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Government of India

NIFTEM
KNOWLEDGE • INNOVATION • OUTREACH

PACKAGING OF PANEER

AATMANIRBHAR BHARAT

PM Formalisation of Micro Food Processing Enterprises Scheme (PM FME Scheme)

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INTRODUCTION

As per Food Safety and Standards Regulations (FSSR), 2011 Paneer is the heat assisted coagulated product resulted from the coagulation of cow or buffalo milk or a combination thereof with the help of lactic acid or citric acid.

The paneer must have the moisture content less than 70%. The fat per cent of paneer shall be greater than 50% of the dry matter.

According to Bureau of Indian Standards (IS 10484:1983), paneer shall contain a minimum of 50% fat on dry matter basis but the moisture content shall not go beyond 60%.

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INTRODUCTION

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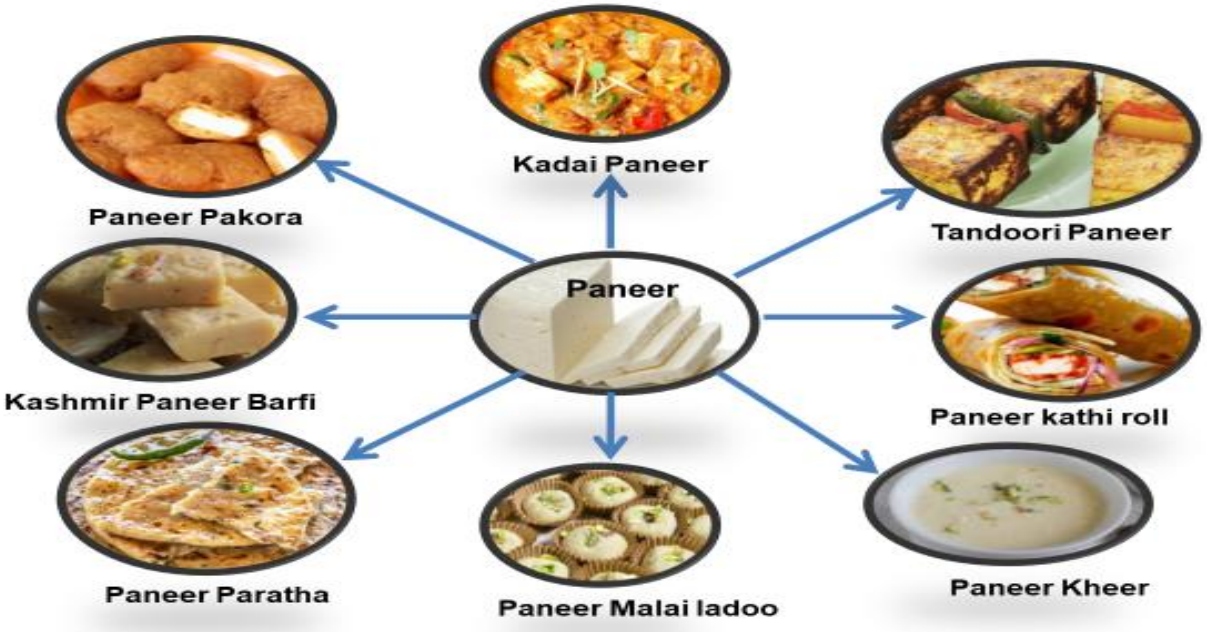
- Paneer is widely used in Indian household and it is a main ingredients of many dishes:



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PACKAGING

- Packaging is an important part of food manufacturing process. It protect the food products from physical ,chemical, biological damages.
- Without packaging, materials handling would be a messy, inefficient and costly exercise and modern consumer marketing would be virtually impossible.
- Packaging Institute International defined packaging as the enclosure of products, items or packages in a wrapped pouch, bag, box, cup, tray, can, tube, bottle or other container form to perform one or more of the following functions: containment, protection, preservation, communication, utility and performance. If the device or container performed one or more of these functions, it was considered a package.

