



10

METHODS OF COOKING FOOD

"Cooking is the art and science of using heat to prepare food for eating." The word also covers the complete variety of cooking methods: preparation for the table of raw and cooked food; final dressing of food; cleaning and cutting of fruits and vegetables; preparation of salads; garnishing of dishes; decoration of desserts; and planning of meals.

All known human societies consume cooked food and cooking could have had significant impacts on how the human body developed, and biologists usually agree. Cooked foods, for instance, tend to be softer than raw foods, so people with smaller teeth and weaker jaws can eat them. Cooking also improves their energy from the food they consume. Starchy potatoes and other tubers, consumed worldwide by individuals, are barely digestible when raw.



OBJECTIVES

After studying this lesson, you will be able to :

- discuss the traditional ways of cooking;
- prepare the raw material for cooking; and
- explain the method of cooking different items.



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10.1 PURPOSE OF COOKING FOOD

People cook food for a variety of purposes, and while eating some raw foods such as fruits and vegetables is best, cooking food has some benefits. For the following purposes, food can be cooked:

1. To change or enhance the food flavour, e.g. meal used to create cake. A cake has a much better taste than raw flour.
2. Changing or improving the appearance of the food, for example using rice to create fried rice, preserving mango to create jam.
3. To alter the texture (the way something feels) of food, e.g. to create pastels using cornmeal. Raw cornmeal is very grainy and coarse, but it becomes softer, smoother and more palatable when cooked with a liquid.
4. Making food safer for consumption (eat).
5. Hard staples such as rice and cassava are used to create foods more digestible.
6. Increasing the food's shelf life, e.g. making jam from guava. Adding sugar and heating the guava to make jam will make a product with a shelf life longer than fresh guavas.

10.2 TRADITIONAL WAY OF COOKING FOOD

The emergence of cooking is the time when individuals are taking their first steps towards civilization. We'll look at how our ancient ancestors used to make their favourite dishes.



1. Stone boiling

They would fill a water-filled vessel, put the food in it, and then heat up rocks in a fire to fall into the water-filled vessel. After adding enough stones, the water would begin to boil, leaving the vessel intact. The aboriginal population of Hawaii used this technique very popular and still used today. Boiling was very difficult before the discovery of ceramics and metals, since all cooking vessels were either hollowed gourds or made of wood. It was impossible to boil water over an open fire.

2. Cooking on the Hearth

You can't state roast some food items today without thinking about an oven, but roasted food meant something very distinct to our ancestors. In front of an open fire, the method of cooking food on a hearth was very popular and is incredibly ancient.

3. Earth Ovens

Earth furnaces are one of the oldest cooking techniques and can be used for baking, steaming or smoking food. By digging a pit into the floor and lighting a big fire in it, an earth oven is produced. The food is tossed on top and buried once the fire has died down and generated some warm coals. Once the food has been cooked, it has been dug and eaten.

4. Food Drying

It's difficult to tell when individuals first started using the sun and wind to dry foods. All you need to dry food is cut it into thin



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strips and then put it on a warm rock that receives tons of sun exposure. There is proof that for at probably 12,000 years individuals have been doing this.

5. Ash baking

Ash has been used in cooking for many hundreds of years in one manner or another.

6. Hot spring cooking

Geysers and warm spring pools invite you to put rice covered in leaf in bubbling sulphur pools and enjoy the cooked contents minutes later. Other places are still baking a traditional Rye bread by burying it in the floor under a stack of black sand.



INTEXT QUESTIONS 10.1

1. List any two purpose of cooking food

2. Why it was impossible to boil water over an open fire.

10.3 PREPARATION OF RAW MATERIAL FOR COOKING



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Since the first human beings picked up cutting and mashing stones, food preparation has been a steady chore. Food preparation procedures may be split according to their core science, whether physical (such as extracting nuts from their shells), chemical (adding salt) or biological processes. Techniques for preparing food variety from chopping through fermentation and emulsification to pressure cooking, vacuum packing and homogenization. One way of understanding them is to examine immediate aims that can be classified as separating edible foods; remove toxins; soften and otherwise make components more edible and digestible; distribute foods; store them; making them into new compositions. Let us discuss the pre-preparation activities:

1. Chopping

Cutting means cutting vegetables into (more or less) bits of bite by using a knife's fast, heavy blows. If a recipe requires something to be finely chopped, the pieces should be smaller and should be slightly larger if it calls for roughly chopped.

