

PACKAGING OF KHOA



AATMANIRBHAR BHARAT

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

INTRODUCTION

- ✓ Indian traditional sweetmeats (sweets / mithai) are very popular in our country and worldwide.
- ✓ Around 50% milk produced in India is converted to traditional Indian dairy products.
- ✓ Mostly, khoa and channa are used for the preparation of sweets.
- ✓ Khoa based sweets are product, burfi, kalakand, milk cake etc.
- ✓ Khoa is also used in the preparation of Gulab jamun, gajar ka halwa, kheer. Paysam etc

INTRODUCTION

- Khoa is a heat desiccated products and is the base material for most of the sweets prepared by *halwais*. As per Food Safety and Standards Regulations (FSSR), 2011 Khoa by whatever name it is sold such as Khoa or Mawa or any other region-specific popular name means the product obtained by partial removal of water from any variant of milk with or without added milk solids by heating under controlled conditions.

PACKAGING

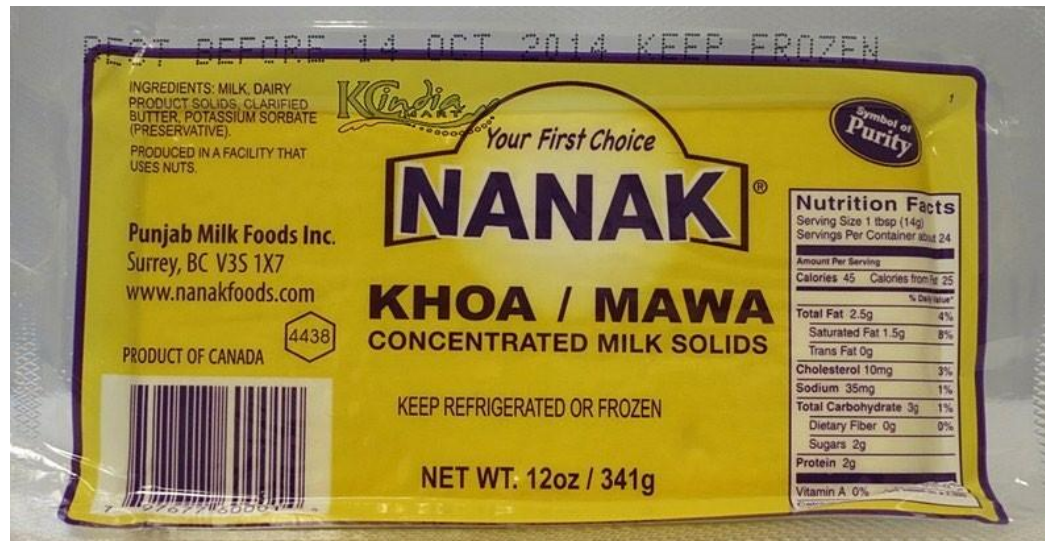
- Packaging is an important part of food manufacturing process. It protect the food products from physical ,chemical, biological damages.
- Without packaging, materials handling would be a messy, inefficient and costly exercise and modern consumer marketing would be virtually impossible.
- Packaging 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.

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.

NEED OF PACKAGING

- 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.



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.

PACKAGING MATERIAL FOR KHOA

- Packaging of khoa and its products is mainly done to protect the products from outside environment especially after the completion of process so that products can retain moisture, flavor, freshness for a longer period of time.



PACKAGING MATERIAL FOR KHOA

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.



PACKAGING MATERIAL FOR KHOA

2. PARCHMENT PAPER : Parchment paper is also used for the packaging and handling of khoa in unorganized sector for shorter duration. Parchment paper is a heavy duty grease and moisture resistant paper.



PACKAGING MATERIAL FOR KHOA

3. HDPE: High container has been also used for packaging of khoa and its products. The benefits of HDPE include:

- i. Weather-resistance
- ii. Malleability
- iii. Light-weight
- iv. Cost-effective
- v. Hygienic
- vi. Recyclable
- vii. FDA-approved



4. 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.