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NEED OF PACKAGING

- **CONTAINMENT :** protecting the environment from the myriad of products that are moved from one place to another.
- **PROTECTION :** to protect its contents from outside environmental influences such as water, water vapor, gases, odors, microorganisms, dust, shocks, vibrations and compressive forces.
- **CONVENIENCE :** Products designed to increase convenience include foods that are prepared and can be cooked or reheated in a very short time, preferably without removing them from their primary package.

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NEED OF PACKAGING

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- **COMMUNICATION :** Packaging contains a lot of information such name of its manufacturer, product name, terms and uses, date of manufacturing, best before. nutritional information thus helping the consumer to be more informed.

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TYPES OF PACKAGING

- **PRIMARY PACKAGING :** Primary package are those package which directly came into contact with food products. It provides first or initial layer of protection to the food products. Examples of primary packaging includes parchment paper, greaseproof paper, paperboard cartons, and plastic pouches.
- **SECONDARY PACKAGE :** Secondary package are those package which surrounds or contains the primary package. Ex. Corrugated case, Boxes
- **TERTIARY PACKAGE :** It contains number of secondary package together. Mainly used for bulk handling of food products.

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PACKAGING MATERIAL FOR PANEER

- Packaging of paneer is mainly done to protect the paneer from outside environment, especially after the completion of process so that paneer can retain moisture, flavor, freshness for a longer period of time.
- The shelf life of fennel seeds and its products depends on the type of package material used for packaging.

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PACKAGING MATERIAL FOR PANEER

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1. LDPE :

- Low-density polyethylene is heat sealable, inert, odour free and shrinks when heated.
- It act as a barrier to moisture and has high gas permeability
- It is less expensive, therefore widely used.
- Has ability of fusion welded to itself to give good, tough, liquid-tight seals.

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PACKAGING MATERIAL FOR PANEER

2. Tin Cans:

- used for customized pack of different capacities.
- Higher shelf life of product
- properly lacquered tin cans are must be use
- must be sealed properly to prevent oxidation in the product
- Higher cost is one of the drawback

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PACKAGING MATERIAL FOR PANEER

3. ALUMINIUM FOIL

- Aluminium is used for packaging as it is highly malleable.
- It can be easily converted to thin sheets and folded, rolled or packed.
- Aluminium foil acts as a total barrier to light and oxygen odours and flavors, moistness, and used broadly in food packaging, including long-life packs.

PACKAGING MATERIAL FOR PANEER

4. METALLIZED POLYESTER:

Mostly used for frozen paneer because of high fat.

- ✓ metallized on both sides or one side
- ✓ high strength and durability,
- ✓ good dimensional stability,
- ✓ excellent chemical resistance
- ✓ Economic
- ✓ Easy to print
- ✓ Lightweight

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PACKAGING MATERIAL FOR PANEER

5. EVA (Polyvinylidene dichloride)/PVDC (Polyvinylidene dichloride)film:

Used for frozen or fresh paneer which will be subjected to termination/sterilization to achieve high shelf life (up to 45 days).

- ✓ superior gas and moisture barrier properties,
- ✓ excellent heat sealability.
- ✓ Economic
- ✓ Easy to print
- ✓ Lightweight

PACKAGING MACHINES

- ✓ Vacuum packaging machine
- ✓ Hand Sealer
- ✓ Individual paneer pouch making machine (source: Fillpack Technology)

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SOME RECENT TRENDS IN PACKAGING

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VACUUM PACKAGING:

- Paneer is high in fat compare to milk and subjected to decrease its quality.
- A laminated or co-extruded pouches along with vacuum also helps in enhancing the shelf life further.
- ✓ The shelf-life of paneer packed in vacuum packaged may improve from 50%-400%.
- ✓ The moisture present in the paneer will retain as the packaging films is not permeable for water. This will maintain the package weight throughout the storage period.
- ✓ No need of chemical preservatives for the extended shelf life.

