



# PACKAGING OF DAL MILLING



**AATMANIRBHAR BHARAT**

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

## Shelf Life of Product:

- **Toor dal** should be stored at cool and dry place.
- It should be away from direct sun light.
- If you are keeping it well then can be stored for 4-5 months.
- If you are buying in bulk then you must store it in the refrigerator for long lasting.

- At the time of selecting the rich seeds of dal you must have to take care of its color and skin.
- In the market it is easily available either in packages or loose one.
- Most probably this dal is sold split and skinned.
- This dal is mainly of two types oily and non-oily.

- Oily toor dal is a natural type of lentils having the long shelf life.
- Where as non oily toor dal is to be purchased during the regular intervals and highly used in Indian cooking.
- At the time of purchasing, smell it and then go ahead, this dal has a mild and nutty aroma having the smaller size than chana dal.

The moisture content of the Dal.

- 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 Grains.

In order to improve the shelf life of the Dal, 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 Pulse 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."

## Dal 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.

## Dal Packaging:

- Dal 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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## 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.

### Different type of Secondary Packaging materials

- Paper and boards
- Cartons
- Corrugated fiberboard



➤ **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 tinfoil 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 properties especially when dry.

### ➤ **Polypropylene-**

- Polypropylene films have better clarity than polyethylene and enjoy superior machinability due to stiffness.
- Lack of good sealability 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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