

S.2 NOTES FOODS AND NUTRITION

After roasting let us continue with these attached notes.

GRILLING AND BROILING

These are methods of cooking food using radiant heat from a metal fret heated by a gas flame or an open electric element.

Broiling: Uses radiant heat from an overhead source to cook foods. The food to be broiled is placed on a preheated metal grate. Radiant heat from overhead cooks the food, while the hot grate marks it with attractive cross-hatch marks.

Grilling: This is when food is cooked by a source of radiant heat. Suitable foods include; beef, poultry, lamb, vegetables like tomatoes, pork etc.

Grilled foods can be cooked in three ways:

- a) Over heat (charcoal, gas or electric grills)
- b) Under heat (gas or electric grills, gas or electric salamanders over fired grills)
- c) Between heat (between electrically heated grill bars or plates)

Guidelines to follow when grilling

- Foods must be brushed with fat to prevent drying.
- The grill must be pre-heated to red hot then reduced after initial cooking.
- Cooking time will vary according to the type food, thickness, and quality.
- Food must be turned frequently using tongs and spoons to avoid pricking the surface resulting in loss of juices.
- All grilled food should be cooked when ordered and served immediately.
- Only small sized portions of food should be used to ease heat penetration.

Aims of grilling

Grilling is intended to make food tender and palatable without losing any of the natural juices and thus only thin slices or fine-grained foods should be used.

Advantages of grilling

- i. A quick and appetizing method that gives food a golden finish.
- ii. Grilled foods are more easily digested than fried foods.

Disadvantages of grilling

- i. Only good quality and therefore more expensive cuts can be cooked by this method.
- ii. Needs careful attention.

Suitable foods

Fish Bacon Tomatoes Sausages
Thin piece of good quality meat Rump

Pork chops and lamb chops

BARBECUING

Barbecues are now popular way of cooking food. Food is laid on a wire rack over hot charcoal by radiant heat from underneath. The charcoal imparts a flavour to the food which adds to the enjoyment of eating it.

The charcoal must not be too hot or the food which burn on the outside but remains under cooked inside which could lead to food poisoning. During cooking, food should be turned at regular intervals and basted with moist marinade to prevent drying out and to add flavour.

Suitable foods

Sausages Meat Chicken Oily fish Kebabs
Burgers Corn on the cob

Advantages of Barbecuing

- An appetizing method of cooking
- Provides flavour

Disadvantages of Barbecuing

- Needs attention
- Requires good quality tender meats.

FRYING

This is a method of cooking in which food is cooked by the heat of hot fat or oil. Fat and oil can be heated to a much higher temperature as compared to water and thus as the food comes in contact with this heated fat, it gets cooked easily. The surface of the food is sealed as soon as it comes in contact with hot fat so the food flavour is retained.

Types of Frying

- i. Sautéing /stir frying
- ii. Shallow fat frying
- iii. Deep fat frying
- iv. Dry frying

Sautéing/Stir frying

This means to toss the food in a little amount of heated fat till it is partially cooked. The fat should just cover the bottom of the pan. Heat the fat to the point where it just begins to smoke. The food to be cooked should be as dry as possible when added to the pan to promote browning and to prevent excessive spattering.

The food is tossed occasionally or turned over by a spatula to enable all the pieces to come into contact with the oil and get cooked evenly.

Sometimes, the pan is covered until the food becomes tender in its own steam. The product obtained or cooked by this method is slightly moist, tender, but without any liquid.

All ingredients should be finely chopped and prepared before cooking commences. It is usually done as preparation step in many dishes e.g. for vegetable rice, noodles and others.

Advantages of Sautéing

- Few nutrients are lost
- Food remains well flavoured
- It is a healthy method of cooking since little oil is used
- It is energy saving method of cooking.

Disadvantages of Sautéing

- Needs constant attention

Suitable foods

- Vegetables
- Thinly sliced meat, pork, lamb, poultry

1. Shallow Fat Frying

This is the cooking of food in a little amount of oil in a shallow pan or a flat surface (griddle). The oil should come at least half way of the food and with this method, thin pieces of food should be cooked e.g. fillet of fish, slices of vegetables (potatoes), poultry etc. During frying, food is

turned over so that it may be browned evenly on both sides. In this case also, the fat used is usually absorbed by the food. Heat is conducted from the base of the pan to the oil and then to the surface of the food.

Guidelines of shallow fat frying

- Food should not be more than 25mm thick.
- There should be enough fat to come half way the food.
- Most foods must be coated to prevent moisture escaping into the fat.
- The fat must be at right temperature, for the food to be fried, if the fat is too cool, the food will absorb it and it will become greasy. If the fat is too hot, the outside of the food will be overcooked and the inside undercooked.
- The food must be lowered gently in to the oil to prevent splashing.
- One piece of food should be lowered into the fat at a time and the fat allowed to heat up again after each addition.
- The frying pan should never be over crowded with food but space should be allowed to prevent lowering the temperature of oil for easy turning of the pieces, for checking the rate of cooking and for lifting the food out easily.
- This is to be presented for service if fried first to give the best brown colour effect
- Foods which are thick are cooked at a lower frying temperature. If high temperatures are used, the outer surface will burn out while the interior is raw.
- The foods are returned over when moisture appears on the surface to prevent over cooking and burning of foods.
- Foods should be seasoned before shallow frying
- All fried foods should be well drained on absorbent paper before serving

Suitable foods

Tender meat joints	Offal e.g. liver and kidney	Fish cakes	Beef burgers
Sausages	Bacon rashers	Vegetable e.g. Mushrooms	Eggs

2. Deep Frying

Is a cooking method that uses convection to transfer heat to a food submerged in hot fat, food to be deep fried are usually first coated in batter or egg with breadcrumbs. This preserves moisture and prevents the food from absorbing excessive quantities of fat. Foods deep-fried should be uniform size and shape.

