सत्यमेव जयते

MINISTRY OF FOOD PROCESSING INDUSTRIES
GOVERNMENT OF INDIA

NIFTEM
KNOWLEDGE • INNOVATION • OUTREACH

LENTIL PACKAGING

AATMANIRBHAR BHARAT

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

INTRODUCTION

❖Packaging is the cornerstone of the food processing industry

❖Thepackaging transform the food from one stage to another by using different techniques

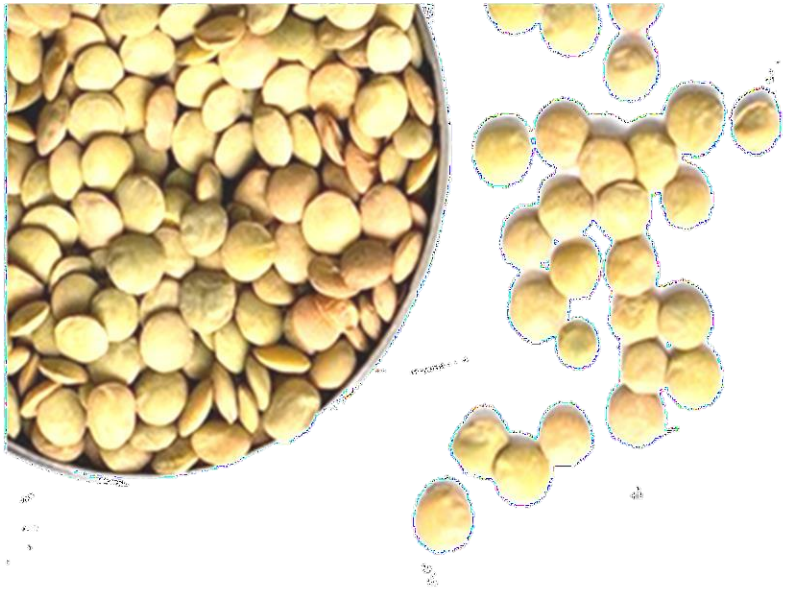
❖Hence, it is driven by factors as health and hygienic, food safety, quality and nutrients

Cont...

❖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;

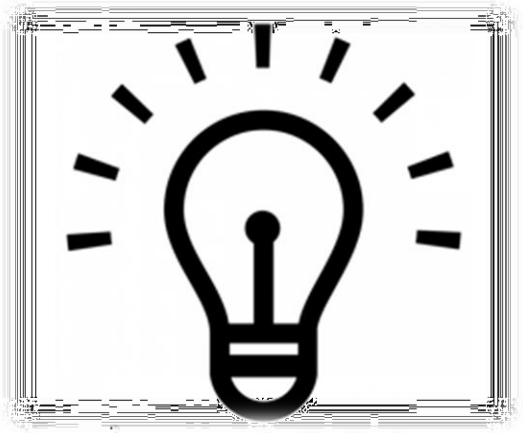
•Prevent contamination from micro- organisms, pollution or vermin;

•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

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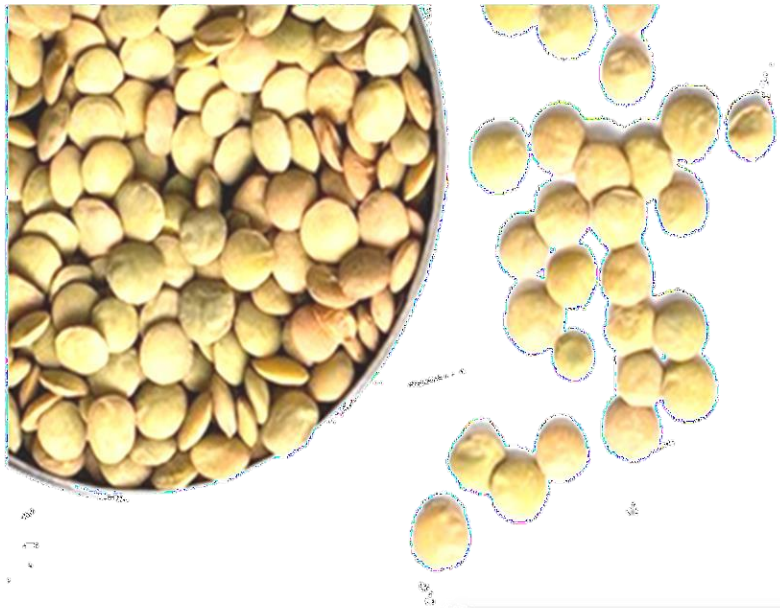
The importance of food packaging is further strengthened by the final choice of the consumers because it directly involves appeal, convenience, information and branding

