

DALIA- PROCESSING



AATMANIRBHAR BHARAT

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

INTRODUCTION

CEREAL GRAINS



- ❖ Cereal grains (or simply grains) are small, hard and edible dry seeds that grow on grass-like plants called cereals.
- ❖ They are a staple food in most countries, and provide more food energy worldwide than any other food group, by far.
- ❖ Grains have played a major role in human history, and grain agriculture is one of the main advancements that fueled the development of civilization.
- ❖ They are eaten by humans, and also used to feed and fatten up livestock. Then grains can be processed into various different food products.

INTRODUCTION




- ❖ Cereals form a major portion of human diet and are an important source of starch and other dietary carbohydrates (dietary fibre), which play an important role in the energy requirement and nutrient intake of human.






TYPES OF CEREAL GRAINS

IMAGE	NAME	DESCRIPTION
	Rice (<i>Oryza sativa</i>).	Rice is an excellent source of calories because of its starch content. It contains 75-80% of starch, 7% of protein, 0.4-0.8% of lipids and 12% of water. Rice oats protein is of highly digestible quality and contains lysine 4.1mg/100g of protein higher than wheat.
	Barley.	It is highly nutritious and important for malting. Mostly used as a breakfast cereal with oat, it is also used as a feed for animals. It is mostly grown on land which is not capable of growing wheat.

TYPES OF CEREAL GRAINS

IMAGE	NAME	DESCRIPTION
	Sorghum	Highly nutritious and used as a feed for livestock.
	Millet	Mostly grown Asia and Africa, wheat porridge is popular in China, Russia and Germany. It can also be used to make alcoholic beverages, as an animal feed and bird feed.
	Rye	The cereal grain of cold climates, used for making beer, breads, whiskeys, vodka and also use as animal fodder.

TYPES OF CEREAL GRAINS

IMAGE	NAME	DESCRIPTION
	Oats	Due to high content of fibre it is popular to reduce weight and for lowering blood sugar level.
	Wheat	Wheat is a major cereal crop and one of the oldest domesticated grains. In modern times, wheat is used to produce meal, breakfast cereals, and oats for bakery products.
	Maize	Corn is a staple cereal in continents like South America and Africa, and used as an animal feed worldwide. Cornflakes are also a popular cereal globally.

DALIA

- ❖ Broken wheat or cracked wheat or couscous is made by milling whole raw wheat grains coarsely.
- ❖ It is highly nutritious as it does not undergo refining.
- ❖ Such cracked wheat has a large number of uses, especially as a dietary supplement.
- ❖ When broken wheat is cooked, it has a hearty, warm aroma and a delightful, grainy taste. It is slightly nutty and chewy.
- ❖ Dalia can be made in several ways and is one of the healthiest options for breakfast/lunch and dinner.

DALIA

Broken wheat may be ground into coarse, medium or fine kernels.

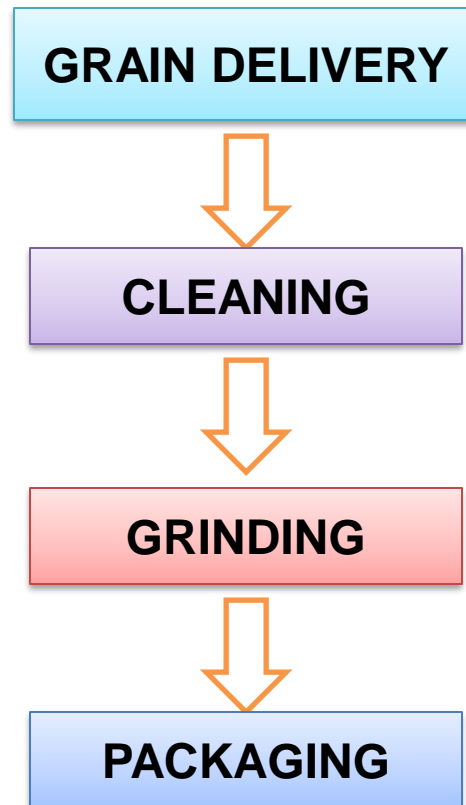
- Large-sized broken wheat- Large-sized broken wheat has a firm texture. It can be used as a cereal, or in casseroles salads and stuffing. Toast them to boost the flavor and shorten the cooking time.
- Medium-sized broken wheat- Medium-sized wheat kernels are usually used for savory preparations like upma or namkeen dalia.
- Fine-sized broken wheat- Small, crushed wheat kernels have a firm and fine texture. These are usually used to prepare broken wheat kheer or sweet lapsi with milk.

MAJOR COMPONENT OF WHEAT

Nutrition facts of Dalia, Broken Wheat- RDA stands for daily Recommended Allowance. Below mentioned table indicates the nutrient content in 1/2 cup of raw broken wheat which is about 75gms.