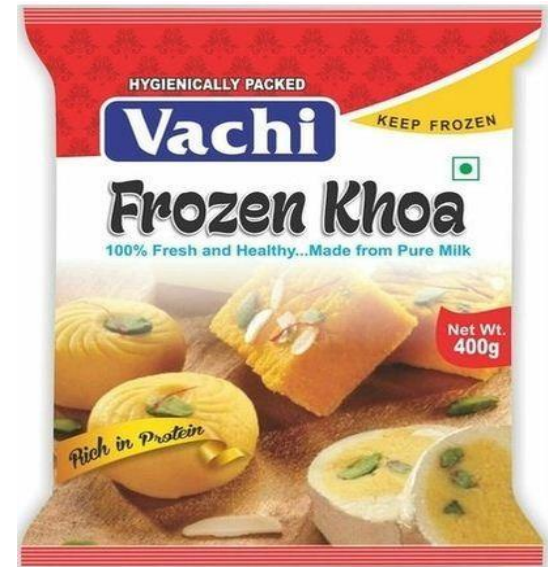
5. PAPER BOARD (White Lined Chipboard):

Mostly used for khoa and its products packaging because of low moisture in product.

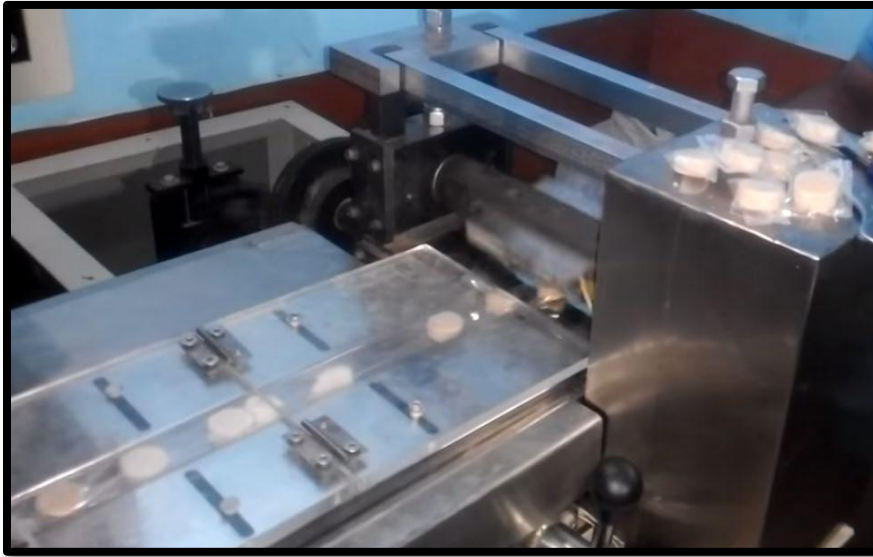
- ✓ Recycled
- ✓ Economic
- ✓ Easy to print
- ✓ May take any shape
- ✓ Lightweight



KHOA Package available in Market



PACKAGING MACHINES



- ✓ Individual product packet
- ✓ Hand Sealer
- ✓ product pouch making machine



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.

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.

SOME RECENT TRENDS IN PACKAGING

ASEPTIC 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.



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.

PACKAGING & LABELING LAWS - FSSAI

- **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.



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



STORAGE OF KHOA

- The proper storage of product with utmost care is very important because improperly stored product will go stale or rancid much faster which may further alter the aroma and flavor and can also harm the health of consumer.
- Generally, khoa has shelf life of 2-3 days at room temperature and for a week under refrigerated storage conditions when packed in parchment paper and paper board box. It can be stored for longer periods with better packaging and/or under deep frozen conditions at -18°C or below. (Source: NDDB)

- NDDDB has developed the technology of manufacturing *product* with semi-automated process which requires small capital investment. The co-operative dairies already manufacturing condensed milk or *khoa* can easily adopt this product. product 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 degree C or below). Active and smart packaging will enhance the shelf life.



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