MINISTRY OF FOOD PROCESSING INDUSTRIES
GOVERNMENT OF INDIA

NIFTEM
KNOWLEDGE • INNOVATION • OUTREACH

PACKAGING OF TEJPATA

AATMANIRBHAR BHARAT

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

INTRODUCTION

- Dried tejpata must be stored in moisture-proof containers away from direct sunlight.
- For long term bulk storage, polythene-lined gunny bags inside wooden boxes are used. The polythene bags help to preserve the green colour of the pods
- It is essential that the tejpata are fully dry before they are placed in the gunny bags for storage.
- Any moisture within the bags will cause the tejpata to rot.
- The stored tejpata should be inspected regularly for signs of spoilage or moisture.
- If they have absorbed moisture, they should be re-dried to a moisture content of 10%.
- The storage room should be clean, dry, cool and free from pests.

FUNCTIONS OF PACKAGING

Packaging materials have the four basic functions

1. Protection
2. Communication,
3. Convenience
4. Containment

- **Traceability** and **Tamper indication** are said to be the secondary functions of increasing importance.

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PACKAGING MATERIAL REQUIREMENT FOR SPICES AND SPICE PRODUCTS

- Should have the ability to protect the contents from spoilage and spillage. Should offer protection against physicochemical and microbiological
- Spoilage due to environmental conditions like humidity, temperature, light and oxygen. This requires a low water vapour and oxygen transmission rates and Light transmissivity.
- Should be a good aroma barrier to prevent loss of flavour substance from the product and pick up of foreign odours.
- Should have good oil and fat resistance characteristics.
- Should have good machineability characteristics and possess the required mechanical strength properties.

PACKAGING MATERIAL REQUIREMENT FOR SPICES AND SPICE PRODUCTS

- Should have good resistance to insects and mites.
- Should be compatible with the product packed as regards tainting and migration and conform to the food laws of importing and exporting countries.
- Should have good appearance and printability to assist in selling by suitable attractive graphics.

NATURE AND DETERIORATIVE CHARACTERISTICS OF SPICES & SPICE PRODUCTS

1. Loss of aroma and flavour

Loss of aroma and flavour is caused by the loss of volatile oil content due to evaporation, seepage and oozing out through packaging material and/or due to oxidation of some aroma components. This is accelerated by temperature.

2. Bleaching of colour

Bleaching of colour occurs in green cardamom is caused by oxygen and accelerated by light, humidity and temperature and favoured by oxygen.

NATURE AND DETERIORATIVE CHARACTERISTICS OF SPICES & SPICE PRODUCTS

3. Loss of free flowing nature

The spice powders become soggy and lose their free flowing nature due to moisture ingress from the surroundings through the package. Caking and lumping problems do not arise in whole spices; however, development of musty odour does occur at higher RH.

4. Microbial spoilage

At and above 70% RH, microbial spoilage occurs in spices due to moisture sorption.

GLASS CONTAINER

- Bottles/Jars are commonly used for dried tejpata and tejpata powder
- The glass used for food packaging is soda-lime glass
- Glass possesses very good barrier properties, so it maintains product freshness for a long period of time without impairing the taste or flavour, visibility of product

FLEXIBLE PACKAGING

- 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

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

OTHER PACKAGING MATERIAL

1. PET bottles

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

2. Liner carton

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

BULK PACKAGING

- Dried tejpata 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, carton boxes *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

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BULK PACKAGING

- A twill, B twill or DW gunny bags are used depending upon the value of the spice.
- The weave clearance of 1-2%, 3-5% and 4-6%, prevent spoilage and restrict movement of insects into the gunny bags.
- Polyethylene lined jute bags or HDPE/PP bags are also used for tejpata packaging
- Tejpata with a moisture content of below 10% will keep well during transportation and storage if packed in 75 µm black coloured polyethylene lined packages in wooden chest.

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

- Its capacities ranging from 2kg to 10 kg are also used.
- 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

- The tejpata (in whole or ground) should be packed into polypropylene packaging (bags or flasks) or glass.
- All packaging 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 tejpata
- Whole spices are packed in 50 g to 1 kg units in 50- 70 µm polyolefin pouches. Few brands are packed in PET/PE laminate for good printability

RETAIL PACKAGING

- Metallized polyester/PE and paper/Al foil/PE laminate pouches, which are very good barriers to moisture and volatile oil, offer adequate protection
- Presence of polyester or foil offers better resistance to insects than polyolefins and cellophanes, and hence are better suited for long term storage.
- Duplex board carton affords further physical strength and good printing surface

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 discoloration.
- Climatic conditions during storage, transportation and distribution.
- Type/sector of market.
- Consumer preferences.
- Printability and aesthetic appeal.

PACKAGING OF DRY SPICE MIXES AND PASTES

- For spice mixes glass jars, tin containers, PET or PET-G Jars, Al foil or PET/met. PET/PE laminates are the choice materials and can offer 9 to 12 months shelf life under normal storage conditions.
- Blister packs for short shelf life or internal market and glass/PET jars for export market are being used for the packaging of these pastes

PACKAGING OF SAUCES/LIQUID SALAD DRESSINGS AND FAT SPREADS

- Co-extruded LD/ Tie/EVOH/Tie/PE blow moulded bottle was found to offer good shelf life for sauces
- PET/ EVOH, PET/EVOH/PET constructions, although little expensive, are being used for ketchup
- For salad dressing which contains oil, vinegar and other ingredients along with spices, PET bottles are preferred to EVOH constructions or PP/HDPE containers.

PACKAGING OF OLEORESINS AND VOLATILE OILS

- Highly volatiles have to be packed in tightly closed glass bottles, suitably lined tin or aluminium containers.
- Oleoresins are also packed in thick food grade HDPE containers.
- Aluminium container with suitable inner coatings can also be considered as consumer pack for oleoresins as it helps in easy dispensing

PACKAGING MACHINERY

Bag filling machine

Automatic FFS machine

Automatic double head power filling machine

FSSAI LABELLING REQUIREMENTS

- Name, trade name or description
- 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

For More details Contact:

National Institute of Food Technology and Entrepreneurship and Management
Ministry of Food Processing Industries
Plot No. 97, Sector-56, HSIIDC, Industrial Estate, Kundli, Sonipat, Haryana-131028

Website: http:www.niftem.ac.in

Email: pmfmecell@niftem.ac.in
Call: 0130-2281089