Carbohydrate	57.9 g
Protein	6.1 g
Fat	1.2 g
Fiber	1.3 g
Calcium	2.77% of RDA
Iron	18.5% of RDA
Magnesium	30.85% of RDA
Phosphorus	37.25% of RDA
Potassium	41.4% of RDA

PROCESSING OF DALIA



PROCESSING OF DALIA

- ❑ **GRAIN DELIVERY:** Grain is delivered to mills by covered trucks and hopper railcars. Grain deliveries will frequently have gone through a number of aggregation steps prior to arriving at the mill (farmer, country elevator, terminal elevator etc.). The number of conveyances making deliveries of grain can vary depending on the time of year with more deliveries at harvest time.
- ❑ **CLEANING THE WHEAT:** removes foreign materials that might have originated during the farmer's harvest such as metal, sticks, stones and straw; and scours the kernels of Wheat. Wheat is cleaned properly that is washed under running water and subsequently softened in water for 5 to 6 hrs. After germination it is dried in sunlight.

PROCESSING OF DALIA

- ❑ The flow of material from the feeding hopper is regulating by means of side handle easily to suit the load. Rotor runs in anti-clockwise direction.
- ❑ The beater pass just beneath the ratchet teeth liner fitted inside the top half of the crushing chamber, leaving a suitable gap between the liner teeth and the tips of the rotating beater.
- ❑ This cuts the material caught between the liner teeth like a sword with a scissors action at a 450/650 RPM.
- ❑ After the required size reduction, the material will pass through the screen fitted inside the lower discharge end of the grinding chamber.

PROCESSING OF DALIA

- ❑ The air generated in the crushing chamber forces the powder to pass through the screen fitted at the bottom discharge end of the crushing chamber, into a filter attached to the delivery trough below. (When crushing wet-pulpy materials, the balloon should not be use).
- ❑ **PACKAGING OF PRODUCT:** The packaging is carried out in a much simple process then milling, the wheat is fed to holding tank of the packaging machine, which simply seals one end of continuous packaging first, then it simply fills the packet as per required weight & seals the other end, generating the required packet.

EQUIPMENT FOR DALIA BEAN PROCESSING

❖ VIBRATING SCREEN GRAIN SEPARATOR

This is an multipurpose machines widely used for pre cleaning of wheat milling, dalia milling, maize milling, oil processing, animal feed production and other grain and separating and cleaning industries. By changing different sieves, this machine is capable of cleaning various materials such as wheat, corn, rice and oilseeds.



EQUIPMENT FOR DALIA BEAN PROCESSING

❖ **AUTOMATIC DALIA MAKING MACHINE :**

Dalia making Machine are used for making Dalia from Wheat. It's available in different capacities starting from 50kg per hour to 500kg per hour.



EQUIPMENT FOR DALIA BEAN PROCESSING

❖ DALIA PACKAGING MACHINE:

It is used for plastic packaging of dalia is different volume(50 GM to 1 KG) according to suitability of market.



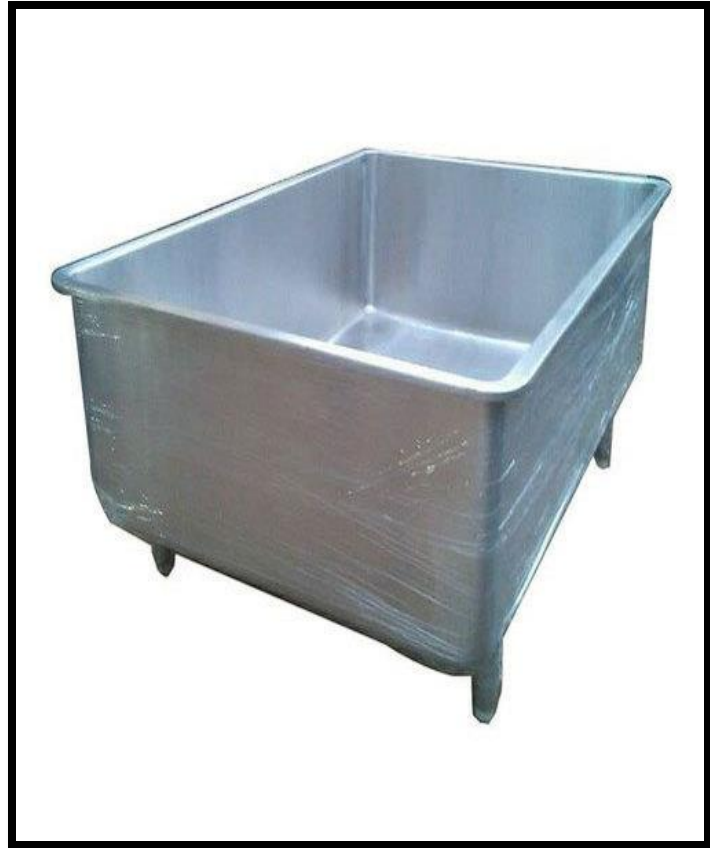
EQUIPMENT FOR DALIA BEAN PROCESSING

- ❖ **UNLOADING BIN:** These are large bins designed for unloading of grains & similar product; they are equipped with large rod mess to prevent big impurities from entering system.



