

## **September Gardening Workshop: Harvest**

All of your hard work is now paying off with fresh vegetables! Well done Gardeners!

Everything looks great in your garden but imagine how wonderful your dinner table will be when you prepare these goodies for meals.

Gardeners need to be careful when pulling or digging up vegetables. When harvesting vegetables, be careful not to break, nick or bruise them. The less you handle your vegetables, the longer they will last in storage. Only harvest vegetables of high quality. Rotting produce does not keep for very long and can spread disease to other stored vegetables.

The first step in harvesting is to ensure that we have a clean harvest. Food safety begins at the garden. In our last session, we talked about pathogens and the harm that they can do to your plants. Pathogens can also affect the people who eat your vegetables and the people that you share your vegetables with.

These pathogens come from several places:

- Wild and domestic animals (birds, deer, cows, or pets, for example);
- Using non-potable or dirty water on produce, hands, or equipment;
- Soil amendments like manure or manure-based compost;
- Dirty harvest tools or containers, such as knives or harvest buckets;
- From the hands of those who are picking or otherwise touching the produce.

And once germs are on the produce, they can be very difficult - if not impossible - to remove.

Prevention is the key! Here are five tips for a healthy harvest.

### 1) Clean hands

Anyone who is touching produce should always wash their hands first, using clean, potable water and soap. You don't need fancy soap - any soap will do. If you don't have easy access to handwashing in your garden, consider bringing your own! Note that hand sanitizers are not an adequate substitute for handwashing in the garden, because dirt on your hands will absorb the sanitizer and make it useless against germs. Remember to rewash your hands anytime they may be contaminated (i.e. using the restroom, picking up something with feces on it, etc.). Wash your hands before putting on your gloves and change your gloves if the first pair get contaminated. If you are feeling sick, hold off harvesting, or ask someone to do it for you.

### 2) Watch for signs of animals

Be on the lookout for signs of animal activity in your garden before and during harvest. Some signs of animal activity may include bite marks or missing produce, bird droppings, dog or other animal feces, or trampled plants. Never pick anything that has visible

contamination such as bird droppings - remember, once it's there, it can be impossible to wash off. The same also goes for pets - keeping pets out of the garden is important when you are growing food for other people to eat. Pets can carry germs that make people very sick.

For example, dogs can carry *Salmonella* in their guts and shed it in their feces without showing signs of illness. Cats - particularly young outdoor cats - can carry *Toxoplasma gondii* (a parasite) and shed the parasite eggs (oocysts) in their feces. These oocysts can survive in soil for well over a year. *Toxoplasma gondii* can be particularly devastating to pregnant or immunocompromised people, among others.

### 3) Use Clean Equipment

It's a good idea to clean and, ideally, sanitize your harvest equipment before use. You don't need to do this every day, but be sure to do so at the beginning of the season, and repeat as often as necessary to keep things clean.

Cleaning means to scrub with a brush or clean cloth using soapy water - using a regular dish soap is just fine. Sanitizing means to spray with a sanitizer, such as a simple bleach solution made from 2 teaspoons of bleach per gallon of water.

In order for a sanitizer to be effective, the surface must be clean, so be sure you scrub before you sanitize

### 4) Use Clean Water

If you are washing produce at the garden, be sure to use clean, potable (drinkable) water. Really dirty produce, such as carrots or potatoes, can be washed outside before being brought into the kitchen and washed again. If it's not too dirty, you can wash it in the kitchen instead.

No matter where you wash, washing under running water is ideal, but dunking in buckets or sinks full of clean water can also be effective. If you are using buckets of water to dunk produce, it's a good idea to change the water when it gets too dirty.

Lots of produce, like peppers, tomatoes, or eggplants, will be clean enough that they won't need to be washed until right before they're eaten.

### 5) Off the Ground and into the Fridge!

When you harvest, try not to set fresh produce back on the ground. You never know what may have been on that ground before you - mice, birds, or the neighbor's cat.

Also, avoid picking up produce that you accidentally drop. Bruises and cuts can be places for pathogens to reside and multiply.

Place produce into clean containers and then move your fresh produce to a cool

location as soon as possible. Even keeping produce in the shade until you can get it into a cool building or refrigerator will help keep it fresh longer.

If possible, try to harvest in the morning, before produce has a chance to warm in the sun. Not only will your fresh produce last longer if it's cooled and stored properly, but most pathogens that can make us sick prefer warm conditions, so cooling can help prevent the multiplication and spread of germs among freshly picked produce.

