



# The Homegrown Handbook

**Phipps Conservatory and Botanical Gardens**  
One Schenley Park | Pittsburgh, PA 15213  
412/441-4442 | [phipps.conservatory.org/homegrown](http://phipps.conservatory.org/homegrown)





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This handbook belongs to

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# Introduction

Welcome to Homegrown! We're so glad you've decided to be a part of the program and hope your new raised bed garden will be an enjoyable source of food, learning and community.

## About Homegrown

Homegrown is a program of Phipps Conservatory and Botanical Gardens dedicated to increasing access to fresh produce, promoting better food choices and improving the overall health of families and children. We fulfill our goals by installing raised bed vegetable gardens at households in underserved neighborhoods and by providing mentorship and resources.

### Contact Info

If you have questions or concerns or just want to update us on your garden's progress, always feel free to contact us.

412/441-4442  
[homegrown@phipps.conservatory.org](mailto:homegrown@phipps.conservatory.org)  
[phipps.conservatory.org/homegrown](http://phipps.conservatory.org/homegrown)

### Partnerships

Homegrown is supported by the contributions of the following partnering organizations.



**Homewood-Brushton YMCA** – A wonderful community center that helps promote Homegrown and allows us to use its onsite garden and classrooms for classes.



**Pittsburgh Job Corps Center** (PJC) – An educational and career technical training program administered by the U.S. Department of Labor. PJC students build almost all of the raised beds for Homegrown in construction classes and help with some of the garden installations.

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## Gardener Responsibilities

Homegrown will set you up with everything you need to start gardening, free of charge. You can expect:

- Raised bed building supplies
- Bed installation
- Soil, seeds and plants
- Garden tools for the family (spades, gloves, watering can)
- Scheduled check-ins and garden visits for two years
- Workshops throughout the season on gardening and healthy cooking

By enrolling in Homegrown, you commit to planting, watering, weeding and harvesting the garden. This is a two-year program, and once the beds are built, the garden becomes your full responsibility. You also commit to:

- Taking care of your garden throughout the season
- Attending classes (held at 6 p.m. on the second Thursday of every month at the Homewood YMCA) when able
- Actively participating in the program and helping new neighborhood gardeners when able



# Raised Beds

## Why Raised Beds?

Using raised beds is a great way to garden and has many advantages, perhaps the biggest being their ability to correct soil. Good soil is essential for a successful garden, especially in the city where soil compaction and contamination are often issues. Raised beds allow you to bring in clean soil so you know exactly what you're growing in. The many benefits of raised beds include:

- Correcting compacted soil
- Added compost and nutrients
- Easier weed control
- Good drainage
- Easy management and accessibility
- Neat and tidy appearance
- Warmer soil, which allows for a longer growing season



## Lead in Urban Soil

Unfortunately, soil in urban environments is often contaminated with pollutants that make it unsafe for growing food. Lead and other heavy metals could have made their way into the soil from chipped lead paint, air pollution from vehicles or disposal of scrap materials like lead pipes, roof flashing and lead-acid batteries. Small levels of lead occur naturally in the soil, but elevated ones are poisonous to humans. In fact, lead can interfere with the nervous, renal (kidney) and hematopoietic (blood-forming) systems and is especially dangerous to small children.

Some vegetable plants will actually absorb lead from the soil and others will just have it on their surface from contact with the soil. Either way, you do not want to eat contaminated vegetables! Raised beds filled with clean soil are a great way to combat soil contamination. If you plan to start an in-ground garden, it is very important to test your soil first.

A soil test can tell you if you have dangerous levels of lead and give you an assessment of other nutrients. Soil tests are available through UMass Amherst's Soil and Plant Testing Lab. The Routine Soil Analysis costs \$15 and tests for lead and heavy metals as well as soil nutrients. For details on sampling and sending your soil to be tested, visit [soiltest.umass.edu](http://soiltest.umass.edu).

## Raised Bed Construction

Homegrown builds raised beds from untreated cedar, a naturally rot-resistant wood that will last for many years. Other woods will also work just fine, but do not use treated wood as it can seep chemicals into your soil. Raised beds can also be constructed from logs, bricks, stone or other materials. While old tires and cracked swimming pools make for creative planters, we don't recommend using these for growing food, as they can also leach chemicals into the soil.

We fill Homegrown raised beds with a 50/50 mixture of soil and compost, which makes a rich medium great for growing food. If you're interested in the specifics or want to expand your garden on your own, our blueprint appears on the next page.

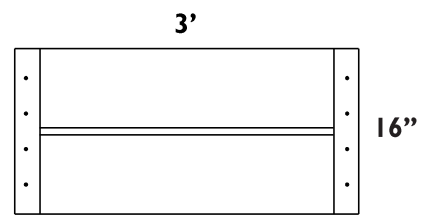
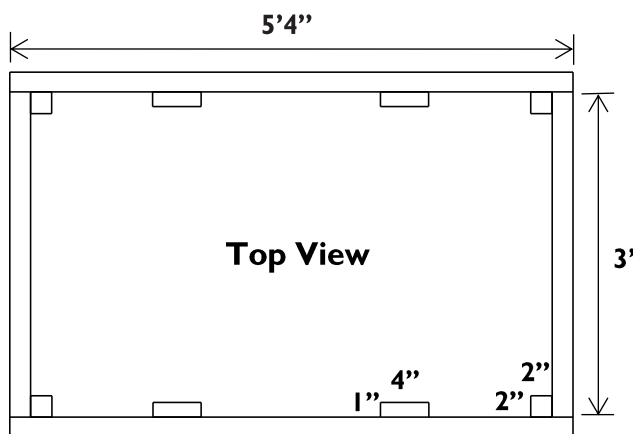
# Raised Bed Blueprint

## Tools

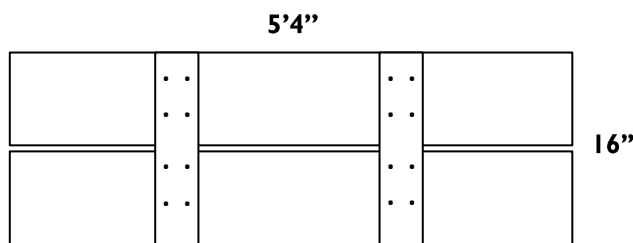
- Saw
- Drill
- Tape measure
- Spade/shovel
- Staple gun

## Materials

- Lumber
  - Three 12 ft. long 2"x8" boards
  - One 6 ft. long 2"x2" stake for corners
  - One 6 ft. long 1"x4" board for side straps
- 2" and 3" galvanized wood screws
- Landscaping fabric
- 20 square ft. of soil and compost



**Short Side**



**Long Side**

## Directions

1. Cut two of the 12 ft. boards into four, 5 ft. 4 inch sections. Cut the other 12 ft. board into four, 3 ft. sections (or have your hardware store cut it for you)
2. Cut both the 2"x2" stake and 1"x4" board into four 16" sections
3. Join the long side boards using the 1"x4" straps and 2" screws (see above)
4. Join the short side boards by attaching the 2"x2" stakes to the ends with 3" screws
5. Assemble the bed by joining the long sides to the short sides, using 3" screws
6. Staple landscaping fabric to the bottom side of the beds
7. Put in place, fill with soil and compost, and plant

# Square Foot Gardening

There are many ways to design and lay out a garden, but we have found that Square Foot Gardening (SFG) works very well for raised beds. The SFG method was developed in the late 1970s by Mel Bartholomew, who was looking for a way to produce more food in less space. It is a simple method that uses blocks instead of traditional rows when planting. The garden bed is divided up into a grid and a different type of plant can be put into each square-foot block. The number of seeds or plants in each square depends upon how big the plant gets and how much space it needs to develop properly.

