

There are numerous factors that affect menu compilation:

- Budget of food ingredients procurement
- Staff capability
- Availability of seasonal vegetables, fruits, and seafood
- Adverse health factors such as poultry affected with bird flu
- Lack of special facilities or equipment required for cooking
- Costing of recipe considering ingredients + fuel + time
- Total cost of each dish
- Total cost of whole meal
- Profit margins

Appropriate Pairing of Food and Beverage

Food and beverage are paired in such a way that there is a contrast with slightly different intensity so that the taste of each should counter the other and not spoil it. Pairing and advising which drink goes best with the selected dish is one of the charming tasks in food operations.

The rule of thumb here is, lighter drinks go well with milder food and more robust drinks go with more intensely flavored food. Here are some popular pairings:

| Beverage | Goes with | Reason for Pairing |
|-------------------|----------------------|---|
| Hot filter coffee | South Indian Food | The bitterness enhances spices in the food. |
| Hot spiced tea | Pakoras and Fritters | Tea enhances flavor of their ingredients and cleanses throat after eating this deep fried food. |
| Iced tea | Sandwiches, Subs | The sharp taste of tea balances mild taste of bread food. |

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| Carbonated drink like Coke, Pepsi, or 7Up | Pizza | To balance the taste of smoky cheese and toppings. |
| Champaign | Salty and savory foods. | Light and slight sweet taste of Champaign balances the salt. |
| Pinot Grigio white wine | Fish steak, chicken steak. | The wine flavor compliments non-veg flavor. |
| Pinot Noir Light Red wine | Grilled Vegetables and Meats. | The wine's farmyard aroma enhances smoky flavor of grilled dishes. |

Trends in Modern Diets

The lifestyle of 21st century people comes with hectic and busy days that may at times force them to compromise on consuming healthy food. To keep the health well maintained, they are aware of the importance of healthy food. They carefully choose what they eat.

Some of the modern trends include:

- Consuming low fat, low calorie food.
- Preferring baked food rather than deep fried food.
- Preferring more leafy vegetables, fruits, and 100% juices.
- Avoiding consumption of sugar or preferring natural sugars/sweeteners.
- Preferring food ingredients that are grown organically.
- Preferring natural drinks such as coconut water, green tea, and fresh juices over carbonated drinks.

Apart from these basic preferences, people follow some special diet plans such as:

- **Caveman's Diet:** Consuming a lot of protein, very less or almost no carbohydrates, no sugar and confectionery.
- **5 Factor Diet:** A US-based actress, Halle Berry, made this diet popular. This diet includes five meals a day, which does not take more than five minutes to be ready on a plate, accompanied by five exercises of five minutes each for five days in a week.
- **Facial Analyst Diet:** A facial analyst examines skin, eyes, and hair to arrive at an appropriate diet plan.
- **Raw Food Diet:** As the name suggests, it includes consumption of only fruits, salad vegetables, and their juices for some span of time.
- **Fat Flush Diet:** To increase the metabolism, this plan of diet recommends avoiding tea, coffee and alcohol, and consuming flaxseed oil, coconut oil, cranberry juice, and vitamins.

The commercial food preparation and service outlets need to update themselves on the contemporary diet fads and include diet food on their menu accordingly.

Part 3: Basics of Bakery & Confectionery

8. FPO – Introduction to Bakery

You are the boss of that dough.

...Julia Child, American chef, author, and TV personality.

Bakery can extend into past years of history. Romans first came with the art of baking and due to globalization it spread worldwide. Baked foods are healthy, tasty, and flavorful. They are in demand on special occasions such as weddings, parties, and social feasts.

What is Baking?

Baking is a manner of cooking food by exposing it to direct heat or heated stones for long time under controlled temperature. Baking is not just limited to cakes, breads and biscuits but practically a wide range of sweet and savory foods such as pies, cookies, tarts, *Baati* (Indian baked bread consumed in North-West region), *Rodgaa* (Indian baked bread consumed in east Maharashtra region of India), and snacks can be baked. Baked food often comes up with aromatic food.

There are five basic ingredients required for baking:

- Flour
- Sugar
- Margarine
- Baking Soda/Powder
- Salt

Commodities Used in Baking

Given below are some food commodities used in baking:

- **Flour:** It is the basic ingredient of baking cookies, breads, cakes, muffins, pizzas, tarts, and pastries. Its variants are self-rising flour, wheat flour, all-purpose flour, cake flour, etc.
- **Essence:** It is an extract acquired from a plant or other matter used for flavoring food. Some typical essence are almond, vanilla, saffron, lemon and rose.
- **Margarine or Butter:** Margarine is made of refined vegetable oil, water, and milk. Butter is made of processing milk. These both are called shortening.
- **Sugar:** It is used as food sweetener.
- **Eggs:** They are used as leavening and binding agents and they can bring moisture in the cakes. The chefs need to add either yogurt or applesauce in eggless cakes.

- **Baking Powder/Yeast:** It is used as a rising/leavening agent that gives softness and fluffy texture to cakes and breads. The baking powder is white fine powder made of Sodium Bicarbonate, Potassium Bitartrate, and corn starch. The yeast comes in two variants: dry and liquid.
- **Cocoa Powder:** It is used for introducing chocolate flavor to the food.
- **Chocolate slabs:** They are used for acquiring flakes by grating and then using the flakes for garnishing and decorating cakes. They come in the variety of chocolate-milk-sugar proportion. Now chocolate drops or chips are also available in the market.
- **Fruit Jams:** They are used for decorating sweet baked products.
- **Milk:** It is used for softening batter for the cakes, breads, and cookies.
- **Salt:** A pinch of salt is added into batter of sweet baked products to balance the taste of Baking powder and sugar.

Some typical equipment required in baking are:

- **Ovens:** They are used as a heating chambers for baking. Direct heat large kilns and modern electric ovens are used in food preparation units. The electric ovens provide high degree of precise temperature control and uniform heat.
- **Mixing Machine:** It is used to mix all bread or cake ingredients together into soft dough or batter.
- **Tins:** There are tins with various shapes and sizes used in baking. They create the resulting baked product in attractive shapes.
- **Icing Bag with Nozzles:** The icing bags hold the icing. They are used in decorating cakes in a large variety of ways using nozzles of catchy shapes and widths. They provide a great way of filling small glasses and molds in a sophisticated manner.
- **Baking Parchment:** It is a cellulose-based paper used as a non-stick surface. It is often thin and disposable.
- **Knives:** Bakery knives are used for cutting loafs, cakes, and handling pieces of cakes.
- **Cake Stands:** They are required to keep cakes of multiple tiers. Some of them are rotary. They provide circular motion that makes the process of cake decoration easy.
- **Spatula:** They are flat tip spoons, used to fold the batter and fill the icing bag. Spatulas often have rubber tips.

Basic Bread Fabrication

Bread fabrication is a complex process. Once started, it cannot be interrupted, as timing is very important for bread making.

There are 12 important stages of baking a bread.

Weighing Ingredients

During this stage, the chef assembles all the required ingredients and weigh them properly to ensure a good quality final product.

Preparing Ingredients

The chef selects an appropriate flour and sieves it. The chef also prepares yeast mixture by adding right amount of water of right temperature into the dry yeast.

Mixing the Ingredients

Mixing the ingredients is not as simple as it sounds. There are various factors that need consideration such as room temperature, flour temperature, speed of machine, the timings of adding various ingredients like margarine, sugar, yeast etc.

Bulk Fermentation

During bulk fermentation, the yeast acts on sugar in the flour and releases carbon dioxide and alcohol while it respire. The gas makes the flour dough rise and the alcohol brings flavor to the bread. The longer the fermentation, the more intense the aroma.

Folding/Degassing

Folding a dough is superior to simply punching it down. Folding involves gently kneading the dough into parts and new rolls. Degassing is a very important piece of the bread jigsaw. It removes some of the carbon dioxide and redistribute the food for yeast so that the yeast can resume to their meal.

