MINISTRY OF FOOD PROCESSING INDUSTRIES
GOVERNMENT OF INDIA

LENTILS Packaging

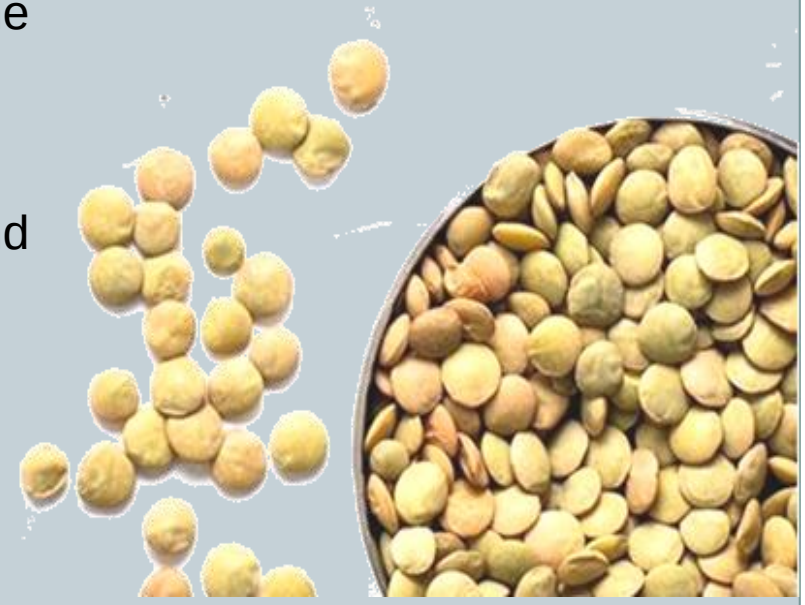
AATMANIRBHAR BHARAT
PM Formalization Of Micro Food Processing Enterprises Scheme (PM FME Scheme)

INTRODUCTION

•Packaging is the cornerstone of the food processing industry

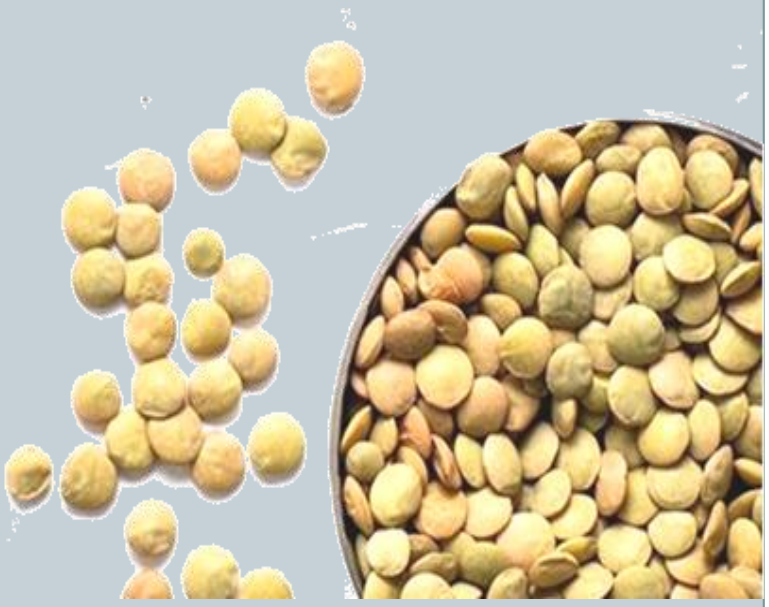
•The packaging transform the food from one stage to another by using different techniques

•Hence, it is driven by factors as health and hygienic, food safety, quality and nutrients

