

PREMIUM

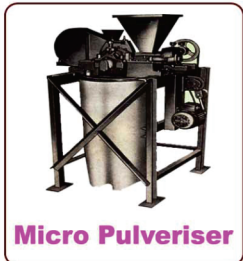
SPICES PROCESSING EQUIPMENT & PLANTS / SYSTEMS

M.O.C- C.S, S.S Contact Parts & S.S Complete, Capacity- 50 kg/hr to 1000 kg/hr & above

More than 60 Plants / Systems & 1000 Equipment Supplied in India and Abroad



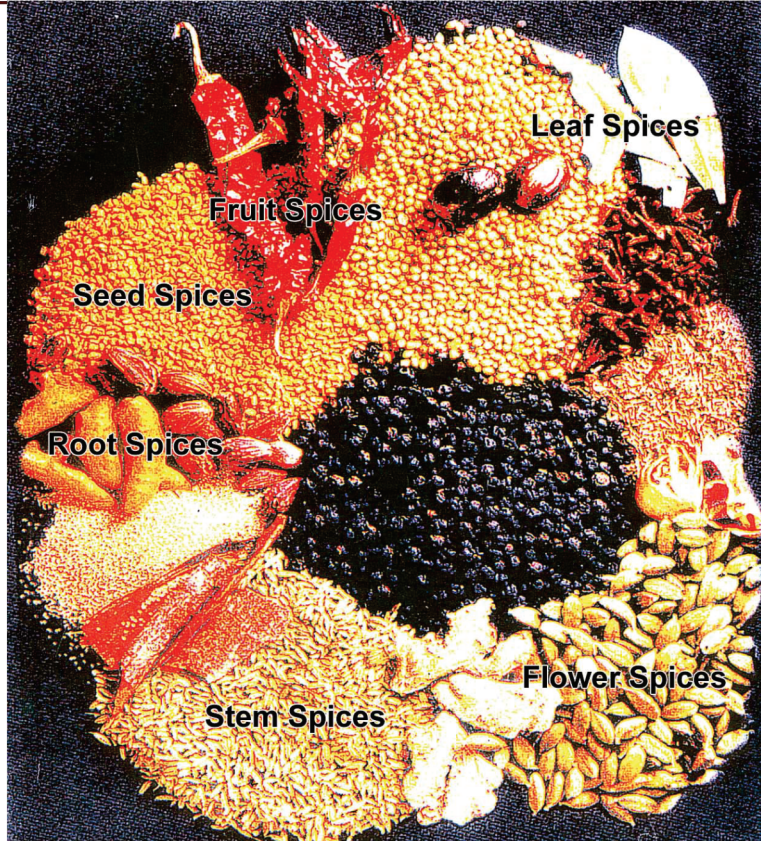
Miracle Mill
(Star Hammer Mill)



Micro Pulveriser



Wizzcon Mill
(Air Swept Mill)



Leaf Spices

Fruit Spices

Seed Spices

Root Spices

Stem Spices

Flower Spices



Precleaner cum Destoner



Blender



Vibro Screen



Pinmill



Screw Conveyor



Bucket Elevator



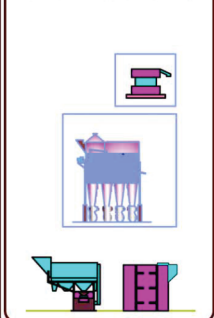
Belt Conveyor



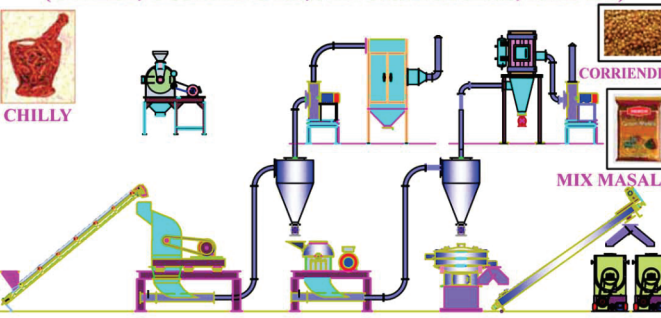
Roaster

SEMI AUTOMATIC SPICES PROCESSING PLANT

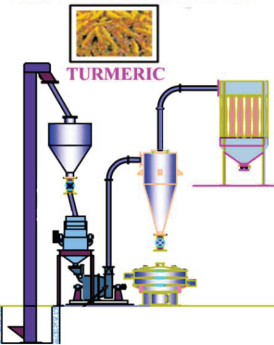
CLEANING AND ROASTING SECTION



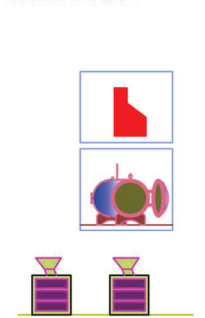
SPICES MILLING, SIEVING AND BLENDING SECTION (CHILLY, CORRIENDER, MINOR MASALAS, BLENDS)



TURMERIC LINE



PACKAGING SECTION



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PROFESSIONALS IN SIZE REDUCTION TECHNOLOGY



CHILLY

PROCESSING OF SPICES

The term spices is used for naturally available agricultural produces which can be used for flavouring the foods and beverages. The flavour is imparted due to the volatile oils present in the products. At present the total spice trade in India is estimated to be at the tune of 6000 Crores. A very little known fact is that it was spices which was responsible for many a wars in Europe and was the major cause for the discovery of the sea routes.