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

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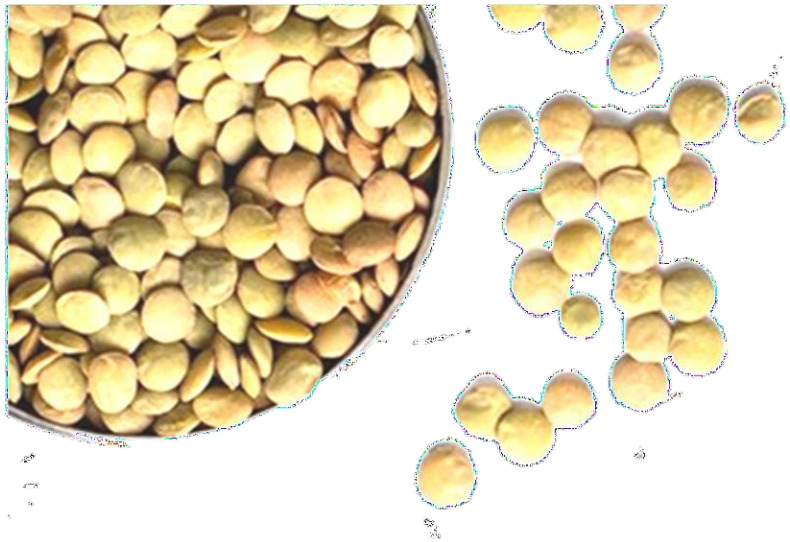

Flexible Plastic Packaging

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

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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);

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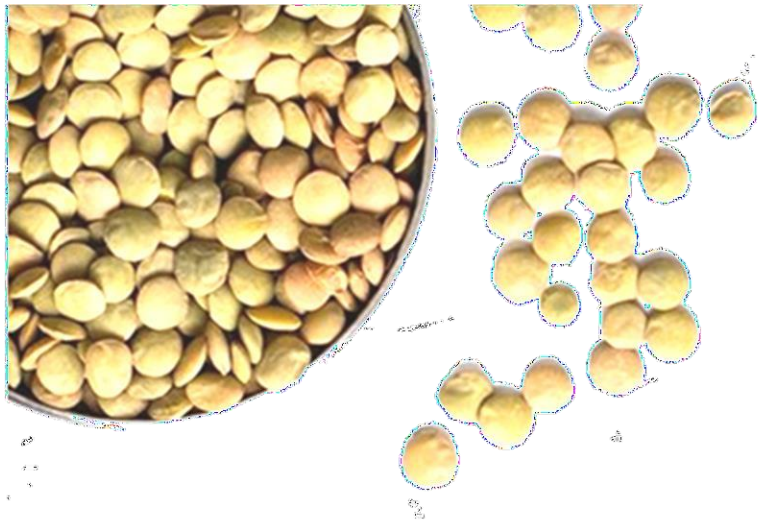


- IS: 11704 Specification for Ethylene Acrylic Acid

(EAA) copolymer;

- IS: 12252 - Specification for Poly alkylene

terephathalates (PET);

- IS: 12247 - Specification for Nylon

6 Polymer;

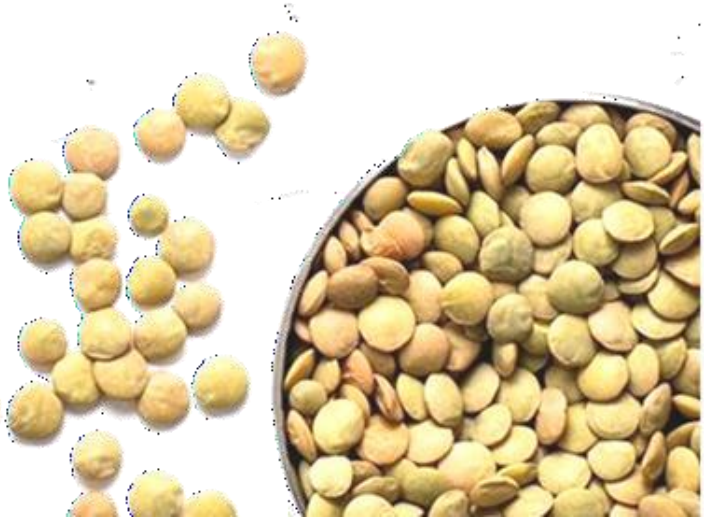
- IS: 13601 - Ethylene Vinyl Acetate (EVA);
- IS: 13576 - Ethylene Metha Acrylic Acid

(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.

