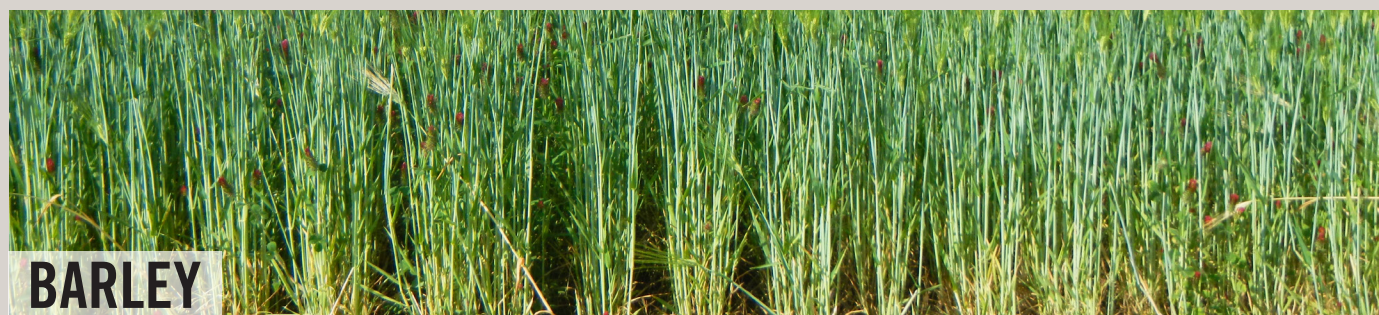


# Healthy Soil = Healthy Plants

Keeping the soil healthy is one of the most important steps in growing healthy plants. **Planting a cover crop**, a crop planted to help improve the soil, adds nutrients and organic matter and protects bare soil from erosion.



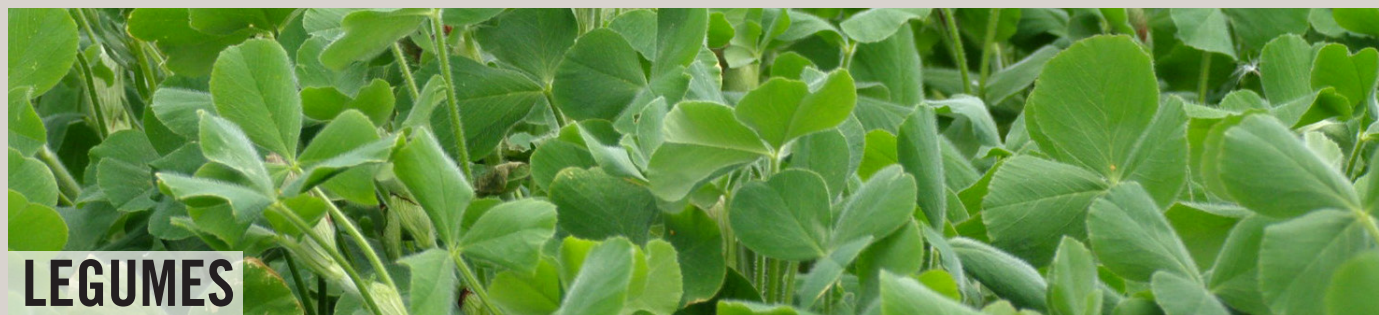
**BARLEY**

**BARLEY** is a grass with a fine, fibrous root system that prevents erosion and improves soil structure.



**BUCKWHEAT**

**BUCKWHEAT** is a fast growing, weed suppressing annual that grows well in warm weather, and can be planted between crops in a single season.



**LEGUMES**

**LEGUMES**, such as alfalfa and clover, contain bacteria within their root systems that convert nitrogen into a form that plants can use. Nitrogen is vital for plant growth.



**WINTER RYE**

**WINTER RYE** is often used at the end of season to prevent soil erosion, reduce compaction, and contribute large amounts of organic matter to the soil that helps plants grow well.

# Insects: Friends or Foes?

We often think of insects in terms of pollinators or pests, but some play other exciting roles in the garden!

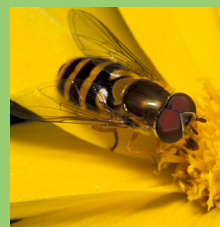
The plants within these two bins attract helpful insects, which are parasites or predators. **Predatory** insects feed on harmful insects such as aphids. **Parasitic** insects attack pest eggs to prevent further outbreaks.