CORRIENDER

Spices can be any part of the Plant, which has the volatile oil presence, and can be used for flavouring food for e.g.

- | | | | |
|------------------|----------------------------------|-----------------|---------------------------|
| 01. Leaf Spices | Mint, Basil, Organelle, Bay Leaf | 04. Fruit Spice | Chilly, Paprika, Cardamom |
| 02. Stem Spices | Cinnamon, Cassia | 05. Seed Spice | Mustard, Nutmeg |
| 03. Flower Spice | Cloves, Saffron | 06. Rood Spices | Turmeric, Ginger |

Processing of Spices

Based on the nature of the spices the processing parameters are determined. Care should be taken to ensure the volatile oils are not lost because it's the volatile oil content, which determines the end value to the product. But essentially the following steps are followed.

- | | | |
|------------------------|----------------------|-------------------|
| 01. Harvesting | 03. Pre-Cleaning | 05. Sterilization |
| 02. Primary Processing | 04. Final Processing | |

Each of the above steps is equally important because they all together end up in determining the final value of the spice. Of the above steps, steps 1, 2 are done at the farm level while steps 3, 4 & 5 are done at the factory level.

With the EU and U.S. Govt. becoming stricter and the new regulations from US FDA, AIB and the customers demanding HACCP Standards. The field of spice processing has undergone a major change. High levels of automation stringent quality standard in the processing have become the need of the day. Many processing units are now encouraging farmers to take up step 3 at the farm level. Spices Board is also doing the same.

01. Harvesting Bulk of the spices in India and other third world countries are done in the conventional method which is hand plucking which causes a lot of wastage's due to denaturing, unhygienic storage at the fruit level causes bruises on the fruits and their subsequent rotting. This leads to higher level of Aflatoxin formation and the microbial load also increases.
02. Primary processing: This step basically involves the removal of unwanted parts, drying and preservation. The steps varies from product to product basically based on conventional wisdom. Its also observed in many cases that the same spices may be processed in different manner in different regions.
03. Pre-cleaning: this involves removal of chaff stones, mud, stand, twigs and fibers, animal and rodent excreta, bird excreta from the spices, which is normally carried out using a combination of Aspirators, Vibrating Screens, Static Rollers, Intended Drum separators.
Here again the choice of the machine depends on shape and size of the Spice its bulk density and other physical parameters.
04. Final processing: Spices are normally processed in following forms chopped and sliced spices
 - a. ground spices
 - b. oleoresins using solvent extraction
 In the above cases processes a , b are basically size reduction by mechanical operation while that of c is by using solvent extraction.
05. Sterilization: Various sterilization process have been developed for e.g.
 - Heat Sterilization
 - Steam sterilization
 - ETO Sterilization
 - Irradiation
 But each of these has their negative aspect also. With tighter enforcement' coming in ASTA & AIB are now encouraging naturally sterilized product. Many Indian & Multinational companies have put up model farms to demonstrate to the farmers the modern harvesting and processing techniques.

PREMIUM GROUP IN CONTEST OF SPICES PROCESSING

All the equipments manufactured by the premium group are used in spices processing. The choice of the machine depends on the processing requirements and the nature of the material to be processed. A brief list of applications I given below.

Industrial Pulverisers

- Miracle Mills & Universal Mills are used for coarse grinding and precutting operation of Chilly.
- Wizcon Mills for starchy materials like Turmeric & Ginger
- Roller Mills for milling operation of non fibrous spices like Pepper
- Micro Pulverisers for fibrous material like Coriander, Cumin
- Turbo Classifier Mill for medium oil content fibrous material like chilly for very fine grinding.

Industrial Separators

- Vibrating Screens, Air Classifies, Precleaners, Gravity Separators and Destoners are used for pre-cleaning operations.
- Gyro Screens, Roto Sifters re used for redressing the final ground product
- Pulse Air Jet Filters are used in Pollution Control lines



TURMERIC

Process Equipments and Material Handling Equipments are used in the automation of the process lines.

The thing to be noted is the requirement of the client and the property of the spice on one hand and the heat generation and work generated by the equipment on the other.



MIX MASALA