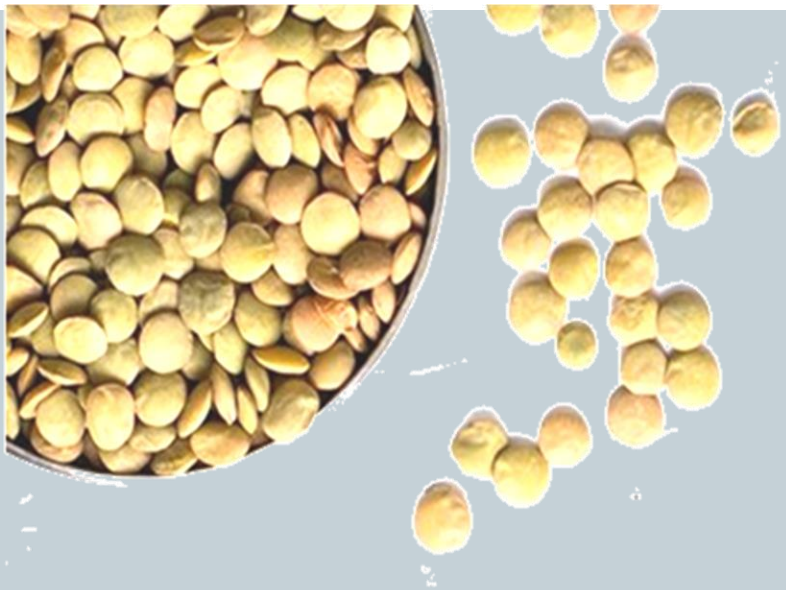


•Beside these, it includes marketing and distribution, maintenance of taste, year-round availability and long shelf life

•Worldwide, the sales of processed foods are estimated to be $2 trillion whereas that of packaged food range around$1 trillion



FOOD PACKAGING



The International Packaging Institute (IPI) defines 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.

LENTIL PRODUCTS

OBJECTIVES

The objectives of packaging in case of lentils and its products include:

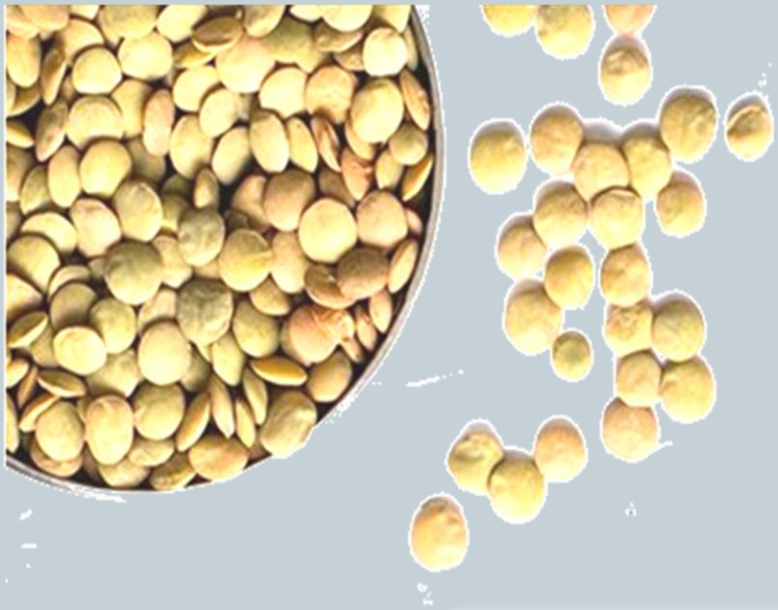
- Prevent physical damage, e.g. from knocking, shaking or crushing;
- Prevent contamination from micro- organisms, pollution or vermin;
- Protect against dehydration/ dampness;
- Protect the product's nutritional and sensory characteristics;
- Help to increase a product's shelf life.