2. Washing

To remove any lingering dust, wash the products under cold running tap water before eating or preparing fresh fruits and vegetables. This decreases the presence of bacteria. The surface can be cleaned with a brush if there is a firm surface, such as



apples or potatoes. Wash them under a running tap when you wash vegetables and rub them under water, for instance in a bowl of fresh water. First start with the least soiled items and give a final rinse to each of them.

3. Blanching

The term blanch relates to a cooking method that briefly immerses food in steam or boiling water or fat, generally followed by shocking, which quickly cools food in an ice bath or cold air. Blanching is used for cooking as well as for preserving vegetables and fruits. You help maintain flavour, colour, and texture when blanching a food for the right amount of time. Vegetables are softened by blanching vegetables just enough so they can be cooked rapidly over elevated heat, like in a stir-fry. It would not be enough for a short time in the pan to soften vegetables.

4. Peeling

Peeling is aimed at removing skin / peel from raw fruit and vegetables. This increases the final product's appearance and taste. The losses must be minimized during peeling by removing as little food as possible but still attaining a smooth peeled surface.

5. Mashing

Reduce (a food or other substance) to a pulpy mass by crushing it.

6. Grating

The method of rubbing the item against a grating tool to transform strong food products into tiny parts. A grater is a hand held metal



tool containing countless elevated slots of different sizes that cut food products into tiny bits as the food is rubbed across the grater's surface.

7. Shredding

Shred implies, by definition, pushing food through or across a shredding surface to create long, thin stripes. Shredding finely implies making long, thin stripes. Most vegetables can be shredded with a box grater, a hand grater or a food processor; however, a knife can be readily shredded with leafy greens and other fruits & vegetables. Shredded raw vegetables add to the recipes brightness, flavour, and crunch, along with the nutrients required.

8. Grinding

Grinding is a food processing technique in which large chunks or food particles are cut into fine parts or bits. It can be performed for different purposes. Ground food with other components becomes more mixable. It is used to process various food varieties. Wet or moist food as well as dry food can be used to grind. Wet or moist grinding of food is called wet grinding and grinding dry food is called dry grinding.

9. Steeping

Steeping is the soaking in liquid (usually water) of a solid, usually so as to extract flavours or to soften it. It helps in fastening the cooking process because food particles, gets soften through this process.



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10. Sieving

A mesh strainer, also known as sift, frequently referred to as sieve, is a tool that separates desired components from unwanted material or characterizes a sample's particle size distribution, typically using a woven screen such as a mesh or net or metal.



INTEXT QUESTIONS 10.1

1. Why do we wash fruits and vegetables?
2. Before cooking the rice, why do we soak the rice for some time?
3. What is the difference between grating and shredding?

10.4 METHODS OF COOKING

We use heat to cook food. Heat changes the complex chemical composition of raw food and transforms it into a simpler form that the body can use. Let us now learn the distinct techniques of applying heat using distinct mediums, and each technique will assist you decide which method to pick and obtain specific outcomes for cooking.

Heat is transfer to food through conduction, convection and radiation.

Conduction, Conduction is a heat transfer technique in which a piece of food is heated by direct contact with a hotter item such as a warm pan. Conduction also occurs when heat is transmitted to a cooler portion from the hotter portion of the food product.



Convection, Convection is the motion of molecules, including liquid and gas, through the liquid state. When water begins to bubble, these warm water bubbles begin to rise to the surface. The warm water at the bottom of the ground heat is transmitted to the cooler water at the top. Simultaneously, the cooler, thick water sinks down to the bottom where it is heated.