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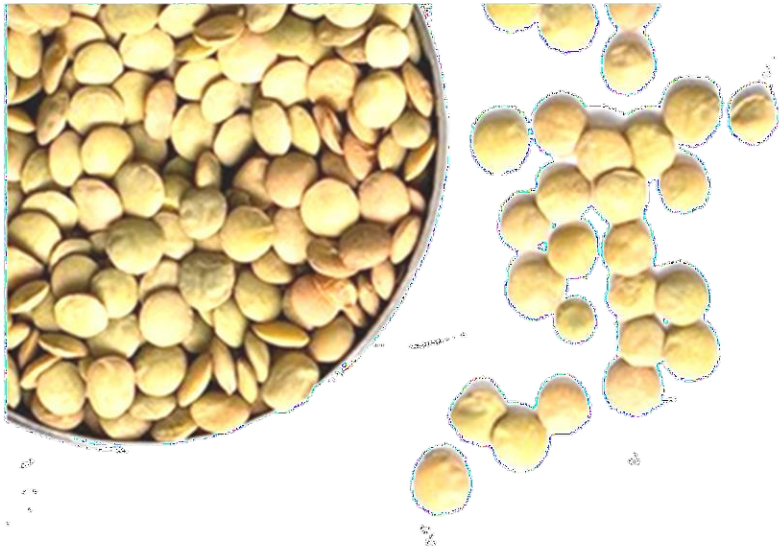


Containment: Small food items are typically grouped together in one package for efficiency. Granular materials and powders need containment.

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.

Cont..

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

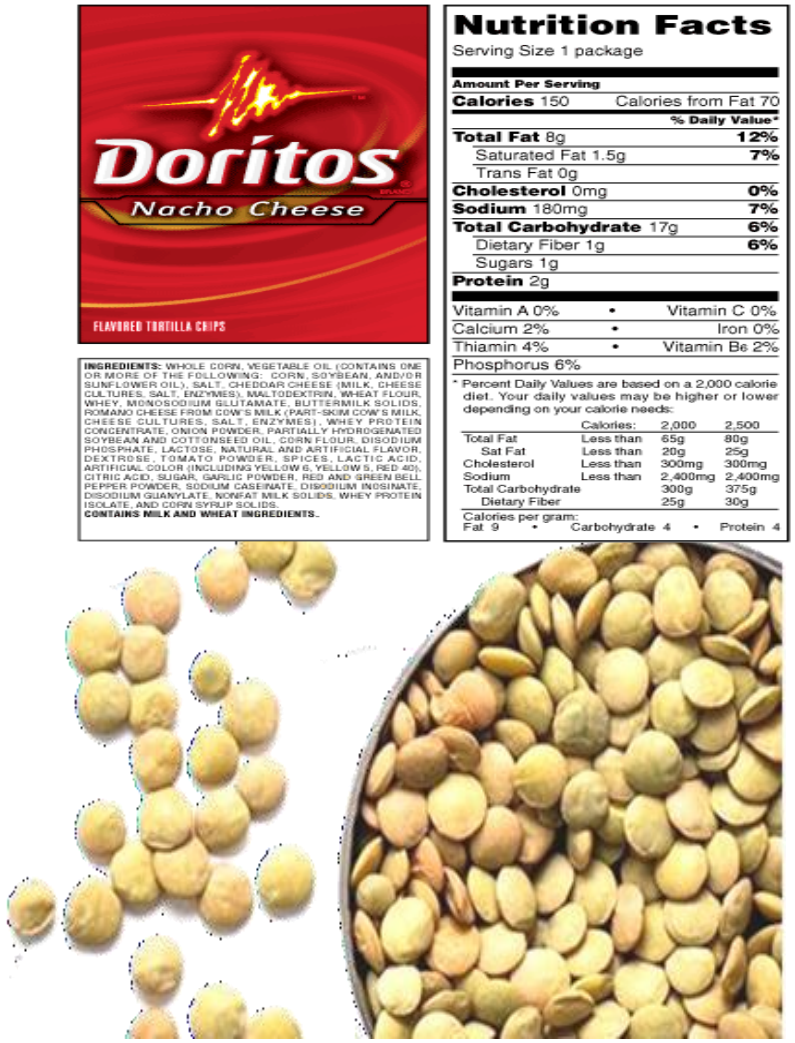
Cont..