IMPORTANCE

- Food packaging is vital for protecting lentil products against external microbes and bacteria
- Enhances shelf-life & attracts buyers
- Displays and promotes the product
- Means of marketing the food product
- Differentiates the product from competitors
- It highlights freshness, health and traceability of the products

The importance of food packaging is further strengthened by the final choice of the consumers because it directly involves appeal, convenience, information and branding

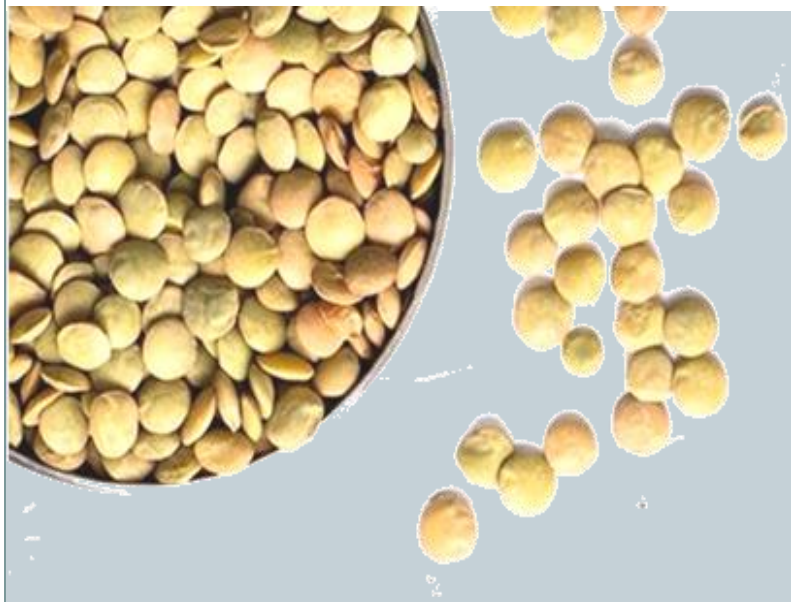
PRINCIPLES OF PACKAGING



•Food packaging preserves food and prolongs its shelf life by protecting it from bacterial damage, moisture and insect attack.

•Shelf visibility,, differentiation, versioning, reassurance, product delivery

TYPES OF PACKAGING



•Primary food packaging is in direct contact with the lentil products– it preserves the products and ensures protection from external bacteria.

•Secondary packaging of lentil products is used for branding and as an extra measure of protection for the food product.

TYPES OF PACKAGING MATERIAL

Flexible Plastic Packaging

Plastic pouches-

•Made by plastic films

•HDPE used as cereal bags

•LDPE used as Kraft singles wrappers

•Polypropylene for chips, biscuits, 2 minute noodle wrappers etc.

•Flexible Plastic Packaging

Flexible Plastic Packaging

Retortable pouches

- Have a thickness up to 0.375mm
- Made by extrusion
- Alternative to metal cans and glass containers
- Suitable for canning
- Used for thermally processed- fruit, vegetable, meat & fish products

Flexible Plastic Packaging

Materials-

- Low density polyethylene (LDPE)
- Polypropylene (PP) Pouches
- BOPP/LDPE
- BOPP/ Polyester
- Metalized Polyester/ LDPE

PACKAGING MATERIALS FOR LENTILS

Following materials are used as packaging for the protection of pulses from moisture and insects-

- Cellophane
- Polyethylene (PE) carton packets,
- Polyethylene bags

In addition to this, these packaging materials are becoming widespread currently-

- Paper
- Foil based packaging material
- PE spectacle packaging material

PACKAGING MATERIALS SUITABLE FOR PACKAGING AS PER FSSAI

- IS : 10146 (Specification for Polyethylene in contact with foodstuffs);
- IS : 10142 (Specification for Styrene Polymers in contact with foodstuffs);
- IS : 10151 (Specification for Polyvinyl Chloride (PVC), in contact with foodstuffs);
- IS : 10910 (Specification for Polypropylene in contact with foodstuffs);
- IS : 11434 (Specification for Ionomer Resins in contact with foodstuffs);

Cont..