Radiation, Radiation Cooking is a process of heating that does not require physical contact between the source of heat and the food being cooked; instead, energy is transferred by heat or light waves that strike the food. The kitchen uses two types of radiation heat: infrared and microwave.

CLASSIFICATION OF METHOD OF COOKING

Water Medium	Oil Medium	Air Medium	Combination
Boiling	Sautéing	Roasting	Braising
Simmering	Shallow frying	Grilling	
Poaching	Deep frying	Toasting	
Stewing		Baking	
Blanching			
Steaming			
Pressure cooker			

We will now discuss each method, giving examples from everyday cookery.



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1. MOIST HEAT METHOD

Boiling

Boiling is a way to cook food by simply immersing it in 100C water and keeping the water at that temperature until the food is tender. Boiling cooks rice, dhal, pulse, roots and tubers.

Excessive continuous boiling causes harm to the food's structure and texture. Loss of nutrients like vitamins B and C when the water is discarded. Time consuming - Boiling may take longer to cook food and waste fuel. Loss of colour - water soluble pigments may be lost.

Stewing

It refers to the simmering of food in a pan with a tight fitting lid using small quantities of liquid to cover only half the food. This is a slow method of cooking. The liquid is brought to boiling point and the heat is reduced to maintain simmering temperatures (80 C -90 C). The food above the liquid is cooked by the steam generated within the pan. Apple vegetables and legumes are usually stewed.

Steaming

It is a method of cooking food in steam generated from vigorously boiling water in a pan. The food to be steamed is placed in a container and is not in direct contact with the water or liquid. Idli, custard and idiappam are made by steaming. Vegetables can also be steamed. It has following benefits :



- Less chance of burning and scorching.
- Texture of food is better as it becomes light and fluffy. Eg. Idli.
- Cooking time is less and fuel wastage is less.
- Steamed foods like idli and idiappam contain less fat and are easily digested and are good for children, aged and for therapeutic diets.
- Nutrient loss is minimised.

Pressure cooker

When steam under pressure is used the method is known as pressure cooking and the equipment used is the pressure cooker. In this method the temperature of boiling water can be raised above 100 C. Rice, dhal and tubers are usually pressure cooked.

- Cooking time is less compared to other methods.
- Nutrient and flavour loss is minimised.
- Conserves fuel and time as different items can be cooked at the same time.
- Less chance for burning and scorching.
- Constant attention is not necessary.

Poaching

This includes cooking at temperatures of 80 C 85 C that are below the boiling point in the minimum quantity of liquid.



- No special equipment is needed.
- Quick method of cooking and therefore saves fuel.
- Poached foods are easily digested since no fat is added.

Simmering

Simmering is a food preparation technique in which food is cooked in hot liquids kept just below the boiling point of water (which is 100 ° C or 212 ° F at average air pressure at sea level), but above poaching temperature (over 71-82 ° C or 160-180 ° F). One carries it to a boil to keep a pot simmering and then lowers the heat to keep the temperature. It is useful for food that takes long to cook, for example stock, soup and kheer.



INTEXT QUESTIONS 10.3

Name the method of cooking the following:

- Kheer
- Idli
- Dal

10.5 DRY HEAT METHOD (AIR MEDIUM)

Roasting

In this method food is cooked in a heated metal or frying pan without covering it. For example Groundnut. It is of three types
 a) spit (for corn, brinjal) b) oven / pan / pot (for root vegetables sweet potatoes, popcorns, etc.)



- Quick method of cooking.
- It improves the appearance, flavour and texture of the food.
- Spices are easily powdered if they are first roasted.
- Food can be scorched due to carelessness.
- Roasting denatures proteins reducing their availability.

Grilling

Grilling or broiling relates to food cooking by direct heat exposure. Food is put above or between a red hot surface in this technique. This technique can be used to prepare papads, maize, phulkas etc.

- Enhances flavour, appearance and taste of the product.
- It requires less time to cook.
- Minimum fat is used.
- Constant attention is required to prevent charring.

Toasting

This is a method where food is kept between two heated elements to facilitate browning on both sides. Bread slices are cooked by toasting.