## Making a Grid

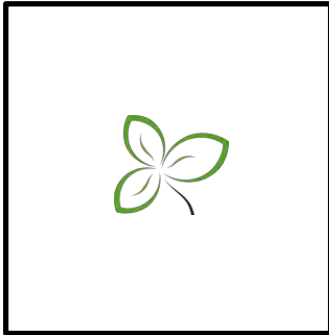
A grid is what makes a Square Foot Garden. Mark off each foot along the four sides of your raised bed using a tape measure; then, connect the marks to form a grid. How you connect them is a matter of preference: you could use nails and string, sticks, old blinds, or simply draw lines in the soil.



# Spacing Guidelines

You can use the seed or plant spacing found on seed packets to determine appropriate SFG spacing for different types of plants. Imagine or draw a smaller grid to evenly space the seeds or plants within a block. Here are four general guidelines:

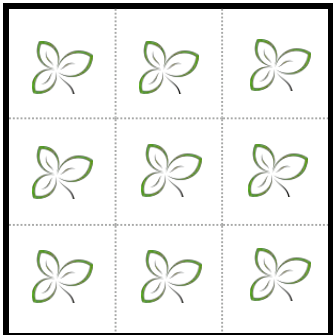
**Extra Large:** One per square for 12-inch spacing



**Large:** Four per square for 6-inch spacing



**Medium:** Nine per square for 4-inch spacing



**Small:** 16 per square for 3-inch spacing



For quick reference, use the following chart to determine plant spacing.

### Square Foot Planting Chart

<b>Plant</b>	<b>Number per square foot</b>	<b>Plant height</b>
Basil	2 (or plant alongside tomatoes)	Medium
Beans- Bush	9	Medium
Beans- Pole	8, with trellis	Tall
Beets	16	Short
Broccoli	1	Medium
Cabbage	1	Medium
Carrots	16	Short
Collards	1	Medium
Cucumbers	2	Short (tall if trellised)
Dill	4	Medium
Eggplant	1	Medium
Garlic	16	Medium
Kale	1	Medium
Lettuce	4	Short
Melons	1 per 2 square feet	Medium (tall if trellised)
Onions	16	Short
Parsley	2	Short
Peas	8, with trellis	Tall
Peppers	1	Medium
Radishes	16	Short
Spinach	9	Short
Summer squash, zucchini	1 per 3'x3' block	Medium
Swiss chard	2	Medium
Tomatoes	1 per 2'x2' block	Tall

# Planning Your Garden

Before starting to plant, it's valuable to make a plan for your garden. Planning helps you use your garden space effectively: buy or grow only what you need, and make sure you have space for everything.

## Steps for Planning Your Square Foot Garden

1. **Make a list of all the things you want to grow.**
2. **Determine how many plants of each type to plant per square foot, and the plants' height** (short, medium or tall). Use the Square Foot Planting Chart on page 12 to find this information.
3. **Mark the north side of your raised bed** on your Raised Bed Grid. (Use a compass or look at your street on a map to determine which direction is north.)
4. **Fill in the squares on your grid, according to plant height.** Write the names of plants that are marked as "short" in the squares on the south side of your garden, plants that are of medium height in the center squares, and tall plants in the squares on the north side. (This planning keeps the taller plants from shading shorter ones.)
5. **If you're going to use a trellis, mark where it will go.** A trellis should go on the north or west side of the bed. Put climbing plants, such as pole beans, cucumbers or peas at the base of the trellis.
6. **Write how many individual plants can be planted in each square on the garden plan** (example: 4 plants for lettuce, 16 for beets; a sample garden plan appears on the next page).
7. **Determine planting dates.** Do this by writing out the dates for when you can plant each crop (using the date ranges from the Planting Calendar on page 18). You may want to write the dates out sequentially after you're finished, so you have a schedule.

# Sample Garden Plan

----- Trellis -----

	1'	2'	3'	4'	5'
1'	<b>Peas (8)</b> <i>Mid-March</i>	<b>Peas (8)</b>	<b>Pole Beans (8)</b> <i>Mid-May</i>	<b>Pole Beans (8)</b>	<b>Pole Beans (8)</b>
2'	<b>Tomato (1)</b> <i>Mid-May</i>		<b>Tomato (1)</b>		<b>Dill (4)</b> <i>Mid-May</i>
3'					<b>Basil (2)</b> <i>Mid-May</i>

<b>Kale (1)</b> <i>Mid-March</i>	<b>Kale (1)</b>	<b>Kale (1)</b>	<b>Collards (1)</b> <i>Mid-March</i>	<b>Collards (1)</b>
<b>Pepper (1)</b> <i>Mid-May</i>	<b>Pepper (1)</b>	<b>Pepper (1)</b>	<b>Spinach (9)</b> <i>Mid-March</i>	<b>Spinach (9)</b>
<b>Cucumber (2)</b> <i>Early May</i>	<b>Cucumber (2)</b>	<b>Radishes (16)</b> <i>Late March</i>	<b>Beets (16)</b> <i>Late March</i>	<b>Parsley (2)</b> <i>Early March</i>

\* Also include border plantings of flowers, and/or nearby pots of herbs.  
See page 27 for a list of plants that attract beneficial insects.



# Planting

When planting your garden, you can either start with seeds or seedlings (small plants, AKA transplants). Some vegetables must be started indoors and transplanted to get a crop before the last frost. Others don't survive transplanting well and should be directly sown. You can reference the Planting Calendar on page 18 to determine when to put seeds or seedlings in the ground.



## Typically Transplanted Crops

- Broccoli
- Cabbage
- Eggplant
- Peppers
- Tomatoes

## Typically Directly Sown Crops

- Beans
- Beets
- Carrots
- Cucumbers
- Lettuce
- Spinach
- Squash

## Can Be Transplanted or Directly Sown

- Collard greens
- Kale
- Swiss chard

## Handling and Planting Seedlings/Transplants

1. **Dig** an appropriately sized hole (slightly larger than the pot), fill with water and let the water soak in.
2. **Gently remove** the seedling from its container. Squeeze the sides of the container to loosen it; then, gently tip the seedling out. Never pull on the stem as this can harm the tender plant. If the roots are very dense and tangled (root-bound), tickle or squeeze the roots so some of them loosen.
3. **Set** the seedling in the hole so that it is level with the soil surface.
4. **Fill in** around the root ball with soil, then lightly tamp (press on) the soil. Make a small well around the base of the plant so that water will pool at the base and direct to the roots.
5. **Water** gently using a watering can with a sprayer head. While the seedlings are getting established, keep the soil moist.



## Direct Sowing Seeds

1. Use your finger to **make holes** in the soil at the appropriate square foot spacing. Refer to the seed packet for appropriate depth. A rule of thumb is to plant seeds at a depth two times their size. Be careful not to make the holes too deep, or seeds won't be able to grow.
2. **Sow the seeds.** Place one to two seeds in each hole.
3. **Label** what you planted where.
4. **Cover** the holes with soil.
5. Gently **firm the ground** over your seeds.
6. **Water** gently. Water seeds every day to keep the soil moist, until they sprout.



## When to Plant

Planting times for different vegetables are determined by local frost dates. Pittsburgh is USDA Plant Hardiness Zone 6, so the average last frost date in spring is around May 15, and the first frost date in fall is around October 15.

The calendar on the next page shows when to plant various crops and indicates whether seeds or seedlings should be planted. Many listed can also be planted or re-planted later in the season.

