

CORRUGATED CARDBOARD BOXES

Corrugated cardboard boxes are the most commonly used packaging for exporting bananas due to their lightweight, durability, and cost-effectiveness. They provide protection against physical damage and help in maintaining proper ventilation for the bananas during transit.



ADVANTAGES OF USING CORRUGATED CARDBOARD BOXES

- Lightweight & Cost-Effective – Reduces shipping costs.
- Biodegradable & Recyclable – Eco-friendly compared to plastic crates.
- Customizable – Can be branded with logos, barcodes, and product details.
- Stackable Design – Maximizes space efficiency during transport.
- Ventilation for Ripening Control – Prevents excess moisture buildup.

WEIGHTS OF CORRUGATED CARDBOARD BOXES

Box Type	Weight Capacity
Small Box	5–10 kg
Standard Box	13–18 kg
Large Box	18–22 kg

DESIGN & STRUCTURE

- Double-walled or single-walled construction, depending on required strength.
- Top and bottom vent holes to allow air circulation and prevent ripening issues.
- Inner plastic liners to maintain humidity and extend shelf life.
- Printed branding & labels as per export regulations.



PLASTIC CRATES

Plastic crates are a durable and reusable option for exporting bananas, especially for short-distance shipments or local markets. They provide better ventilation, strength, and protection compared to cardboard boxes.



FEATURES OF PLASTIC CRATES

- Material: High-Density Polyethylene (HDPE) or Polypropylene (PP)
- Design:
 - Ventilated sides & base for airflow and ripening control
 - Stackable & nestable to save space
 - Handles or grips for easy carrying
 - UV-resistant & moisture-proof for outdoor storage
- Capacity: Typically 10–20 kg per crate
- Colors: Usually green, blue, or black (can be customized)
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WEIGHT RANGE OF PLASTIC CRATES

Crate Size	Dimensions (L × W × H)	Capacity
Small Crate	400 × 300 × 200 mm	5–10 kg
Medium Crate	500 × 350 × 250 mm	10–15 kg
Large Crate	600 × 400 × 300 mm	15–20 kg
Heavy-Duty Crate	650 × 450 × 350 mm	20–25 kg

FACTORS AFFECTING PLASTIC CRATE WEIGHT

- Material – HDPE (High-Density Polyethylene) crates are heavier than lightweight PP (Polypropylene) crates.
- Thickness – Thicker crates (reinforced) weigh more but provide better protection.
- Ventilation Design – Crates with more perforations are lighter.



WOODEN CRATES

Wooden crates are a sturdy and eco-friendly option for exporting bananas, offering better protection than plastic and cardboard while maintaining proper ventilation. They are commonly used for premium banana exports, bulk shipments, and long-distance transport.



FEATURES OF WOODEN CRATES

- Material: High-quality wood such as pine, plywood, or hardwood
- Design:
 - Slatted sides for proper ventilation
 - Reinforced corners for stacking strength
 - Handles or cutouts for easy handling
 - Custom branding & labeling (burned-in or sticker labels)
- Capacity: Typically 10-25 kg per crate
- Reusable & Durable: Long-lasting and biodegradable

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ADVANTAGES OF WOODEN CRATES

- Strong & Rigid – Protects bananas from crushing
- Better Airflow – Slats provide proper ventilation for ripening control
- Eco-Friendly – 100% biodegradable & reusable
- Ideal for Long-Distance Transport – Used for premium exports
- Stackable & Customizable – Can be resized or branded
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VACUUM OR MODIFIED ATMOSPHERE PACKAGING

Vacuum Packaging and Modified Atmosphere Packaging (MAP) are advanced techniques used to extend the shelf life of bananas by controlling oxygen (O₂), carbon dioxide (CO₂), and humidity levels. These methods slow down ripening and reduce spoilage, making them ideal for long-distance exports.



FEATURES OF VACUUM & MODIFIED ATMOSPHERE PACKAGING (MAP)

- Air Removal – Completely removes air to prevent oxidation and microbial growth.
- Hermetic Seal – Ensures airtight protection using plastic films.
- Compact & Space-Saving – Reduces packaging size, making transportation more efficient.
- Best for Processed Bananas – Ideal for banana chips, pulp, dried bananas, and freeze-dried products.
- Extended Shelf Life – Can preserve bananas for months without refrigeration.

WEIGHT RANGE OF PLASTIC CRATES

Package Type	Banana Quantity
Small Pack	200–250g (slices/chips)
Medium Pack	500g–1kg
Bulk Pack	2–5kg

IDEAL EXPORT CONDITIONS FOR MAP BANANAS

- Temperature: 13–14°C (prevents chilling injury).
- Humidity: 85–95% RH (keeps bananas fresh).
- Gas Composition: 3–5% O₂, 2–10% CO₂, balance N₂.
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