Dividing

A large dough is divided into several smaller portions to make loaves or buns.

Benching

At this stage, the dough is kept for a while so that the gluten can rest and shaping becomes easy. This time is not more than a few minutes.



Shaping

At this stage, the baker shapes the bread for various looks such as loaves, buns, bagels, baguette, rolls, sticks, and other various shapes. Shaping affects the physical form of the bread.

Proofing

Once the dough is made into a desired shape, the baker keeps it for the final fermentation before it enters the oven. Proofing affects the chemical form of the bread.

Baking

The baker preheats the oven and keeps the doughs into it under a controlled temperature.

Cooling

In this stage, the baker takes out the bread and sets on the racks for exposing it to the air for cooling. Some breads such as baguette are eaten at room temperature.

The bread is thus ready to be consumed.

Types of Cakes

Cakes are named according to the way they are prepared.

| Type | Preparation |
|--------------|---|
| Butter cakes | They contain fat such as butter. It starts with beating sugar and butter together until the sugar dissolves partially and then adding dry and wet |

| | |
|------------------------|--|
| | ingredients alternatively. The resulting cake is light and rich with moisture. For example , Pound cake made with a pound each of butter, sugar, eggs, and flour. |
| Layer Cakes | They also contain butter and can be made by arranging layers of different butter cakes. For example , Golden cake, Birthday cake. |
| Sponge cake | They do not contain fat or leavener such as baking powder. The preparation starts with whipping eggs or egg whites such that it becomes fluffy with air. Dry ingredients are sifted and folded in gently. During baking, the air expands to rise the cake on its own. It gives extremely light and spongy but less moist cake. |
| Angel Food Cake | It contains egg whites and no egg yolks. Preparation starts with beating egg whites until they are firm and adding dry ingredients gently. This cake is very white and delicate. It is often paired with addition of fruits. It is cooled by inverting it on the cooking rack. |
| Genoise | It is a kind of sponge cake made with whole eggs. In the preparation, eggs and sugar are combined and whipped in the pan kept over simmering water. They are sliced into thin horizontal layers and stacked with alternate layers of cream/frosting and slices to create layered cake. For example , Swiss roll. |
| Flourless Baked Cake | It does not contain flour. All ingredients are folded gently and poured into a pan that is kept in a larger pan which is partially filled with water. This water bath is arranged to reduce effect of strong heat from oven to this delicate cake. For example , cheese cake. |
| Flourless Unbaked Cake | They are chilled instead of baking. The bottom is often crusted with a layer of cake and on the top of it whipped cream and egg white is added. For example , Chocolate mousse. |

Pastry

It is a dough often used for preparing both, sweet and savory meals. It contains flour, shortening like butter or oil, sugar, water, and salt. A filling is put inside the pastry and it is baked to get resulting food with crispy coat. There are various pastries made such as short crust pastry, puff pastry, and Filo pastry. For example, pastry is used for pies, puffs, croissants, and tarts.



Pastes, Creams, Fillings, and Sauces

Baked items often look and taste good when paired with fillings and creams, and topped with sauces. They bring tempting presentation to the main cake or bread and also extend their flavor.

Pastes

Pastes are the compound of fruit pulp, lemon juice, and sugar. The bakers often add light spices such as cinnamon or cardamom, which go well with the sweet taste. Some widely used pastes in bakery are:

- Apple paste
- Banana paste
- Coconut paste
- Guava paste
- Mango paste

For preparing savory puffed pastries, ginger-garlic paste is also used.

Creams

Their texture changes as per the amount of butterfat they contain. The higher the butterfat contents, less whipping is required to get thick cream.

- **Half and Half/Single Cream:** It contains around 15% fat. It cannot be whipped as it contains proportion of cream and milk as 50:50. It goes well with coffee or on cereal.
- **Whipping Cream:** It contains around 30% fat and it is thick enough to be whipped.
- **Double Cream:** It contain around 48% fat. It cannot get whipped well.

Fillings

The fillings have a strong foot in the domain of desserts, cakes, and other bakery products. The fillings provide delicate flavor and aroma. A perfect filling has a good spreading ability and consistency. Some of the widely used fillings are:

- Chocolate filling
- Coffee fillings
- Almond filling
- Cashew nut filling
- Hazelnut filling
- Peanut filling

Sauces

Various sweet sauces often known as dessert sauces are used with cakes and desserts that take them to the next heights. They contribute flavor and moisture to the dessert. The dessert sauces are made by combining cooked fruit pieces, sugar, and liquid caramel or light alcohol such as wine.

Some popular ones are crème Anglaise, classic caramel sauce, chocolate sauce, strawberry sauce, raspberry sauce, blueberry sauce, butterscotch sauce, and fruit curds.

9. FPO – Confectionery

*If some confectioners were willing...To let the shape announce
the filling, We'd encounter fewer assorted chocs...Bitten into and
returned to the Box.*

...Ogden Nash, American Poet.

Today, a large range of colorful, flavorful confections available in the market, which serve as a treat to our tongues as well as our eyes. May it be the candies, bite-size chocolates, cookies, lollies, or other sweets; not only children but grown-ups also favor them. Adults being health conscious, consume them with confessions.

In Europe and US, syrups, caramel, cocoa powder, milk powder, and sugar are generally used. In Indian subcontinent, the confections are often generally referred to as *Mithai*, which is based on the main ingredient *khoyaa*; the thick hard cream of milk. Mithai is also made from *Halwaa*, the wheat extract or it can be made from *gram flour*. Confections in Indian subcontinents also use palm sugar or jiggery; the concentrate of cane juice as a sweetener.

What is Confectionery?

Confectionery is an art of making confections by using sugar and a carbohydrate based binding medium.



Flour Confection



Sugar Confection



Chocolate Confection



Other Confection

The confections is broadly divided into the following categories:

- **Flour Confections:** They are cakes, tarts, doughnuts, cookies, sweet pastries, or any similar confection made using flour. They are mainly served in desserts course.
- **Sugar Confections:** They are candies, chewing gums, and jellies. They flavor and color sugar as their main ingredient. They are made at high temperatures around 150°C. The spoilage is low and hence they have longer shelf life without refrigeration.
- **Chocolate Confections:** They use cocoa powder and chocolate syrup as their main ingredient. They need refrigeration during warm weather.
- **Milk Confections:** They are thick milk cream based/milk powder based confections made by combining various dry fruits, flavors, and colors into them. They are treated as a part of main course. They are best when fresh. Their shelf life is short but can be extended by refrigeration.
- **Other Confections:** They are made from extract of soaked wheat, which is flavored, thickened, and colored.

Commodities Used in Confectionery

Ingredients used in Confectionery

- **Fruits/Dry Fruits/Nuts:** They are a prominent ingredient. Fruits are cooked with or without sugar to get sweet thick pulp. Dry fruit pieces, Nut powders, broken Nuts, or roasted nuts are used.
- **Sugar (Glucose/Sucrose):** It is required to bring sweetness to the confection.
- **Cocoa Powder:** It is a key ingredient of preparing chocolates and chocolate-based confections.
- **Milk Powder:** It brings thick and moist physique to the confection.
- **Pectin:** It is a texturizing gelling agent and thickener. It is used in preparing gums, chewable candies, and jelly products.
- **Gelatin:** It is used almost exclusively in confectionery products which require long, tough, gum-like textures.
- **Acid:** It is lemon juice, tartaric acid or any vinegar.
- **Essence:** It is a flavoring agent for the confections.
- **Color:** It is simple food color. It is available in dry as well as liquid form.

Equipment used in Confectionery

These commodities often involve preparation, mixing, cooking, dispensing, and packaging machines. They are used depending upon the requirement. In smaller food preparation units,

not all types of machines are required. They can use cake/candy/jelly molds, icing bags, trays, frying, and baking instruments.