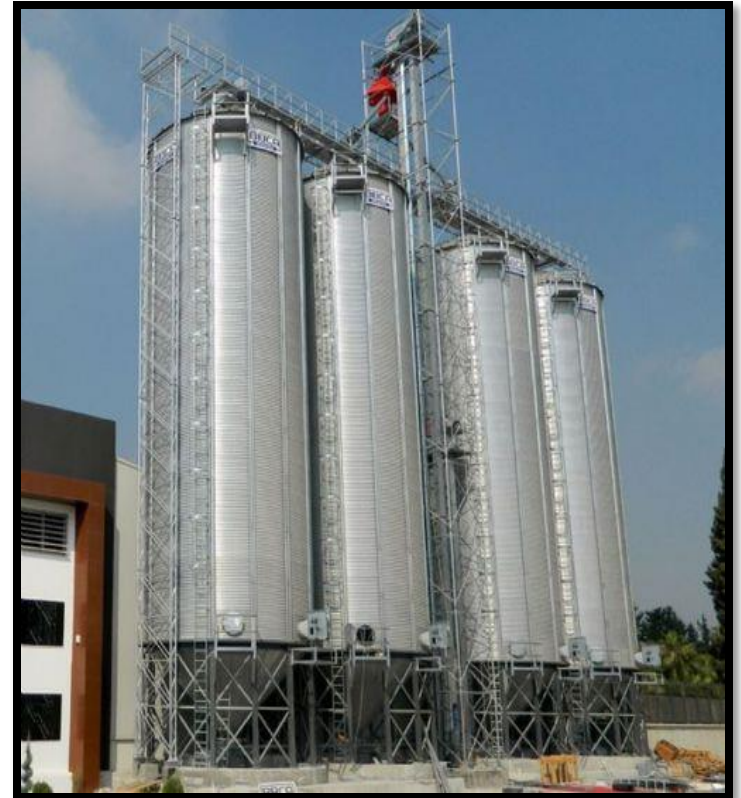
EQUIPMENT FOR DALIA BEAN PROCESSING

- ❖ **SS STORAGE TANKS:** It's a simple tank designed to hold required product.



EQUIPMENT FOR DALIA BEAN PROCESSING

- **SILOS:** These equipments are class of storage equipments which are specifically designed for dry grain raw material of small granule composition. Usually used to store grains but can also be used to store cement & aggregate.



MARKET POTENTIAL

- ✓ Dalia is a sweet dish used all over India known as “Lapsi”. It has high fiber content, which not only helps in keeping the digestive system healthy but also keeps the hunger at bay for a longer time.
- ✓ Breakfast cereals is a growing market in India which was pegged at USD 283 million in 2017 with the promise of , double-digit growth over the next five years.
- ✓ Within this, hot cereals and muesli have been the fastest growing product categories in the recent past.

MARKET POTENTIAL

- ✓ Among hot cereals, Dalia has gained high acceptance and popularity; this can be attributed to the consumers' awareness of the grain's health benefits.
- ✓ India, being a large market with growing middle-income group and double-income households, holds great potential for the breakfast which in turn must provide healthy, convenient, and tasteful options.



HEALTH BENEFITS

- **Good for your muscles:** Yes, this nutritious diet works great for building muscles. Dalia is a rich source of proteins and if you are one of those who are looking to gain muscle mass, include dalia in your diet. It is loaded with essential vitamins. Eat a bowl of dalia and increase your protein intake.
- **Aids in weight loss:** Dalia contains high fibre content. It gives you a feeling of fullness and you do not indulge in over-eating. Include a bowl of dalia as your morning meal. It will provide you essential nutrients and you will feel energetic throughout the day.

HEALTH BENEFITS

- **For diabetic patients:** For diabetics, dalia acts as a great healer. It contains low glycemic index and complex carbohydrates. This ensures a slow and steady release of glucose into blood. Dalia keeps your blood sugar levels under control.
- **Increases metabolism:** This wholesome food is good for improving metabolism. It is a whole wheat product which enhances metabolism rate.
- The fibre content in Dalia helps in proper digestion and prevents constipation. It also improves the consistency of stool, which helps relieve constipation.

HEALTH BENEFITS

- **Provides essential nutrients:** By providing essential nutrition to our body, this food is a great source of magnesium.
- **A good source of energy:** It is a good source of energy. Eat it after an intense workout session and you will replenish your lost energy.





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