## Storage

Different vegetables need different storage conditions. Temperature and humidity are the main storage factors to consider. There are three combinations for long-term storage:

1. cool and dry (50-60°F and 60% relative humidity),
2. cold and dry (32-40°F and 65% relative humidity and
3. cold and moist (32-40°F and 95% relative humidity).

For cold conditions, 32°F is the ideal temperature. This temperature is not easy to attain in most homes. Expect shortened shelf-lives for your vegetables as storage conditions deviate from the ideal temperature. This shortening of their life span can be up to 25 percent for every 10°F increase in temperature.

Basements are generally cool and dry. If storing vegetables in basements, provide your vegetables with some ventilation. Harvested vegetables are not dead, but they still "breathe" and require oxygen to maintain their high quality. Protect them from rodents.

Home refrigerators are generally cold and dry (40°F and 50-60% relative humidity). This is fine for long-term storage of garlic and onions, but not much else. Putting vegetables in perforated plastic bags in the refrigerator will provide cold and moist conditions, but only for a moderate amount of time. Unperforated plastic bags often create too much humidity, which leads to condensation and growth of mold or bacteria.

Root cellars provide cold and moist conditions. As with basements, provide ventilation and protection from rodents when storing vegetables in cellars. You can use materials such as straw, hay or wood shavings for insulation. If using such insulation, make sure that it is clean and not contaminated with pesticides.

Some vegetables, such as cucumbers, peppers and tomatoes, require cool (55°F) and moist storage. These conditions are difficult to maintain in a typical home. Expect to keep vegetables requiring cool and moist storage conditions for only a short period.

## Harvest and storage information for common vegetables:

### Asparagus

- Harvest the third year after planting when spears are six to nine inches long.
- Store in cold and moist conditions. Keep upright during storage.
- The expected shelf-life is two weeks.

### Snap Beans

- Harvest two to three weeks after bloom when the seeds are still immature.
- Store in cold and moist conditions.
- Beans will develop pitting if stored below 40°F.
- The expected shelf-life is one week.

### Cabbage

- Harvest when the heads are compact and firm.
- Store in cold and moist conditions.
- The expected shelf-life is five months.

### Carrots

- Harvest when the tops are one inch in diameter.
- Store in cold and moist conditions without their tops.
- The expected shelf-life is eight months.

### Sweet Corn

- Harvest when the silks are dry and brown. The kernels should be milky when cut with a thumbnail.
- Store in cold and moist conditions.
- The expected shelf-life is five days.

### Cucumbers

- Harvest for slicing when the cucumbers are six inches long.
- Store in a cool spot (55°F) in the kitchen in perforated plastic bags. Storage in the refrigerator is also possible for a few days.
- Cucumbers develop pitting and water-soaked areas if chilled below 40°F.
- Do not store with apples or tomatoes.
- The expected shelf-life is one week.

### Lettuce

- Harvest while the leaves are tender.
- Store in cold and moist conditions.
- The expected shelf-life is one week.

### Onions

- Harvest when the necks are tight and the scales are dry.

- Store in cold and dry conditions.
- Cure at room temperature for two to four weeks before storage.
- Do not freeze.
- The expected shelf-life is four months.

#### Peas

- Harvest when the pods are still tender.
- Store in cold and moist conditions.
- The expected shelf-life is one week.

#### Peppers

- Harvest when the fruits reach desired size or color.
- Store in a cool spot (55°F) in the kitchen in perforated plastic bags. Storage in the refrigerator is also possible for a few days.
- Peppers develop pitting below 45°F.
- The expected shelf-life is two weeks.

#### Potatoes

- Harvest when the vine dies back.
- Store in cold and moist conditions. Keep away from light.
- Cure at 50-60°F for 14 days before storage.
- Potatoes will sweeten below 38°F.
- The expected shelf-life is six months.

#### Summer Squash

- Harvest when the fruit is four to six inches long.
- Store in a cool spot (55°F) in the kitchen in perforated plastic bags.
- Do not store in the refrigerator for more than four days.
- The expected shelf-life is one week.

#### Winter Squash

- Harvest when the shells are hard and before a frost.
- Store in cool and dry conditions.
- Curing is unnecessary. Do not cure the Table Queen variety.
- The expected shelf-life is two to six months, depending on variety.

#### Tomatoes

- Harvest when the color is uniformly pink or red.
- Store in a cool spot (55°F) in the kitchen in perforated plastic bags.
- Tomatoes lose color, firmness and flavor if stored below 40°F.
- Do not refrigerate.
- The expected shelf-life is five days.