Some Popular Confections

Let us see a few popular confections:

- **Caramel:** Wet caramel is prepared by melting sugar with water then cooked with milk powder. Dry caramel is prepared by cooking sugar by itself until it liquefies and caramelizes.
- **Chocolates:** Bite-sized confectioneries generally made with chocolate.
- **Dodol:** A toffee-like confection prepared in South East Asian countries such Indonesia, Malaysia, and the Philippines.
- **Fondant:** It is a thick paste made of sugar and water. It is often flavored and colored, used in preparation of sweets, icing, and cake decoration.
- **Fudge:** It is made by boiling milk, milk powder, and sugar together.
- **Halwaa:** It is made of the extract of wheat soaked overnight, sieved and cooked with sugar and color till it becomes thick. It is often arranged in layers, and cut into cubes.
- **Candy:** It is hard and based purely on sugar. For example, lollipops, peppermint drops and disks, candy canes, and rock candy.
- **Marshmallow:** fluffy and puffy lightly flavored candies.
- **Marzipan:** An almond-based confection, doughy in consistency, a sweet yellow or white paste of ground almonds, sugar, and egg whites. It is used to coat cakes or to make confectionery.
- **Mithai:** A generic term for confectionery in India, it is typically made from dairy products, powdered nuts, cardamom powder, and saffron.

Part 4: Basics of Indian Cooking

10. FPO – Indian Cooking

Indian food is like classical music raga- it takes time to build up to a crescendo.

... Shobhaa De, Indian Model and Author.

Indian cuisine boasts about the widest variety of tastes, exotic aromas, and preparation methods. Being a country of diverse culture, the taste and preparation of food changes every few hundred kilometers along with the language dialects.

North Indian food is completely different in terms of look, flavor, and taste from South Indian food. Similarly, East-Indian food is totally different in its form than the food from West-Indian lands. Indian cuisine is recognized as part of different regions such as *Asamese, Andhrite, Bengali, Gujrati, Kashmiri, Marathi, Punjabi, South Indian*, and many more.

Widely Used Ingredients in Indian Cuisine

There are some special ingredients that an Indian kitchen stocks. The stock includes some gourmet dairy products such as *Ghee* and *Paneer*. These two dairy products are used in preparing sweets as well as savory dishes.

Ghee

Ghee is nothing but clarified butter, which is superior to the ordinary butter in terms of contents and flavor. The procedure of preparing this dairy product is little lengthy but the efforts and time spent on their preparation are worth the aroma and body they deliver to the food. The procedure goes as follows:

- Accumulate 8 parts of full cream of milk in a large deep pan.
- Add 2 parts of thick sour curds and mix well and keep aside for 4 to 5 hours.
- When the entire cream turns sour, beat it with the electric beater for around 20 minutes using water as required. This action separates butter and white buttermilk. The buttermilk is used in preparing a savory dish called *Kadhi*. It can be consumed as an appetizer too.
- Take out butter in a heavy bottom pan.
- Heat it on low flame till you get to see brownish golden burnt milk solids deposited at the bottom of the pan and a transparent golden ghee on the top of it.

Paneer

This is a basic ingredient of Paneer based gravies and desserts.

- Boil 2 liters milk in a deep pan.
- When it is coming to full boil, add 2 to 3 tbsp vinegar into it.
- Stir for a while occasionally.
- Boil for a few minutes further till you get to see milk chunks separated from thin white whey.
- Place a clean cotton cloth with edges spread outwards in another deep pan.
- Put water separated milk solids into the cloth.
- Assemble the edges of cloth to drain the whey completely and you get *Paneer*.
- Cut into pieces of desired shape and store in the freezer.

Some other important ingredients kept handy are:

- **Dalia:** Coarsely broken wheat. It is used to prepare a porridge-like snack.
- **Semolina (Suji):** Finely broken wheat. It is used to prepare *Halwa* or *Upma*.
- **Beaten Rice (Poha):** Dry, flat, flaky rice used in preparing various snacks.



Kokum



Paneer



Semiyan



Jaggery (Gud)



Beaten Rice (Poha)



Puffed Rice (Murmura)



Ghee



Tamarind (Imli)



Puffed Chickpea



Dalia



Samolina

- **Puffed Rice (Murmura):** It is roasted rice in special kiln to make it puffed. It is used to make a spicy snack called *Chiwda*.
- **Jaggery (Gud):** thick boiled and solidified pulp of sugarcane juice. It is added in lentils and veg dishes to balance hot and sour taste.
- **Vermicelli (Semiyan):** Long and thin spaghetti made of wheat flour. They are used for cooking a dessert named *kheer* and a snack named *Upma*.
- **Kokum:** They are the dried peels of a fruit from a plant belonging to *Mangosteen* family. They leave dark red juice when soaked in warm water. This juice is used in preparation of seafood gravies, and a spicy savory chilled drink named *Solkadhi*. Kokum gives sour taste to the food and can be replaced by *Aamchur* or *Tamarind Pulp*.
- **Tamarind:** It is a pod-like, flat, long, and pulpy fruit with greenish brown shell as thick as egg shell. Inside, there is a brown fruit held with ridges. Both raw and ripe tamarind is used in chutneys and gravies.
- **Puffed Split Chick Peas (Chana):** Chick peas are roasted to make them puffed and they are shelled. These puffed peas are used in preparing snacks like *Chiwda*, toffees like *Chikki*, and chutneys.

Importance of Chhonk in Indian Cuisine

Chhonk (popularly known as *Tadka*) is a cooking method by which aroma of various spices extracted and incorporated in the food. Five main ingredients are put in chhonk by heating oil in a pan: Mustard seeds, cumin seeds, asafoetida, turmeric powder, and curry leaves.

Sometimes finely chopped green chili or garlic, juliennes of ginger, ginger-garlic paste, fennel seeds, or red chili powder, is added to release their aroma. These ingredients can vary according to the cuisine.

The chhonk not only adds aroma of spices to the food but also acts as a hunger inducing medium.

Indian Veg Stews

Indian cookery offers a very wide variety of stews preparation. The vegetable stews are made of diced vegetables. The vegetables are cooked by combining them with various spice mixes. For thickening the stew, either grated coconut, peanut, tomato, or onion pastes are used. Then they are seasoned with chhonk. The stews are popularly known as *Sabzi*.

Vegetables stews are made of almost any vegetables listed in chapter named "Vegetarian Cookery". Some popular sabzis are:

- Potato-Cabbage (Aaloo-Gobhi)
- Spinach with Cottage Cheese (Palak-Paneer)
- Fried Okra (Bhindi Fry), Stuffed Okra with filling of coconut and peanut powders and spices.

- Steamed Potato in savory tomato gravy with cream (Dum Aaloo)
- Roasted Brinjal stew cooked with onion, groundnuts (Baingan Bharta)
- Sweet and Sour Bitter gourd cooked in tamarind pulp and jaggery (Khatta Karela)
- Cottage cheese in thick onion-tomato-spices gravy (Paneer Kadhai)
- Stuff-cooked Tomato or Capsicum
- Cauliflower, Potato, and Green Peas in coconut gravy
- Fenugreek leaves cooked with peas and cream (Methi Malai Mutter)

Indian Non-Veg Stews

The non-veg stews are made of diced meat pieces such as chicken, lamb, prawns, fish, and mutton cooked with spices. For thickening the stew, either grated coconut, tomato, raw papaya or onion pastes are used.

Meat stews are cooked using. Some popular non-veg stews are:

- Chicken Curry
- Mutton Curry
- Fish Curry
- Fish Fry (Fish coated with spiced rice flour and turmeric leaf and shallow fried.)
- Mutton in White Gravy
- Dry meat Stew (*Sukke Mutton*)
- Dry Prawn Masala
- Prawn Curry
- Spicy minced Mutton (*Keema*)

Indian Daals

Indian *Daals* are nothing but the lentils, pulses or beans cooked with aromatic spices. The lentils can be whole or split, with or without husk.

If the whole lentils are to be used, they are soaked for six to eight hours if they are whole and with husk. Sometimes they are sprouted to reduce the amount of sugar in the lentil. They are cooked in a pressure cooker to make them soft, edible, and bring down their anti-digestion properties.

