

# Successful Storage of Garden Produce



Lunch & Learn  
12 noon to 1 pm  
September 8, 2014

**UW**  
**Extension**  
Cooperative Extension

# Resources



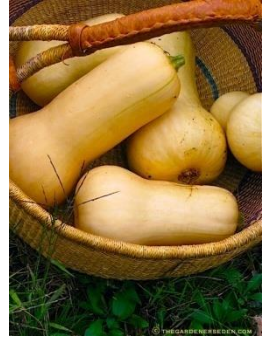
- How Do I...Store Foods [www.uga.edu/nchfp](http://www.uga.edu/nchfp)
  - Proper care and handling of fruits and vegetables
  - Storing home canned food
  - Storing vegetables at home
  - Cupboard storage charts
- A=Z Index P=Produce [www.foodsafety.wisc.edu](http://www.foodsafety.wisc.edu)
  - Safe handling of oranges, parsley, tomatoes, and other produce items (English and Spanish)
  - Storage guidelines for fruits and vegetables
  - Storing fruits and vegetables from the home garden

# Delicious Taste of Summer



- Frozen fruits and vegetables
  - Store for 8-12 months. Vegetables not blanched or untreated fruits should be used within 3 months.
- Dried fruits and vegetables
  - Store for 6-12 months tightly sealed in a cool, dry cupboard.
- Canned fruits and vegetables
  - Properly canned foods should be safe indefinitely. For best quality, use within 1-2 years.
  - Remove screw bands on sealed jars. Wash the lid and jar, dry, label and store in a cool, dark location.
  - Don't store above 95°F or food will lose quality and may spoil.
  - Jars that accidentally freeze are OK, as long as they remain sealed.

# Harvesting for Storage Success



- Harvest fruits and vegetables at, or near, peak maturity
- Choose produce that is free from disease or insect damage
- Harvest and handle produce carefully so it is not to bruised or cut
- Leave a 1" stem on most vegetables to reduce water loss and spoilage
- Choose types of produce, and varieties, suited for storage
- Choose only the best for storage!

# Post Harvest Care



- Store berries and cherries ‘as is’; rinse prior to eating, not before storage.
- Do not wash potatoes, onions, sweet potatoes, or garlic before storage. Leave a fine layer of soil on potatoes; leave skin on garlic and onion.
- For longer storage, dip tomatoes (red or green), winter squash, and pumpkin in a very dilute bleach solution, dry and store.
  - 1½ teaspoon bleach per gallon of water

# In Garden Storage

- Root crops such as beets, carrots, rutabagas, parsnips and turnips can be left in the garden into late fall and early winter.
- Mulch heavily with straw to keep the ground from freezing and allow extended harvesting.
- Harvest prior to a hard freeze.
- Leave 1" of stem. Store at 32°-40°F in a sealed bag with a few holes to help retain moisture.



# Curing Vegetables to Improve Storage

- Potatoes, onions, pumpkins, sweet potatoes and winter squash (except acorn) benefit from post-harvest curing.
- Curing heals injuries and thickens the skin, reducing moisture loss and guarding against decay.



Commodity	Curing Temp	Humidity*	Storage after Curing
Potato	60-70°F	80-90%	35-45°F
Onions	60-80°F	40-50%	32°F
Pumpkin			
Sw. potato	80-85°F	90%	55-60°F
Winter squash			

\*Watch for wilting or too much moisture loss.

# Storing Produce: The Basics

Four categories of temperature and humidity (RH) define optimum storage conditions.

- **Warm and dry:** 50-60°F, 70% RH.
  - A basement corner can be excellent for storing pumpkins and winter squash.
- **Cold and dry:** 32-40°F, 65% RH.
  - An extra refrigerator for garlic and onions.
- **Cool and moist:** 40-50°F, 90% RH.
  - Sealed bags in a 'warm' refrigerator.
- **Cold and moist:** 32-40°F, 95% RH.
  - Sealed bags in a cold refrigerator.





# Key Points

Harvested produce is still respiring and quality can be greatly influenced by the storage environment.

- Moisture, or lack of moisture is often key to a long storage life. Never allow standing water to form, this will quickly lead to rotting.
- Storage areas should be dark and well aerated.
- Produce should be protected from insects and rodents.
- Keep produce from freezing.