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SOME RECENT TRENDS IN PACKAGING :

MODIFIED ATMOSPHERE PACKAGING:

- MAP can be defined as packaging of food items where atmosphere inside the packet has been modified to increase the shelf life of food products. It involves active modification or passive modification.
- In active modification air is displaced with a controlled, desired mixture of gases, and the process is called as gas flushing.
- Passive modification occurs due to respiration and the metabolism of microorganisms associated with the food.

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SOME RECENT TRENDS IN PACKAGING :

ACTIVE AND INTELLIGENT PACKAGING :

- Active packaging is defined as packaging in which subsidiary constituents have been deliberately included in or on either the packaging material or the package headspace to enhance the performance of the package system.
- Intelligent packaging is defined as packaging that contains an external or internal indicator to provide information about the history of the package and/or the quality of the food.
- Various functions performed by intelligent packaging includes: Oxygen absorber, Carbon dioxide absorber or emitter, Ethylene absorber, Ethanol emitter, Moisture absorber.

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SOME RECENT TRENDS IN PACKAGING :

ASPECTIC PACKAGING :

- Aseptic packaging is the filling of sterile containers with a commercially sterile product under aseptic conditions, and then sealing the containers so that re-infection is prevented; that is, so that they are hermetically sealed.
- **Aseptic packaging are used for :**

✓ To take advantage of high temperature.

✓ Increase shelf life of food products at normal temperature.

✓ In package sterilization.

LABELING

- Labeling is a means of performing the communication function of packaging, informing the consumer about nutritional content, net weight, product use and so on.

✓ Labeling acts as a silent salesman of a company

✓Shape and design of the container attracts the customers.

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PACKAGING & LABELING LAWS - FSSAI

General requirement for packaging:

- A utensil or container made of the following materials or metals, when used in the preparation, packaging and storing of food shall be deemed to render it unfit for human consumption:—
- (a) containers which are rusty;
- (b) enameled containers which have become chipped and rusty;
- (c) copper or brass containers which are not properly tinned
- (d) containers made of aluminium not conforming in chemical composition to IS:20 specification for Cast Aluminium & Aluminium Alloy for utensils or IS:21 specification for Wrought Aluminium and Aluminium Alloy for utensils.

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PACKAGING & LABELING LAWS - FSSAI

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- **Labeling should contain following information:**

✓ Name of the food product.

✓ List of ingredients.

✓ Nutritional information.

✓ Declaration of VEG and NON VEG.

✓ Declaration of added food additives.

✓ Name and address of manufacturer.

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PACKAGING & LABELING LAWS - FSSAI

- ✓ Net quantity
- ✓ Code number
- ✓ Lot number/ Batch number.
- ✓ Date of manufacturing.
- ✓ Best before date
- ✓ Country of origin.
- ✓ .Number of pieces
- ✓ Bar Code
- ✓ Brand Name etc

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STORAGE OF PANEER

- The proper storage of paneer with utmost care is very important because improperly stored paneer will go stale of rancid much faster which may further alter the aroma and flavor and can also harm the health of consumer.

The proper storage requires following :

- **Dark Place** : paneer should be always stored in a dark room to avoid it from sunlight or UV light, so that quality such as aroma and flavor should be maintained till final consumption.
- **Airtight :** To avoid paneer from absorbing moisture and unpleasant odour from air.

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INNOVATIONS

- NDDB has developed the technology of manufacturing *paneer* with semi-automated process which requires small capital investment. The co-operative dairies already manufacturing condensed milk or *khoa* can easily adopt this product. paneer packed either in polythene bags or parchment paper lined paper board boxes can keep well for 7 days at room temperature and 30 days at refrigeration temperature (8°C or below).
- Active and smart packaging will enhance the shelf life.

For More details Contact:

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