M&T ENGINEERING EQUIPMENTS

# FRUITS PROCESSING LINE

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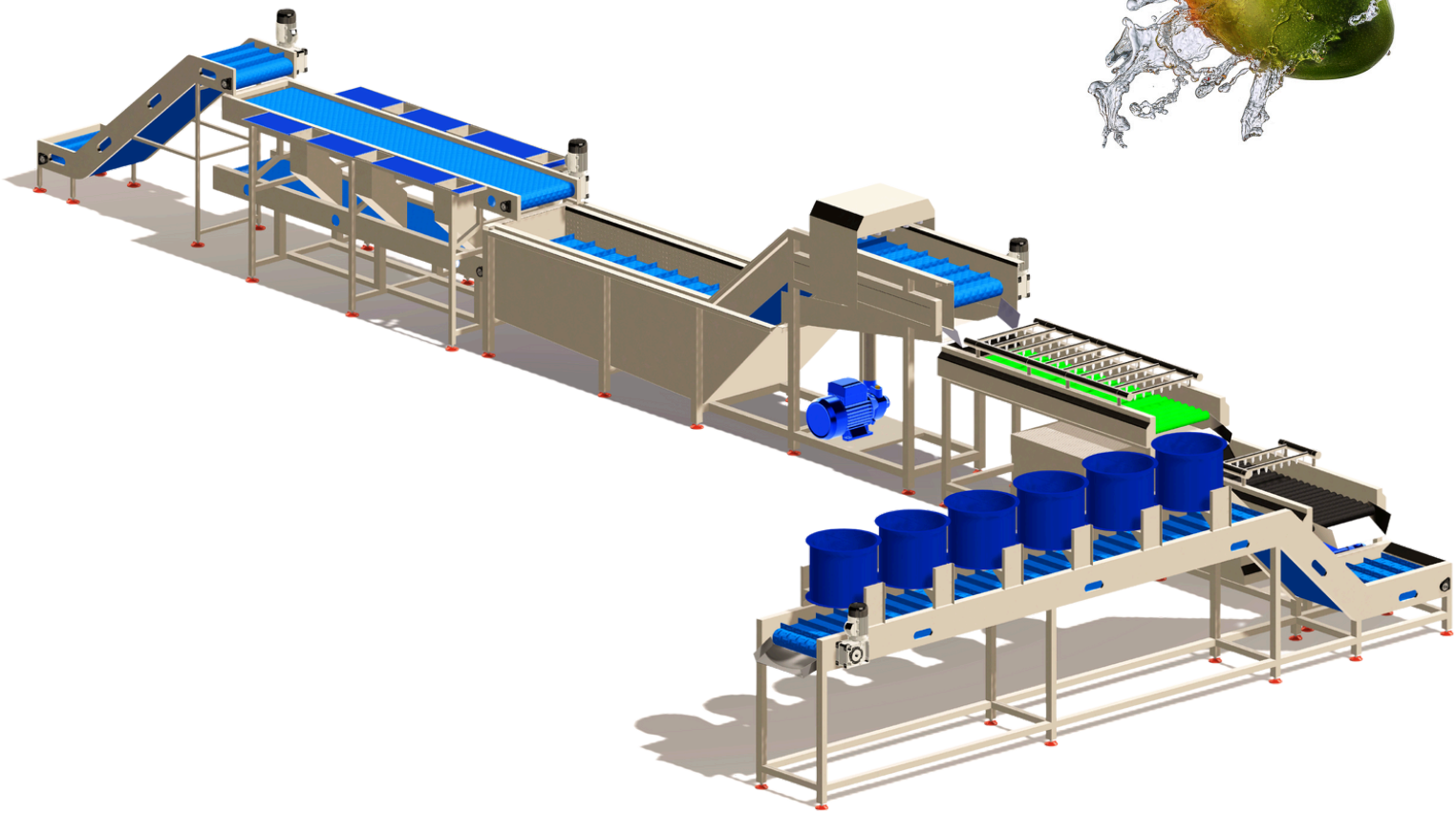
# Packhouse Practices For **Mango**



Packhouse practices for mangos involve critical activities such as sorting, grading, packing, and cooling from arrival to export. Adequate cooling capacity is essential for maintaining quality, while proper cleaning and sanitizing of the building and equipment are key to good practices. Effective temperature management ensures the mangos meet market standards.

