naytrix
FOODTEK PVT LTD

DEDYDRATION PROCESS FOR FRUITS & VEGETABLES

www.naytrix.in

Your Turnkey Partner in Food Processing Equipment Manufacturing

COMPANY OVERVIEW

About Us

Naytrix Foodtek Pvt. Ltd., based in Ahmedabad, Gujarat, India, is a leading manufacturer and supplier of premium food processing equipment. We specialize in delivering turnkey solutions for frozen food processing, dehydration processing lines, and fruits and vegetables packhouses. With a strong focus on quality and innovation, our state-of-the-art machinery is designed to enhance efficiency and meet global food safety standards across diverse applications.

At **Naytrix Foodtek Pvt. Ltd.**, we are committed to providing end-to-end project support, from design and manufacturing to installation and maintenance. Our expertise extends to developing customized food processing lines that cater to specific industry needs, ensuring seamless operations and maximum productivity.

DEHYDRATION PROCESSING LINE

Introduction -

Dehydration is one of the oldest and most effective methods of food preservation. A dehydration processing line is an integrated system of machines designed to remove moisture from fruits and vegetables while retaining their nutrients, flavor, and shelf life.

By precisely controlling temperature and airflow, our system ensures consistent drying and product quality, making it ideal for producing dehydrated flakes and powders for a variety of industrial, culinary, and retail applications.

Applicable for all type of Fruits & Vegetables

DEHYDRATION PROCESSING LINE

Raw Material Categories in Dehydration Processing

1. Regular Vegetables & Fruits

Why Separate?

- These items have smooth surfaces, moderate moisture content, and delicate textures.
- They require gentle washing, uniform slicing, and controlled dehydration to maintain shape and nutrition.

Processing Focus:

- Efficient cleaning without damage
- Precise slicing for even dehydration
- Air-drying to remove surface moisture before drying
- Optional color sorting to maintain aesthetic quality

Examples: Beans, peas, okra, brinjal, apple, mango, banana, etc.

2. Root Vegetables

Why Separate?

- Root vegetables are soil-grown, have tough skins, and require abrasive cleaning and peeling.
- Peeling is essential to remove dirt, pesticides, and inedible outer layers.

Processing Focus:

- Drum washing for heavy soil removal
- Mechanical peeling to reduce labor
- Post-peeling slicing and dehydration
- Suitable for making flakes or powders

Examples: Potato, beetroot, carrot, radish, sweet potato, etc.

3. Leafy Vegetables

Why Separate?

- Leafy greens are fragile, highly perishable, and retain more surface water.
- They need gentle vortex washing and controlled centrifugal drying to avoid tearing or bruising.