## Planting Calendar

Vegetable	Seeds or transplants?	Spring planting dates	Fall planting dates
<b>Frost Tolerant Crops</b> (not injured by light frost)			
Broccoli	Transplant	Late March – Late April	Early July – Mid-August
Cabbage	Either	Mid-March – Late April	Mid-June – Mid-August
Collards	Either	Mid-March – Late April	Early July – Early September
Garlic	Seeds (Cloves)	Mid-March – Mid-April	Early September – Early October
Kale	Either	Mid-March – Late April	Early July – Early September
Onions	Either	Mid-March – Late April	—
Peas	Seeds	Mid-March – Mid-April	Early August – Early September
Radishes	Seeds	Late March – Mid-May	Mid-July – September
Spinach	Seeds	Late March – Late April	Mid-July – September
Swiss chard	Either	Early April – Mid-June	Early July – Mid-August
<b>Cool Temperature Tolerant Crops</b> (can be damaged by frost, but intolerant of temperatures above 70 degrees Fahrenheit)			
Beets	Seeds	Late March – Mid-June	Early July – Mid-August
Carrots	Seeds	Late March – Mid-May	Early July – Mid-August
Lettuce	Seeds	Late March – Mid-August	—
<b>Warm Season Crops</b> (to be planted after danger of frost has past)			
Basil	Either	Mid-May – Mid-June	—
Beans	Seeds	Mid-May – Mid-July	—
Cucumber	Seeds	Early May – Mid-July	—
Dill	Either	Mid-May – Late July	—
Eggplant	Transplant	Mid-May – Late June	—
Melons	Seeds	Early May – Mid-June	—
Parsley	Transplant	Early March – Late July	—
Peppers	Transplant	Mid-May – Late June	—
Summer squash	Seeds	Early May – Early July	—
Tomatoes	Transplant	Early May – Mid-June	—

# Tomato Maintenance

Tomatoes, a summer garden favorite, need more care and attention than most other vegetables to stay under control, especially in a small garden. They require staking and pruning throughout the growing season to prevent disease and produce the largest harvest.

## Staking Tomatoes

Square foot gardening utilizes a small space to produce the largest and healthiest produce possible. Since tomatoes tend to grow very large, staking is extremely important to prevent overcrowding and to keep leaves off the ground, preventing diseases and shading of other crops. Staking also allows for earlier harvests of larger tomatoes. There are many ways to stake your tomatoes; this handout will outline two of the most common ways, but you can also get creative and find your own solution.



- **Wooden or metal post**

Make sure your post is at least 5 feet tall. Use soft ties (old t-shirts or rags ripped into strips are great free options) to secure the main stem to the post, making sure to remove all but 1 or 2 suckers. Tie the stem to the post every 6-12 inches, and tie loosely- tight enough to hold up the plant, but leaving some wiggle room for it to grow (see photo to the right). As your plants grow, add more ties as needed.

If your post needs extra support, take another post and secure it at an angle next to the plant. Tie the posts together at the top to make a tee pee structure, and add more posts as needed to hold up your tomato plant.



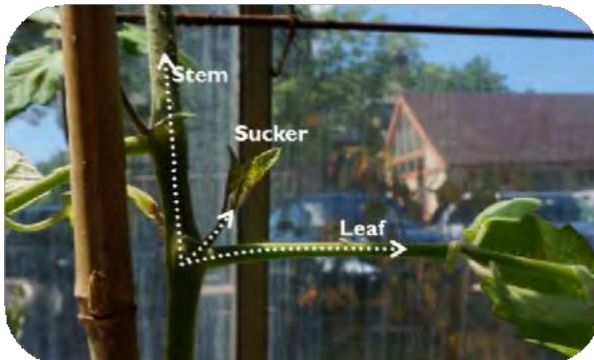
- **Wire cage**

Pre-made wire cages can be purchased at most hardware stores or garden centers and can be placed directly over a small plant, pushing the wires into the soil. Be sure to place the cage as soon as you plant while your tomato is still small; doing this when your tomato is too large can break stems off your plant.

## Tomato Suckers

Tomatoes produce extra branches in the junction of the main stem and a leaf branch, called suckers. These suckers can cause problems like overcrowding, which may lead to disease, poor stem strength and poor fruit quality. Removing them is a simple process of evaluating, identifying, pruning and keeping a watchful eye throughout the season to keep them in check.

- **Evaluate.** Towards the lower part of the plant, choose 1 or 2 of the healthiest looking suckers to keep. The rest can be removed and sent to the compost bin!
- **Identify.** Suckers grow between the main stem and a branch, at a 45° angle to the main stem. They can be as thick as or thicker than the main stem or branch, and they have an upright appearance. They can become very large and can bear fruit, so don't be fooled!
- **Prune.** Remove suckers by pinching or cutting as close to the stem as possible.
- **Watch.** Suckers will continue to grow as your plants get bigger, so take a glance once a week or so to keep them in check. It's best to remove suckers when they're still small, so the earlier you catch them, the better.



# Garden Care

## Watering

Water is essential for good vegetable production. Rain is a good source, but often you will need to supplement during dry periods, and it's important to water properly.



### Tips for Watering

- Water at the base of your plants to target the roots.
- Water deeply to encourage deep root growth.
- A watering can with a sprinkler head works best for even saturation without disturbing the soil too much.

### When to Water

It's best to water in the early morning or late afternoon since lower temperatures reduce evaporation, allowing time for the plants to dry off before dark and reducing the risk of fungus or disease. Of course, these are *ideal* times; if they don't work with your schedule, water at any time is better than none!

### How Often to Water

How often to water your garden will depend upon the weather, but generally you should check the garden one to three times per week.

A garden needs about one inch of water per week, so if it doesn't rain, you will need to water. A good rule of thumb is to feel the soil about one inch below the surface (just stick your finger in the soil up to your first knuckle). If it's moist, you're okay; if it's dry, it's time to water. During extra hot times, you may need to water more. If it has rained a lot, you may not need to water at all.

Newly planted seeds and young plants, however, need more attention than an established garden. After seeds are planted, the soil should stay moist until the seeds sprout, so they should be checked and watered every day if needed. For small seedlings and new transplants, water whenever the top inch of soil is slightly dry (check at least every other day).

## Managing Weeds

Weeds are the enemy of gardeners everywhere. They compete with your plants for water, nutrients, sunlight and space, and can quickly overrun a garden if they're not controlled. The good news is that they're much easier to control in raised beds, where the soil is loose, free from grass seed and easy to reach. Some tips for managing weeds are as follows.

- Check your garden for weeds weekly. If you pull a few every week, they won't get out of control.
- Dig or pull weeds out; just be careful not to disturb your nearby vegetables.
- Pull the whole weed, including the root, so it doesn't come back.
- It's easiest to weed after a rain, when the soil is soft and moist.
- Mulching also helps keep weeds down.

## Mulching

After planting, it's a good idea to mulch the surface of your garden bed. Mulch provides many benefits: it prevents water evaporation, inhibits and controls weeds, encourages earthworm activity and keeps soil from splashing on plants.

Wood chips and shredded bark are perhaps the most common types of mulch, and they're great for mulching paths and landscaping, but not the best option for vegetable beds since they take a long time to break down. Some great options for your raised bed are listed below.

- Use dried leaves or leaf mulch (chopped up autumn leaves), applying a thick layer, about two inches deep.
- Try fresh grass clippings (as long as they're not treated with pesticides), applying them in thin layers (about ¼ inch deep). After a fresh layer dries out, you can apply another layer; several layers will discourage weeds.
- Mulch with seed-free straw.

These materials will break down throughout the growing season and at the end of it can be mixed into the soil to provide added nutrients.





## Preparing for Winter

When summer ends and the weather starts to cool, it's important to properly prepare the garden for winter. Cleaning up the garden, amending the soil and mulching in the fall help make sure your garden is in the best shape for planting when spring comes around.