Once cooked, spices are added and *Chhonk* is put over it to enhance the flavor. Let us take a look at some of the famous *Daals*.

Plain Daal

It is often made of split and husked *Toor* or *Moong* lentils. The lentils are washed and soaked in water for 20 minutes. Then they are cooked in a cooker till they turn completely soft but intact in shape. They are then boiled with water, little salt and *ghee*. Plain *Daal* is consumed without *Chhonk*.

Daal Tadka (Daal with Chhonk)

It is the plain *Daal* with *Chhonk*. The *Daal* is often cooked with chopped tomatoes and/or onions, garlic, ginger and other spices such as coriander powder, turmeric powder, and chilies. The *Chhonk* of ghee/butter with spices is put over cooked *daal* it to bring out best flavor.



Plain Daal



Daal Tadka



Rajma with Rice



Moth Beans Curry



Maah Ki Daal



Chick Pea Curry

In Maharashtra state, they add some *Kala (Goda) Masala* into *Daal* while it boils for enhancing its flavor.

Rajmaah

It is prepared by cooking kidney beans. It is often paired with plain rice.

Ingredients:

Kidney beans 200gm soaked in water overnight, 1 large onion, 1 green chili, and 3 tomatoes finely chopped, 1 inch ginger and 6 cloves of garlic minced, 1 tbsp. *Rajmaah Masala*, 1 tsp cumin seeds, $\frac{1}{2}$ tsp red chili powder, $\frac{1}{2}$ tsp turmeric powder, water 600ml, 1 tbsp butter, $\frac{1}{2}$ tbsp. dry mango powder, and salt to taste.

Preparation:

1. Add *Rajmah* in pressure cooker with chopped onions, tomatoes, ginger, garlic and green chilies.
2. Add cumin seeds, chili powder, turmeric, and water.
3. Stir well and cook for 8 to 10 whistles.
4. Take out from the cooker and check if it is cooked completely.
5. Heat butter in a pan. Add cooked *Rajmaah* to it. Add little water, *Rajmaah* masala, and dry mango powder.
6. Cook for another 6-8 minutes.
7. Mash a few rajma beans with the back of a spoon to thicken the consistency of daal.

Chana Masala

It is prepared similar to *Rajmaah* using cooked chick peas instead of kidney beans. In addition, *Rajmaah Masala* is replaced with other tangy spice mix called *Chana Masala*.

Other Indian Daals

In India, field beans, moth beans, green beans, black-eyed beans and horse beans are often sprouted and cooked with grated coconut, chopped onion and tomatoes, and ginger-garlic paste.

Indian Flatbreads

Indian flatbreads form a major part of the main course. They are prepared from the dough of wheat flour, gram flour, or all-purpose flour. The doughs are gently rolled on a smooth platform using a rolling pin to get them in the form of flat thin disks. These disks are generally termed as *Rotis*. The *Rotis* are baked on a flat pan or skillet called *Tawa*.

There are myriad types of Indian flatbreads when it comes to the composition of ingredients and method of preparation.

Plain Roti

This is a flatbread prepared in most regions of India. It is prepared using wheat flour dough, little oil, and some salt for taste.

Ingredients:

2 cups whole wheat flour, $\frac{1}{2}$ tbsp. salt, 2 tbsp. oil, $\frac{1}{2}$ tea spoon salt, water.

Preparation:

1. Mix the flour and salt and knead it into a fine dough using water and oil.
2. Divide the dough into 8 equal portions.

3. Roll each dough into the shape of flat disks.
4. Bake them on both sides on a heated *Tawa*.

In large food preparation units, kneading and rolling equipment as well as automatic roti making machines are used that prepare ready to eat *Rotis*.

Rumali Roti (Rumali = Like Handkerchief)

This is a very thin roti eaten with stews and lentils. The name comes from its thin form and way of folding, similar to a handkerchief.

Ingredients:

Same as plain roti ingredients; with 1 cup whole wheat flour replaced by 1 cup all-purpose flour. Plus 4 tbsp *Ghee*.

Preparation:

1. Mix the flour and salt and knead it into a fine dough using water and oil.
2. Divide the dough into 16 equal portions.
3. Roll two small doughs into the shape of small flat disks.
4. Apply ghee or oil on one of them.
5. Place the second rolled disk on the first one.
6. Without sealing edges, roll them together into large flat and thin disk.
7. Bake them on both sides on a heated *Tawa*.
8. When each side is baked properly, separate the two layers and fold them as a fold of a handkerchief.

Paratha

It is cooked by stuffing some cooked dry vegetables little mashed and spiced in the dough and rolling into thick disk.

Ingredients:

For dough, same as roti. Plus any dry stuffing made by cooked vegetables. It can be made of cooked potatoes, cauliflower, cottage cheese, or any other vegetable of choice and imagination.

Preparation:

1. Prepare dough by following first two steps of Roti.
2. Take a small dough.
3. Roll it into 3 inch diameter disk.

4. Place a small serving of the stuffing on it and bring the edge of the disk together and seal them to make a ball. Flatten it slightly.
5. Apply some flour and roll it gently.
6. Bake it on both sides using ghee or butter.

Puri

It is puffed bread.

Ingredients:

2 cups wheat flour, 1 teaspoon sugar, $\frac{1}{2}$ tbsp. salt, water and oil for deep frying.

Preparation:

1. Dissolve sugar in $\frac{1}{2}$ cup water.
2. Add this water and salt into the flour.
3. Knead it into fine and firm dough.
4. Divide the dough into 12 pieces.
5. Roll each piece into small disk of 4 inches diameter.
6. Heat oil in a deep thick-bottomed pan.
7. Deep-fry the *Puris* on both sides. They should come out puffy and crispy.

Naan

It is North-Indian flatbread.

Ingredients:

All-purpose flour 2 cups, Dry yeast 1 teaspoon, warm water and buttermilk - 1 small cup each, sugar and salt - 1 teaspoon each, ghee or butter for butter naan.

Preparation:

1. Add sugar to the warm water. Activate yeast by adding it into this mixture and let it stand for 10 minutes.
2. Pour this mixture into the flour.
3. Knead into a very soft dough and let it stand in warm place for 20 minutes.
4. Make 8 equal portions of the dough.
5. Take a small dough and roll it into 3 inch diameter round disk.
6. Spread little ghee or butter.

7. Fold the disk half. Apply ghee again on the visible surface and fold it to bring a look of a circle's quarter.
8. Roll it into flat little thick disk, which should resemble a triangle with rounded corners.
9. Bake it on both sides till half done.
10. Place it on the wire rack and hold the rack directly on the flame. Turn the naan and let it bake on the other side till done completely.

The naan looks thick bread with bubbly surface. Applying ghee on the top of the hot naan gives butter naan version. It tastes good with any spicy veg or non-veg gravy.

Bhatura

It is similar to *Puri* in appearance but it is bigger and puffier than *Puri*. The dough for *Bhatura* is prepared using little curds, water and salt. It is consumed with spicy chick-pea gravy. This pairing is popularly known as *Chana-Bhatura*.



Plain Roti



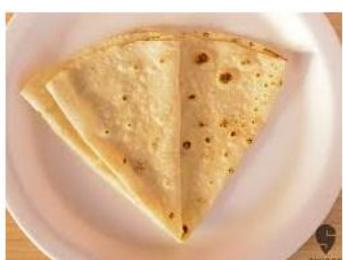
Paratha



Naan



Appam



Rumali Roti



Bhatura



Puri

Appam

They are fluffy smooth flatbread made with the rice as main ingredient.

Ingredients:

Raw rice 1 large cup, husked and halved black grams $\frac{1}{4}$ cup, fenugreek seeds 1 tbsp., coconut milk (first) 1 cup, cardamom powder 2 pinches, salt and sugar $\frac{1}{2}$ tbsp. each.