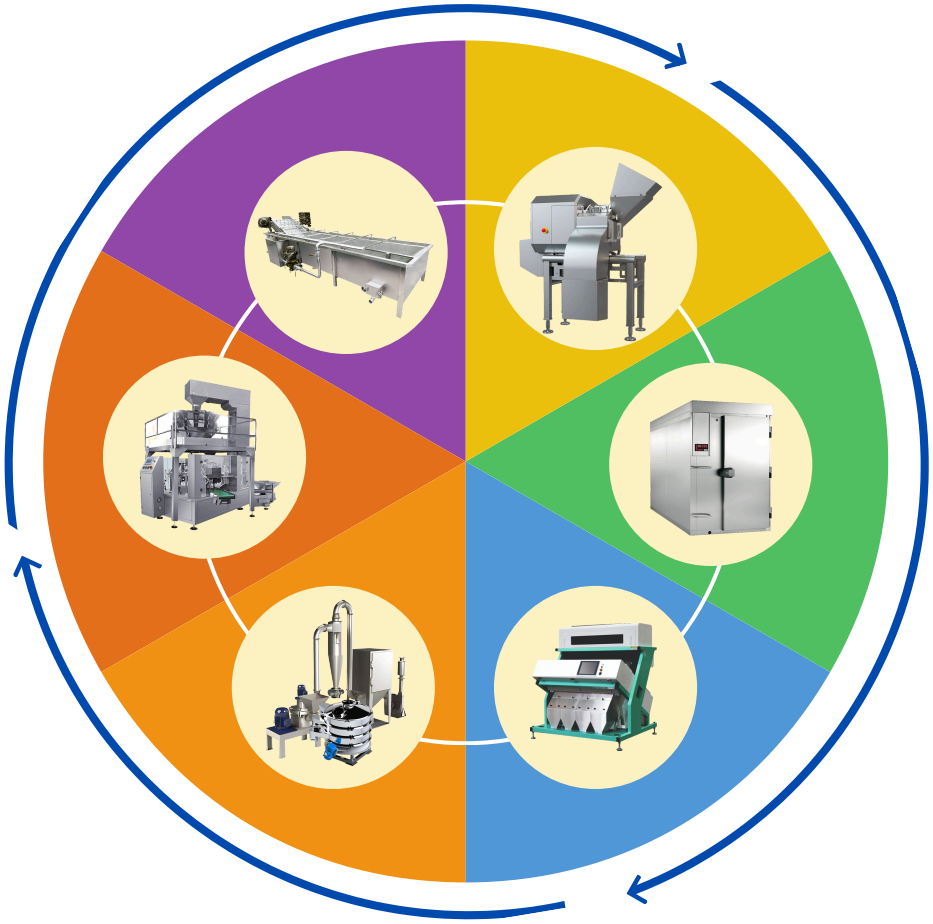
Processing Focus:

- Vortex washing to clean without damage
- Centrifugal drying to maintain freshness
- Optional peeling if stems are processed
- Special care during slicing and dehydration

Examples: Spinach, fenugreek (methi), amaranth, coriander leaves, etc.

DEHYDRATION PROCESSING LINE

PROCESS FOR REGULAR VEGETABLES



01 ⟶ Sorting and Washing

In the dehydration process, sorting removes damaged or unwanted raw materials, while washing ensures the produce is clean and free from dirt, pesticides, and contaminants, preparing it for efficient drying.

02 ⟶ Slicing

Slicing reduces fruits and vegetables into uniform pieces, ensuring faster and more even dehydration.

03 ⟶ Dehydration

The dehydration machine removes moisture from produce using controlled heat and airflow, preserving quality and extending shelf life.

04 ⟶ Color Sorting

The color sorter automatically removes discolored or defective pieces to ensure only high-quality products move forward.

