



Edible Landscaping




Harvest and Storage

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Why Pay Attention to Harvest/Storage?

- *Your time and money invested**
- *Home grown vegetables and fruit taste much better than those available in markets, but to be at their best, they need to be harvested at the right time and stored correctly.**



If we DO pick fruits and vegetables at the right time...

- **best taste**
- **optimum vitamin and mineral content**
- **With vegetables: you will also tend to keep the plants producing more**

If you don't pick on time...

- **fibrous, tough or rotten.**

Want them tender? Want them sweet?

- These are the 3 objectives of our Harvest and Storage segment:
- 1. Understand the concept of fruit and vegetable “maturity.”
- 2. Know the best time to harvest crops.
- 3. Know the best way to store crops.

A little science first...on SUGAR!

- Some fruits **increase** in sugar after harvest (due to the conversion of starches to sugar):
 - European pears
 - Kiwifruit
 - Mangos
 - Papayas
 - Some others



Tricksters

Some fruits do **NOT** increase in sugar but **SEEM** to get sweeter due to decrease in acidity in the fruit-

- Blackberries
- Cherries
- Grapes
- Raspberries
- Strawberries
- Citrus



Some Fruits and Veggies continue to ripen somewhat after picking:

Word of the day = climacteric

Note: “ripen” doesn’t mean more sugar...They might change in texture, color or juiciness but will not increase in sugar content. It’s usually best to pick ripe or almost ripe.

Harvest Gently

- Avoid bruising and cutting
- Place gently into buckets/bins
- Avoid stacking fruit too high



Twist Up!



Clipping

- Fruits such as persimmon, pomegranate, quince and grapes require clipping.
- Avoid damaging the skin of the fruit by layering newspaper between fruit layers.



More Clipping



Harvesting Leafy Herbs and Veggies

- **Clip using clean kitchen shears or sanitized clippers**
- **Sanitize clippers with product such as Lysol (least corrosive)**



WALKABOUT... ;-)

- **LETS TALK "MASHWA"**
- **LOST CROP OF THE INCAS**
- **TUBEROUS NASTURTIUM**
- **A HUMMINGBIRD MAGNET**
- **ANNUAL VINE 6 FEET, 3 POUNDS OF TUBERS!**

MASHWA USES

- Stews and soups
- Fried or baked
- Soaked in molasses to prepare desserts.
- Young leaves are eaten as green vegetable.
- Flowers are eaten in salads.
- Flower buds are pickled in vinegar.

Mashwa Tubers



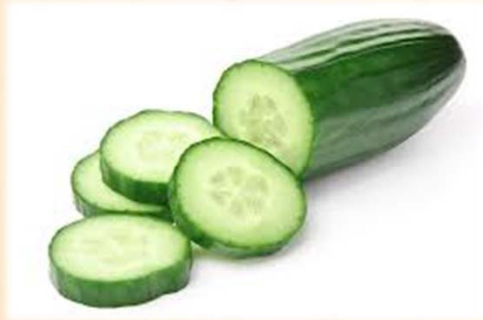
Mashwa vine



Chard



Cucumbers



Onions



Peppers



Pumpkins and Winter Squash



Radishes



Summer Squash (Zucchini, Crookneck)



Tomatoes (They are actually a fruit.)



Apples



Pears



Peaches



Plums



Apricots



Figs



Grapes



Strawberries



Raspberries



Blackberries



Blueberries





Another “walkabout”???

- Shout out when you know the name
- Sorta Kinda like a potato
- Not starchy (carbs=inulin=fructose)
- Great for diabetics (fructose xxx glucose)
- Sorta Kinda tastes like a water chesnut
- Can be a runaway plant
- Perennial sunflower
- It is NOT an artichoke
- It is not from Jerusalem

Jerusalem artichoke or Sunchoke



Runaway hedge



Storage



Storing harvested fruit in layers of paper for countertop ripening and refrigeration.

Gas Wars

- If you notice that your fruits or vegetables are rotting too quickly, you might be experiencing a “Gas War”. Some fruits and vegetables give off very high levels of ethylene gas, and that is a ripening agent for some other produce.
- Ethylene is a naturally occurring plant growth regulator.
- Some new products claim to absorb the gas or slow down the food’s respiration.
- Best to just “slow down the respiration” by lowering the temperature and/or isolation.

Table 1.5 Fruits and vegetables classified according to ethylene production rates.

