COOKING METHODS WHERE STEAM IS USED AS A MEDIUM

STEAMING

This method requires the food to be cooked in steam generated from vigorously boiling water in a pan so that food is completely surrounded by steam and is not in contact with water. In this method food does not come in contact with water. Food is cooked by steam or water vapours from the boiling water below it .It can be done by two methods:

1) DIRECT METHOD of steaming involves the application of steam directly to the food which is placed on a perforated rack over boiling water in a pan which is tightly covered with a lid as in making idlis, doklas, momos or steamed fish.
2) INDIRECT METHOD of steaming involves packing of food in a vessel with a lid and then immersing the vessel in another vessel of boiling water (double boiler) .The heat for cooking food is supplied by the boiling water all around the immersed inner vessel as in the making of steamed puddings.

PRESSURE COOKING

This method of cooking is developed on the principle that more heat is generated by steam under pressure than otherwise and hence cooking time is greatly reduced. Since steam is not allowed to escape, the volatile flavor compounds remain in the food and the shorter cooking time enhances the nutrient retention and palatability.

In the pressure cooker, heat is transferred from steam to the food, the steam condenses on the cold food and the heat is released. Condensation of steam occurs until the food reaches the temperature of steam (100 centigrade), then condensation decreases and the steam pressure is built up in the cooker. The weight over the cooker regulates the pressure by preventing the escape of the steam. Pressure cooking is best suited to the cooking of foods which are required to be moist such as curries, soups, broths and stews.

Advantages

a) It helps to conserve nutrients, colour and flavor of the food.
b) The food is easily digestible.
c) It shortens cooking time.
d) It saves the fuel.
e) Steamed foods are good for the patients.

Disadvantages

Overcooking might make the food too soft or at times de-shaped or shapeless also.

COOKING METHODS WHERE FAT IS USED AS A MEDIUM

The food is cooked in hot fat (oil or ghee). It is quick method as the fat can be heated to a high temp so that food coming into contact with it is rapidly heated. Care should be taken to see that the fat contains no impurities as these are likely to produce unpleasant flavours and odours. Temp. of the frying process should be controlled so that the smoke point of the fat is not reached since it causes its decomposition. Fat should not be heated above 200 centigrade as it causes fat to hydrolyse and form Acrolein compounds which have an unpleasant acrid flavor. This method includes following methods:

DRY FRYING

It includes frying of those foods which have fat in them. When the food is heated, the fat comes out from the food itself and helps in cooking e.g. bacon, sausages, kalari etc.

SAUTEING

It involves a small quantity of fat which is just enough to be absorbed by the cooking food e.g. cooking vegetables for noodles, sautéing sprouts.

SHALLOW FRYING

It is cooking in a pan with just enough fat to keep the food from sticking. When the food is cooked from one side, it is turned to other side. Parantha, dosa, pancakes, omelettes etc. are made by this method. Shallow frying results in loss of vitamins from foods since shallow fried foods are generally not coated and come into contact with air at high temp.

Advantages

a) Food is tasty and crisp.
b) Less fat is used if less is poured.

Disadvantages

a) It takes more time to cook.
b) Some nutrients are lost.
c) Food may burn if care is not taken.

DEEP FRYING

It is very popular and old cooking method in our country. Deep frying is done in a deep fry pan or karahi containing excess quantity of fat so as to immerse the food to be fried e.g. pakoras, potato chips, puris, samosas, jalebis, sevigathis are deep-fried.

In this method, large quantity of fat is heated in a pan or karahi. Cooking fat should be sufficient to allow the food to float in it. Oil must be very hot (a faint blue smoke should rise from the surface). The food may be thinly coated with any material like maida, cornflour, besan, egg etc.

In deep frying method, the food is cooked rapidly at 175-200 centigrade, loss of minerals and nitrogenous substances is reduced to minimum. However, fat soluble vitamins A, D,E,K may be lost in the fat, if food is not well coated. Fat used for deep frying should not be repeatedly used since prolonged use of the fat causes polymerization and inter-esterification of the fat resulting in the formation of certain compounds which irritate the GIT and these compounds are suspected to be potential carcinogens.

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The proper methods used in frying are vital to the quality of the product obtained. If the foods have been fried properly, there will be minimum absorption of fat by the food, making it look and taste crisp and fresh instead of stale and greasy. Fried foods which look too greasy indicate that they have been fried at too low a temp. or refried to serve hot.

Any fat used for frying should be flavourless so that it does not mask the natural flavor of the food. The smoke point of the frying medium when fresh should not be less than 220 centigrade and it must contain some anti-oxidant and stabilizer to prevent its deterioration during storage and while in use.

Advantages

a) Deep fried food has greater satiety value.
b) Food takes less time to cook.
c) The food is tasty and attractive.

Disadvantages

a) Deep fried food is not easy to digest.
b) Uncoated foods can have heavy loss of nutrients.
c) The calorific value of deep fried foods is more so calorie counters should remain vigilant.
d) The cost factor is more.

MICROWAVE COOKING

This is relatively a new, advanced and modern method of cooking. The food is placed in an electronic oven where it is exposed to penetration of microwaves produced by a magnetic tube. These microwaves cause agitation of the molecules within the food so that the heat is generated and the cooking time is shortened by ten times than that needed by conventional cooking methods.

This method of cooking involves the use of high frequency electromagnetic waves i.e. microwaves which penetrate the food and produce frictional heat by setting up vibrations within the food. Special ovens called microwave ovens are designed for the purpose which are fitted with a magnetic tube so placed as to focus the microwaves on to the food. This causes friction and heat is produced thereby cooking the food very fast. The vitamins, the natural aroma and the juice of the food are retained which invariably tend to get lost in conventional cooking. As the food is cooked in its own juices, very little oil or fat is used in cooking. China, pottery and heat proof clear are excellent cooking utensils for microwave. Plastic dishes can be used only for duration when time does not exceed 3-4 minutes. The cookware should

have no silver or gold lining on them. Do not use aluminium foil for covering dishes as it leads to sparking.

Advantages

a) Cooking time is greatly reduced.
b) Nutrient loss is less.
c) It is an excellent method for reheating as it does not brown the food each time it is heated.

Disadvantages

a) High cost of microwave
b) It does not cause browning
c) Special utensils are required.

SOLAR COOKING

Solar cooking makes use of non-conventional source of energy i.e. sunlight which is abundantly available in India. The method of using solar energy for cooking has been found to cook food effortlessly without consumption of conventional fuels like gas, kerosene, coal, wood etc. The cost of solar cooker has also been kept within the reach of common man and even govt. subsidies are available to promote their use. Solar cooking is a very simple technique. The original flavor of the food is retained. Some of the heat sensitive nutrients are lost. Loss of nutrients is similar to that seen in boiling and steam cooking. However, as foods are cooked in minimum quantity of water excessive loss of nutrients may not take place. Water used for cooking food is not discarded, hence loss of vitamins may be minimum. There is no danger of overheating or overcooking. The process is comparatively slow and takes about 1-3 hours depending upon the design of the cooker and the intensity of the sunlight available.