05 ⟶ Pulverize & Grading

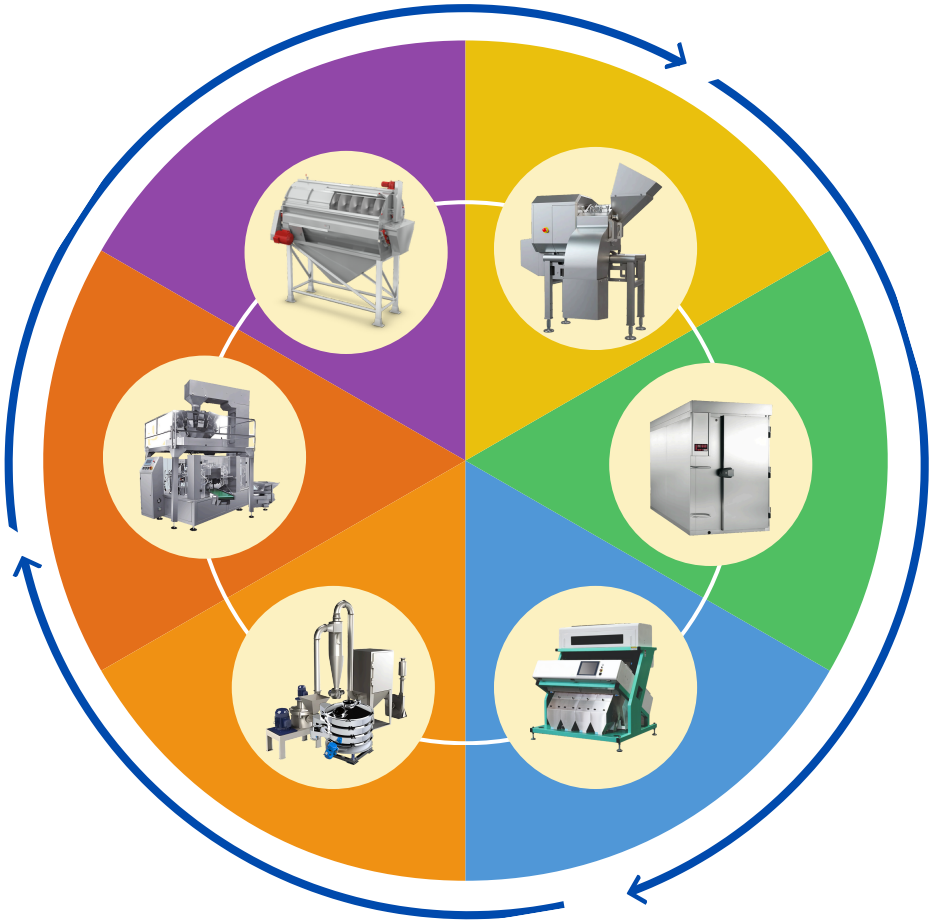
The pulverizer grinds dehydrated flakes into fine powder for further applications. The vibro grader separates powder into uniform particle sizes for consistent product quality.

06 ⟶ Packaging

The packaging machine fills and seals dehydrated products to maintain freshness, hygiene, and extend shelf life.

DEHYDRATION PROCESSING LINE

PROCESS FOR ROOT VEGETABLES



01 ⟶ Sorting, Washing & Peeling

Sorting removes damaged or unwanted raw materials. Drum washing provides thorough cleaning of soil and debris from root vegetables. Peeling machines efficiently remove outer layers, ensuring clean and ready-to-slice produce.

02 ⟶ Slicing

Slicing reduces fruits and vegetables into uniform pieces, ensuring faster and more even dehydration.

03 ⟶ Dehydration

The dehydration machine removes moisture from produce using controlled heat and airflow, preserving quality and extending shelf life.

04 ⟶ Color Sorting

The color sorter automatically removes discolored or defective pieces to ensure only high-quality products move forward.

