

## DRY FOOD STORAGE CONTAINERS

**Introduction:** When fresh produce, grains, beans or legumes are dried after harvest, whatever drying method is used must be followed by proper storage. Using a high quality, clean container that is light, air and insect proof will greatly extend the shelf life of the products.

### Design Options & Materials Needed

Small containers can best be used for consumer packaging, and larger containers will work well for long term storage. Glass, metal and plastic containers are all good choices for storage of dried foods, and in dark colors can also help protect foods from light. Food grade plastic storage containers are relatively inexpensive, and are available in many sizes and shapes. Heavy weight plastic buckets (2g or 5g sizes) can be sealed using “gamma seal™” lids, which can be screwed off whenever the container needs to be opened. Metal foil pouches or plastic bags can be used as bucket liners, and these can be heat sealed for long term storage, or zip-locks type bags can be used for easy access. Vacuum sealing of food grade plastic storage bags will exclude air completely. Dry ice can be added to large containers to displace air and protect the dry foods from insect pests. Oxygen absorbing pellets can be used in well-sealed containers to reduce oxygen concentration, increasing shelf life by slowing down biological deterioration and preventing insect reproduction.



Glass and plastic jars:



Metal foil packaging:



Zip-lock food storage bags:



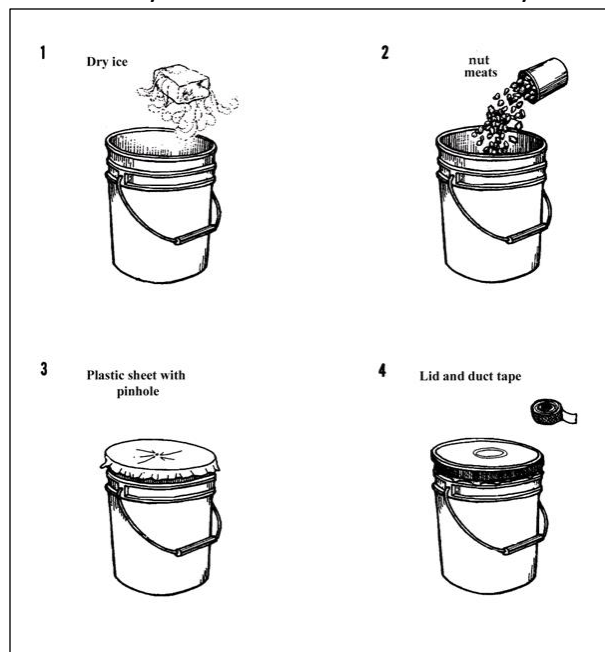
Gamma seal lids:

2 piece design, with a ring that seals onto the bucket rim, and a lid that screws on to the threaded ring. (photo from Pleasant Hill Grain company)

# Postharvest Innovations Plan Series

CO<sub>2</sub> (dry ice) use: Carbon Dioxide in the storage container will kill many kinds of insects within 7 days.

Oxygen absorbers: Available in 100cc, 300cc and 500cc size packets (use one 500cc packet for storing up to 3lbs (1.4 kg) of dry food in one container)



### Costs and benefits

Food product	Storage in traditional packaging (ex: sacks or plastic bags)	Using high quality food storage containers and best practices	Potential increase in shelf life (and protection from pests) using improved storage containers
Grains, beans	\$0.20 per kg Storage life = 6 to 10 months	PICS bag (triple bagging) \$2 per bag Storage life up to 2 years	1.5 years
Dried fruits <20% moisture	\$0.30 per kg Storage life = 6 months	Metal foil pouch \$0.50 per kg Vacuum sealed (\$50 to \$80 for machine) Storage life = 18 months	1 year
Dried vegetables <10% moisture	\$0.30 per kg Storage life = 12 months	Metal foil pouch \$0.50 per kg Sealed plastic bucket with O <sub>2</sub> absorbers \$10 Storage life = 8 years	7 years

### Food storage information and supplies

<https://pleasanthillgrain.com/appliances/grain-mills> <https://www.containerstore.com/s/kitchen/food-storage/12>  
Containers and packaging ideas <http://www.containerandpackaging.com>

### For further information

Small-scale postharvest handling practices: A manual for horticultural crops (Chapter 10; 5<sup>th</sup> edition 2015)  
[http://ucanr.edu/sites/Postharvest\\_Technology\\_Center\\_/files/231952.pdf](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>

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