

Harvest and Postharvest handling checklist

Good postharvest quality starts at planting, and sometimes even earlier. Crops that are well nourished, appropriately irrigated, protected from pests and diseases and grown in a favourable climate will have better postharvest quality than products grown under stressful conditions.

After all the investment in growing the crop, poor postharvest handling is surely snatching defeat from the jaws of victory. Actions taken at harvest and immediately afterwards have major impacts on storage life and quality. Disappointed customers may not return, or are likely to ask for a discount if they do.

These checklists outline the key actions needed to ensure proper harvest and postharvest handling of fresh produce.

It should be noted that these notes are extremely general. Specific actions will be needed for specific crops. For example, best practice for cherries includes immediate hydrocooling on receipt, whereas avocados are usually cooled after packing (preferably within 24 hours of harvest), seed potatoes are cooled slowly over several weeks, and pumpkins may not be cooled at all.

These materials are therefore just a foundation, available for growers to improve and adapt to their needs.

Harvest

	Step	Good management practices	Useful records	Priority H/M/L	Status ✓ / ✗
Pre-season	Equipment checks	Before harvest starts, check the operation of all harvesting, grading and packing equipment and of cool rooms and cooling systems.	Equipment maintenance schedule		
Schedule harvesting	Maturity check	Check maturity attributes (e.g. TSS, starch, size, colour) against customer requirements.	Test results Harvest logbook		
	Harvest schedule	Commence harvest once product has reached market maturity (or will do so during storage and transport). Harvest most mature (e.g. north facing) blocks first.			

	Step	Good management practices	Useful records	Priority H/M/L	Status ✓ / ✗
Harvest	Check equipment	<p>Inspect harvesting equipment, bags and bins for sharp edges and hard drops.</p> <p>Ensure harvesting equipment is clean and free from contaminants.</p> <p>If using knives, check they are clean and sharp.</p>	Equipment maintenance schedule		
	Train pickers	<p>Show pickers how to harvest and trim produce to market expectations.</p> <p>Ensure pickers understand how to avoid damaging produce (e.g. cuts, bruises) during harvest.</p> <p>Conduct a food safety induction that includes produce handling and personal hygiene.</p>	Staff training		
	Weather	<p>Avoid picking fruit while wet.</p> <p>Avoid harvesting vegetables during hot conditions; pick early, while conditions are cool.</p>	Harvest logbook		
Transfer to pack shed	Cover bins	<p>Protect harvested produce from the sun:</p> <ul style="list-style-type: none"> • Cover bins or lugs. • Place bins in the shade. • Transfer ASAP 	<p>Staff training</p> <p>Maintenance logbook</p>		
	Transport	<p>Transport fruit slowly (max 20km/h).</p> <p>Ensure roadways are well maintained.</p>			

Packing

	Step	Good management practices	Useful records	Priority H/M/L	Status ✓ / ✗
Bin receipt	Unloading	Do not leave produce in the sun; place in a covered area.			
	Check quality	Assess quality on receipt to quickly identify and address issues caused by poor harvesting or transport practices.	Fruit quality		
	Check product temperature	Cool immediately if produce is hot.	Temperature		
	Check traceability	Ensure batches are identifiable.	Production records		
Cooling	Cooling before packing	<p>Cool before packing if the product is warm or hot at harvest and/or packing is delayed.</p> <ul style="list-style-type: none"> • Hydrocooling is suitable for products that tolerate wetness. • Vacuum cooling is most efficient for products that lose water easily. • Forced air systems cool product faster and minimize weight loss compared to room cooling <p>Be mindful of condensation that can occur when cold product re-warms during packing.</p>			
	Cooling after packing	<p>Cool fruit and vegetables ASAP, especially those with a short storage life.</p> <p>Use a forced-air or vacuum system to cool efficiently.</p> <p>Avoid condensation on moisture sensitive produce.</p> <p>If forced air cooling, ensure vents are aligned and there is strong and even pressure through the entire load.</p>	Temperature logs		
	Storage	<p>Check pulp at the end of the cooling cycle to verify product is within 2–5°C of desired temperature.</p> <p>Store at optimum temperature and relative humidity (depending on commodity).</p>			

	Step	Good management practices	Useful records	Priority H/M/L	Status ✓ / ✗
Packing	Packing line checks and cleaning.	<p>Check for sharp edges, hard drops and worn brushes, rollers or padding. Replace brushes if they become stiff and/or hard to clean.</p> <p>Clean all surfaces that contact the produce.</p>	<p>Equipment maintenance</p> <p>Cleaning</p>		
	Staff training	<p>Train packers in product handling and customer specifications.</p> <p>Ensure packers understand quality requirements (e.g. size, packed weight, labelling).</p> <p>Conduct a food safety induction that includes produce handling and personal hygiene.</p>	<p>Training record</p>		
	Bin tips and flumes	<p>Ensure products feed out slowly and drops are minimised.</p> <p>Use an approved sanitiser in recirculating systems and change water when it becomes dirty.</p>	<p>Chemical register</p>		
Product cleaning and treatments	Cleaning	<p>Minimise time on brushes (ideally ≤ 30 seconds) to that needed to clean fruit.</p> <p>Use brushing systems that do not rely on fruit-to-fruit contact to move along the line e.g. removal bar, brushes that rotate and travel.</p>	<p>Cleaning record</p>		
	Fungicide	<p>Check if fungicide is registered locally and for destination market.</p> <p>Treat within 24 hours of harvest for best control of disease.</p> <p>Apply fungicide as a non-recirculated spray for at least 30 seconds.</p> <p>Lower the pH of the fungicide solution if using an alkaline (pH>7) water source.</p>	<p>Postharvest chemical record</p>		

	Step	Good management practices	Useful records	Priority H/M/L	Status ✓ / ✗
	Drying	Avoid packing wet produce. Ensure temperatures in heated tunnels do not exceed 50°C. Reduce speed or increase temperature if fruit labels don't stick.			
Grading	Grading and packing	Load products so they are appropriately spaced on the line, avoiding crowding, rubbing or bumping. Add padding and baffles to reduce impacts. Minimise all drops.			
	Specifications	Define, record and agree specifications with customers. Monitor packed product to confirm specifications are met.	Packed product assessment		
	Reject bin analysis	Regularly sample produce from reject bins and record reasons for rejection (e.g. sunburn, damaged, rot). Identify and investigate key quality issues.	Reject bin analysis		
	Size grading	Check equipment operation. Regularly check weights of packed product.	Equipment maintenance		
Packaging	Labelling	Ensure labels meet customer requirements.			
	Packaging and handling	Use cartons with at least 5% vented surface area and sufficient strength to withstand supply chain handling. Place cartons on pallets carefully and secure well with locking sheets and strapping.			
Sampling	Library trays	Retain library trays at the end of each batch and store until the end of shelf life.	Library tray assessment		

	Step	Good management practices	Useful records	Priority H/M/L	Status ✓ / ✗
	Testing	Sample and send fruit to laboratory for MRL, heavy metal and microbial testing as required by target market and/or food safety system.	Chemical analysis		
Storage	Holding before dispatch	Place incomplete pallets into cool room if held overnight or for longer periods. Leave >5cm air gap around all sides of stored pallets. Minimise storage before dispatch.	Temperature log		