- IS: 11704 Specification for Ethylene Acrylic Acid

(EAA) copolymer;

- IS: 12252 - Specification for Poly alkylene

terephathalates (PET);

- IS: 12247 - Specification for Nylon

6 Polymer;

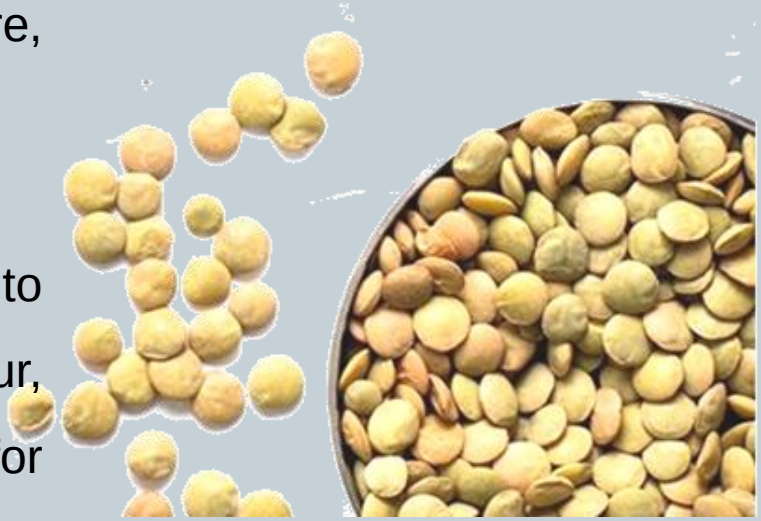
- IS: 13601 - Ethylene Vinyl Acetate (EVA);
- IS: 13576 - Ethylene Metha Acrylic Acid

(EMAA)

FEATURES OF PACKAGING

Food Packaging of lentils and its products serves several purpose:

Protection: Lentils kept in the package require protection from various things like moisture, compression, temperature, etc.



Barrier protection: Packaging is required to provide a barrier from oxygen, dust, water vapour, etc. Keeping the lentils fresh, clean, and safe for the required shelf life is a basic function.

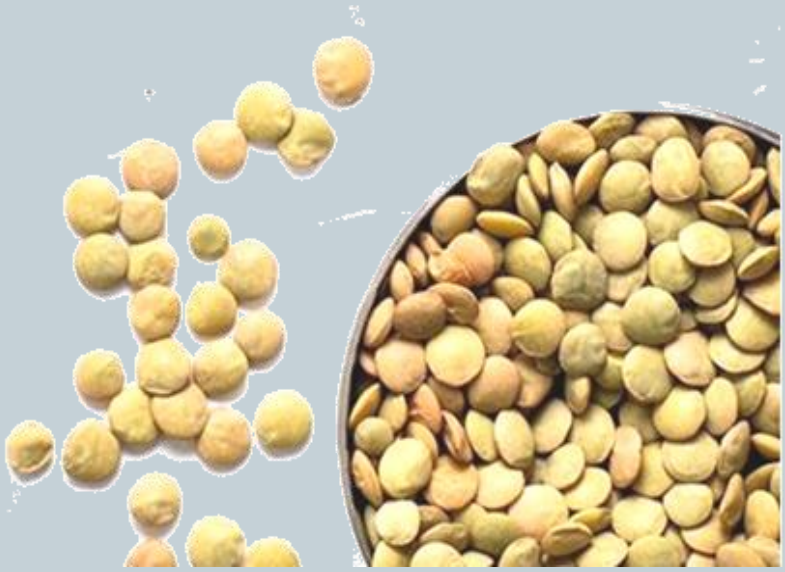
Cont..

Containment: Small food items are typically grouped together in one package for efficiency. Granular materials and powders need containment.

Label Information: All lentil products packages require labels on the nutrition facts, how to use, dispose, date of manufacturing and expiry of the package or product.

