

# PACKAGING IN PEPPER



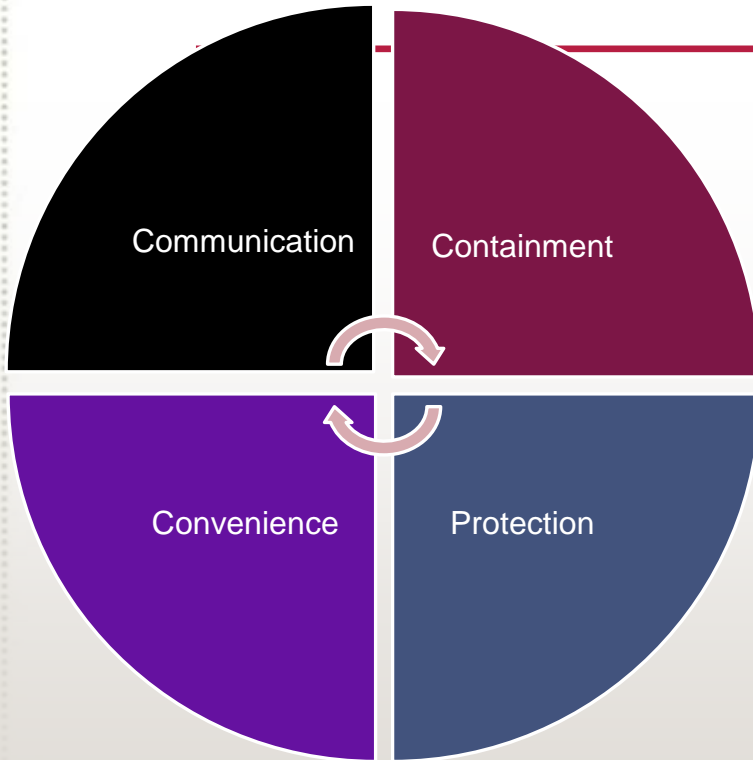
## AATMANIRBHAR BHARAT

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

- Pepper is hygroscopic in nature and has a tendency to absorb moisture resulting in mould attack and insect infestation.
- Shall be packed in clean, sound, sealed packages, material which does not affect the product
- Conventionally, dried pepper is stored in double lined gunny bags.
- Value added products can be stored in different types of packaging materials to increase its shelf life.
- Black pepper have natural antioxidant activities and can be helpful to prevent oxidation of food



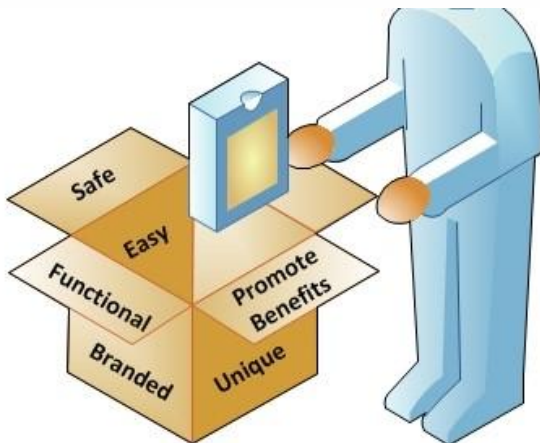
# FUNCTIONS OF PACKAGING



- Ability to protect content from spoilage and Spillage
- Prevent insect infestation and insect damage
- Economical, easily available and easy disposal
- Confirm with food laws



# FUNCTIONS OF PACKAGING



- Offer Protection against environmental conditions- moisture barrier
- Offer protection against microorganisms- oxygen barrier
- Strength properties to withstand mechanical hazard during transportation and storage
- Have a good printability

# DETERIORATIVE FACTORS OF PEPPER

## Moisture Content

- Moisture absorption from humid atmospheres promotes results in mould attack and insect infestation.
- This leads to loss in aroma, caking and rancidity



# DETERIORATIVE FACTORS OF JAGGERY

## Microbial Contamination

- In high humidity condition moisture absorption occurs.
- Beyond a certain level of moisture content, microbial infection and biochemical degradation sets in.
- Moisture content should be less than 13% in dried pepper in storage





## BULK PACKAGING

- Whole pepper is packed and transported in jute gunny bags and double polythene lined bags.
- The plastic based alternate packaging materials are used to overcome the contamination problems associated with jute.
- Eco friendly packaging materials like jute gunny bags, paper bags etc can be utilized and use of polythene bags can be minimized
- Dried pepper having moisture content of 10-11% can be stored without any mould growth in jute bags with polythene lining of 0.003 inch or more thick or in laminated bags or similar containers





# ADVANTAGES OF BULK PACKAGING

- Bags are flexible, collapsible and durable
- Can be used for packaging of, powder and any free-flowing material.
- Product wastage/spillage and tampering can be avoided.
- Since the handling is mechanized, less labour is required.
- Saving in time for loading and unloading.
- Bags are light in weight and, therefore, freight costs are reduced.
- Creates eco-friendly, pollution free working atmosphere.