The food is completely immersed in hot fat and therefore a deeper utensil and large quantity fat is required. The fat is heated in the pan and as it becomes hot, the food to be fried is lowered gently into the oil and gets cooked quickly.

While deep frying, care should be taken to make sure that the fat does not get over heated as the fat decomposes at high temperature.

Therefore, it is important **to judge that the fat has been heated to the right temperature which can be done in the following ways:**

- a. When the fat starts giving a light smoke and becomes still, it indicates that it has been heated to the right temperature.
- b. If one inch square piece of bread becomes golden brown in one minute, then the temperature of such fat is right for frying.
- c. A little piece of food can be first fried and if it cooks, then proceed with the rest.
- d. Use of thermometers on deep fat fryers.

Coating foods:

It is essential that foods to be deep fried should be coated to protect the surface from intense heat and prevent the food from breaking up.

When the food is placed in hot fat, the egg coating coagulates rapidly and thus forms a protective layer around the food, which becomes crispy and golden brown. The food inside continues to cook by conduction and retains its flavour and texture.

Coatings for fried foods include;

- i. Beaten eggs
- ii. Beaten eggs and bread crumbs for fish cakes, croquettes, scotch eggs.
- iii. Beaten egg and oatmeal
- iv. Batters used for fish and fritters
- v. Pastries

Advantages of coating foods

- To protect the food from the extreme heat of the fat and prevent it from becoming overcooked.
- To prevent the food from becoming soggy.
- To prevent food juices from escaping
- To prevent food from breaking up.
- To make food more attractive

Suitable foods for deep frying

Potato chips Fish fillet or steaks Croquettes mixtures

Doughnuts	Fritters	Pastry
Small poultry joints		Potato crisps

Points to consider when deep frying foods

- Use fat with high smoke points as it can be heated to high temperature e.g. oils have a higher smoke temperature as compared to fats and hence should be preferred for frying.
- See that the fat has been heated to the right temperature before putting in food and maintain the temperatures during frying so that the food does not burn.
- The food should be prepared according to type, divided into suitable sizes and shapes to allow uniform cooking.
- Foods should be coated before deep frying to protect them from the extreme temperatures of oil and to protect them from becoming soggy.
- A strong pan must be used large enough to hold fats, food and basket if used.
- Do not over crowd the pan with many foods at one time as this lowers the temperature and the fat/oils may rise rapidly and could boil over.
- Lower the food gently into the hot fat. Do not drop it in as it may splash the oils and cause burns.
- Turn the food stuff frequently so that it is evenly browned on both sides and allow sufficient time for cooking.
- Most fried food must be drained using a perforated spoon and then put on absorbent paper after frying to remove excess grease.
- After frying, strain the oil and store in closed containers in a cool, dry dark place to prevent it from become rancid.
- Fried food should be served immediately.
- Food should be chilled after crumbing.
- If coated in batter, any excess should be drained off and the food slowly lowered into the fryer
- Very cold or frozen food e.g. potato chips should be added in small amounts. It is however, more preferred to thaw or defrost the foods before deep frying to prevent cases of food poisoning.
- Residues of crumbs, batter or food should be regularly skimmed from the frying medium.

Safety rules for deep frying.

- Never leave a deep fat frying pan unattended to.
- Do not heat fat beyond the required temperatures.
- Keep the pan handle turned towards the side of the cooker to prevent it being knocked over.
- Naked flames must not leak up the side of the pan.
- If the fat starts to smoke, turn off the heat immediately as this means it is near to flash point (turning to flame).

Dry Frying

This method is used for foods naturally rich in fat, this fat is extracted during cooking and will prevent the food sticking to the pan e.g. bacon and sausage. Adding extra fat will tend to make these foods greasy and unappetizing.

General advantages of frying

- It is a quick method of cooking.
- Fried food is very appetizing and tasty
- Fried foods have better keeping qualities.
- Introduces variety in the meals as fried foods are crisp in texture.
- Fried food have a higher satiety value.
- It increases the colorific value of food

Disadvantages of frying

- Fried foods are difficult to digest as food get covered layers of fat.
- Due to high temperature, the nutrient losses are higher particularly of fat solublenutrients and heat sensitive nutrients.
- As fats and oils are expensive, it is not an economical method of cooking.
- Sometimes the food may become oily with too much absorption of oil(sogged with oil especially if oil was not at the right temperature.)
- More attention is required while cooking and care should be taken to avoid accidents.
- Repeated use of heated oils may produce harmful substances and reduce the smoking point.

ASSIGNMENT

1a) What are the advantages of coating food before deep frying?

b) Give any 4 examples of materials that can be used to coat foods before deep frying.

c) Briefly explain how you can coat fish fingers before deep frying them.

2a) Discuss the possible causes of accidents when using deep frying as a method of cooking

b) What first aid can you give to a person who has been burnt by oil?

c) How can you prevent accidents when using deep frying as a method of cooking?

3a) Differentiate between

- i. Sautéing and dry frying
- ii. Barbecuing and broiling

b) Discuss the guidelines to follow when grilling foods.