- Garden cleanup is the first thing to do. Warm season crops like tomatoes, squash and beans usually start dying back on their own in late summer/early fall and won't survive after the first frost hits (first frost date in PA is around October 15). These crops should be removed from the garden. Dig or pull them up, and if they are disease-free, compost them. If they are diseased, you'll want to dispose of them separately so as not to harbor any diseases in your compost pile. Also, remove all weeds and dead plant material.

- Cool weather crops can be left in the garden. Kale, collards and beets are a few of the crops that can survive colder temperatures, especially if they're protected. See page 18 for a list of frost-tolerant crops.



- Mulching to amend your soil is also a good thing to do in the fall. You can find great mulches right in your yard- fallen leaves, grass clippings and compost all make great mulches and will break down over the winter, enriching your soil. See page 22 for more information about mulching.



- Protecting cool weather crops in fall is also an option for an even longer harvest. A thick layer of mulch will help cool weather crops last longer into the fall. More advanced methods to extend harvests into winter include setting up low tunnels or mini hoop houses over garden beds. Protecting plants with fabric or plastic will keep the soil warmer and protect from wind and frost.

# Dealing with Pests and Diseases

Every gardener has to deal with pests and diseases that threaten our plants and crop yields. There's no magic potion to keep the garden free of trouble, but we can take steps to prevent and treat problems when they arise.

## Go Organic

When you see pests destroying plants in your garden, don't be tempted to reach for a commercial pesticide to kill them, as many contain chemicals that are harmful to humans, and anything you put on your edibles could end up on your plate. In fact, these chemical pesticides can build up in our bodies and, over time, may cause damage to our organs and nervous, endocrine and reproductive systems.

Chemical pesticides can not only be poisonous to humans but damaging to the environment. They linger in the air, ground and waterways long after their initial use, causing harm to wildlife and ecosystems. Typically, they are also indiscriminate and kill all insects, even those that benefit our gardens.

## Good Gardening Practices

To keep plants healthy and avoid pest and disease outbreaks:

- Water the soil around the roots of plants, not the leaves.
- Properly space, stake and prune plants to ensure good airflow.
- Add compost every year to keep the soil fertile.
- Add flowers and herbs in and around the garden to encourage beneficial insects.

## Beneficial Insects

The most important way to keep pests at bay, keep crops healthy and prevent infestations is to encourage diversity in your garden. It's important to understand that not every bug is bad; in fact, more than 90 percent of the insects you see in your garden are actually beneficial! The garden depends upon pollinators, worms and other soil-building insects, as well as a variety of insect predators that feed on pests and protect our crops. The best method for attracting these beneficial insects to your garden is to plant diverse crops and incorporate various flowers and herbs into your landscape.

The following charts include information on some common pests and their beneficial predators, as well as details on what to plant to attract beneficial insects to your yard.



Beneficial Insect Chart					
<b>X =</b> The beneficial insect is a predator to the corresponding pest		Harmful Pests			
		Aphids	Cabbage worm	Leaf miner	Tomato hornworm
Beneficial Insects	Bees and pollinators				
	Braconid wasp	X			X
	Damsel bugs	X	X		
	Green lacewings	X	X	X	X
	Lady beetles	X		X	X
	Spiders		X		
	Paper wasps	X	X	X	
	Praying mantis	X			

<b>Top Plants for Attracting Beneficial Insects</b>	
<b>Plant</b>	<b>Beneficial they attract</b>
Borage	Bees and pollinators
Daisy family (Black-eyed Susan, chamomile, coreopsis, cornflower, cosmos, marigolds, sunflower, tansy and yarrows,)	Lady beetles Green lacewings Paper wasps Pollinators
Mint family (All mints, oregano, thyme and rosemary)	Spiders Desired flies Predatory wasps
Nasturtiums	Spiders Ground beetles Damsel bugs Pollinators
Umbel (parsley) family (dill, fennel, caraway, parsley, lovage and cilantro)	Parasitic wasps
Others: Lavender, anise hyssop, fennel, alyssum	Bees Butterflies Other pollinators

## Common Pests and Diseases

The first step to treating a problem in the garden is proper identification. Below is information on some common pests and diseases that you may encounter in your garden and how to prevent or treat them organically. If you have a problem you can't identify, feel free to call Homegrown at 412/441-4442, or call the Dr. Phipps Greenline at 412/665-2364 for advice.

### Aphids

Aphids are tiny, soft-bodied insects that come in a variety of colors and can have a waxy or wooly coating. They attack by piercing many kinds of plants and sucking out their juices. Look for them on the undersides of leaves.



#### Signs of infestation:

- Misshapen, curling or yellow leaves
- Leaves or stems covered with a sticky substance called "honeydew" (aphids leave this behind when they feed)
- Sooty mold, a fungus that grows on the honeydew and makes stems and leaves appear black

#### Prevention and treatment:

- Predators of aphids include lady beetles and parasitic wasps.
- Use a strong spray of cold water on leaves to dislodge aphids.
- Wipe or spray the leaves with a solution of water and dishwashing detergent (1 quart water:1 tsp detergent) or rubbing alcohol (straight or diluted), every two to three days for two weeks.

## Cabbage Worms

Cabbage worms are the insect pest that has caused Homegrown gardeners the most trouble. Once they appear, without treatment they can quickly cause major damage to your plants. To combat cabbage worms, it's important to be able to identify them and know strategies to take quick action.

### Identification

There are two common types of cabbage worms: Imported cabbage worms, which are velvety green, 1- 1 ¼-inch-long caterpillars with faint yellow stripes, and Cross-striped cabbage worms, which are bluish gray with numerous black and yellow stripes. They become small white butterflies and lay their eggs on brassicas, also known as cole crops, like collard greens, kale, cabbage and broccoli. These worms work quickly, so check your plants often and, as soon as you spot one, take action.



*Imported cabbage worms on a damaged collard leaf*



*Cross-striped cabbage worms and their damage*

You can also look for cabbage worm eggs before they hatch. Their eggs are clusters of tiny yellow or white dots, usually found on the underside of leaves.

### Signs of an infestation

- Ragged holes chewed in leaves
- Dark green droppings on the plant, called “frass”
- Worms on the undersides of leaves



*Cabbage worm eggs*

## Prevention

- Incorporate plants that attract cabbage worm predators, including yellow jackets, green lacewing, paper wasps, spiders and birds, into your garden. See the chart on page 27 for suggestions.
- Use a barrier to prevent the cabbage moths from laying eggs on your plants
  - You can use row cover (AKA garden fabric, available at garden centers and greenhouse supply stores), tulle (a fine mesh fabric, available at craft stores) or any other fine mesh or netted material.
  - Cover plants with the fabric- either drape it directly over the plant, or set up a cage or hoops around the plant to cover the same day as planting. Pin or weigh down the sides so there are no openings.
  - Remove the cover to water and harvest, but replace it immediately after.



Left to right: row cover protecting one container plant, tulle over a hoop frame, row cover directly on plants

## Treatment

- Handpick the worms off of your crops and destroy them (one way to do this is to drop them into a mixture of liquid soap and water). You can also remove or crush eggs if you see them.
- Wet plants' leaves, then sprinkle with cormeal. Worms that eat it will bloat and die.
- Use the organic, biological pesticide BT (*Bacillus thuringiensis*).
  - BT is a natural bacteria that kills worms and caterpillars. Once caterpillars ingest BT, they stop feeding on your plants within hours and die within a few days. It's environmentally friendly and has no harmful effects on humans, wildlife, earthworms, pollinators or most other beneficial insect
  - BT comes in powder and concentrated liquid forms. *Read the product information and directions thoroughly before use*, and follow directions to ensure proper application.
  - BT should be used as soon as you see any signs of damage, and/or preventatively when you see cabbage moths around your plants. It must be reapplied every 7-10 days or after rain as long as needed, per instructions.



