



**TRINITY COLLEGE FOR WOMEN
NAMAKKAL
DEPARTMENT OF NUTRITION AND DIETETICS**

**SBEC- FOOD PROCESSING
ODD SEMESTER**

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Food processing

- **Food processing** is the set of methods and techniques used to transform raw **ingredients** into **food** or to transform food into other forms for **consumption** by **humans** or animals either in the home or by the **food processing industry**. Food processing typically takes clean, **harvested** crops or **slaughtered** and **butchered** animal products and uses these to produce attractive, **marketable** and often long-life food products. Similar process are used to produce **animal feed**.

What are the methods of food processing?

Food processing includes traditional (heat treatment, fermentation, pickling, smoking, drying, curing) and modern methods (pasteurisation, ultra-heat treatment, high pressure processing, or modified atmosphere packaging). Some of the common methods are described below:

Canning

The food is heated to a high temperature. This process is called pasteurization. Then, the food is packaged and stored in an air-tight can.



Fermentation

The breakdown of sugars by bacteria, yeasts or other microorganisms under anaerobic conditions. This means, no oxygen is needed for the process to take place (apart from oxygen present in sugar). Fermentation is notably used in the production of alcoholic beverages such as wine, beer, and cider, and in the preservation of foods such as sauerkraut, dry sausages, and yoghurt, but also for raising dough in bread production.



Freezing

Food temperatures are reduced to below 0°C to decrease the activity of harmful bacteria. The process can be used to preserve the majority of foods including fruits, vegetables, meat, fish, and ready meals. Do you know the steps needed to produce frozen peas? Check them out

Modified atmosphere packaging

Air inside a package is substituted by a protective gas mix, often including oxygen, carbon dioxide and nitrogen – gases that are also present in the air we breathe. They help to extend the shelf life of fresh food products - usually of fruits, vegetables, meat and meat products, and seafood.



Pasteurization

Food is heated and then quickly cooled down to kill microorganisms. For example, raw milk may contain harmful bacteria that cause food borne illnesses. Boiling it (at home) or pasteurizing (on a large scale) is crucial to ensure it is safe to consume. Apart from dairy products, pasteurization is widely used in preservation of canned foods, juices and alcoholic beverages.

Additives

Food additives play an important role in preserving the freshness, safety, taste, appearance and texture of processed foods. Food additives are added for particular purposes, whether to ensure food safety, or to maintain food quality during the shelf-life of a product. For example, antioxidants prevent fats and oils from becoming rancid, while preservatives prevent or reduce the growth of microbes (e.g. mould on bread). Emulsifiers are used for instance in improving the texture of mayonnaise, or stopping salad dressings from separating into oil and water.



Smoking

A process of heat and chemical treatment of food to help preserve it by exposing it to smoke from burning material such as wood. Smoked foods usually include types of meat, sausages, fish or cheese.



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SCOPE AND IMPORTANCE OF FOOD PROCESSING