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



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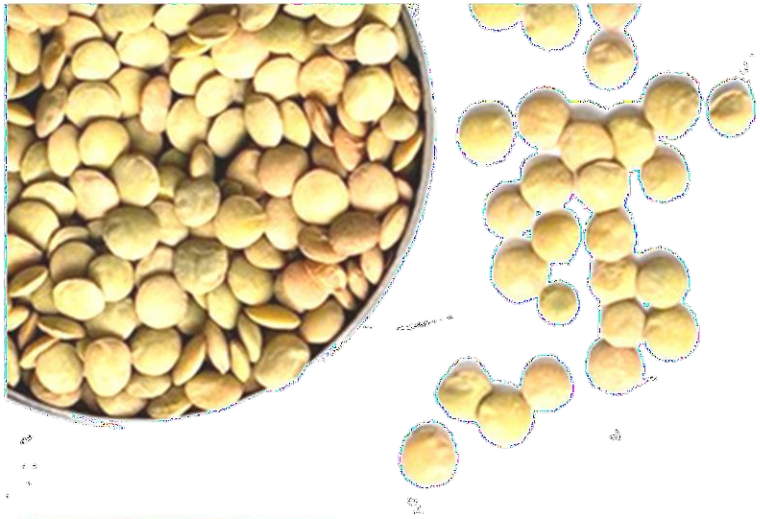
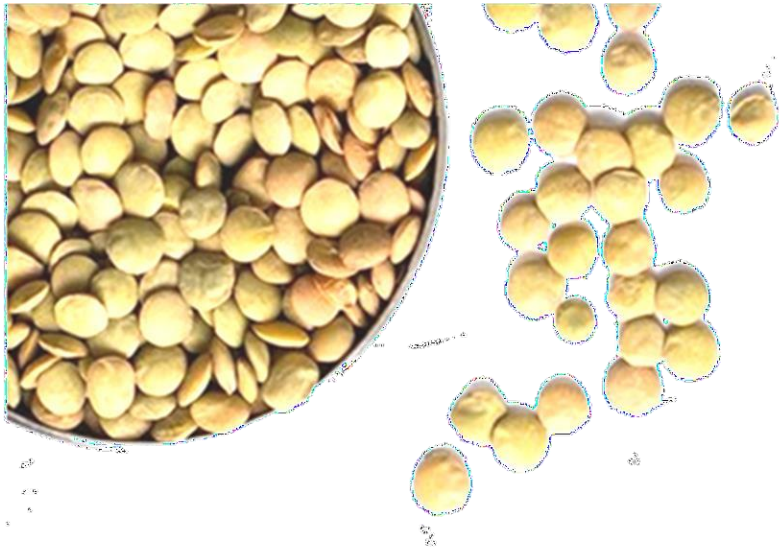


- Best Before and Use by Date
- FSSAI Logo and License No.
- Country of origin
- Instructions for use
- Warning and advisory statements
- Nutritional Information

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

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

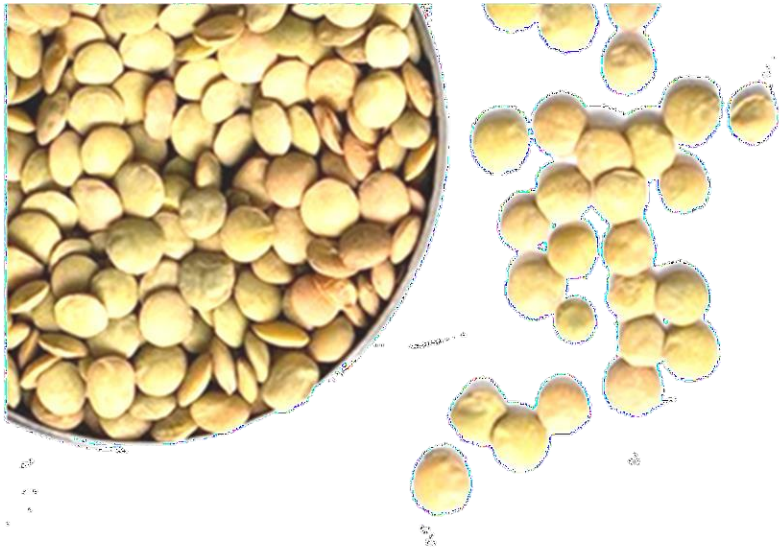
•A fully automatic vertical form fill & seal machine suitable for packing lentils, its flour and other dry products

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.