## Tomato Hornworms

Tomato hornworms are large, green caterpillars with horn-like tails. The adult moths are sometimes called “hummingbird moths” and are very large and gray-brown in color. They feed nonstop on leaves and fruit and commonly affect night shades such as tomatoes, peppers, potatoes and eggplant.



Photo © George Bredehoft

### Signs of infestation:

- Missing or wilted leaves, usually starting at the top of a plant
- Dark green or black droppings on tops of leaves (look under the leaf for the hornworm)
- Large, open scars on the outside of fruits



Photo © Max Wahrhaftig

*Tomato hornworm covered in beneficial wasp cocoons*

### Prevention and treatment:

Predators include lady beetles, green lacewing, paper wasps and braconid wasps.

- Keep the garden as weed-free as possible to discourage egg-laying on weed hosts.
- Handpick worms and drown them in soapy water.
- If you see a hornworm with wasp pupae attached to it, don't kill it; put it in a place where it can feed without damaging crops and the pupae will eventually hatch to create natural predators.

## Bottom Rot

Bottom rot, also known as blossom-end rot, is a physiological plant disorder caused by calcium imbalance. Wide fluctuations in moisture, too much nitrogen in fertilizers or root damage from cultivation can cause calcium deficiency. Bottom rot most commonly affects tomatoes but can also impact squash, pepper and cucumber plants. It will usually occur while fruit is green or ripening.

### Signs of disorder:

- A small, sunken, water-soaked area on the bottom of the fruit
- The spot grows and sinks in while turning brown or black
- Fruit rots on the vine



### Prevention and treatment:

- Maintain consistent levels of moisture in the soil (use mulch to minimize evaporation).
- Avoid fertilizers too high in nitrogen and do not over-fertilize during early fruiting.
- Add materials with high levels of calcium, such as bone meal or egg shells, to the soil when planting.
- Remove damaged fruit and discard it.
- If bottom rot has already occurred, it can be treated with a commercial calcium chloride product.

## Early Tomato Blight

Early tomato blight is a fungal disease that affects all parts of the plant. It can occur in any type of weather but thrives in damp conditions and usually occurs in plants that are stressed, old or in poor health.

### Signs of disease:

- Dark spots on stems or leaves
- Concentric rings form around the dark spots
- Yellow leaves

### Prevention and treatment:

- Make sure seeds or seedlings are disease free.
- Provide enough space between plants for good air flow.
- Prune the bottom leaves to create a 1– 2 foot space between the soil and the first leaves. This prevents water from splashing onto the leaves and transferring disease spores.
- Practice good garden sanitation. Clean out debris throughout the season so diseases don't spread.
- If you see signs of blight, remove the plant from the garden to prevent spreading.
- If you have an outbreak, rotate crops the next year.



Photo © USDA Cooperative Extension

## Late Tomato Blight

Late tomato blight is another fungal disease that affects plants. It is more detrimental than early blight, as it can travel easily via spores and is highly contagious. It can quickly ruin an entire crop.

### Signs of disease:

- Sunken dark green or brown lesions on leaves or stems
- Leaves that are shriveled and dead
- Circular, greasy, brown lesions on tomato fruits
- White, fuzzy or cottony spores on stem lesions, under leaves or on sunken spots on the fruits

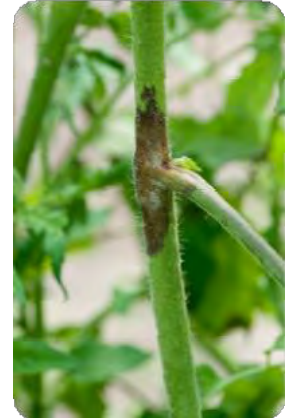


Photo © Dwight Sipler

### Prevention and treatment:

- Plant disease-resistant hybrids.
- Rotate crops each year.
- Avoid wet conditions; don't water from above, and water early in the day so plants dry before nightfall.
- Remove infected plants from the garden and seal them tightly in a trash bag to prevent the disease from spreading; do not compost any infected plants.



Photo © Howard F. Schwartz

## Powdery Mildew

Powdery mildew is a fungal disease that creates powdery spots on the leaves and stems of plants, most commonly those of squash and cucumbers. It is unattractive but rarely fatal.



Photo © Wikimedia Commons User:Pollinator

### Signs of disease:

- Powdery white or gray splotches on leaves and stems
- Leaves curl or drop

### Prevention and treatment:

- Remove the infected parts of the plant and dispose; do not compost as most compost piles won't get hot enough to kill the spores.
- Trim and prune to improve air circulation.
- Avoid watering from above to keep the leaves dry.
- Try an organic fungicide made from 1 Tbsp. baking soda, ½ t. liquid soap, and 1 gallon water; mix and apply to leaves (do not apply in full sun).

## Animal Pests

Insects and diseases aren't the only threats to the garden. Animal pests like rabbits and groundhogs can also do a lot of damage and can be difficult to keep at bay.

To discourage rabbits from settling nearby, remove brush piles, weed patches, piles of stone or any other debris where they could live and hide. The most effective way to deal with rabbits is to fence them out; it only takes about a 3-



Photo © Ann Harrison



Photo © Wikimedia Commons User: EIC

foot-high fence (with holes no larger than 1 inch) to prevent them from jumping over, and you have a good start with raised beds. It's also a good idea to bury the fence several inches below the soil surface, to keep them from digging under.

Groundhogs, on the other hand, can be much trickier. There's not much a groundhog won't eat in the garden, so if you see one near your house or helping itself to your garden, it's best to take action as soon as possible.

## How to Deal with Groundhogs in Your Garden

### Groundhog Basics

In deciding the best way to manage groundhogs in your garden, it is important to have an understanding of their basic behaviors. Understanding groundhog behavior allows you to make the best management decisions based on your unique troubles and property.

Groundhogs are rodents which live all across North America. They are diurnal, which means they are most active during the day, particularly in early morning and late afternoon. Groundhogs eat mostly plants, which is where the trouble comes in for gardeners. In gardens, they tend to prefer plants that belong to the Brassica family (e.g. collard greens, cabbage, broccoli, kohlrabi, etc.). Groundhogs are accomplished swimmers, climbers and diggers. It is uncommon for groundhogs to contract diseases transferrable to humans, such as rabies, and therefore they are generally not considered to be a public health risk.

Groundhogs are territorial, usually staying within 50 yards of their den. They hibernate from October to around March or April. Babies are born between the months of March and May, and they leave the den by early July.

## What Does Groundhog Damage Look Like?

There are a lot of critters that are interested in your garden- how can you tell if it is a groundhog? Groundhog damage is usually pretty severe in comparison to chipmunk, mouse or insect damage. Groundhogs will eat almost all of a plant, usually only leaving some stems. They will also take big chunks out of your fruits, particularly tomatoes.

Groundhog Damage:



Insect Damage:



Groundhog Damage:



Chipmunk Damage:



## Gardening Solutions

- **Tolerance or co-operation**

Plant a groundhog garden, AKA trap crop. By planting other things in your yard for groundhogs to eat, they will become less interested in your garden. Clover and alfalfa are good crops to distract the groundhogs; plant them around the perimeter of your yard, or close to where you think they're entering, so they find the trap crop before your garden.