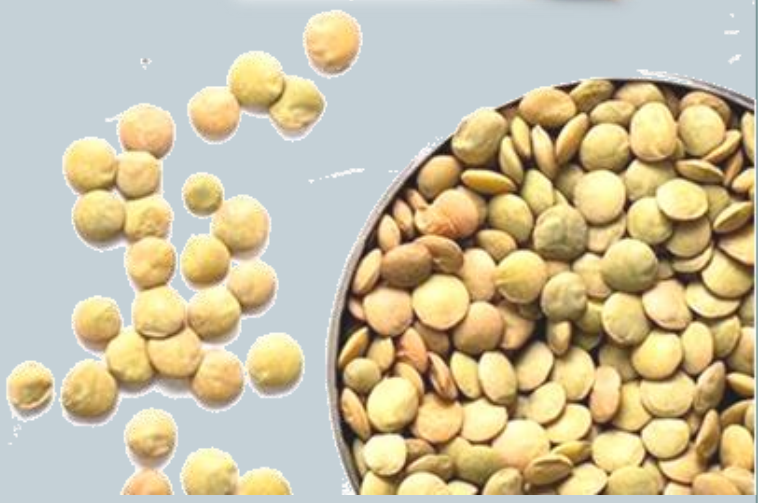
Marketing: Food packaging encourages potential customers to buy the product and food packaging design also plays an equally important role

Security: Proper packaging can play an essential role in reducing the security risks of shipment. With tamper evident features, there is no chances of the food packages being destroyed or contaminated during shipment



Convenience: Food packages have certain features which add convenience in handling, stacking, distribution, sale, display, re-closing, opening, use, and reuse

Portion control: Lastly, food packaging provides information on the exact portion of contents available in that particular product



LABELING REQUIREMENTS AS PER FSSAI

- The Name of food
- Declaration regarding Veg.
- Name and address of the manufacturer
- Net Quantity
- Lot/Code/Batch Identification
- Date of manufacturing or packing

INGREDIENTS: WHOLE CORN, VEGETABLE OIL (CONTAINS ONE OR MORE OF THE FOLLOWING: CORN, SOYBEAN, AND/OR SUNFLOWER OIL), SALT, CHEDDAR CHEESE (MILK, CHEESE CULTURES, SALT, ENZYMES), MALTODEXTRIN, WHEAT FLOUR, WHEY, MONOSODIUM GLUTAMATE, BUTTERMILK SOLIDS, ROMANO CHEESE FROM COW'S MILK (PART-SKIM COW'S MILK, CHEESE CULTURES, SALT, ENZYMES), WHEY PROTEIN CONCENTRATE, ONION POWDER, PARTIALLY HYDROGENATED SOYBEAN AND COTTONSEED OIL, CORN FLOUR, DISODIUM PHOSPHATE, LACTOSE, NATURAL AND ARTIFICIAL FLAVOR, DEXTROSE, TOMATO POWDER, SPICES, LACTIC ACID, ARTIFICIAL COLOR (INCLUDING YELLOW 6, YELLOW 5, RED 40), CITRIC ACID, SUGAR, GARLIC POWDER, RED AND GREEN BELL PEPPER POWDER, SODIUM CASEINATE, DISODIUM INOSINATE, DISODIUM GUANYLATE, NONFAT MILK SOLIDS, WHEY PROTEIN ISOLATE, AND CORN SYRUP SOLIDS.
CONTAINS MILK AND WHEAT INGREDIENTS.

Nutrition Facts

Serving Size 1 package

Amount Per Serving	
Calories 150	Calories from Fat 70
	% Daily Value*
Total Fat 8g	**12%**
Saturated Fat 1.5g	**7%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 180mg	**7%**
Total Carbohydrate 17g	**6%**
Dietary Fiber 1g	**6%**
Sugars 1g	
Protein 2g	

Vitamin A 0%	•	Vitamin C 0%
Calcium 2%	•	Iron 0%
Thiamin 4%	•	Vitamin B6 2%
Phosphorus 6%		