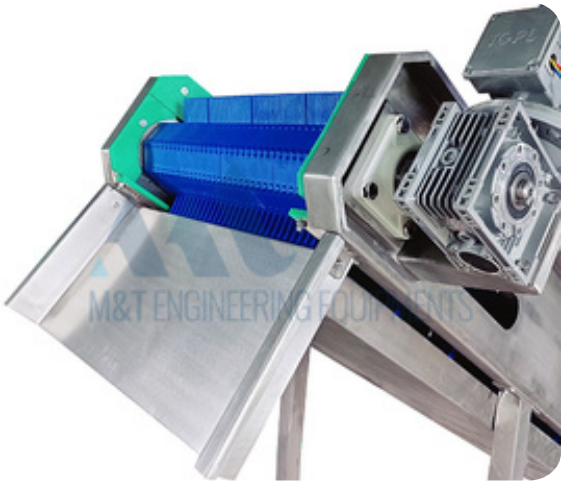
## At the **Mango Packhouse**

Mango processing at the packhouse must be carefully controlled, with automated systems for washing, hot-water treatment, sizing, and grading, all under close supervision. Immediate cooling, typically using forced air, is crucial, but the temperature must not drop below the critical point to avoid chilling injury, which can cause skin discoloration and poor flavor.

# 01 Inclined Conveyor

**M&T Engineering Equipments'** Inclined Conveyors offer an ideal solution for moving goods efficiently up an incline.





Crafted using premium quality materials and cutting-edge techniques, this conveyor undergoes rigorous quality checks to ensure superior performance.

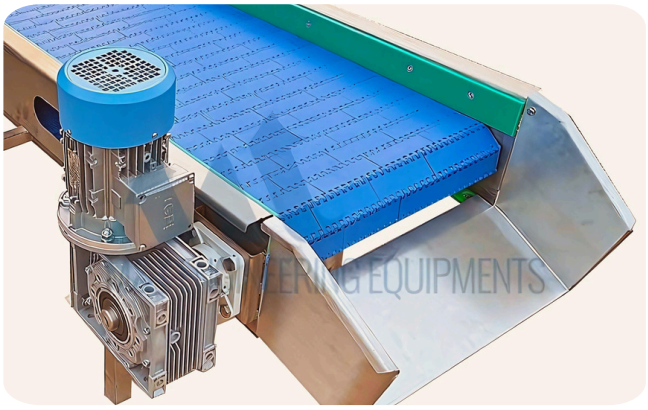
Ideal for continuous processing in food plants, the conveyor facilitates the inspection process by dividing the product into multiple lanes as it moves along the belt. It features an adjustable height and speed, making it easy to operate. The belt runs along the length of the conveyor on a durable PP support sheet.

The drive system includes geared motors, bearings, and a tensioning arrangement, ensuring smooth and reliable operation. We also offer customization options to meet specific customer requirements.

# 02 Inspection Conveyor



**M&T Engineering Equipments** offers a top-notch Inspection Conveyor, designed specifically for the efficient transportation and inspection of fruits and vegetables.



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# 03 **brush washer -** Mango

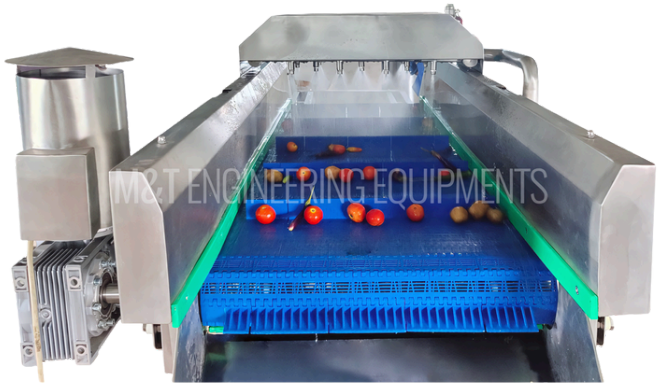

The **M&T Root Washer** is expertly designed for the efficient cleaning of root vegetables such as ginger, carrots, onions, radishes, yams, taro, cassava, potatoes, and sweet potatoes.

This machine utilizes food-grade brushes and rotating brushes combined with high-pressure sprays to thoroughly remove stains, dirt, and other residues from the surface of root vegetables.

Depending on the specific needs of the product, the machine can be equipped with either stiff or soft brushes. The rolling action of the brushes facilitates effective cleaning and peeling through the friction generated between the brushes and the vegetables.

With a design that is both compact and well-structured, the M&T Root Washer ensures optimal performance and reliability in the cleaning process.

# 04 Fruits/Vegetables Washer


The **M&T Vegetable Washing Machine** is ideal for the fruit and vegetable processing industry, using bubble spraying technology for thorough cleaning. It effectively removes dirt and residues with water and high-pressure spray nozzles. Equipped with a Variable Frequency Drive (VFD) for adjustable conveyor speed and a clean water spray section for double washing, it ensures efficient, continuous cleaning.