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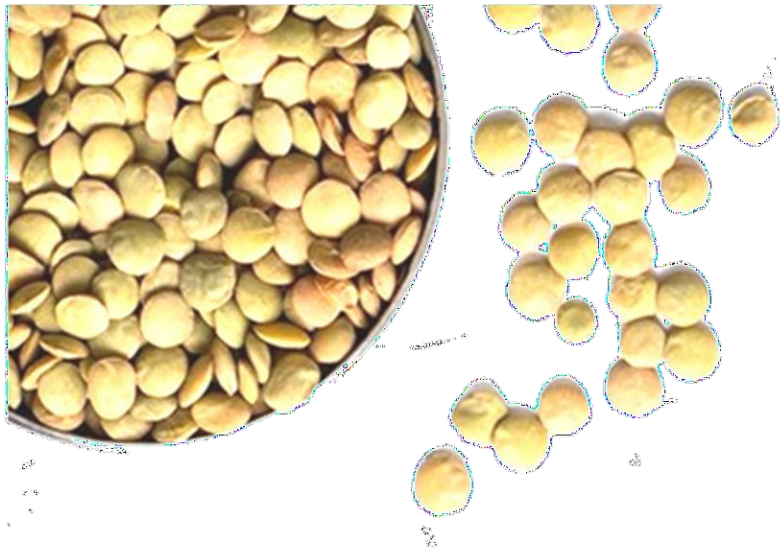
COLLAR TYPE MULTI HEAD MACHINE



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

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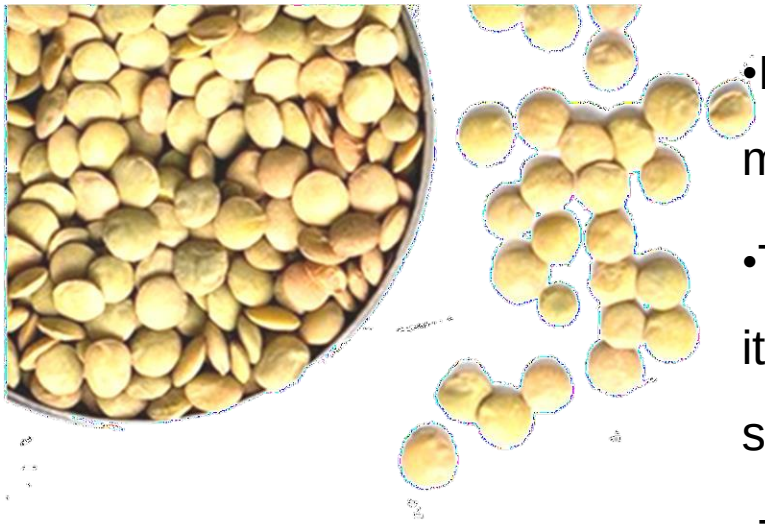

•It is vertical electro-pneumatic packaging machine.

•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.

Cont..

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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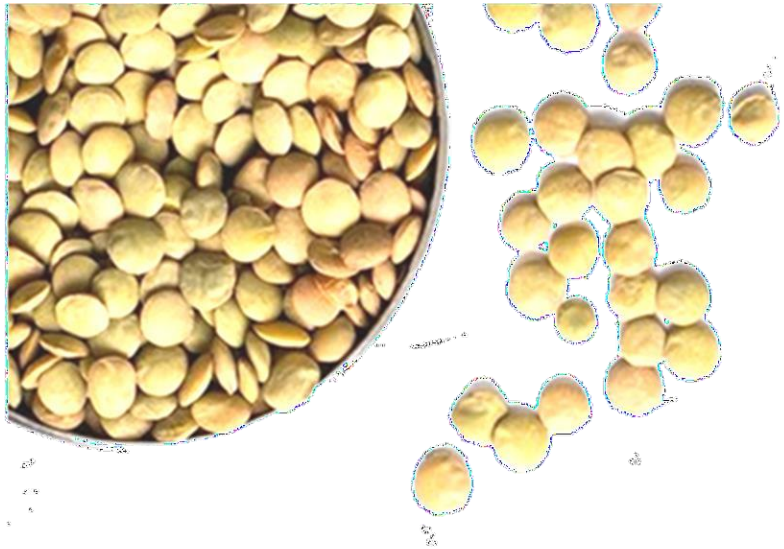
SEMI AUTOMATIC AUGER FILLING MACHINE



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

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