Preparation:

1. Soak rice, black grams and fenugreek seeds for 2 hours.
2. Grind them together to thick consistency.
3. Add coconut milk and mix well to form batter of pouring consistency.
4. Keep it at warm place for 8 hours for fermentation.
5. Add cardamom powder, sugar, and salt.
6. Heat appam pan.
7. Pour the batter of the size of a serving spoon in the center of the pan.
8. Hold the handles of pan and tilt it in such a way that the batter spreads outwards and makes a circle. Make sure the center is thicker than the outer side.
9. Cover it with lid for a couple of minutes and steam it.
10. When the outer side starts leaving the pan, the appam is ready.
11. Take the appam out gently by cooking it only on one side.

The other versions of rice flatbreads are *Dosa* and *Uthapam*, which can be eaten as a snack in themselves. Each one use different compositions of rice and black gram, and different fermentation periods.

Flatbreads taste best when hot and fresh, paired with stews, gravies, and pickles.

Indian Rice Dishes

Rice is consumed with either *Daal*, curds, gravy, or curry if it is plain. Variants like *Biryani*, *Pulao*, *Curd-Rice*, and *Tamarind-Rice* are consumed as a one dish meal. Rice is washed thoroughly and cooked with water, salt, and little ghee in a pressure cooker or electric cooker. In this section, we will discuss some of the popular rice dishes.

Plain Rice

It is boiled/steamed rice without any spices.

Ingredients:

Raw long grain rice 1 cup, water, salt ½ teaspoon, ghee 1 tbsp. (optional).

Preparation:

1. Take 2 cups water in a medium saucepan.
2. Add salt and ghee to it.
3. Bring it to boil.
4. Add rice and boil it for 5 minutes.
5. Turn down the heat and cook for 15 minutes with lid on.
6. Cut the heat.
7. Let it stand for 5 minutes with lid.
8. The grains should be finely cooked yet separate.

Pulao

This is spicy rice cooked in veg or non veg stock and pieces of vegetables or meat.

Ingredients:

Long grain rice 1 ½ cup, Green Peas ¼ cup, Dices carrot ¼ cup, Any other diced vegetable of choice, Bay leaf 1 piece, Garam Masala Powder ½ tbsp., Turmeric and Red Chili Powders, Mustard Seeds and Cumin Seeds ½ tbsp. each, Asafoetida a pinch for chhonk, chopped coriander leaves 1 bunch, salt ½ tbsp., oil 2 tbsp., vegetable stock 2 ½ cups.

Preparation:

1. Wash rice and keep aside.
2. In a heavy bottom pan, add oil.
3. When it is heated, add Mustard Seeds, Cumin Seeds, Asafoetida, and Turmeric Powder.
4. Add vegetables and red chili powder and stir for a couple of minutes.
5. Add rice, stock, and salt.
6. Bring to boil on full heat.
7. Reduce heat and cook rice for 15 minutes.
8. Cut the heat and let it stand for 5 minutes with lid.
9. Garnish with chopped coriander leaves.

Meat pulao is made of replacing pieces of vegetables with pieces of boneless meat and meat masala.

Khichdi

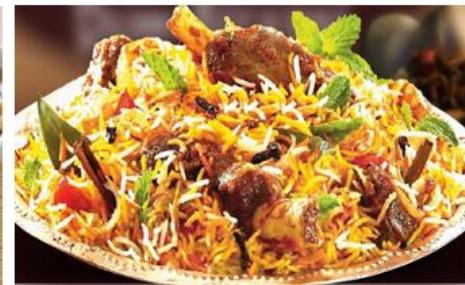
Khichdi is rice cooked with mainly lentils and chopped carrot. The split green grams or pigeon peas are used as accompanying lentils with rice. This one dish meal is light on spices and always seasoned with ghee.



Plain Rice



Pulao



Mutton Biryani



Tomato Rice



Curd Rice



Khichdi

Biryani

Biryani is a savory Mughal delicacy the Northern Indian lands have given to the world. Though there are veg and non-veg versions prepared, the non-veg version of Biryani prepared with meat stock and meat pieces is more popular. Here is how a gourmet mutton biryani is prepared:

Ingredients:

- **For Rice:** Star Anise 1, washed & drained basmati rice 500 gm, Bay Leaves 2, Black Cardamoms 2, Black Cumin Seeds 2 tbsp., Black Peppercorns 6, Green Cardamoms 6, cinnamon sticks 1"X2, Cloves 6, Fennel Seeds 1 tbsp., Nutmeg ¼ Piece, Mace 1 flower, Salt 2 tbsp.
- **For Mutton Marination:** Mutton 1 kg cut in 2 inches pieces, Garam Masala 1 tbsp., 1 Ginger-Garlic Paste 2 tbsp., Raw Papaya Paste 3 tbsp., Hung Curds 6 tbsp., Juice of 1 lemon, Red Chili Powder 1 tbsp., salt 1 tbsp. Saffron strands 2 pinches soaked in ½ cup milk.
- **Other ingredients:** Thinly sliced onions 4 fried till brown, Chopped tomatoes 2, 4 tbsp ghee. Oil, Rose Water, Kewra essence 6 drops.

Preparation:

1. Mix all ingredients for marination and keep standing for 1 hour.
2. Cook the marinated mutton over medium heat by stirring in between till it is soft and intact.
3. Keep covered aside.
4. Soak the rice for 20 minutes in water. Wash well and drain.

5. In a small piece of clean cloth take Black Cardamoms, Black Cumin Seeds, Black Peppercorns, Green Cardamoms, cinnamon sticks, Cloves, Fennel Seeds, Nutmeg, Mace, and tie a knot to make a small bag.
6. Bring around 800 ml water to boil.
7. Add rice, bay leaf, salt, and spice-bag into it.
8. Cover and cook until the rice is half done.
9. Drain the water and remove the whole masala bag.
10. Add Kewra essence and rose water into saffron-milk mixture.
11. Heat a heavy bottom pan on medium heat.
12. Add ghee and bay leaf.
13. Reduce heat to minimum.
14. Add a layer of cooked rice, top with cooked meat pieces, sprinkle some saffron water, top with fried onion slices and ghee.
15. Repeat till ingredients are over.
16. Put the lid on the pan. Seal the pan using flour dough or foil.
17. Cook the Biryani on low heat for 30 minutes.

The difference between Pulao and Biryani is, the Biryani is layered while being cooked, uses exotic spices such as saffron, and has a traditional gourmet cooking style unlike pulao.

South Indian communities prefer some simpler and tangy rice dishes such as lemon rice, curd rice, tomato rice, and tamarind rice. These rice versions are often prepared using roasted peanuts, split black gram and yellow gram powder, and a *Chhonk* of curry leaves, asafoetida, and turmeric.

Indian Snacks

Let us take a look at some of the popular Indian snacks:

- **Alloo Bonda:** It is prepared by molding spiced and mashed boiled potatoes into rounds, coating them the batter of gram flour, and deep frying them till golden brown.
- **Idli:** It is made with the batter of rice and black gram. Two parts of rice and one part of split husked black gram is soaked for eight hours. They are ground separately in a pouring thick consistency and mixed well together. This batter is kept at warm place for fermentation for around 6 to 8 hours. The batter is set into Idli molds and steamed for 15 minutes.



