



**SNS COLLEGE OF TECHNOLOGY
(An Autonomous Institution)
Coimbatore.**

Unit I - Topic 1

Functions of Packaging, Packaging of foods, requirement, importance and scope, environmental considerations.

PACKAGING:

Food packaging is a packaging system specifically design for food and represents one of the most important aspects among the processes involved in the food industry, as it provides protection from chemical, biological and physical alterations. The main goal of food packaging is to provide a practical means of protecting and delivering food goods at a reasonable cost while meeting the needs and expectations of both consumers and industries. Additionally, current trends like sustainability, environmental impact reduction, and shelf-life extension have gradually become among the most important aspects in designing a packaging system.

Packaging is a massive, lucrative industry and often it is the way the packaging looks that persuades the shopper to buy the product inside it.





SNS COLLEGE OF TECHNOLOGY
(An Autonomous Institution)
Coimbatore.

Objectives Of Packaging

The major objectives of packaging are:

- To preserve, protect and maintain the contents in a fit and palatable condition.
- To withstand the chosen selling and distribution method.
- To furnish a design and appearance which should be attractive to the consumer, easy to open, store and dispose off.
- To provide an economical containers.
- To make it easier and safe to transport.
- To prevent or minimize losses of the product.
- To provide a convenient means for dispensing the product.





Functions of Packaging

Packaging is still another food preservation method. In other words, protection of the food product is a major function of packaging. Packaging is a necessary aid for storage and distribution of food. Packaging must provide the proper environmental conditions right from the start when food is packed till it's finally consumed. A good package should therefore carry out following functions:

- It should provide a barrier against dirt and other contaminants and keep the product clean.
- It should be securely closed to prevent losses or leakage.
- It should protect food against any physical and chemical damage due to air, light, insects, and rodents.
- It should serve as a material handling tool containing the desired unit amount of food within a single container and may facilitate the assembly of several such units into aggregates.
- The packages may also serve as a processing aid.
- The package design should provide protection and convenience in handling and transport during distribution and marketing
- It should help the customers to identify the food and instruct them how to use it correctly.
- It should persuade the consumer to purchase the food.
- The package may serve as convenience item for the consumer, e.g. as a drinking utensil, as well as process, storage and distribution container.
- Packaging when properly used can be cost saving device.
- Package may serve the purpose of portion controlling in certain food items.
- Certain package may facilitate dispensing of the product.



Broadly major functions of packaging are:

Protection against

- Climatic hazards e.g. relative humidity (RH), oxygen, light, heat, cold, rain.
- Biological hazards e.g. insects, bacteria and moulds, mites, rodents and birds.
- Mechanical hazards those happening during packing, storing, transportation and distribution e.g. impacts, vibrations, compressions.

Preservation: The extent of time a product could be preserved in a packaging system.

Promotion:

- Attracts the consumer towards a product.
- Cuts the cost of advertising

***THERE ARE SIX MAIN REASONS WHY PACKAGING DEVELOPED AND IS IN USE
TODAY***

1. To protect a product from damage or contamination by micro-organisms and air, moisture and toxins.

The product must be protected against being dropped, crushed, and the vibration it suffers during transport. Delicate products such as fruits need to be protected by a rigid package such as a laminated container. The product must also be protected against the climate including high temperatures, humidity, light and gases in the air. It must also be protected against micro-organisms, chemicals, soil and insects.

2. To keep the product together, to contain it (i.e. So that it does not spill).

Some shapes cannot be easily packaged, for example, certain vegetables. However, there are methods of getting around this problem. Suppliers of canned vegetables such as carrots have developed a particular type of plant that yields carrots that are straight and smaller than the normal variety. These fit into cans. Some products such as fruit juices and sausages need to be contained in packages that hold them together and are sealed to prevent spillage and loss.



SNS COLLEGE OF TECHNOLOGY
(An Autonomous Institution)
Coimbatore.

3. To identify the product:

Packaging is the main way products are advertised and identified. To the manufacturer the package clearly identifies the product inside and it is usually the package that the customer recognizes when shopping. The package, through its color scheme or logo, is what is normally identified by the customer. The package will also contain important information including ingredients and 'sell by date'.

4. Protection during Transport and Ease of Transport.

A package should be designed to make it easy to transport, move and lift. A regular shaped package (such as a cuboid) can be stacked without too much space between each package being wasted. This means that more packages can be transported in a container of a lorry. Unusually shaped packages can lead to space being wasted and this can be costly if thousands of the same package are being transported.

5. Stacking and Storage

In supermarkets and shops it must be possible to stack packages so that space is not wasted on the shelves. Lost space on shelves is looked upon as a lost opportunity to sell to a customer. Also, the package must be designed in such a way that all the important information can be seen by a potential buyer, especially the product name. The next time you visit the supermarket look carefully at the shape of the packages. They are usually the same rectangular / cuboid shape. It is the selection of colours and shades that determine whether the product inside is regarded as a quality, sophisticated or cheap item. Often packages are stacked on top and alongside each other to reduce wasted space. The shape and form of the package determines how efficiently they can be stacked or stored.

6. Printed Information.

Information that is useful to consumers and companies such as Supermarkets is printed on packaging. This includes, ingredients, sell by dates, price, special offers, manufacturers address, contact information, product title, barcode and more.

The bar code is extremely useful to the shop selling the product. When the barcode is scanned, the computer system automatically determines if the product needs reordering. Also, the price of the product appears at the till.



Requirements of Packaging :

All of the following requirements must also be satisfied.

Requirements specific to reusable packaging:

- packaging should be designed so that it can be reused several times under normal conditions of use
- processing for reuse must meet health and safety requirements for the workforce
- when it reaches the end of its useful life, the packaging must meet one of the recoverability requirements listed below

Requirements specific to the recoverable nature of packaging:

- **Packaging recoverable in the form of energy recovery.** Packaging waste processed to produce energy must have a minimum calorific value
- **Packaging recoverable in the form of composting.** Packaging waste processed for the purpose of composting must be so biodegradable that it does not adversely affect the composting process or collection of compost
- **Biodegradable packaging.** Biodegradable packaging waste must ultimately decompose into mainly carbon dioxide, biomass and water



**SNS COLLEGE OF TECHNOLOGY
(An Autonomous Institution)
Coimbatore.**

Packaging - environmental considerations



By considering the environment at the design stage you can reduce the cost of your packaging and minimize its impact on the environment. You can also make your product more appealing to consumers who prefer recyclable packaging or packaging from renewable sources.

You must ensure that the packaging you use complies with environmental regulations. The weight and volume of the packaging must be the minimum necessary, and the packaging must be recoverable by recycling, incineration or composting. There are also limits on the level of heavy metals that can be present in packaging.

You also have a duty of care for the waste you produce. The regulations require businesses to ensure that their waste is handled and disposed of or recycled safely.