Yarrow is known to attract minute parasitic wasps, but don't worry. They can't sting! These wasps lay eggs on immature whiteflies which are pests on the plants that we are trying to grow.



parasitic wasps

Dill, fennel, and parsley flowers attract hoverflies, which are bee look-alikes. Despite their appearance, these flies cannot sting. However, this does not stop them from being very effective pest predators.



hover flies

Lemon Gem marigolds are very effective in attracting ladybugs, which are the natural predators of many plant pests. This makes them very important because they protect the plants from harmful insects.



ladybugs

**As you may see, these plants also attract pollinators such as bees.  
In a home garden, consider planting these among other plants.**

# Controlling Cucumber Beetles

Cucumber beetles are among the most serious pests vegetable growers face. They attack squash, pumpkins, watermelon, cucumbers, and other plants in this family (cucurbit). They kill or stunt seedlings, damage stems and fruits, and can transmit fatal bacterial wilt.

## Practicing Integrated Pest Management

Cornell Botanic Gardens Staff practice Integrated Pest Management (IPM), which brings together a range of biological, organic, cultural, mechanical, and chemical approaches to prevent or reduce pest problems.

**It's called "management" because it's difficult to fully eliminate pests, which include fungi, bacteria, viruses, weeds, wildlife, and more.**

## Sticky traps and a bug vacuum

We control populations organically by placing traps for them near cucurbits. The lure has pheromones that attract the beetles – not other insects – then the yellow sticky paper traps them. We also remove as many as we can with our handmade bug vacuum!



Adult striped cucumber beetle (left) and adult spotted cucumber beetle (right)

**Look for the yellow traps in the squash bed.  
Do you see striped or spotted cucumber beetles on them?**

# Perennial Vegetables

Beautiful, delicious, and good for the environment

Most vegetables we eat in the United States —and most of what you see in this garden— are **annuals**, which are planted and harvested every year. Around the outer perimeter of this garden, we planted **perennial** edible plants.



Some perennials, like asparagus and rhubarb, die back to the ground every winter and sprout again from their roots in spring. Other perennials are shrubs, like raspberries.

## Perennial fruits and vegetables:

- ✓ Add beauty to the landscape
- ✓ Improve soil health
- ✓ Provide shelter, water, and shade for wildlife
- ✓ Require minimal maintenance once established
- ✓ Can grow in hard to grow areas
- ✓ Are often ready to harvest before or after most annual vegetables, which extends the harvest season

**Plant care tips:** Perennial vegetables and fruits may take a few years to mature enough to eat, and once established, may require division periodically. Be sure to plant them with enough room to grow, and look up what pests might affect them in your region.

# Every Drop Counts

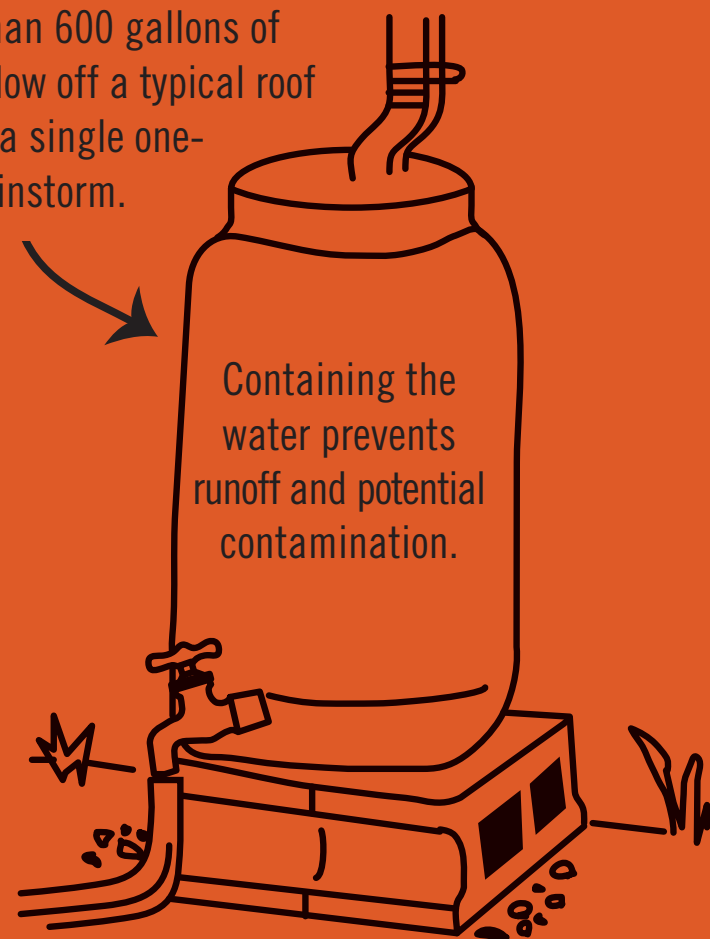
We strive to be water-wise in our garden.