Sago Khichadi



Upma



Poha



Aloo Bonda



Urad Wada



Samosa



Pakora



Dhokla



Idli



Thalipeeth

- **Poha:** It is made of beaten rice. The beaten rice is washed and all water is drained. It becomes wet and soft. Some oil is heated in a pan and mustard seeds, cumin seeds, asafoetida, turmeric, green chili pieces, and curry leaves are added to it. Peanuts and chopped onion and finely chopped potatoes are added too. After cooking this mixture, the soaked beaten rice is added and mixed well. It is cooked for a few minutes. Finally, salt, a pinchful of sugar, and fresh grated coconut is added to bring tangy taste.
- **Sago Khichadi:** The sago is soaked for nearly 2 hours. Ghee is heated in a heavy bottom pan. The cumin seeds and a few pieces of green chilis are added to the ghee. Then pieces of potato are added and fried for a little while. The soaked sago is added alongwith coarsely ground powder of roasted peanuts. The mixture is cooked for a while with lid; stirring occasionally. Finally, some salt and a pinchful of sugar is added.
- **Pakoda (Fritters):** They are prepared by missing onion or potato slices in gram flour with red chili powder, salt, and carom seeds. They are then deep fried till they turn golden brown and served with chutneys.
- **Samosa:** It is prepared by stuffing spicy mixed vegetable into stripes of dough, folding them in a triangular shape, and finally deep frying them. The vegetable involves roughly mashed boiled potato and green peas spiced with turmeric and pieces of green chili, fennel seeds, corn nibbles, raisins, and broken cashew nuts.
- **Thalipeeth:** It is made of five grain flour. The split chick-peas, rice, wheat, green gram, dry red chilies, and coriander seeds, are roasted. These all ingredients are ground to fine power. At the time of preparation, the flour is kneaded using water and salt into fine soft dough. Some chopped onion and cilantro is added. Some oil is applied to the surface of a skillet and a dough is gently spread into a round disk by pressing it with hand. Finally, the skillet is transferred to heat and the *Thalipeeth* is cooked on both sides with lid.

- **Upma:** Its basic ingredient is broken wheat called *dalia* or coarsely ground wheat called *suji*. Regular chhonk is prepared in a pan and some chopped onions, green chili, peanuts, split chick peas, and tomatoes are fried in it. The dalia or suji, salt, and some ginger juliennes is added and stirred for a while. Finally, Boiled hot water is added and the mixture is covered immediately to cook thoroughly.
- **Dhokla:** Its main ingredient is gram flour and suji. They both are combined and mixed well with ginger-garlic paste, green chilli paste, sugar, thin buttermilk and salt. The mixture is fermented for six to eight hours. The batter of thick pouring consistency is then steamed for 10-12 minutes. The dhokla is cut into pieces and seasoned with a chhonk of mustard seeds, cumin seeds, and curry leaves.
- **Urad Vada:** The main ingredient is black gram. The split and husked black gram is soaked for two hours. It is ground coarsely to thick consistency. Chopped fresh coconut green chilli pieces, and salt is added to taste. The wadas are made with hand making hole at the center and deep fried till they turn golden brown on both sides.
- **Vadi:** They are small bite size spicy and tangy rolls cut into disks and fried till crispy.



Bakhar Vadi



Alu Vadi



Kothimbir Vadi

- **Bakhar Vadi:** A mixture of dry roasted coconut, red chili powder, poppy seeds, sesame seeds, chopped fried cilantro, salt, and tamarind pulp is cooked. A mixture of all-purpose flour, corn flour, baking powder, and carom seeds is kneaded into fine dough. A small portion of dough is rolled into a flat disk and the cooked mixture is evenly spread on the top of the disk. It is then rolled and cut into pieces. These pieces are deep fried in oil.
- **Alu Vadi:** It is made of arum leaves. A mixture of gram flour, carom and sesame seeds, red chili powder, salt, and tamarind pulp is applied evenly on the back of the arum leaves. The leaves are then folded into tight roll. This roll is steamed for 10 to 12 minutes, cut into pieces, and shallow fried.
- **Kothimbir Vadi:** A thick mixture of chopped coriander, chick pea flour, ginger-garlic-green chili paste, salt, and carom and sesame seeds is shaped into a long roll. The roll is steamed for 10 to 12 minutes. It is cut into pieces and shallow fried.

Indian Desserts

Indian desserts are part of main course though in many regions now dessert is being treated as a course after main course. The desserts prepared in pure *ghee* are considered the best in taste and appearance.

Indian Desserts are made of powdered nuts, dairy products, and flavoring condiments such as cardamom and saffron. They are sweetened by adding sugar. The desserts also use shredded carrots, suji, chick pea flour, and hung curds. Let us see, some popular desserts of India:

- **Falooda:** It is a popular sweet made of cooked vermicelli, rose or *khus* syrup, chilled milk, and basil seeds.
- **Gajar Halwaa:** It is prepared by cooking shredded carrots in milk with sugar, broken cashew nuts and almonds, raisins, and cardamom.
- **Gulab Jamun:** They are round sweetmeats in sugar syrup. All-purpose flour, milk powder, and baking powder are mixed together and kneaded into fine tight dough. It is divided into small round doughs of 1 inch diameter. These small doughs are deep fried till golden brown. Once they cool, they are added into cardamom-flavored sugar syrup and kept aside till they soak the syrup. After a couple of hours, Gulab Jamuns turn soft, swollen, and edible.
- **Jalebi:** Jalebis are coiled sweets dipped in sugar syrup. The mixture of all-purpose flour, Corn flour, Curds, and salt is prepared with a thick consistency and fermented for eight hours. It is then filled in a piping bag with 5mm diameter nozzle. Oil is heated in a deep frying pan and the jalebis are prepared directly into heated oil by pouring the batter into oil in the pattern of coil. They are fried till done and put into the sugar syrup.
- **Kulfi:** It is a traditional ice cream of Indian subcontinent mostly sought after during summer. It is made of freezing the mixture of thick evaporated milk, sugar, crushed almonds and pistachios, and saffron.
- **Motichoor Laddoo:** It is a sweet and flavorful ball-shaped dessert made of *Boondi*, the fried chick pea flour with pearl shape. To start with, the batter of gram flour with thick flowing consistency is prepared. It is then directly fried into hot oil in the form of small drops when passed through a circle-slotted spoon. Once the Boondi is fried, it is put into sugar syrup and kept for some time. Shelled watermelon seeds, raisins, and cashew nuts are added into this mixture and laddoos are prepared by taking three tbsp. portion of the mixture in hands and shaping it round.



Suji Halwa



Gajar Halwa



Ras Malai



Shreekhand



Kheer



Gulab Jamun



Boondi/Motichoor
Laddoo



Falooda



Jalebi



Kulfi

- **Paaysam or Kheer:** It is a dish made using either vermicelli or rice, which is cooked in milk flavored with sugar, cardamom powder, saffron, coarsely cut nuts, and pure ghee.
- **Ras Malai (Ras= Juice, Malai=Cream):** It is a flattened sweetmeat in flavorful milk. Its main ingredient is cottage cheese. Fresh cottage cheese is mashed and rolled into small balls of 2 inches diameter. They are flatten a little. They are cooked with sugar, water, and essence of Kewra or Rose for 8 to 10 minutes. They turn soft and bigger once cooked. They are put into a flavorful mixture of thick milk, cardamom powder, blanched and sliced almonds and pistachios, and saffron. This sweet is often consumed chilled.
- **Shreekhand:** The main ingredient in this dish is hung curds. Thick curd is acquired by hanging it for 3 to 4 hours in a thin cotton cloth so that most of the water is removed from it. It is then mixed with sugar, cardamom powder, one or two saffron strands, and crushed almonds and pistachio nuts.

If the pulp of ripe Alphanso mangoes is mixed with *Shreekhand*, a very delicious sweet called *Aamrakhand* is prepared. Both *Shreekhand* and *Aamrakhand* are consumed chilled with *Puris*.

- **Suji Halwa:** Its main ingredient is Suji, which is sauted in ghee with sugar, crushed or sliced nuts, raisins, saffron strands, and cardamom powder. Finally, the halwa is cooked by adding hot water into this mixture.

Indian Chutneys and Pickles

Chutneys and pickles enhance the flavor of main food by complementing it.

Chutneys

They are thick and savory mixture of either grated coconut, roasted peanuts, mustard or sesame seeds, green chili, and salt. Chutneys are also prepared using tamarind pulp, seedless dates, and raisins by cooking them in water for some time, and adding jaggery, salt, cumin seed powder, and chili powder.

The chutneys are served with main food, snacks, or street food too.