05 ⟶ Pulverize & Grading

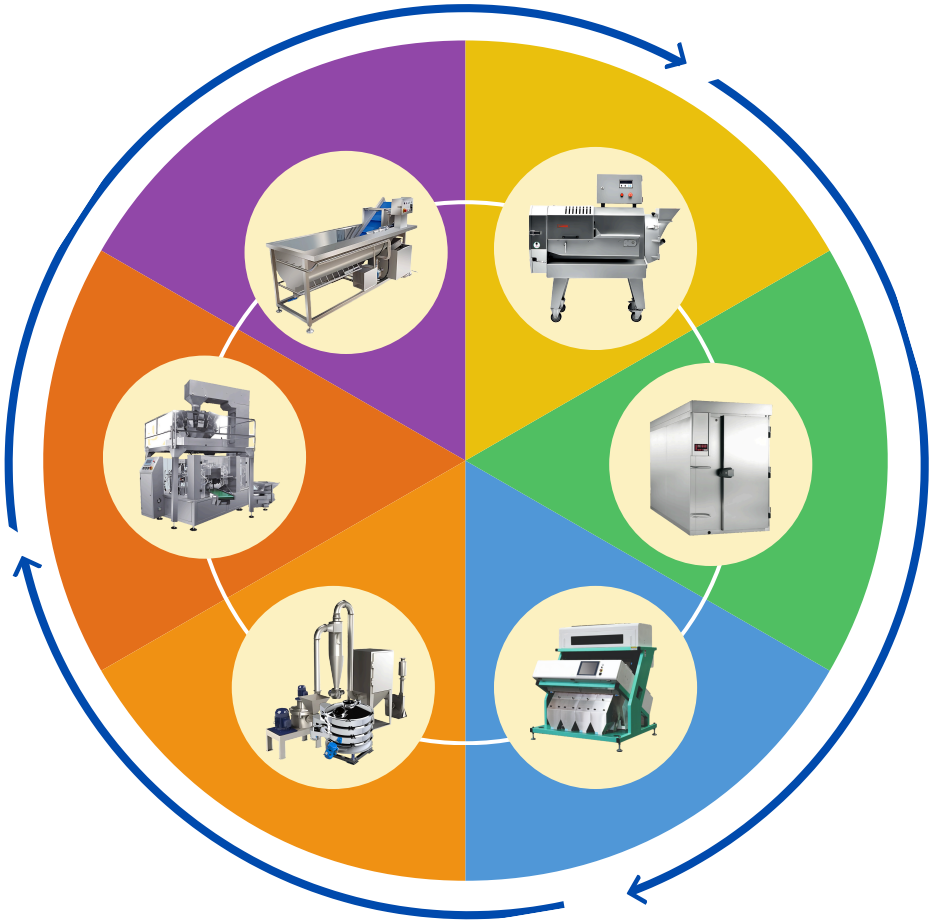
The pulverizer grinds dehydrated flakes into fine powder for further applications. The vibro grader separates powder into uniform particle sizes for consistent product quality.

06 ⟶ Packaging

The packaging machine fills and seals dehydrated products to maintain freshness, hygiene, and extend shelf life.

DEHYDRATION PROCESSING LINE

PROCESS FOR LEAFY VEGETABLES



01 ⟶ Sorting & Vortex Washing

The sorting unit ensures only high-quality raw materials are selected, while the Votex washing machine efficiently cleans produce with high-pressure water flow, maintaining hygiene and preparing it for further processing.

02 ⟶ Slicing

The leafy slicing machine precisely cuts leafy vegetables into uniform pieces, ensuring optimal size and consistency for efficient dehydration.

03 ⟶ Dehydration

The dehydration machine removes moisture from produce using controlled heat and airflow, preserving quality and extending shelf life.

04 ⟶ Color Sorting

The color sorter automatically removes discolored or defective pieces to ensure only high-quality products move forward.

05 ⟶ Pulverize & Grading

The pulverizer grinds dehydrated flakes into fine powder for further applications. The vibro grader separates powder into uniform particle sizes for consistent product quality.

06 ⟶ Packaging

The packaging machine fills and seals dehydrated products to maintain freshness, hygiene, and extend shelf life.

DEHYDRATION PROCESSING LINE

Dehydration Systems

We offer a complete range of dehydration solutions tailored to different production scales and product types. Our systems are designed for high efficiency, superior product quality, and energy optimization. Customers can choose between Batch Type and Continuous Type dehydration systems based on their processing needs.

- **Batch Type Dehydration Systems**

Our batch type dehydration systems are ideal for operations that require flexibility, product variety, and precise control over the drying environment. Capacities are available from 100 kg to 1000 kg per batch, using a robust tray dryer system.

We offer multiple drying technologies under the batch category:

1- Electric Dryer with Bin Dryer:

- A highly versatile option, combining the efficiency of electric heating with the convenience of bin-based material handling. Ideal for small to mid-sized operations focusing on uniform drying.

2- Heat Pump Dryer:

- Designed for energy savings and gentle drying, heat pump dryers operate at lower temperatures, making them perfect for heat-sensitive fruits, vegetables, and herbs while maintaining natural color and flavor.