# INSTITUTIONAL PACKAGES

- Institutional packs of capacities ranging from 2kg to 10 kg are also used.

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- Traditional materials used: tinplate containers and jute bags.
- Currently used materials: Laminated flexible pouches and plastic woven sacks.
- BOPP multicolor Printed laminated PP Woven bags.



# RETAIL PACKAGING-PEPPER

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- The black pepper (in whole or ground) should be packed into polypropylene packagings (bags or flasks) or glass.
- All packagings must be hermetically sealed to avoid loss in the mass or modifications in the moisture content.
- Some care should be taken when removing the air from within the packaging before sealing.
- The vacuum packaging improves the conservation of the quality of the dehydrated pepper

# CONSUMER PACKAGES

- The options available to the traders/exporters in the selection of a consumer pack for domestic and export market are quite wide.
- The selection/choice of the packaging material/system depends upon a number of factors.
- Shelf-life period(the degree of protection required by the product against moisture pick-up, aroma retention and discolouration).
- Climatic conditions during storage, transportation and distribution.
- Type/sector of market.
- Consumer preferences.
- Printability and aesthetic appeal.





# GLASS CONTAINERS

- Bottles/Jars are commonly used for dehydrated pepper, pepper in brine, pickle etc
- The glass used for food packaging is soda-lime glass.
- Most bottles and jars are tailor-made specifically for one product or one manufacturer.
- Glass packaging materials are strong and corrosion resistant but costly
- Glass jar and steel jar were found to be better containers for storing ground pepper for longer storage period
- Eliminates the risk of potentially harmful chemicals found in some plastics that can leach into food.



# GLASS CLOSURE AND SEALING LUG JARS

## Lug Jars

- Also known as Twist Off(T/O) caps, lug caps are compatible with containers whose threads are non-continuous.
- Lugs on the interior of a lug cap, correspond with the non-continuous threads and close by a partial rotation.



LUG Cap Sealer  
(Mechanical)



LUG Cap Sealer  
(Pneumatic)



# GLASS CLOSURE AND SEALING THREAD JARS

## Continuous Tread

- Continuous thread caps can be metal or plastic and have various liner options.
- Categorized by threads which wrap around the jar, a few products that traditionally use continuous thread caps include...





The printed flexible pouches are generally laminates of various compositions.

•Polymers are commonly used for packaging due to their transparency, softness, heat sealing capacity, low cost, good mechanical property and they also have good barrier to heat and oxygen

1. Polyester/metallised polyester/ LDPE
2. BOPP/LDPE
3. BOPP/metallised polyester/LDPE.
4. Polyester/AL foil?LDPE



# FLEXIBLE PACKAGING

- ~~Polyester and BOPP materials used for lamination is generally 10 or 12  $\mu$  thick.~~
- PVDC, EVOH and EVAL based material have high barrier properties.



# TYPES OF POUCHES

- Centre seal formation
- Three sides seal formation
- Four sides seal formation



Centre seal formation



Three sides seal formation



Four sides seal formation



## COMPOSITE CONTAINERS

- Composite container are also used for packaging of value added products of pepper
- The containers are round and the body(side wall) is made of PE coated foil laminated spirally wound paper.
- The top and bottom ends of the container may be made from metal or plastic.
- The inner face is coated with plastic film or a combination of film and aluminum foil- This ensure optimum barrier properties against moisture and oxygen.



# KRAFT PACKAGING

- Has good strength, printability and appearance.
- Other advantages are its low cost, wide availability and low weight.



- Currently very popular material in food packaging.
- Made by sulphate pulping process.
- Poly amide or polyamine resin is used to coat or laminate to improve barrier properties.

## PET bottles

- Clear, Shiny and transparent.
- Unbreakable.
- Good barrier properties.
- 100 % recyclable.
- Low permeability of moisture and air.





## OTHER PACKAGING MATERIAL

- Liner carton filling and packing machine also known as duplex box packing machine
- Provides good protection and barrier properties.



# PACKAGING MACHINERY



Bag filling machine



Automatic FFS  
machine



Automatic double head  
power filling machine

# FSSAI LABELLING REQUIREMENTS

- Name, trade name or description

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- Name of ingredients used in the product in descending order of their composition by weight or volume
- Name and complete address of manufacturer/packer, importer, country of origin of the imported food (if the food article is manufactured outside India, but packed in India)
- Nutritional Information
- Information Relating to Food Additives, Colors and Flavors
- Instructions for Use



# FSSAI LABELLING REQUIREMENTS

- Veg or Non-Veg Symbol
- Net weight, number or volume of contents
- Distinctive batch, lot or code number
- Month and year of manufacture and packaging
- Month and year by which the product is best consumed
- Maximum retail price



# LABELLING OF PEPPER POWDER



Ingredients

Name and complete address of the manufacturer

Customer care information

Information of the product

FSSAI License number

Best Before

Vegetarian Sign

Net Weight

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



THANKYOU