

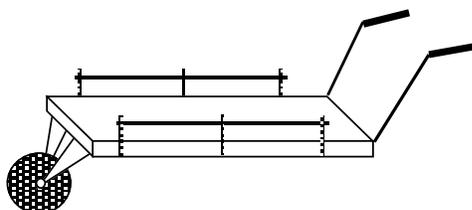
FIELD PACKING

Introduction: Many postharvest operations for fruits and vegetable crops in developing countries take place on the ground in the field or on the floor inside a simple packing shed. When the crop is dropped, thrown or piled on the ground after harvest, it can become damaged and bruised, contaminated by soil or animal feces, or exposed to insect attack, fungal and bacterial plant pathogens. These injuries and contaminants can lead to higher postharvest losses, quality declines and food safety problems.

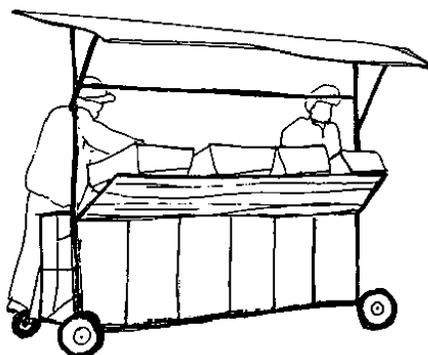
To reduce the number of times that produce is handled between the field and the market, and to protect produce from being damaged by rough handling and exposed to soil and other contaminants, a mobile or stationary system can be used for field packing produce right in the field or very near the place of harvest.

Design Options & Materials Needed

Mobile sorting/grading/packing stations: A simple **hand cart** can be used to bring empty containers into the field during the harvest. Two or three containers can be field packed at the same time, allowing the harvester to sort by colors or grade into different sizes as she moves along the row. A larger, **mobile cart with a roof** attached for shade can be pushed along the edge of the field.



Hand cart



Mobile shaded packing cart

Costs and benefits of field packing using a mobile packing station

If 1000 lbs of table grapes are harvested and field packed by 4 trained workers (picked trimmed, packed 25 lbs per carton, and SO₂ pads inserted) in 2 hours. Losses are calculated to be 10% compared to the typical 20% losses associated with grading, trimming, packing and cooling grapes in a local packinghouse. Workers are paid \$1.00 more per hour than usually paid to field laborers who harvest crops to be transported to the packinghouse.

Costs: Equipment, Trained Labor, Packages suited to field packing and cooling

Base labor rate = \$6.00/hour

Additional labor cost \$1.00/hour bonus x 4 workers x 2 hours = \$8.00/day

Equipment -- shaded packing station \$150.00 (used for several seasons)

Materials - same grape lugs and pads used in packinghouse = \$ 1.50 per set, 4 additional cartons required.

Postharvest Innovations Plan Series

Number 13

Low cost, small-scale practices for reducing postharvest food losses

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Cooling -- same cost as for cooling after using packinghouse

Benefits: No packinghouse to maintain, Less damage (no dumping, re-sorting), Quick handling (less water loss)

Packinghouse power, water and ventilation costs savings = \$10 /day

Postharvest losses reduced to 10% (4 additional cartons per day from the vineyard).

100lbs x 0.50 per lb = \$50

	Field Packing	Packinghouse
Costs		
labor	\$48	\$40
packaging	54	48
shed		10
Total	92	98
Losses	10%	20%
Returns		
produce for sale	900lbs	800lbs
market value	\$450	\$400
Net profit	\$358	\$302

Field packing provides a daily return of \$56 more than using a packinghouse. The investment in the shaded packing station can be recovered in less than three days.

For further information

Small-scale postharvest handling practices: A manual for horticultural crops (Chapters 1 and 3; 5th edition 2015) http://ucanr.edu/sites/Postharvest_Technology_Center_/files/231952.pdf

Postharvest Technology Center (UC Davis)

<http://postharvest.ucdavis.edu>

The Postharvest Education Foundation

<http://www.postharvest.org>

Postharvest Innovations LLC

<http://www.postharvestinnovations.com>

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