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

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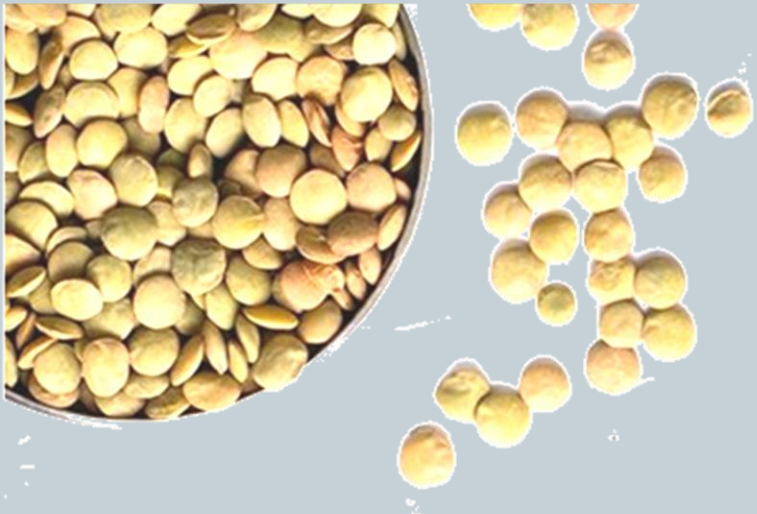
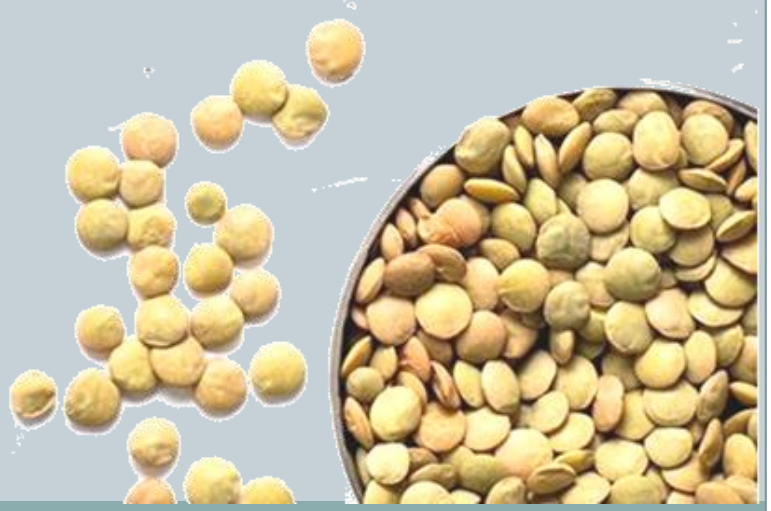


- Best Before and Use by Date
- FSSAI Logo and License No.
- Country of origin
- Instructions for use
- Warning and advisory statements
- Nutritional Information

Cont..

- Name of Oil used for frying in case of fried lentil snack
- State “Gluten free”
- State “Contains Trehalose” if Trehalose is added
- State the name of any additive if added
- State the name of any preservative if added



NUTRITIONAL LABELLING

Original Label

Nutrition Facts

Serving Size 2/3 cup (55g)
Servings Per Container About 8

Amount Per Serving

Calories 230	Calories from Fat 72
	% Daily Value*
Total Fat 8g	**12%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**12%**
Dietary Fiber 4g	**16%**
Sugars 12g	
Protein 3g	
Vitamin A	10%
Vitamin C	8%
Calcium	20%
Iron	45%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily value may be higher or lower depending on your calorie needs.

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

New Label

Nutrition Facts

8 servings per container
Serving size **2/3 cup (55g)**

Amount per serving
Calories **230**

	% Daily Value*
Total Fat 8g	**10%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**13%**
Dietary Fiber 4g	**14%**
Total Sugars 12g	
Includes 10g Added Sugars	**20%**
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

- Nutritional information is the declaration of the nutritional composition of the food
- It provides an idea of the nutrition that can be derived from that particular article of food
- Nutritional information should always be stated in numerical terms
- The nutrition information for a particular food article is declared per 100g or 100ml or per serving of the food on the label

MACHINERY INVOLVED

FFS CUP FILLER MACHINE

•A fully automatic vertical form fill & seal machine suitable for packing lentil pulses, lentil flours

TYPES OF SEALING-

•Centre seal
•Three side seal
•Four side seal

FFS CUP FILLER MACHINE

FFS AUGER FILLER MACHINE

•A fully automatic vertical form fill & seal machine suitable for packing lentils, its flour and other dry products

TYPES OF SEALING-

•Centre seal
•Three side seal
•Four side seal

Cont..