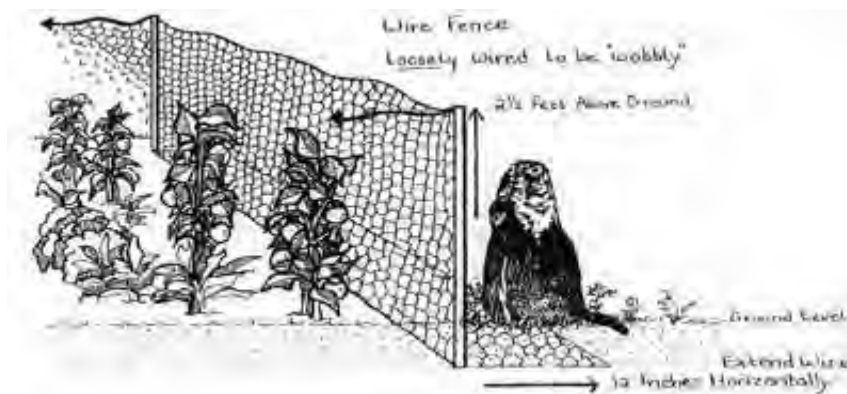
- **Eviction**

Trapping and removal is one option to get groundhogs off your property. Groundhogs are best baited with apples, carrots or lettuce. It is best to trap between July and September. If groundhogs are causing structural damage to your house, you may be eligible for a trapping program with Pittsburgh Bureau of Animal Care & Control (412/255-2036). If you are considering trapping privately, be sure to become familiar with the laws about wildlife trapping and management in Pennsylvania before taking any action.

Close potential entry points by filling in existing holes and burrows, patching fences and removing hiding spots. This will help prevent other groundhogs from moving in.

- **Fencing**

Fence the groundhogs out of your garden. Keep in mind that groundhogs can climb and dig; to effectively keep groundhogs out, using flexible fencing options is best (e.g. chicken wire, plastic mesh fencing, etc.). Fencing should be buried under the ground in an "L" shape (about 1 foot down and 1-2 feet out) to keep groundhogs from burrowing underneath. To prevent climbing, fences should be at least 4 feet tall and loose on top; that way, while the critters are trying to get over, the fencing will fall backwards and make it impossible for them.



- **Scare devices and harassment**

Tie **objects** in your garden that will **scare them off**. Because they are prey animals, groundhogs are generally very skittish. Things that move in the wind, such as balloons or a beach ball, work well to frighten them off. Pie tins also work well if



tied up to a stake, so that when the wind blows, they bounce around and make noise.

Put **motion-detecting noisemakers** in your garden; they go off when a groundhog approaches and should frighten them off. Some gardeners have also had success keeping groundhogs at bay by keeping a radio on in their garden.

- **Habitat Modification**

Keeping your grass cut short and removing potential hiding spaces (e.g. brush piles, undergrowth) in your yard will make your property less appealing to groundhogs because they do not like to be out in the open.

- **Repellents**

Spray a **hot pepper spray** on the leaves and fruits of your plants; groundhogs won't like the spiciness and should leave your plants alone. Remember to wash your food before you eat it though! See below for a recipe.

Sprinkle **cayenne pepper** or **Epsom salts** on or around your plants. Both will taste bad to the groundhog. Epsom salts will also help replenish your soils with magnesium, an important plant nutrient.

Soak rags or sponges in **ammonia** and place them around the perimeter of your yard, or near groundhog holes. Ammonia is present in higher concentrations in predator urine, and the scent of it should trick the groundhog into thinking that there is a predator around and indicate that they should leave.

### Hot Pepper Spray Recipe

#### Ingredients:

- 1 gallon water
- 3 tablespoons hot pepper flakes (or 10 fresh peppers chopped up; cayenne is best)
- Biodegradable dish soap

#### Instructions:

Add water and peppers to a pot and simmer for 15 minutes. Let mixture sit for 24 hours, then strain and add a few drops of natural, biodegradable dish soap (this helps the mixture stick to the plants). Use a spray bottle to apply to your plants. Be careful and wash your hands thoroughly; don't touch your eyes! If spray is used on vegetables, wash thoroughly before consuming.

# Composting

Good soil is crucial for growing healthy plants. The best soil is full of organic material, carbon-rich matter formed from anything that once lived. Organic matter is important for making nutrients available to plants and encouraging beneficial microbial life in the soil.

The best way to increase organic matter is to add compost to your garden. You can compost at home, recycling food and yard waste to make valuable, organic fertilizer for your garden. Compost adds numerous benefits to the garden and doesn't cost a thing to make.

## How to Compost

1. **Set up a compost bin.** Using a bin keeps compost piles neater and keeps animals out. You can build a bin from wood or wire, or purchase a plastic bin. Whatever you use, the bin should be at least 3'x3'x3' and have holes for good air circulation.
2. **Fill your bin with yard and food waste.** Virtually any plant material can be composted. For the best results, a balance of brown (carbon-rich) and green (nitrogen-rich) material is needed. The ratio should be at least 1:1, but more brown than green is better.

Browns	Greens
Dry carbon-rich materials	Wet or fresh nitrogen-rich materials
Autumn leaves	Fruits
Twigs	Vegetables
Cardboard	Food scraps: banana peels, apple cores, kale stems, etc.
Newspaper	
Woodchips and sawdust	Tea and coffee grounds
Pine needles	Grass clippings
Straw	Plants and weeds
Dry, dead plants	Other (calcium): crushed eggshells

### Troubleshooting:

- If your pile is getting smelly, you probably have too many greens. Mix in more browns, turn the pile and make sure it has good drainage.
- If your pile is not decomposing or heating up, add more greens and make sure it is moist and aerated.

## Know what **NOT** to compost.

The following items should never be added to your compost pile, as they will either compromise your health, harm your garden, attract animals or won't break down:

- Meat and meat scraps
- Bones
- Oil or fat, or vegetables cooked in oil or fat
- Pet waste
- Weeds that have gone to seed
- Diseased plants
- Plants or clippings that were treated with chemicals
- Glossy paper or magazines

### 3. **Make sure your pile gets enough air and moisture.**

To ensure good air circulation, turn or stir your pile, or simply use a pitchfork or stick to loosen up the contents. The more you do this, ideally every week or two in warm months, the faster everything will break down.

In order for materials to break down, the compost pile also needs to stay moist like a wrung-out sponge, not wet/soaked. If your pile has a lid, you will likely need to add water every so often.

### 4. **Allow time for finishing.**

Producing finished compost generally takes three to six months. When your bin is full you will want to stop adding materials so the compost can finish. Compost is ready when it looks dark brown, is crumbly and smells like rich earth. When the pile stops heating up and looks finished, let it sit for at least a few weeks to cure; it can then be used.



*Photo © Kessner Photography*

## **Other composting tips:**

- Keep a small, covered container in your kitchen to collect food scraps that you can easily transport to your bin when it gets full.
- If possible, layering is very effective- every time you add greens, cover them with a layer of browns.
- Smaller pieces compost faster, so to speed things up, shred newspaper and leaves and chop up garden debris and kitchen scraps before adding them.
- Stockpile leaves in the fall so you have a steady supply of browns all year.

## Purchasing Compost

If you need compost before you're able to produce your own or more than you can produce, bagged compost is also available for purchase at many garden centers and hardware stores. Options include:

- **Composted manure:** Can be made from cow, horse or poultry manures. It contains important nutrients, and a little goes a long way. Note that fresh manure from farms will burn plants; it must first be fully composted.
- **Mushroom compost:** The leftover medium used for growing mushrooms, originally composted manure, straw or other materials, depending on the company. It contains high salt levels, so it should be used with caution around young plants. For best results, thoroughly mix it with garden soil or allow it to sit over winter to cure.
- **Worm castings or Vermicompost:** Manures, food wastes or other materials processed by red worms. Usually mixed with soil before being sold so potency can vary; follow the bag's instructions on application rates.