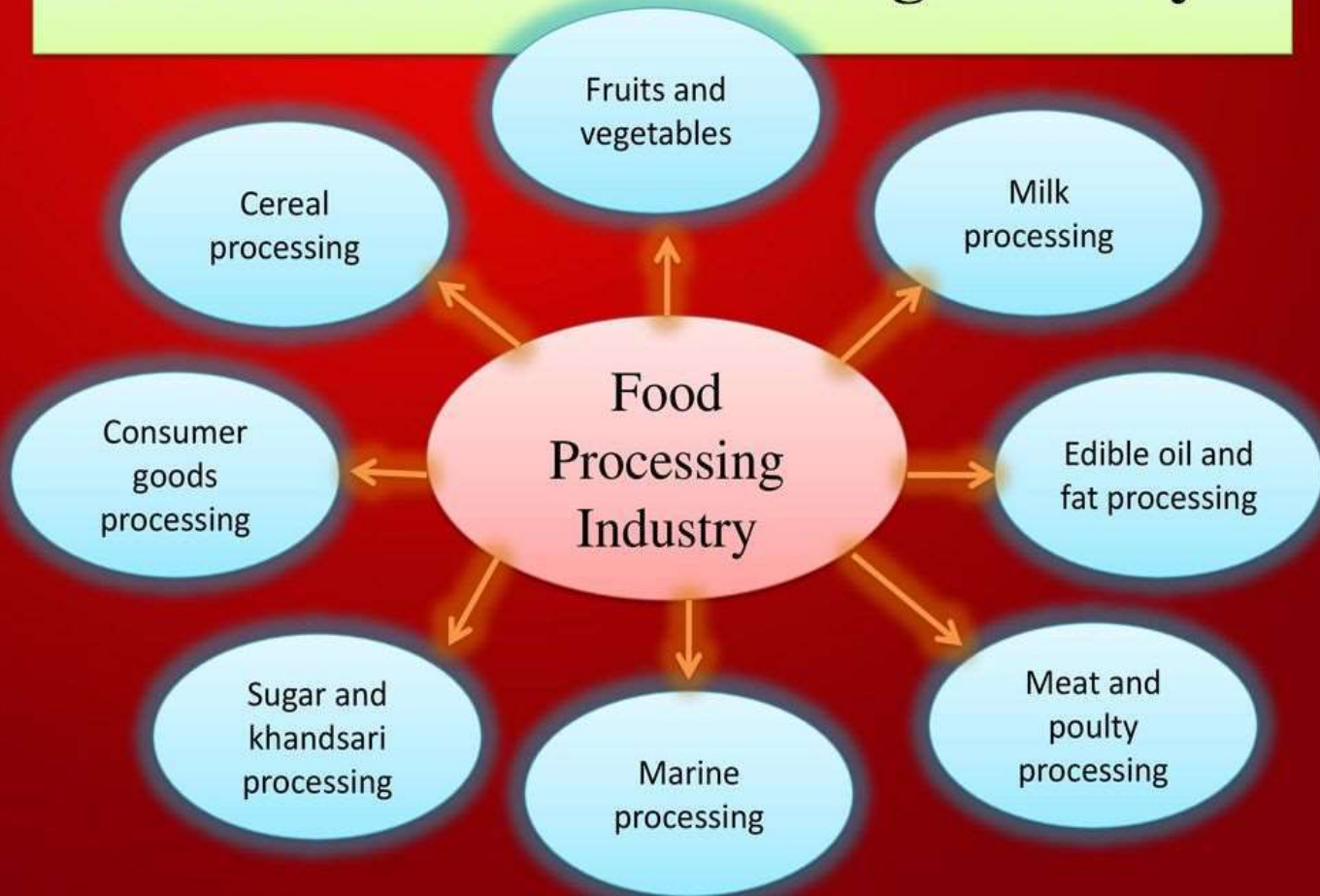
Scope and Importance of Food Processing

- The scope and importance of food processing are vast, with many different methods used to achieve different results. Food can be processed and preserved in many ways, including canning, freezing, dehydration, pickling, and irradiation.
- The most common method of food processing is probably cooking, which prepares food for consumption in various ways. Cooking can be done at home or in a commercial setting, such as a restaurant or factory.
- Food processing and preservation can be defined as all the activities and operations required for converting raw agricultural produce into safe and nutritious food products. Food processing and preservation are necessary to ensure access to safe, wholesome, and palatable foods at reasonable costs.

- Food processing enhances the shelf life of food through various ways such as microorganism control, low-temperature storage, dehydration, and removal of oxygen. It also alters the texture, flavour, and nutritional value of food products to appeal to consumers.
- The food processing industry is an important part of the Indian economy. It accounts for about 10% of India's GDP and employs around 15 million people.
- The sector is multiplying and is estimated to reach a value of Rs. 2,58,000 crore by 2022. There are many opportunities for investment in the food processing sector, and it offers good returns on investment.

- The food processing industry in India is facing several challenges such as lack of adequate infrastructure, shortage of skilled workforce, inadequate access to finance and raw materials, high cost of energy, lack of proper storage facilities, and poor market exposure.
- The food processing industry has a crucial role to play in the development of India's economy. The sector needs to be integrated into the country's strategy for inclusive growth by creating an enabling environment that would encourage investments in infrastructure, research, innovation, and technology up gradation.
- The government should also provide incentives for developing the food processing industry and create awareness about the importance of processed foods. We can only hope to see the sector multiply and contribute to India's economic development.

Sectors In Food Processing Industry



THANK YOU

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