Class	Production rate at 68°F (20°C) ($\mu\text{l C}_2\text{H}_4/\text{kg}\cdot\text{hr}$)	Commodities
Very low	Less than 0.1	Artichoke, asparagus, cauliflower, cherry, citrus fruits, grape, jujube, strawberry, pomegranate, leafy vegetables, root vegetables, potato, most cut flowers
Low	0.1-1.0	Blackberry, blueberry, casaba melon, cranberry, cucumber, eggplant, okra, olive, pepper (sweet and chili), persimmon, pineapple, pumpkin, raspberry, tamarillo, watermelon
Moderate	1.0-10.0	Banana, fig, guava, honeydew melon, lychee, mango, plantain, tomato
High	10.0-100.0	Apple, apricot, avocado, cantaloupe, feijoa, kiwifruit (ripe), nectarine, papaya, peach, pear, plum
Very high	More than 100.0	Cherimoya, mammee apple, passion fruit, sapote

Table 1.6 Ethylene production and sensitivity of several commodities.

Commodity	Ethylene production	Ethylene sensitivity
Climacteric Fruit		
Apple, Kiwifruit, Pear, Cherimoya	high	high (0.03 - 0.1 ppm)
Avocado, Cantaloupe melon, Passion fruit	high	medium (> 0.4 ppm)
Apricot, Banana, Mango	medium	high (0.03 - 0.1 ppm)
Nectarine, Papaya, Peach, Plum, Tomato	medium	medium (> 0.4 ppm)
Vegetables and non-climacteric fruit		
Broccoli, Brussels sprouts, Cabbage, Carrot,	low	high (0.01 - 0.02 ppm)
Cauliflower, Cucumber, Lettuce, Persimmon	low	high (0.01 - 0.02 ppm)
Potato, Spinach, Strawberry	low	high (0.01 - 0.02 ppm)
Asparagus, Bean, Celery, Citrus, Eggplant	low	medium (0.04 - 0.2 ppm)
Artichoke, Berries, Cherry, Grape, Pineapple	low	low (> 0.2 ppm)
Pepper	low	low (> 0.2 ppm)

**These fruits should be ripe
when picked and refig'ed:**

Apples >7 days	Figs
Apricots	Grapes
Asian pears	Raspberries
Blackberries	Strawberries
Cherries	
Cut fruit	

**These fruits should be ripened on
the counter and then refig'ed:**

Avocados	Plumcots
Kiwis	
Nectarines <small>pick near ripe</small>	
Peaches <small>pick near ripe</small>	
Pears	
Plums	

These fruits should be stored ONLY at room temperature

Apples < 7

Bananas

Grapefruit

Lemons

Mandarins

Mangoes

Cantaloupes

Persimmons

Pineapples

Plantains

Pomegranates

Watermelons

These veggies should be stored in the refrig after harvesting:

■ **Artichokes**

■ **Asparagus**

■ **Green beans**

■ **Lima beans**

■ **Beets**

■ **Belgian endive**

■ **Brussels sprouts**

■ **Cabbage**

■ **Cauliflower**

■ **Celery**

■ **Cut veggies**

■ **Green onions**

■ **Herbs (not basil)**

■ **Leafy veggies**

■ **Leeks**

■ **Lettuce**

■ **Peas**

■ **Radishes**

■ **Spinach**

■ **Sprouts**

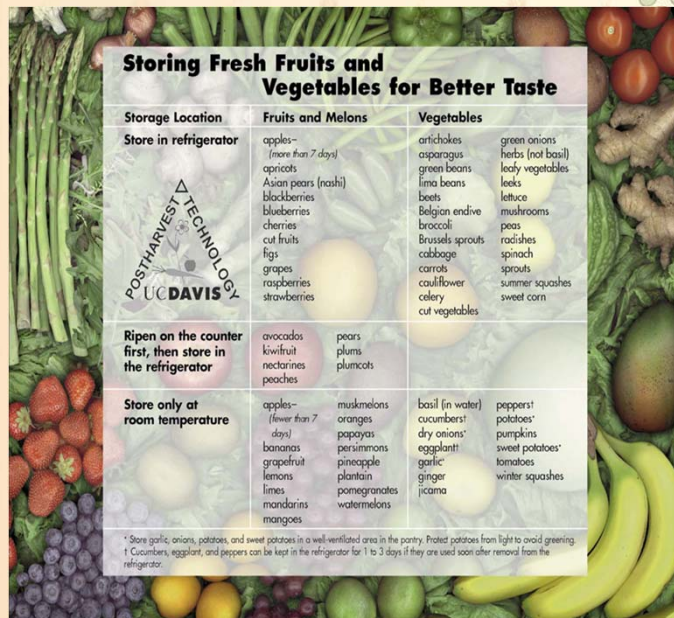
■ **Summer squash**

■ **Sweet corn**

These veggies should be stored **ONLY** at room temperature:

- Basil (in water)
- Mint (in water)
- Cucumbers <3 days
- Onions *ventilated
- Eggplant <3 days
- Garlic *ventilated
- Ginger
- Jicama
- Peppers <3 days
- Potatoes *ventilated
- Pumpkins
- Sweet potatoes *ventilated
- Tomatoes
- Winter squash