# Chill Injury

- Chill injury is damage to plants and produce caused by temperatures above 32°F.
- Fruits and vegetables of tropical and subtropical origin are most susceptible:
  - Bananas, pineapple, tomatoes, sweet potatoes, avocado, cucumbers, summer squashes, peaches, and more
- Caused by breakdown of normal cellular processes
- Signs are surface pitting, discoloration, internal breakdown, loss of flavor, and decay



# Warm and Dry

- A basement corner can be warm enough, and dry enough for storage of some crops.
  - 50°-60°F, 70% relative humidity

Produce Item	Temp (°F)	Humidity (%)	Time
Peppers, hot	50	60-65	6 months
Pumpkins	50-55	70-75	2-3 months
Sw. potato	50-55	50-60	2-6 months
Winter squash	55-60	80-85	4-6 months

# Cold and Dry

- Garlic and onions prefer a cold environment, with refrigerator temperatures. Do not seal these items in plastic bags – it will be too wet and they will rot.
- 32°-40°F, 65-70% relative humidity



# Cool and Moist

- A refrigerator that is set 'warm' can be ideal for extended storage of many crops.
- Placed in perforated plastic bags, and seal. Inspect frequently for excess moisture.
  - 40°-50°F, 90% relative humidity

Produce Item	Time
Beans, snap	7-10 days
Cucumbers	10-14 days
Eggplant	1 week
Melon	2 weeks
Potatoes (white)	1-36 weeks
Tomatoes	1-3 weeks

# Cold and Moist

- Most crops should be stored cold and moist. Humidity is required to maintain quality.
- Store in a refrig in perforated plastic bags to allow for some air movement. Check for decay.
  - 32°-40°F, 95% relative humidity

Produce Item	Time
Apples, Pears	2-6 months
Cabbage	4-5 months
Carrots	4-5 months
Corn	1 week
Leafy greens	2-3 weeks
Potatoes	2-9 months
Rutabaga	2-4 months



# Stored Produce - Potatoes

- Early season potatoes with thin skins should be brushed off after harvest and stored in a bag in a refrigerator (35-40°) for up to 3 months.
- Check to make sure moisture doesn't build up. Allow for air flow (don't seal the bag tightly).
- Late-crop potatoes should be harvested, soil brushed off, and cured 1-2 weeks in moist, warm air (60-75°F). An empty refrigerator can work well.
- Once cured, place at 40-45°F for 2-9 months.



# Stored Produce - Onions

- Harvest onions when tops have fallen over and they have begun to dry.
- Place in a well-ventilated (warm) garage and cure for 1-2 weeks until tops are dry.
- Trim top to 1". Do not remove outer peel.
- Hang to store, or place in a shallow box.
- Store 32-35°F and 65% RH for 2-6 months – do not put in a sealed plastic bag.
- Store away from other produce that may absorb odors.





# Stored Produce - Tomatoes

- Mature green tomatoes will ripen into the fall.
- Harvest fruit from still vigorous vines. Fruit from dead vines will more rapidly spoil.
- Harvest just before (or immediately after) frost for longer keeping.
- Rinse in a dilute bleach solution (1½ teaspoon per gallon of water) dry with a soft cloth, and store in a shallow layer in boxes 50° to 55°F.
- Enjoy tomatoes as they ripen.



# Stored Produce –Winter Squash and Pumpkins

- Winter squashes – acorn, butternut, hubbard – and pumpkins are nutritional powerhouses.
- Harvest mature fruit with hard rinds before frost.
- Leave at least 1” of stem to prevent decay.
- Cure pumpkin and butternut (not acorn) at 80°-85°F for 7-10 days prior to storage to extend the shelf life.
- Store 50°- 60°F for 2-6 months.



# Stored Produce - Apples

- Apples will continue to ripen and can be harvested before peak maturity for maximum storage. Late maturing varieties store best.
- After harvest, cool to remove field heat, and dry.
- Carefully sort and continue to cull. One bad apple **will** spoil the whole group!
- Store, 32° for up to 6 months. A plastic bag or bin works well to maintain humidity; add holes for air circulation.

# 'Salvaging' Stored Produce

- Sort and cull produce during storage, discarding (composting) visibly spoiled product.
  - Do not attempt to salvage spoiled produce by canning or dehydration.
- Trim and sort produce prior to serving or cooking.
  - Cut away damaged areas or those visibly spoiled.
  - Trim green areas from potatoes; discard growing potatoes.
- Restore limp celery to 'life' by placing stems in a glass of water.  
Wrap carrots or radishes in a damp paper towel to reintroduce moisture to tissue.