# 05 **Waxing** for fruits

Waxing is often applied to mangos to reduce water loss and give the fruit a more attractive, shiny appearance. Whether waxing is necessary depends on the client's specific requirements. When waxing is needed, only food-grade wax, approved by the importing country, is used to ensure safety and quality.

Before waxing, the fruits must be completely dry to allow for proper adhesion of the wax. The wax is typically sprayed onto the fruit's surface through an automated system, ensuring consistency and efficiency. To achieve an even coat, the fruit is brushed during the waxing process, which helps distribute the wax uniformly across the entire surface.

Once the wax is applied, the mangos pass through a forced air dryer to set the wax and remove any excess moisture. This step helps to preserve the fruit's quality during transport and enhances its visual appeal for the market.

# 06 Air Drying System

A **Fruit and Vegetable Dewatering Conveyor** is designed to remove excess moisture from produce after washing, blanching, or other processing stages. Effective dewatering is crucial for preventing spoilage, improving the quality of the final product, and ensuring efficient packaging. Here's how such a system typically works and what to consider:

### Function and Purpose

**1. Moisture Removal:** The primary function is to reduce the water content on the surface of fruits and vegetables. This helps in better preservation, enhances the texture, and prepares the produce for subsequent processing or packaging.

**2. Prevents Spoilage:** Excess moisture can lead to bacterial growth and spoilage. Dewatering helps in extending the shelf life of the produce.

**3. Improves Handling:** Less water on the produce makes it easier to handle and package, reducing the risk of damage.

# 07 Weight Sorting Machine





A **Roller Weight Sorting Machine** is a valuable tool in the Fruit and Vegetable Processing Industry, ensuring that produce is sorted accurately and efficiently based on weight. Proper selection of the machine based on your specific needs will help optimize the sorting process and maintain high quality in the final product.

A **Roller Weight Sorting Machine** for Fruits and Vegetables is used to sort produce based on weight. This type of machine is crucial in ensuring uniformity in products, which is important for both quality control and packaging. Here's an overview of how these machines work, their components, and considerations for selecting the right one.

### Function and Purpose

- **Uniformity:** Ensures that fruits and vegetables are sorted into different weight categories, which helps in packaging, processing, and pricing.
- **Quality Control:** Helps in removing underweight or overweight produce that doesn't meet quality standards.
- **Efficiency:** Automates the sorting process, increasing speed and accuracy compared to manual sorting.

**A Roller Weight Sorting Machine is suitable for fruits and vegetables.**

# 08 Corrugated Box Packing

Packaging for mangos is designed to offer physical protection, ensuring the fruit remains intact during transport. Strong, protective cardboard boxes are typically used, and the packaging is based on factors like weight, ripeness, and classification. This ensures that the fruit arrives in the best possible condition, meeting the standards required by different customers and market segments.

Packaging requirements can vary, but single-layer boxes are commonly used. For popular mango varieties, it's typical to find them packed in 4 kg cardboard boxes containing 7 to 8 mangos. This standardized approach helps maintain consistency and quality across shipments.


# 09 **Pre** - Cooling

Pre-cooling before storage and shipment is crucial to quickly reduce the temperature of mangos and eliminate field heat. This process ensures that the fruit is brought down to a safer temperature range soon after harvest, preserving its quality.

When mangos are harvested with temperatures above the recommended cold storage range of 10-12°C, immediate cooling is necessary. Forced-air cooling is an effective method to achieve this, particularly when the fruit is picked in warm conditions. This method rapidly lowers the temperature, helping to maintain the freshness of the mangos.

Throughout the pre-cooling process, it's important to regularly check the temperature of the fruit inside the boxes. Monitoring both the coldest and warmest spots on the pallet ensures that the mangos are uniformly cooled, preventing any potential spoilage or quality degradation during storage and shipment.

# 10 Dispatched

The dispatch process for mangos involves careful handling and preparation to ensure that the fruit remains in optimal condition during transportation. After the mangos are sorted, graded, and packed, they are stored under the recommended temperature conditions to maintain freshness. Proper documentation, including quality reports and traceability information, is completed to ensure compliance with customer and market standards before shipment.

During dispatch, the fruit is carefully loaded onto refrigerated trucks or containers to preserve the ideal temperature throughout transit. Ensuring stable, cold-chain management during transportation is key to maintaining the quality and shelf life of the mangos until they reach their destination.

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