

Technical Bulletin #37:

Harvesting and Postharvest Recommendations for Carrots

1. Harvesting

- Carrots accumulate sugars as they mature in the field. High sugar content improves the eating quality of a carrot and increases its storage potential. It is recommended to harvest carrots between 100-140 days after seeding depending on the variety used.
- Harvesting should be done manually by using a small spade to dig and gently remove the carrots from the ground without scratching them.
- Avoid watering carrots a day before harvesting
- It is preferable to harvest carrots early in the morning before the mid-day heat. Avoid harvesting under wet conditions.
- Once harvested, it is best to place the harvest bins or baskets in a shaded area. If left in the field, cover the harvested product to protect it from the sun and to reduce water loss and premature senescence.



Crates full of freshly harvested carrots



The growth cycle of a carrot

2. Postharvest Cleaning and Sorting

- Carrots should; be firm and bright orange in color, have achieved sufficient size to fill in the tips, and have a uniform tapered appearance from shoulder to tip.
- Freshly harvested carrots must be sorted in order to discard carrots that are not of high quality. Common defects are; defective roots, undersized, broken, diseased, have a green core, split or cracked, and sun burnt carrots. Careful handling is necessary to avoid bruising and tip breakage during these grading steps.
- Carrot texture should be of uniform and similar shape for the variety, well-formed, smooth, and firm. Additionally, they should be free of growth or harvest damage, decay, disease, and insects.
- If selling carrots with their tops attached (foliage), tops should be fresh in appearance, dark green, and free from serious injury, disease, decay, or insects. If not, trim the tops leaving them 10 cm in length.
- Carrots are graded according to their size, diameter, and length (long, medium and short).
- Cleaning can be done manually by removing big soil particles attached to the carrot. If carrots are not being sold immediately then leave them dirty to help prevent moisture evaporation and scratching. Clean just before selling.
- Remove all roots from the tip of the carrot.



Fully grown carrots before cleaning



3. Packing for Transport

- Carrots should be packed in strong, well-ventilated containers such as wooden crates, durable plastic bins, mesh sacks, or bamboo baskets.
- All containers should have protective padding (newspaper, banana leaves, etc.) to prevent fruit scarring and abrasions.
- As much as possible according to the container/sack style, arrange the carrots parallel to one another in order to prevent the stem from puncturing or scratching other carrots.
- Avoid overloading containers, which can cause bruising or damage to the carrots.
- The fully loaded container should be taken to a cool, shaded area until ready to load onto delivery vehicle.



Properly packed carrots ready for transport

4. Temporary Storage

- Keep harvested product in a cool place under the house or in another shaded and well-ventilated area.
- High humidity is necessary to prevent dehydration and loss of crunchiness of stored carrots. Carrots can be rehydrated prior to marketing by spraying cold water on the roots or by covering the roots with ice

5. Transport to the Market

- Arrange the baskets in the manner that will best avoid damage to products in adjacent containers. Do not overload the containers.
- If refrigerated transport is not available, the delivery vehicle should at least be covered to protect the carrots from direct sunlight, dust, and dirt.

6. Nutrition Value

Carrots are a very good source of Vitamin A, an essential micronutrient in a healthy diet. In Cambodia, many children and women suffer from night blindness, a condition that is directly related to a diet that lacks in Vitamin A. A small carrot (50g) will provide more than 150% of the recommended daily allowance for Vitamin A. Carrots are also a good source of dietary fiber and are a very low-fat and low-calorie food. Peeled, raw carrots are an excellent snack food for school-age children and teenagers. Additionally, thoroughly cooking and mashing carrots to add to *bobor* significantly increases the nutritional value of this traditional children's meal and will provide important nutrients to babies as they start to eat solid foods.

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