

Tomatoes and Vegetable Gardening



Whenever I teach about container gardening, or vegetable gardening, tomatoes are often the most requested topic. Most people love tomatoes for the variety of uses in the kitchen. The problem has arisen with the price and quality of them in the grocery stores, as the flavor cannot match what we have right out of the garden! Grocery store tomato varieties are grown and harvested when they are green, to be durable through transport for thousands of miles and duration to the destination, giving them the “cardboard” texture and flavor people complain about. Some grocery store tomatoes are then gassed to give them the red color we expect.

Whereas vine ripened, fresh tomatoes from the garden or a local farm stand will have a rich flavor and texture that does not withstand long transports, as they are picked when ripe!

Tomatoes were grown many centuries ago by the Aztecs. They have been a controversial topic for centuries with suspicion about being poisonous by many, until Ben Franklin discovered otherwise. Tomatoes are a fruit, but an act of congress, in 1883, necessitated the change in their status to a vegetable to reduce its tax when a case of tomatoes was being imported to New York from the West Indies. Even the spelling and pronunciation of this food has been a constant source for discussion.

With these facts in mind, the home gardener anxiously awaits the first ripe, juicy tomato from the vine after plotting, planning, and tenderly caring for these *tropical plants* in their gardens, patios and porches. Too often problems arise causing too many dropped leaves, spots on the fruit or teeth marks causing that perfect tomato to elude us. It is too easy to get discouraged from the weather or other problems that can prevent our dream of our own delicious tomatoes from being ours!

This article will try to avoid some of these problems and try to correct others to help you have great success this year and for years to come!

Planting for Outside

Tomatoes like **deep rich soil**; the deeper the better! Deep containers and deep framed raised beds, providing 2 ½ feet of root space, work much better and are easier to care for than flat rows, as 40% of the space is not given to pathways. For framed raised beds,

- I dig a trench that is at least one foot deep and 6 inches wide,
 - under the wooden frame of the bed,
- Add the trench soil to the planting area
- fill the trench with rubble stone or trap rock
- and then place the frame on top of the stone
 - to preserve the wood and
 - Protect the roots of the plants from predators.
- This will also hold excess rain water for up to three weeks
- For the plants to use at a later date.

When preparing the soil, Tomatoes are **acid loving** plants, as are peppers and eggplant, requiring a ph of 5.5 to 6.5, which is accomplished by adding more composted cow manure, or horse manure, (and used coffee grounds) to the garden soil before planting.

Remember to plan ahead to be able to “rest” the soil for 2-3 weeks, before planting.

Start seeds indoors in February in a weak, but moistened, potting soil mixture in small starter containers. It is also a good idea to **soak the seeds overnight before planting**. Seed germination does not require heavy nutrients, or light, but *consistently warm and moist conditions*. These tropical plants do best in temperatures of 75 to 80 degrees with humidity of 60%. I use a mister bottle to water the surface of the soil morning and afternoon, to keep the seed moist to germinate.

After germination the plants will require a light source to form foliage and grow further. Water these baby plants gently in the morning and afternoon, until the plants get stronger. As the sprouts form stems and foliage, the plants will need to be turned around every few days so they will grow straighter and stronger stems, rather than thin stems bent one way. As the stems grow, the roots will be growing as well. “Pinching back” the top section of foliage will also make for stronger stems and bushy plants (see illustration)

When the plants start to crowd their roots in the starting container, by sprouting from the bottom drainage opening, the plants may be moved to larger containers with more moistened potting soil and a small amount of added composted manure for slightly richer soil. Be sure to *water the plants both before and after transplanting* to ensure success and prevent shock to the plants. After a few days, only water in the mornings. As the plants mature, pinching the top set of leaves will cause the plants to thicken and become stronger, but only after multiple sets of leaves have formed, so there are always leaves to support the growth of the plants. The tomato plants will require more and more sunlight to maintain a green color. Water the seedlings (deeply) in the morning, at least twice a week or more, while they are in the house.

Planting outside

If things don't work out, or if there is no time to start your own, most garden centers sell fine **seedlings** and plant "starts" at reasonable prices to make life easier. Pot the extras for friends and family. Buy early in April for the best selection and protect them at home before putting them out in late May. Tomato plants are tropical, so they need a warm place to grow and plenty of food and water.