3- Freeze Dryer:

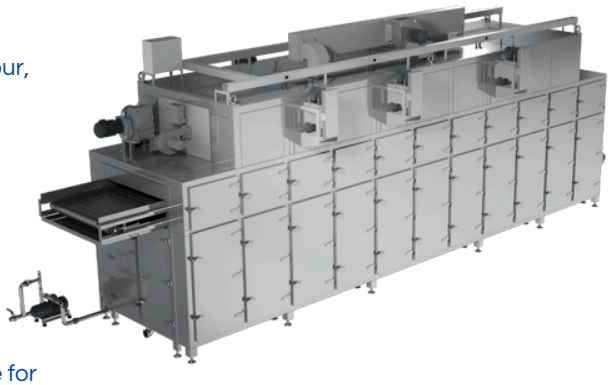
- The ultimate solution for high-value products requiring maximum retention of nutrients, aroma, and structure. Freeze drying ensures the best shelf life and premium product quality.

4- Solar Dryer:

- An eco-friendly, sustainable option utilizing solar energy to dry products efficiently. Solar dryers are ideal for operations looking to reduce energy costs while maintaining excellent product standards.

- **Continuous Type Dehydration Systems**

Our continuous type dehydration systems are engineered for high-volume, industrial-scale operations. Capacities range from 500 kg to 2000 kg per hour, depending on the product type and drying parameters.



Continuous dryers operate with a fully automated system, offering:

- Uniform drying across the product flow
- High throughput and operational efficiency
- Consistent product quality with reduced manual handling
- Optimized energy consumption and lower operational costs

These systems are ideal for processors handling large quantities of fruits, vegetables, herbs, and other food products, providing reliable performance for commercial production demands.

DEHYDRATION PROCESSING LINE

Packaging Solutions and Shelf Life

Proper packaging is crucial for preserving the quality, flavor, texture, and nutritional value of dehydrated products. We offer a variety of packaging options suited to different product types, market needs, and shelf-life expectations.

- **Types of Packaging:**

1- Polyethylene (PE) Bags
- Commonly used for bulk packing. Provides good moisture protection and is economical for domestic and industrial use.

2- Vacuum Packaging
- Air is removed from the package before sealing, significantly extending shelf life by preventing oxidation, microbial growth, and flavor loss. Ideal for premium fruits, vegetables, and herbs.

3- Aluminum Foil Pouches
- These multi-layer pouches provide excellent barrier properties against moisture, oxygen, and light. Suitable for sensitive, high-value products like herbs, spices, and freeze-dried items.

4- Modified Atmosphere Packaging (MAP)
- Involves replacing the air inside the package with a gas mixture (commonly nitrogen or carbon dioxide) to slow down spoilage and maintain product freshness for an extended period.

5- Glass Jars / PET Containers
- Used mainly for retail packaging. Offers excellent visibility, branding opportunities, and long-term storage protection.

6-Paper Bags with Inner Liners
- Eco-friendly option for products with moderate moisture sensitivity, suitable for natural or organic product lines.

- **Shelf Life of Dehydrated Products:**

The shelf life of dehydrated products largely depends on the drying method, residual moisture content, and packaging type used. Typical shelf lives include:
- **Tray Dried / Heat Pump/ Continuous Conveyor Dried Products:** 8 to 12 months under ambient conditions with proper vacuum or sealed packaging.
- **Freeze Dried Products:** 18 to 24 months or more when packed in aluminum foil pouches with oxygen absorbers or vacuum sealing.
- **Solar Dried Products:** 6 to 9 months, depending on humidity control and packaging integrity.

- **Key Storage Conditions for Best Shelf Life:**

- Store in cool, dry conditions
- Avoid exposure to direct sunlight
- Maintain relative humidity below 60%
- Ensure packaging remains sealed after opening

naytrix

LET'S WORK TOGETHER

+91 76239 99711

www.naytrix.in

projects@naytrix.in

Plot No.48, ShantiVan Industrial Park,
Bakrol, Bujrang Road, Ahmedabad,
Gujarat-382433, India

FOLLOW US