<http://ucce.ucdavis.edu/files/datastore/234-1920.pdf>



Storing Fresh Fruits and Vegetables for Better Taste

Storage Location	Fruits and Melons	Vegetables
Store in refrigerator	apples— (more than 7 days) apricots Asian pears (nashi) blackberries blueberries cherries cut fruits figs grapes raspberries strawberries	artichokes asparagus green beans lima beans beets Belgian endive broccoli Brussels sprouts cabbage carrots cauliflower celery cut vegetables green onions herbs (not basil) leafy vegetables leeks lettuce mushrooms peas radishes spinach sprouts summer squashes sweet corn
Ripen on the counter first, then store in the refrigerator	avocados kiwifruit nectarines peaches	pears plums plumcots
Store only at room temperature	apples— (fewer than 7 days) bananas grapefruit lemons limes mandarins mangoes	muskmelons oranges papayas persimmons pineapple plantain pomegranates watermelons basil (in water) cucumbers ¹ dry onions ¹ eggplant ¹ garlic ginger jicama peppers ¹ potatoes ¹ pumpkins sweet potatoes ¹ tomatoes winter squashes

* Store garlic, onions, potatoes, and sweet potatoes in a well-ventilated area in the pantry. Protect potatoes from light to avoid greening.
¹ Cucumbers, eggplant, and peppers can be kept in the refrigerator for 1 to 3 days if they are used soon after removal from the refrigerator.

Asparagus



Basil, Mint



What about Storing Vegetables?

<http://ucanr.org/sites/gardenweb/files/29040.pdf>

VEGETABLE GARDENING AT A GLANCE: HOW TO PLANT AND STORE

Vegetable	Recommended planting dates ^a				General planting requirements			Storage conditions			
	North and North Coast	South Coast	Interior Valleys	Desert Valleys	Crop type ^b	Amount to plant (4 persons)	Distance in inches ^c between plants in rows (cm)	Distance in inches ^c between rows (no beds) (m)	Best temp °F (°C)	Time length to (weeks) preserved ^d	How to preserve ^d
artichoke ^e	Aug-Dec	May-Jul	Jul	Sep	C	3-4 plants	48 (122)	60 (1.5)	32 (0)	1-2	freeze whole, can, dry, or freeze hearts
asparagus ^e	Jan-Mar	Jan-Feb	Jan-Feb	Feb-Apr	C	30-40 plants	12 (31)	60 (1.5)	32 (0)	3-4	can, dry, or freeze
beans, lima ^f	May-Jun	May-Jun	May-Jun	—	W	15-25-ft row	6 (15) bush; (4.5-7.5-m row)	30 (0.8) 24 (61) pole	40 (4)	1-3	can, dry, or freeze
beans, snap ^g	Jul; May-Jun	Mar-Aug	Apr-May; Jul-Aug	Jan-Mar; Aug	W	15-25-ft row (4.5-7.5-m row)	3 (7.5) bush; 24 (61) pole	30 ^h (0.8)	45-55 (7-13)	1-2	can, dry, or freeze
beets ^g	Feb-Aug	Jan-Sep	Feb-Apr; Aug	Sep-Jan	C	10-15-ft row (3-4.5-m row)	2 (5)	18 ^h (0.5)	32 (0)	3-10	can, dry, or freeze
broccoli ^{e, f, g}	Feb-Apr; Aug-Sep	Jun-Jul; Jan-Feb	Dec-Feb; Jul	Sep	C	6-10-ft row (2-3-m row)	12-18 (30-45)	36 (0.9)	32 (0)	1-2	dry or freeze
brussels sprouts ^e	Feb-May	Jun-Jul	—	—	C	15-20-ft row (4.5-6-m row)	24 (61)	36 (0.9)	32 (0)	3-4	dry or freeze
cabbage ^{e, f}	Jan-Apr; Jul-Sep	Aug-Feb	Jul; Feb	Sep-Nov	C	10-15 plants	24 (61)	36 (0.9)	32 (0)	12-16	dry or freeze
cabbage, Chinese ^f	Jul-Sep	Aug-Oct	Aug	Aug-Nov	C	10-15-ft row (3-4.5-m row)	6 (15)	30 ^h (0.8)	32 (0)	2-3	dry or freeze

Master Food Preservers, El Dorado County

- Questions? Call the Master Food Preservers
- at (530) 621-5506 (Voice Mail)
- MFP e-mail: edmfp@ucdavis.edu
- http://cecentralsierra.ucanr.org/Master_Food_Preservers/

Thank you! Any Questions?

El Dorado County Master Gardeners are here to answer your gardening questions!

- **Office hours: 9-Noon, Tuesday—Friday**
- **Phone: 530-621-5512**
- **Email: mgeldorado@ucdavis.edu**
- **On-line: <http://ucce.ucdavis.edu/survey/survey.cfm?surveynumber=7090>**
- **Walk-ins welcome: 311 Fair Lane, Placerville CA 95667**
- **http://ucanr.org/sites/EDC_Master_Gardeners/**