Another idea is to put out plants of **varying maturity** to stagger the harvest time. This way the fruit will be available for a longer time and easier to use, rather than all at once!

Connecticut generally has a last frost date of May 20. If the weather has been cool, lay some **clear plastic** on the soil for at least a few days, before planting, to increase the soil temperature. Tomatoes require warm soil to set fruit and be productive. If plants are set out in cool soil and then mulch is applied, the soil will never get up to the temperature required. Remove the plastic before mulching.

Remove all but the top section of leaves of each plant **before planting**. Plant each tomato plant as deeply as possible for deep root development. Plant the stems in the soil horizontally if the leafless stem is too long and the soil is not 2 1/2 feet deep. If the soil is deep enough, dig a hole for the plant that is 1 1/2 feet deep, fill the bottom 1/4 of the hole with composted manure, backfill soil on top of that, then plant your tomato plant deeply while covering the leafless bottom of the stem with soil. **Water** the plants *deeply*, to help the roots create a closer bond with the soil. After the plants are in, spread some composted manure on the surface of the soil, for a gentle feeding as it rains or you water. **Mulch** the warm soil and the plants with 5 or 6 inches of straw or leaves. This will keep the soil warm, prevent moisture loss and

prevent weeds during the growing season. Mulching also prevents many diseases as well.

Companion planting helps to prevent problems and improve flavor as well. Tomatoes may be in the same bed with peppers and eggplant for soil compatibility. Planting between these with basil, garlic and parsley will improve flavor as well as deter some bugs while being a convenient place to harvest for meal preparation. Planting a mixed row of marigolds and chives around the perimeter of the garden will deter other bugs and creatures.

Another thing to do after planting the bed is to sprinkle a **light** covering of wood ashes or **pulverized** lime on the soil to prevent the Tomato Fly from laying eggs.

General Care for Tomatoes:

Tomatoes are a vine plant needing **supports** to keep them upright. The weight of the fruit will weigh them down quickly. For this reason, I suggest both staking and caging the plants at planting time with stakes higher than the expected growth of the plant and larger cages than you think you will need. This will make tending the plants easier in the growing season.

Tomatoes need **deep watering** only once or twice a week at the base of the plant, not from the top. They do not like their leaves being wet. They prefer hot, dry summers, but require deep **feeding** and **deep** watering. I add compost, rich with earthworm castings every two weeks after the fruit starts to set. In August, I start with manure tea as a fertilizer. I make this in a bucket of water with some cow manure, stirring twice a day over a three-day period. A fish tank bubbler will also work to add air to the mix. On the third day, add some black strap molasses to feed the biodiversity before they go to work in the garden. Use this liquid for a watering on the fourth day morning. Fish emulsion will work in place of this tea. Espoma “Tomato-tone” is also a great slow release fertilizer I have used. Choose the one that works best for you.

Lightly **fluff the mulch** with a pitchfork or garden fork from time to time to allow better air and water circulation. Add more mulch through the season to keep the covering effective.

When the fruit starts to set, I start to **prune** back the leaves of the “fruited branch” so the sun and air will get to the fruit as well as the leaves. **Air circulation** is important to reduce the possibility of mold and rot. This is accomplished by

removing extra foliage and non-fruiting branches from the center of the plant and removing the foliage ends of the branches.

It is also important to remove **suckers** from the junctions of the stem and branches to prevent loss of nutrients. Sometimes the suckers will begin fruiting before you have a chance to prune. In that case, check the neighboring branches to see if an unfruiting, alternate branch can be removed. Check the plants at *least* twice a week. Do not let it go any longer than a week, or you will have an overwhelming forest on your hands and poor production.

As the tomatoes start to ripen, watch carefully for any harbinger of trouble and deal with it quickly, before it spreads to other plants. Checking the plants daily will help you to judge the needs of them and give you a better harvest.

Basic Problem Solving

Prevention is the best way to deal with problems. Proper spacing of the plants, staking, caging, pruning and mulching will all avoid most problems with Tomatoes. If there are bug problems, a **soapy spray**, will deter most bugs. Planting the exterior row of mingled marigolds and chives will deter the “crawling creatures”, while adding a layer of wire fabric under the garden, or the trench of stone under the frame of the framed raised bed, will deter the borrowing creatures.

Basic Bug Spray:

1. To a one-quart mister spray bottle
2. Fill with water
3. