Ministry of Food Processing Industries
Government of India

सत्यमेव जयते

NIFTEM
Knowledge. Innovation. Outreach

PACKAGING OF BESAN

AATMANIRBHAR BHARAT

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

PACKAGING

Shelf Life of Product:

- Flour infestation is a common problem that both traders and flour millers face.
- Maintaining the consistency of the grain and its flour is a difficult task.
- With due treatment & managed conditioned climate, flour can be stored without any signs of damage for up to 6 months.
- Like other types of grains, chickpea and besan should be stored in a sealed container to keep out moisture in a cool place.

- It stays fresh for upto 6 months and longer if refrigerated.

- Besan from Indian stores sometimes is already a few months old and has been stored in hot conditions should be refrigerated.

- The quality of the product is also established with the type of process and technology further improves the quality of the product.

- The addition of anti-microbial packaging adds value to the product and thus the quality.

The moisture content of the Besan flour:

- Storage Conditions
- Storage –Temperature & Humidity
- Cross Contamination
- Unhygienic Conditions
- Cracks on the floors & walls
- Standing water near the stores
- Spillage & bird feces in the stores/stairs & floors
- Presence of grains germs in the flour.

In order to improve the shelf life of the flour, the following additional precautions should be taken by millers -:

- Use clean & fumigated grains for milling
- Use scouring machines in the cleaning line
- Set cleaning machines with optimum efficiency to separate out all the impurities from the Besan grains

- Clean the dead pockets of the cleaning line frequently, to get rid of non-moving grains at the elevator bottom & outlets, grains conveyor troughs, and tempered grain conveyors.
- Fumigate empty Grains bag.
- Before milling, use scourers to remove dirt in tempered grains.
- Regularly clean the milling equipment like roller mills, feed hoppers, flour conveyors, gravity spouts, plan shifters purifiers, bran finishers, flour bins, flour elevators, flour packing hoppers, bran elevators line, etc.

- Fumigate packing materials before every use.
- Frequently fumigate bins & conveyors.
- Always keep the parking area & the flour storage area clean.
- Type of packaging materials used.

➢ Proper Storage

- When food products are not properly stored, they are spoiled by other food products that are bad for health.
- As germs begin to grow on it, food products stored for a long time get spoiled.
- Spoilage is a phase in which food goods deteriorate to the point that human food is not edible.
- "In most cases it has been seen that these Maida-based instant noodles take a toll on the digestive process.
- Its remnants may reach the appendix area of the body and trigger infection."

PACKAGING

Besan flour Packaging:

- Packaging refers to the act of designing and producing the container or wrapper of a product.
- It is one of the most important parts of marketing.
- There are many factors that need to consider while selecting a suitable type of pack for the product:
  - The product contents.
  - The application of the product.

- Content stability.
- Protection from any environmental factors
- Acceptability of the pack to the customer.
- Regulatory, legal, and quality issues.

Characteristics of packaging material

- The material selected must have the following characteristics:
- Must meet tamper-resistance requirements
- Must not reactive with the product
- They must protect the preparation from environmental conditions
- Must be non-toxic
- Must not impart odor/taste to the product
- Must be FDA approved.

PACKAGING

Besan Packaging:

- Flour is packed directly in gunny bags, gunny poly-line bags for bulk sale, and for retail sale in laminated pouches or poly-bags.

- Packaging Specifications:
  - To protect the product from spillage and spoilage.
  - To provide protection against atmospheric factors such as light, heat, humidity, and oxygen.
  - The selected packaging materials should have high water vapour and oxygen barriers.

- The packaging material should have a high barrier property to prevent aroma/flavour losses and in gross of external odour.

- Therefore, the wrapping material should be resistant to grease and oil and be compliant with the commodity.

- The packaging content should, in addition to the above practical specifications, have good machinability, printability and be readily available and disposable.

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TYPES OF PACKAGING

Fundament classification:

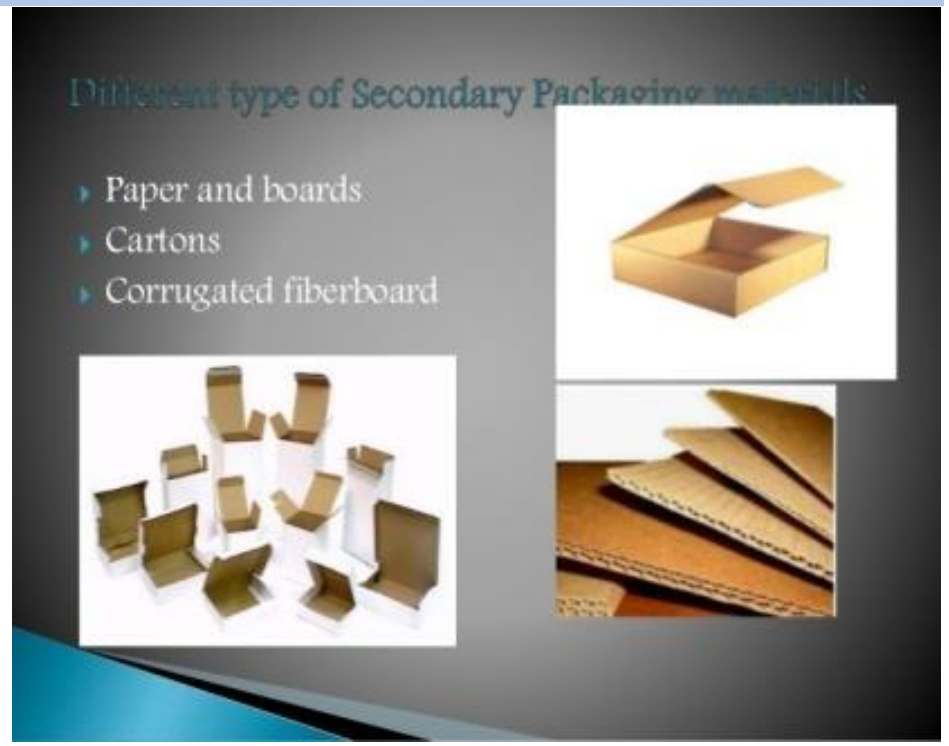
Packaging refers to the act of designing and producing the container or wrapper of a product. It is one of the most important parts of marketing.

- **Primary packaging:**

  Primary packaging is packaging which is in close association with the product itself and is often referred to as a consumer unit. The main purpose of the primary packaging is to contain, protect and/or conserve the final product, in particular against contamination.

- **Secondary Packaging:**

Secondary packaging is the outer packaging of the main packaging, which connects packages and further covers or marks the prescription component.



- **Tertiary Packaging:**

Tertiary packaging is used for the handling, transportation, and delivery of bulk products

TYPES OF PRIMARY PACKAGING

✓ Hanging Bags-

- Hanging bags in grocery stores and other shopping outlets are commonly used.
- They are a type of plastic bag that is also sealed with a back-middle seam on both ends as well.
- Hanging bags have a pre-cut hole that makes it easier for them to hang from hooks so that they can be seen in an attractive way.

✓ Pillow bags –

- A pillow bag is another typical type of package.
- The bags are named for their shape, which is like a cushion.
- They are found lying flat on grocery store shelves in the grocery store and were known to carry the items.

✓ Gusseted Poly Bags-

- Gusseted bags are often called flat-bottom bags because they feature a tucked in pleat that's been pressed flat.
- It allows the bag to expand for greater carrying capacity and to keep the shape of a box if necessary.
- These types of poly bags can be heat sealed, tied, stapled, or taped shut.
- They're the perfect poly bag for anyone looking to get more flour in a single bag.

✓ Flexible Pouches-

- Flexible pouches are a perfect way to carry most packaged items.
- They can be made with zipper-seal closures, which tend to keep the inside contents fresh for use.
- Flexible pouches offer amazing printing capabilities, many pouches stand up on their own, which helps you improve your shelf appearance.

Essentials

- ✓ Shelf-life duration, i.e. the degree of protection required by the commodity against pick-up of moisture, preservation of aroma retention, decolouration, etc (in case taste maker is added)
- ✓ During packaging, transportation, and delivery, environmental conditions.
- ✓ Business type/sector
- ✓ Preferences for users
- ✓ Printability and appeal of aesthetics

The package types generally used as consumer packs are:

- ✓ Plastic cups of various sizes and shapes with labels and provided with metal or plastic caps.
- ✓ The plastic lids have added inbuilt features of tamper evidence, dispensing, grinding, etc.
- ✓ Printed tinplate container with/without dispensing systems.

- ✓ Printed tinplate container with/without dispensing systems.
- ✓ Plastic containers with plugs and caps with dispensing and tamper evidence features.
- ✓ Printed flexible pouches – pillow pouch, gusseted pouch, stand-up pouch.
- ✓ Lined cartons

MATERIAL OF PACKAGING

- The most common choice of packaging medium is plastic (generally flexible).
- It provides the required protection and preservation, grease resistance, physical strength, machinability, and printability.
- Polythene, polypropylene, laminated pouches, PVC wrapped trays and plastic jars were the various packaging materials used.
- In terms of preserving consistency during the storage era, the suitability and adoptability of these packaging materials have been examined.

PLASTIC-BASED PACKAGING MATERIALS THAT CAN BE USED FOR NOODLES ARE LISTED BELOW.

➢ Polyethylene (PE)

- It is considered to be the backbone of packaging films.
- Polyethylene with its low water vapor transmission is of definite interest.
- Polyethylene films are fairly free of plasticizers and other additives and are quite extensively used as a part of lamination.
- Its ability to heat seal increases its value.
- A copolymer of polyethylene and polyvinyl alcohol and EVOH has outstanding gas barrier

➢ Polypropylene-

- Polypropylene films have better clarity than polyethylene and enjoy superior machinability due to stiffness.
- Lack of good saleability has been a problem; however, PVDC and vinyl coating have been used to overcome this problem.
- Some varieties of PP have been specially developed for twist-wrap applications as they have the ability to lock in position after twisting.

➢ Polyesters (PET) and Polyamide (PA)

- Polyethylene terephthalate film has high tensile strength, gloss, and stiffness as well as puncture resistance.
- It has moderate WVTR but is a good barrier to volatiles and gases.
- To provide heat seal property, PET is normally laminated to other substrates.
- Nylons or polyamides are similar to PET but have high WVTR.

➢ Metallised Films

- When polymeric films are metalized there is an improvement in their barrier properties.
- Metallization is also used for decorative purposes and aesthetics.
- The films, which are used for metallization, are PVC, PET, PP, and polyamides.

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