

ON-FARM STORAGE for FRUITS and VEGETABLE CROPS

Introduction: Why do we store fruits and vegetables?

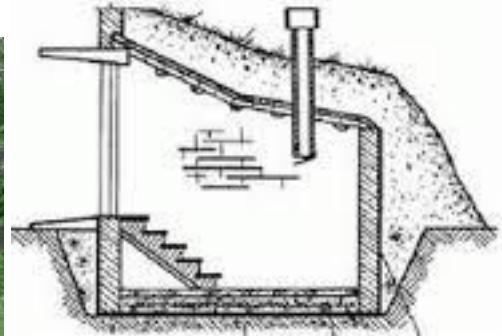
- To extend the traditional marketing period
- To avoid price drops due to local seasonal gluts
- To hold fruits intended for processing
- To reduce losses during long-term storage of onions, garlic and potatoes

Produce intended for storage must be of high quality, of proper maturity, handled gently and kept cool between harvesting and when being placed into storage.

Improper storage conditions will provide poor results

- Using poor quality packages
- Inappropriate storage conditions (wrong temperature, poor air flow, low relative humidity) will give poor results
- Overloading the structure will lead to poor cooling

Design Options & Materials Needed



Underground Root Cellar



Small Charcoal Cool Room

Postharvest Innovations Plan Series

Number 20

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

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1 MT Ventilated onion storage



Onions and garlic must be stored at lower relative humidity, with good ventilation, to prevent the development of decay, rooting and sprouting

- Raised platform
- Mesh walls
- Small inner chambers
- Cover for shade and protection from rain

Costs and benefits

Crop (1000 kg)	No storage	On-farm storage before marketing	Potential increase in profits
Onion storage for 6 months	Sales at harvest time when market prices are low 1000kg @ \$1.00 per kg \$1000 market value	\$500 to construct ventilated a 1 MT onion storage Field curing the onions (loss of 5% in weight) Storage losses 12% losses 830 kg to sell @ \$3 per kg \$2490 market value	\$1490 additional market value Will fully pay for storage structure in one use.

For further information

Small-scale postharvest handling practices: A manual for horticultural crops (Chapter 7; 5th edition 2015)

http://ucanr.edu/sites/Postharvest_Technology_Center_/files/231952.pdf

Report on construction of a charcoal cooler:

<http://www.postharvest.org/images/CharcoalcoolstoragePNACQ751.pdf>

Cold Storage for Small Farms Part 1: <https://www.youtube.com/watch?v=Pkwgz-jmmPO>

Cold Storage for Small Farms Part 2: <https://www.youtube.com/watch?v=73u6g5KSkuY>

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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