## Using Compost

There are several ways compost can be used in the garden:

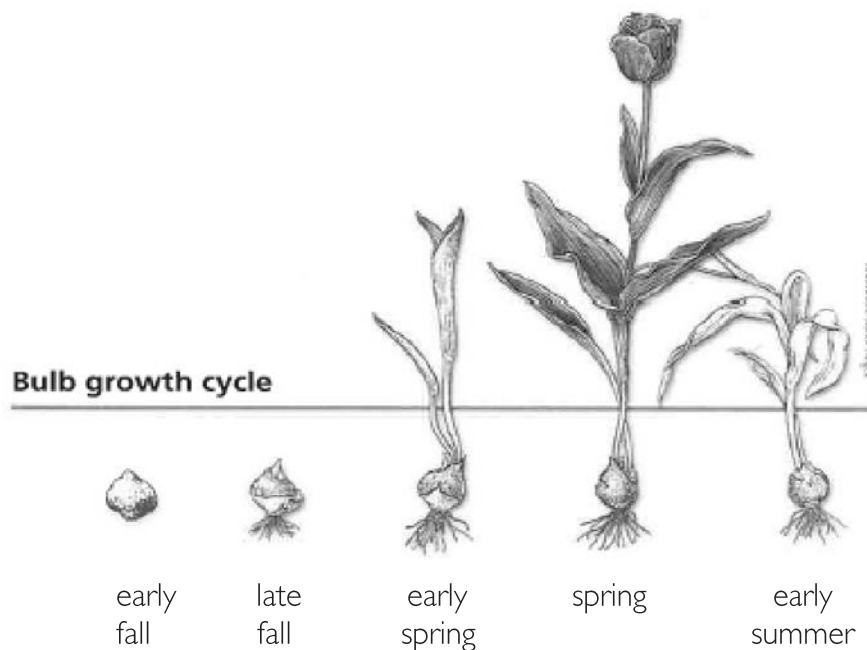
1. **Amending soil:** Add up to 3 inches of compost to the top of beds before planting, and mix it into the first several inches of soil. You can do this in the fall or spring.
2. **Mulch or Side Dressing:** One to two months after planting, spread compost on top of soil as a mulch, or side dress by digging a hole next to a plant and adding compost. It will slowly break down over the season to encourage soil life and release nutrients for plants.

# Daffodil Bulbs

Each fall, new Homegrown gardeners receive daffodil bulbs to plant at home and share with neighbors. Daffodils are some of the first flowers to bloom in spring and add a lovely pop of color to the landscape. Bulbs must be planted in the fall before the ground freezes. To properly plant and maintain bulbs:



1. **Plant them where they get at least a half day of sunlight.** With the right conditions they will often increase their number.
2. **Plant bulbs 4” apart (4-5 bulbs per square foot), and about 6” deep.**
3. **Water thoroughly after planting only.** After planting, water only if rainfall is scarce- too much moisture can cause bulbs to rot.
4. **After daffodils flower, wait at least 8 weeks – until the leaves turn yellow – before cutting them.** You can remove flowers or seed heads, but do not cut the leaves. The foliage needs to die back naturally so the bulbs can store up the energy they will need to grow and bloom again the next year.



# Harvesting and Storing Fresh Vegetables

Harvest time is always exciting, when you reap the reward of the effort you've put into your garden! It's important to know how to tell if vegetables are ripe and ready for picking so you get the best yield, flavor and shelf-life.



## Tips for Harvesting

- When harvesting vegetables, be careful not to break, nick or bruise them. The less vegetables are handled, the longer they will last in storage.
- Harvest vegetables in the morning when they are likely to be at their coolest and will take handling better.



## Storage Information

Once produce is harvested, if you don't eat it right away, it's good to know best storage practices so your hard-earned produce will last as long as possible. Different vegetables need different storage conditions. Temperature and humidity are the main storage factors; there are three combinations for long-term storage:

1. **Cool and dry** (50 – 60°F and 60 percent relative humidity)
  - Basements are generally cool and dry. If you store vegetables in your basement, provide them with some ventilation (don't use plastic bags) and protection from rodents.
2. **Cold and dry** (32 – 40°F and 65 percent relative humidity)
  - Refrigerators are generally cold and dry, don't put veggies that require these conditions in plastic- leave them unbagged or use paper bags or boxes.
3. **Cold and moist** (32 – 40°F and 95 percent relative humidity)
  - Put vegetables in perforated plastic bags in the refrigerator, or in the crisper drawer, for cold and moist conditions. Unperforated plastic bags often create too humid conditions, which lead to condensation and growth of mold or bacteria.

## Harvest and Storage Chart

The following chart gives specific harvest and storage information for some commonly grown vegetables. Expected shelf-life times are estimates.

Vegetable	When to harvest	How and how long to store	Notes
<b>Beans</b>	When pods are firm, but the seeds are still immature	Cold and moist, 1 week	Don't wash before storing; they will toughen over time
<b>Beets</b>	When beets are 1 ¼ – 3" in diameter	Cold and moist, 2 weeks	Remove green tops before storing (greens are also edible)
<b>Cabbage</b>	When the head is compact and firm	Cold and moist, 2 weeks	Make sure it is dry before storing
<b>Carrots</b>	When tops are ½ – 1" in diameter	Cold and moist, 2 months	Before storing, remove green tops, scrub off dirt, and let them dry
<b>Chard</b>	When leaves are 6 – 8" tall; harvest outer leaves first and the center will continue to grow	Cold and moist, 3 – 4 days	Wash before using, not before storing
<b>Collards</b>	When leaves reach desired size, up to 10" long	Cold and moist, 4 – 5 days	Pick lower leaves first, wrap in moist paper towels, and place into a sealed bag; wash thoroughly before using
<b>Corn, sweet</b>	When silks dry and brown; kernels should be milky when cut	Cold and moist, 5 days	Sweetest if eaten immediately
<b>Cucumbers</b>	For slicing, when about 4 – 6" long and uniformly green (don't let them get yellow)	Cool spot in kitchen in perforated plastic bags; or in refrigerator for 7 – 10 days	Develops pitting and water-soaked areas if chilled below 40°F; do not store with apples or tomatoes
<b>Eggplant</b>	When the skin is shiny, before color dulls	Like cucumbers, 1 week	When harvesting, leave 1" of stem attached; don't store at temperatures below 50°F
<b>Herbs</b>	When leaves are tender and fragrant	Cold and moist, varies	Store upright in a glass of water, or in plastic bag with a paper towel

<b>Kale</b>	For fresh eating, harvest leaves when small and tender; otherwise, when leaves are 6 – 8" tall	Cold and moist, 1 week	Harvest outer leaves first; don't pick the center of the plant, as it will keep producing
<b>Lettuce</b>	While leaves are tender; varies with variety	Cold and moist, 1 week	Put into a plastic bag with a dry paper towel to remove moisture
<b>Onions</b>	When tops are brown	Cold and dry, 4 months	Allow to dry at room temperature for 2 – 4 weeks and then store
<b>Peas</b>	When pods are plump but still tender; be careful not to tear the vine	Cold and moist, 1 week	Keep peas well picked to encourage more production
<b>Peppers</b>	When fruits reach desired size or color	Like cucumbers, 2 weeks	The longer they stay on the plant, the sweeter they get; develop pitting when stored below 45°F
<b>Radishes</b>	Varies with variety, typically when roots are up to 1 ¼" in diameter	Cold and moist, 1 month	Remove tops, wash and dry completely before storing
<b>Spinach</b>	While leaves are still small and tender	Cold and moist, 10 days	Leaves get bitter if allowed to grow too large
<b>Summer squash</b>	When fruit is 6 – 8" long and still tender	Like cucumbers, 1 week	Do not store in the refrigerator for more than 4 days
<b>Tomatoes</b>	When color is uniformly pink or red, and flesh is slightly tender	Like cucumbers, 5 days	Loses color, firmness and flavor if stored below 40°F; do not refrigerate
<b>Watermelon</b>	When underside turns yellow, or it produces a hollow sound when knocked	Like cucumbers, 10 days	Will decay if stored below 50°F for more than a few days
<b>Winter squash and Pumpkins</b>	When shells are hard, before frost	Cool and dry, 3 – 6 months	Most benefit from curing before storage: wipe clean and leave at room temperature for 10 – 20 days and then store



# Resources

## Phipps Resources

The Phipps resources below provide information on gardening and healthy eating and lifestyles.