COLLAR TYPE CUP FILLER MACHINE

•It is used for packing of powder and free flowing products.

•With this machine, products can be packed in a wide range of consumer packs with desired filling system.

Products that can be packed: -

Lentil pulse, Lentil flour, Lentil chips, Fried/Baked crispy lentil, Fried/ Baked lentil crackers, Lentil finger fries, Lentil crispy energy bites and many more other snacks of lentils

Cont..

COLLAR TYPE AUGER FILLER MACHINE

- It is used for packing of powder and free flowing products.
- With this machine, products can be packed in a wide range of consumer packs with desired filling system.
- They are efficient for packaging seal pouch for 1 kilogram.
- These machines are controlled auger control panel and with this we can fill all kinds of sticky powders and flours.

Cont..

COLLAR TYPE MULTI HEAD MACHINE

•Collar type Automatic Pouch Packing Machines fitted with Multi Head Weigher can be used to pack lentil chips, Namkeen, crackers, other snack food items.

Cont..

- It is vertical electro-pneumatic packaging machine.
- This machine automatically forms a pouch, fills it with a product and then seals and then separates the "filled and sealed Pouch".
- This machine can be synchronized with any multi food weighing system
- It uses a single roll of packing film and require supply of compressed air

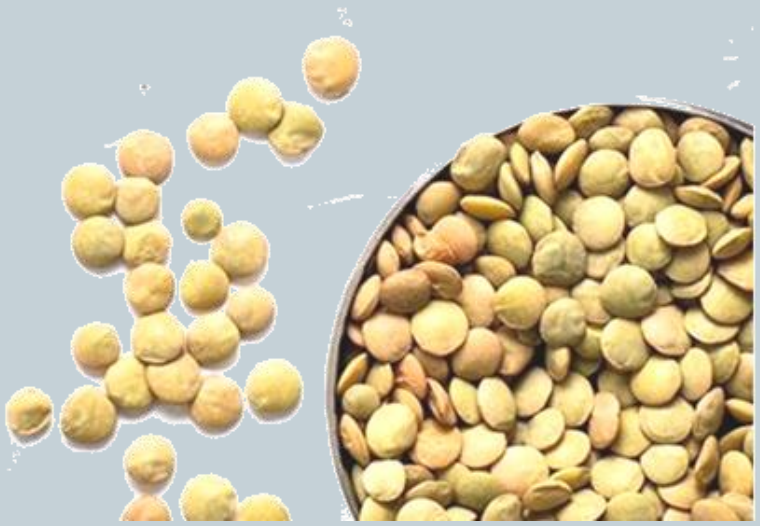
Cont..

PNEUMATIC FFS CUP FILLER MACHINE

- It is used for packing of lentil flour and free flowing products.
- With this machine, products can be packed in a wide range of consumer packs with desired filling system.
- These are efficient for packaging seal pouch for 1 kilogram.

Products to be packed:

•Lentil pulse, Lentil flour, Lentil chips, Fried/Baked crispy lentil, Fried/ Baked lentil crackers, Lentil finger fries, Lentil crispy energy bites, RTE food products and many more other snacks of lentils



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SEMI AUTOMATIC AUGER FILLING MACHINE

- It can pack almost all types of powders.
- The machine is very much suitable to pack hygroscopic flours and powders.

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MOFPI
MINISTRY OF FOOD PROCESSING INDUSTRIES
GOVERNMENT OF INDIA

PM FORMALISATION OF MICRO FOOD PROCESSING ENTERPRISES SCHEME (PMFME)

TOTAL OUTLAY: RS.10,000 CRORE

- 2,00,000 FPOs/SHGs/Cooperatives and working micro enterprises to be directly benefitted
- Expected to generate 9 lakh skilled and semi-skilled jobs
- To be implemented over a 5-yr period from 2020-21 to 2024-25
- Cluster approach
- Focus on Perishables.

Helpline Number
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