Pickles

Pickles are prepared by marinating the pieces of raw mango, root vegetables, garlic, raw tender turmeric, or lotus stem in salt, oil, and ground condiments. For pickles, mostly sesame, peanut, or mustard oil is used. They are served as an accompaniment with *Parathas*, *Rotis*, and rice dishes.

In Southern India, they also prepare pulpy pickles by cooking local leafy vegetables with garlic, chili, tamarind, jaggery, and oil to have them with rice.

Indian Street Food

A very large variety of street food includes *Bhel*, *Pani-Puri*, *SPDP (Sev-Puri-Dahi-Puri)*, *Chaat*, Roles and Wraps in veg and non-veg variants, spiced corn nibbles or cobs, sandwiches, *Vada-pao*, *Kachchi Dabeli*, *Ragdaa-Pattie*, *Bread Pakora*, *Kebabs*, and *Momos*.

Most of the street foods are prepared using various masalas. The street food is often served with Tamarind chutney or Dates chutney. The coconut chutney is prepared with either dry coconut or fresh coconut grinding it with garlic, green or red chili.

11. FPO – Indian Masalas and Gravies

Secret of happiness is variety. But secret of variety like the secret of all spices is knowing when to use it.

...Daniel Gilbert, American Social Psychologist and Writer.

There is a common string connecting all Indian cuisines though; and that is: the spices. Indian cuisines are incomplete without spices.

Indian masalas or the spice mixes are the hearts of cooking stews and curries. They provide taste and aroma to lentils, veg and non-veg stews, curries, and rice dishes. What's more, the Indian street food is also treated with spices. The masalas are prepared with the intention of balancing hot and tangy taste of the food.

Indian Masalas

The dry masalas (powdered spice mixes or curry powders) are used to flavor lentils, vegetables, seafood, and meat. The ingredients are roasted over low heat until they release a faint aroma. A fine powder is made and they are stored in an airtight container.

Some of the popular spice mixes used in Indian cuisines are given here:

Biryani Masala

It is used for savory spiced colorful and flavorful rice.

| | | | |
|-------------------|-------|-----------------|---------------------|
| Fennel Seeds | 50 gm | Black Cardamoms | 10 gm |
| White Poppy Seeds | 40 gm | Star Anise | 10 gm |
| Cumin Seeds | 30 gm | Caraway Seeds | 10 gm |
| Cinnamon Powder | 30 gm | Bay Leaves | 10 gm |
| Whole Cloves | 20 gm | Mace | 10 gm |
| Green Cardamoms | 20 gm | Nutmeg | Powder of 2/4 piece |

Chhole Masala

It is used for chick pea curry.

| | | | |
|-------------------|----------|------------------------------|--------|
| Coriander Seeds | 2 tbsp | Cloves | 4-5 |
| Cinnamon | 1" piece | Cumin Seeds | 2 tbsp |
| Black Cardamom | 3-4 pods | Anardana (optional) | 1 tbsp |
| Bay Leaf | 1 | Whole Dry Chilies (optional) | 1 or 2 |
| Black Peppercorns | 1 tbsp | | |

Coastal Fish Masala

It is used for fish curry and fish fry.

| | | | |
|--------------------|----------|---------------------|---------|
| Dry Coconut Grated | 3 tbsp | White Pepper Corns | 1/4 cup |
| Sesame Seeds | 1 tbsp | Green Cardamom Pods | 1/2 cup |
| Mustard Seeds | 2 tblsp | Cumin Seeds | 3/4 cup |
| Saffron Strands | 1/4 tbsp | Nutmeg Powder | 1/4 cup |
| Black Pepper Corns | 1/4 cup | | |

Garam Masala

It is a usual spice mix used in stews.

| | | | |
|-------------------|------------|----------------|----------------|
| Coriander seeds | 4 tbsp | Black Cardamom | 3-4 large pods |
| Cumin seeds | 1 tbsp | Cloves | 2-3 pieces |
| Black Peppercorns | 1 tbsp | Cinnamon | 2 x 1" pieces |
| Black Cumin seeds | 1 1/2 tbsp | Bay Leaves | 2 Crushed |
| Dry Ginger Powder | 1 1/2 tbsp | | |

Kala (Goda) Masala

It is used to flavor lentils and Masala Rice.

| | | | |
|----------------------|----------|-------------------|-------|
| Coriander Seeds | 500 gm | Mace Flower | 50 gm |
| Dry Red Chilies | 250 gm | Cinnamon Bark | 50 gm |
| Dry Coconut shredded | 250 gm | White Poppy Seeds | 50 gm |
| Dry Turmeric Roots | 50 gm | Caraway Seeds | 50 gm |
| Asafoetida Chunks | 50 gm | Sesame Seeds | 50 gm |
| Cloves | 50 gm | Sesame Seeds | 50 gm |
| Black Pepper Corns | 50 gm | Bay Leaves | 50 gm |
| Flower Stone | 50 gm | Green Cardamom | 25 gm |
| Whole Nutmegs | 5 pieces | Black Cardamom | 25 gm |



Meat Masala

It is used to flavor chicken and lamb dishes.

| | | | |
|----------------------|----------|------------------|------|
| Cumin Seeds | 20 gm | Ginger Powder | 5 gm |
| Coriander Seeds | 8 gm | Garlic Powder | 5 gm |
| Cloves | 5 gm | Red Chili Powder | 5 gm |
| Cinnamon | 2" Stick | Turmeric Powder | 5 gm |
| Orange food coloring | 1 gm | Mace Powder | 5 gm |
| Salt | 5 gm | | |

Pao-Bhaji Masala

It is used in a tangy stew paired with *pao* (bun-shaped bread).

| | | | |
|-----------------|-------|------------------|------------|
| Red Chili - | 50 gm | Black Cardamom | 4-5 pieces |
| Coriander Seeds | 50 gm | Dry Mango Powder | 25 gm |
| Cumin Seeds | 25 gm | Fennel Seeds | 10 gm |
| Black Pepper | 25 gm | Turmeric Powder | 1 tbsp |
| Cinnamon | 25 gm | Star Anise | 2 pieces |
| Clove | 25 gm | | |

Rajmah Masala

It is used to spice kidney beans curry.

| | | | |
|------------------|----------|---------------------|----------|
| Cloves | 4 pieces | Black Peppercorns | 4 pieces |
| Cardamom | 2 pieces | Cumin Seeds | 1 tbsp |
| Cinnamon Stick | 1" stick | Cumin Powder | 1 tbsp |
| Bay leaf | 1 piece | Ginger Garlic Paste | 1 tbsp |
| Coriander Powder | 1 ½ tbsp | Garam Masala Powder | ½ tbsp |
| Red Chili Powder | 1 tbsp | Dry Mango Powder | ½ tbsp |

Sambar Masala

It is used to flavor a curry named *Sambar*; prepared with cooked pigeon peas, drumsticks, tomatoes, pumpkin pieces, and cubes of other vegetables. Sambar is paired with *Idli*, *Urad wada*, *Uthapam*, or various types of *Dosai*.

| | | | |
|------------------------|-----------|----------------------|--------|
| Chana Daal | ¼ cup | Black Peppercorns | ¼ cup |
| Urad Daal (black gram) | ¼ cup | Dry Red Broken Chili | ¼ cup |
| Coriander Seeds | ½ cup | Dry Grated Coconut | ¼ cup |
| Cumin Seeds | ¼ cup | Mustard Seeds | ¼ cup |
| Fenugreek Seeds | ¼ cup | Turmeric Powder | 2 tbsp |
| Dried Curry Leaves | 20 pieces | Asafetida Powder | 2 tbsp |

Tea Masala

It is used to prepare flavored tea.

| | | | |
|----------------|--------------|---------------------------|--------|
| Black Cardamom | 1 pod | Black Peppercorns | ¼ tbsp |
| Cardamom Seeds | From 25 pods | Dry, Ground Ginger Powder | 1 tbsp |
| Cloves | 4 pieces | Ground Cinnamon Powder | 1 tbsp |
| Fennel seeds | ½ tbsp | Carom Seeds (optional) | ¼ tbsp |

There is a very large variety of spice mixes for side dishes such as curd based salad named *Raita*, appetizers such as *Jal-Jeera* and *Chhach*, sweet flavored milk named *Thandai*, and Indian street food named *Chaat*.