1. **Porchside Gardening Blog** offers vegetable gardening tips for all skill levels, no matter how much (or how little) outdoor space you have. Find the blog at **[phipps.conservatory.org/porchside](http://phipps.conservatory.org/porchside)**.
2. **Ask Dr. Phipps** is a free service provided by Phipps Master Gardeners to answer gardening questions. Contact Dr. Phipps anytime at **412/622-2364** or **[drhipps@phipps.conservatory.org](mailto:drhipps@phipps.conservatory.org)**.
3. **Let's Move Pittsburgh** is a program of Phipps Conservatory and a collaborative of organizations and individuals committed to raising awareness about the importance of nutritious eating habits, increased physical activity and reduced screen-time for children in our region. Visit **[letsmovepittsburgh.org](http://letsmovepittsburgh.org)** for more information and resources.

## Garden Resources

There are many great resources in Pittsburgh for garden supplies. Homegrown sources its materials mostly from the places listed below. For a directory of many more places to find garden supplies, visit **[phipps.conservatory.org/porchside](http://phipps.conservatory.org/porchside)**.

### Soil, Compost, and Mulch

**AgRecycle** offers bulk quantities of compost and mulches. Products can be delivered or picked up with a truck.

335 Braddock Ave.  
Pittsburgh, PA 15208  
412/242-7645

### Lumber

**Paul Lumber and Supply** is a locally owned, full-service lumber yard, and a good source for any type of new lumber.

4072 Liberty Ave.  
Pittsburgh, PA 15224  
412/681-9200  
**www.paullumber.doitbest.com**

## Seeds

**Seed Savers Exchange** specializes in heirloom varieties and offers more than 200 organic seed varieties. Find the catalog at **www.seedsavers.org**.

**Johnny's Selected Seeds** is an employee-owned seed producer with a large selection of organic and heirloom seed. Find the catalog at **www.johnnyseeds.com**

## Seedlings/Transplants

*We grow almost all of our own seedlings for Homegrown, but when we need to supplement, we purchase from these nearby sources:*

**East End Food Co-op** sells many varieties of seedlings from several local growers.

7516 Meade St.  
Pittsburgh, PA 15208  
412/242-3598

**Garden Dreams Urban Farm and Nursery** offers many varieties of Certified Naturally Grown vegetable and herb seedlings. Garden Dreams seedlings are available for purchase directly from the farm or from Construction Junction and the East End Food-Co-op, among other local vendors.

806 Holland Ave.  
Wilkinsburg, PA 15221  
412/638-3333  
**mygardendreams.com**

## Tools

**Salik's Hardware** is a local store offering spades, watering cans, various garden tools and some seeds.

603-7 N. Homewood Ave.  
Pittsburgh, PA 15208  
412/731-2882

## Garden-Related Organizational Resources

### Free Rain Barrels

**StormWorks**, in partnership with Nine Mile Run Watershed Association, is giving away 200 free Hydra rain containers to Homewood and East Hills residents as part of the Rosedale Runoff Reduction Project. To sign-up for a free rain barrel, call 412/243-7680 or email [info@stormworkspgh.com](mailto:info@stormworkspgh.com). More info at [www.rosedalerain.com](http://www.rosedalerain.com).

### Vacant Lots Projects

**Lots to Love** is a guide for community organizations and residents who are interested in transforming vacant lots into well-loved spaces. Developed of Gtech Strategies, it includes resources to determine ownership of vacant lots, as well as to plan and implement projects. Visit [www.lotstolove.org](http://www.lotstolove.org).

**Pittsburgh Adopt-A-Lot Program**, from the Department of City Planning, allows residents and groups to build temporary edible, flower, and rain garden projects on vacant City-owned lots. Also includes the Vacant Lot Toolkit, to walk you through the process. For more information and to download the toolkit, visit [www.pittsburghpa.gov/dcp/adoptalot](http://www.pittsburghpa.gov/dcp/adoptalot). For questions, call 412/255-2287.

**Allegheny Cleanways** is an organization that was formed to “engage and empower people to eliminate illegal dumping and littering in Allegheny County.” They clean up illegal dumpsites, and through the Partner Against Littered Streets (PALS) program, provide kits of materials to community groups for litter cleanups. For more information, visit [www.alleghenycleanways.org](http://www.alleghenycleanways.org), or call 412/381-1301.

### Garden Resources

**Grow Pittsburgh’s Garden Resource Center** is a tool-lending library and materials depot. With a membership, you will have access to garden tool rental, unlimited wood chip mulch and certain quantities of straw mulch, compost, seed and organic amendments.

147 Putnam St.  
Pittsburgh, PA 15206  
412/362-4769

[www.growpittsburgh.org/garden-resource-center](http://www.growpittsburgh.org/garden-resource-center)

**Grow Pittsburgh’s City Growers Community Garden Program** partners with organized communities to start and maintain sustainable and productive community gardens. Applications open each year. For more information, visit [www.growpittsburgh.org](http://www.growpittsburgh.org), or call 412/362-4769.

# Glossary

**Beneficial insect:** An insect that positively contributes to your garden or the environment. Can be pollinators, predators or soil builders.

**Compost:** Broken down, decomposed organic matter; an excellent soil amendment for gardens.

**Insect predators:** Insects that prey on other insects. They are beneficial in the garden, as they can kill insect pests that feed on plants.

**Lead:** A heavy metal, sometimes found in urban soil, dangerous for human consumption and vegetable production.

**Organic:** A term used to describe gardening practices or produce grown without the use of synthetic chemicals.

**Organic matter:** Any material that was once alive or comes from a living organism. In the garden context, this usually means plant material- leaves, weeds, plants, vegetable peelings, etc.

**Pest:** An insect or animal that does damage to vegetable crops.

**Pesticide:** A chemical designed to kill insects. Most are synthetic and not used when gardening organically.

**Pollinators:** Insects and animals that pollinate, or move pollen between plants. This is necessary for plants to reproduce and produce fruit.

**Raised bed gardening:** A method of gardening where soil beds are raised higher than the surrounding soil. Raised beds are often enclosed with sides made of wood, stone or bricks.

**Root bound:** A condition of plants grown in pots or containers, when roots run out of space to grow and start wrapping around the inside of the pot.

**Seedling:** A young plant, often started in a container to be later transplanted outside into the ground.

**Soil amendment:** Anything that's added to soil to enrich it or alter the nutrient make-up. Examples include compost, bone meal, and mulch.

**Tamp:** To gently firm or press on the soil.

**Transplant:** 1) To replant a plant in a new location, i.e. planting a potted plant in the ground, or moving a plant to a different part of the yard. 2) Seedling.

**Trellis:** An upright structure used to grow plants vertically.