Here are some helpful tips to save water in your own yard!

## RAIN BARREL

Rain barrels collect and store rainwater to conserve water from your tap.

More than 600 gallons of water flow off a typical roof during a single one-inch rainstorm.



Containing the water prevents runoff and potential contamination.

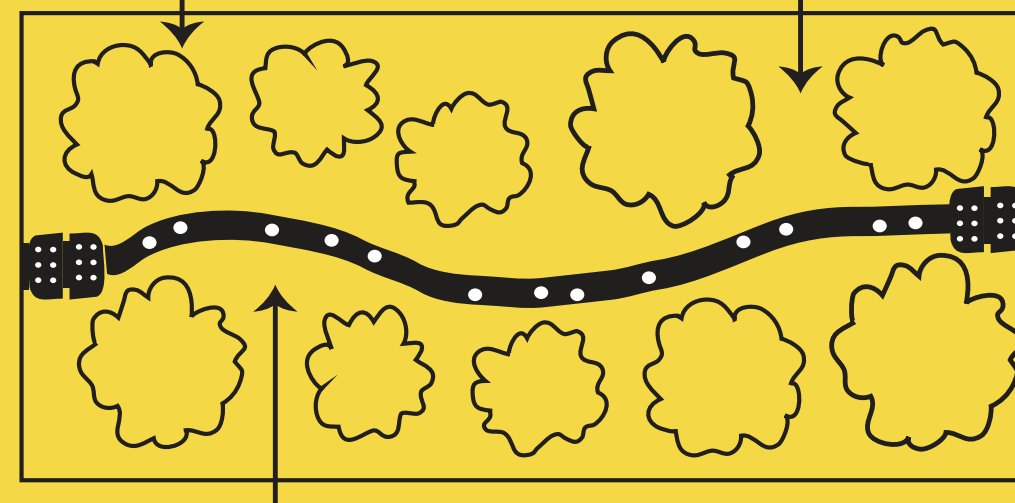
Our rain barrel collects runoff from the tool shed's roof, used to water our crops. Old wine barrels work well, or you can buy one at your local garden center.

## DRIP HOSE

Sprinklers waste water by unnecessarily watering more than just the plants, and a lot is lost to evaporation. Instead, try drip irrigation or a soaker hose.

Leaves stay dry, lowering the chance of disease.

By not irrigating the soil between plants, less weeds grow.

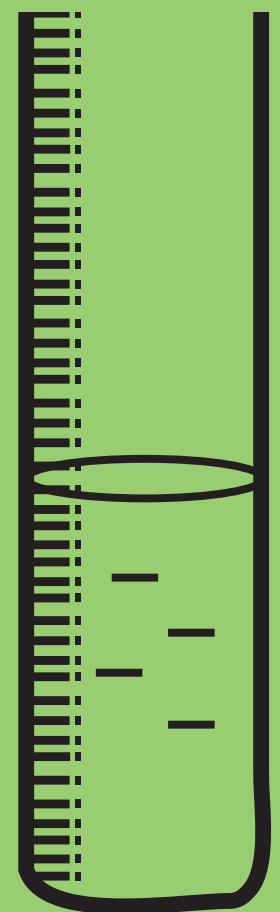


Little openings direct water to the plant's roots

## RAIN GAUGE

Use a rain gauge to measure how much rainfall you're receiving, which determines how much to water your plants.

Water less when rain is abundant.



Be sure to place your gauge out in the open, so nothing blocks the rain from entering.