There are also some other spices such as *pickle* masala, a combination of five spices named *panch-poran* used in eastern states of India. The list goes on according to the taste preferences and diversity in cultures.

Basic Indian Gravies

Gravy is the soul of Indian cuisine. Gravy is a thick liquid of saucy consistency that provides body and flavor to the curries and other food preparation. It provides the basic five tastes: bitter, hot, sweet, sour, and salty. In this section, we will discuss some popular gravies:

White Gravy

A basic gravy that adds body to the curries.

Ingredients:

| | | | |
|---------------------|--------|-----------------------|----------|
| Chopped Onions | 300 gm | Green Cardamom | 2 pieces |
| Cashew nuts | 200 gm | Bay leaves | 2 pieces |
| Water | 200 ml | Chopped Green Chilies | 2 |
| Ginger-Garlic Paste | 25 gm | Oil | 5 tbsp |
| Sweet Yogurt | 200 gm | | |

Preparation:

1. Put cashew nuts in boiling water for five minutes.
2. Drain the water and put fresh water and chopped onions into it.
3. Cook till onions turn soft.
4. Drain the water and grind to fine paste.
5. Heat oil in a wok.
6. Add cardamoms, bay leaves, and chopped green chili.
7. Add yogurt into it and cook for a while.
8. Add cashew nut-onion paste and cook further till oil separates.
9. Cut the heat and let it cool for storing.

A variation named **Yellow Gravy** is prepared by adding turmeric and saffron and replacing green chili with yellow chili.

Red Gravy

It is tomato based gravy that introduces sour taste.

Ingredients:

| | | | |
|--------------|--------|---------------------|-------|
| Tomatoes | 1kg | Ginger Garlic Paste | 20 gm |
| Onions | 500 gm | Garam Masala | 10 gm |
| Tomato Puree | 250 ml | | |
| Chili Powder | 30 gm | | |

Preparation:

1. Boil tomatoes by adding onions and whole Garam Masala till they turn soft.
2. Blend them together till smooth.
3. Add ginger-garlic paste, salt, red chili powder, and tomato puree in this mixture.
4. Boil the mixture for 20 to 25 minutes.
5. Yet another version of this gravy called **Makhani Gravy** is prepared with addition of butter 100 gm, 200 ml cream, and 2 tbsp fenugreek powder.

Brown Gravy

It is used as a base for preparation of meat curries.

Ingredients:

| | | | |
|----------------|--------|------------------|--------|
| Chopped Onions | 1 kg | Red Chili Powder | 30 gm |
| Tomatoes | 500 gm | Tomato Puree | 200 ml |
| Garam Masala | 5 gm | Oil | 5 tbsp |

Preparation:

1. Heat oil in a pan.
2. Add Garam Masala, chopped onion into it and cook till the onion turns brown and translucent.
3. Add red chili powder, tomatoes, and tomato puree.
4. Cook on medium heat till the tomatoes leave water.
5. Grind this mixture into fine paste.

Shahi Gravy

This gravy is used in gourmet Indian cuisine.

Ingredients:

| | | | |
|---------------------|--------|-----------------------|--------|
| Cashew nut | 200 gm | Onions | 50 gm |
| Almonds | 75 gm | Green Cardamom Powder | 5 gm |
| Poppy Seeds | 25gm | Bay Leaves | 2 |
| Ginger-Garlic paste | 10gm | Garam Masala | 1 tbsp |
| Oil | 4 tbsp | | |

Preparation:

1. Boil cashew and poppy seeds together.
2. Boil onion and almonds separately.
3. Grind them to fine pastes.
4. Take oil in a frypan.
5. Add Garam Masala, bay leaves, and cardamom powder.
6. Add all pastes except cashew-poppy seeds paste.
7. Cook for a while on low heat by stirring occasionally.
8. Add cashew-poppy seeds paste.
9. Cook further for a couple of minutes and cut the heat.
10. Yet another version of Shahi Gravy called **Korma Gravy** is prepared using 1 cup dried solid milk (*Khoya*) and 1 cup yogurt.

Green Gravy

This gravy is used in gourmet Indian veg and non-veg cuisine. Its main ingredient is coconut.

Ingredients:

| | | | |
|----------------------|-----------|-----------------------------------|--------------|
| Fresh grated coconut | 2 cups | Fresh Chopped Cilantro with stems | 1 cup |
| Green Chilies | 4 pieces | Mint (Optional) | 1/4 cup |
| Salt | 1/2 tbsp. | Ginger | 1 1/2" piece |

Preparation:

1. Put all the ingredients in a blender.
2. Grind to fine paste of thick consistency by adding a little water.

Part 5: Kitchen Communication

12. FPO – Kitchen Communication

There's a bond among a kitchen staff, I think. You spend more time with your chef in the kitchen than you do with your own family.

...Gordon Ramsay, British Chef and Restaurateur.

Every commercial business needs effective communication and commercial kitchen is not an exception. Places like commercial food preparation units, communication is vital to execute the culinary operations successfully and smoothly.

In the domain of commercial kitchen, if the right information is shared at the right time with the right person, it can help to increase kitchen productivity.

Role of a Kitchen Manager

The kitchen manager is a chief chef of the kitchen who is responsible for overall operation of the kitchen. Being the leader of a busy team, the kitchen manager needs to be quick at solving real problems occurring in the kitchen.

The kitchen manager's responsibilities include:

- Ensuring all food items are prepared and served according to the preparation unit's recipes, portioning, cooking, and serving standards.
- Monitoring and controlling the inventory of kitchen items.
- Supervising the food preparation activities in the kitchen.
- Supervising if hygiene and cleanliness standards are met.
- Scheduling the staff according to the working time.
- Training the new staff.
- Monitoring equipment maintenance issues.
- Play active role in achieving the financial target of the food preparation unit.
- Creating food plans and budget plans for special occasions.
- Recording key pieces of information such as staff schedules, employee performance and attendance, food and beverage sale, customer's lost and found, and duty reports in a timely manner.

Taking Orders

Taking orders from the customer or guests is a two way communication process. Let us say there are two persons, the guest and the server. The guests prefer to place order to a knowledgeable or qualified server. The server must:

- Be aware of basic food preparation, recipes of various food items on the menu.
- Have an eye for detail and accurate in recording the order.
- Know the slang/local words used by the customers.
- Be able to describe preparation in words shortly.
- Know the time required to prepare menu items.
- Know what accompaniments go well with each menu item and which menu items complement each other.
- Know the prices for each item offered on the menu.
- Be polite and friendly; but not casual.
- Not assume anything about the customer even if the customer is a frequent visitor.

The customers often ask questions about the preparation of the food, serving size in case of beverages, pizza, and otherwise, filling and cooking types in case of sandwiches, subs, and pizzas, and toppings in case of pastries and ice creams. The server must record every detail by communicating with the guest clearly.

Executing Orders

The server manually hands over the order in the kitchen to begin preparation of the dishes. Once the order is in hand, the team work shows up in execution.

The Chef de cuisine, the sous chef, the line chefs, runners, and other staff; all need to work harmoniously in the kitchen. They need to communicate clearly to avoid any unwelcomed outcomes in the process of food preparation as well as service of food.



To avoid communication loopholes, each member of the kitchen staff must:

- Understand the role and responsibility of oneself as well as other team members.
- Be willing to share information and experiences with each other. It is important especially when the duty shift changes.
- Must know all the areas in the kitchen and the places of preparation equipment, serving equipment, and ingredients store.
- Be willing to support less-skilled or new staff member.
- Be able to deliver the best results in the least possible time.