Baking

The food is cooked by dry heat in an oven or oven-like appliance in this technique. In an oven, the temperature range is 120 C - 260 C. The food is normally kept uncovered in a fat-coated paper



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container. This technique is used to prepare bread, cake, biscuits and pastries.

- Baking lends a unique baked flavour to foods.
- Foods become light and fluffy - cakes, custards, bread.
- Uniform and bulk cooking can be achieved. Eg. Bun, bread.
- Flavour and texture are improved.



INTEXT QUESTIONS 10.4

1. List the advantages of roasting method?
2. What is the principle of the baking?

10.6 COMBINATION METHOD

Braising

Braising is a combined method of roasting and stewing in a pan with a tight fitting lid. Flavourings and seasonings are added and food is allowed to cook gently. Food preparations prepared by combination methods are: Uppuma -Roasting and boiling. Cutlet -Boiling and deep frying. Vermicelli payasam -Roasting and simmering.

10.7 FAT AS A MEDIUM OF COOKING

In this method, the food to be cooked is brought into contact with larger amount of hot fat. When food is totally immersed in hot oil, it is called deep fat frying. Samosa, chips, pakoda are examples of deep fat fried foods. In shallow fat frying, only a little fat is used

and the food is turned in order that both sides are browned. eg. cutlets, parathas.

- Very quick method of cooking.
- The calorific value of food is increased since fat is used as the cooking media.
- Frying lends a delicious flavour and attractive appearance to foods.
- Taste and texture are improved

Sautéing

Sautéing is a dry heat cooking technique that utilizes a tiny quantity of oil or fat over comparatively elevated heat in a shallow pan. It is not only an optimal way to sear or brown food before any other cooking technique, but it is also an excellent way to cook smaller, even-sized pieces of food by throwing them in the pan and holding them over the curved lip until they are cooked through.

Deep frying

Deep frying (also referred to as deep fat frying) is a cooking method in which food is submerged in hot fat, most commonly oil, as opposed to the shallow oil used in conventional frying done in a frying pan. Normally, a deep fryer or chip pan is used for this. Deep frying may also be performed using oil that is heated in a pot.



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Shallow frying

Only half of the item is submerged in oil and, when browned, turned over to brown the other half, e.g. in tikki and pratha. Through conduction from the heated pan, heat is transmitted to the food in touch with and convection currents.



INTEXT QUESTIONS 10.5

1. Which method of cooking does a vendor use to prepare a plate of idli ?
2. List any two food item prepared by using braising method.



WHAT HAVE YOU LEARNT

- Importance of cooking food
- Various ancient/ traditional methods of cooking food
- Need for pre-preparation
- Different type of pre-preparation activities
- Method of cooking can be classified as moist and dry
- Moist heat method include boiling, simmering, poaching, steaming and pressure cooking
- Principle of dry heat methods including grilling, roasting, toasting and baking
- Methods which use oil as a medium of heat transfer include sautéing, shallow frying and deep fat frying.



TERMINAL QUESTIONS

1. List three foods that are blanched before use.
2. List the method of cooking involved in preparing
 - Cutlet
 - Chicken curry
 - Rice kheer
 - Kofta curry
3. Difference between the following methods of cooking
 - Boiling and steaming
 - Shallow and deep fat frying
 - Baking and grilling
4. Make a list of dishes which can involve more than two method of cooking?



ANSWERS TO INTEXT QUESTIONS

10.1

1. i) to change the food flavour.
ii) to alture the texture of food.
2. Because cooking vessels were made of wood.



Notes

**10.2**

1. to remove dust.
2. to make it soften.
3. In grating we rub item against grating food, while in shredding push item to move strip or is long size.

10.3

1. i) Steaming ii) Simmesing iii) Pressure cooker.

10.4

1. i) Quick method.
ii) Improve appearance and texture
iii) any other
2. Baked in dry heat in temp. between 120C - 260 C.

10.5

1. Steaming.
2. i) Uppuma ii) Vermecilli, Payasam.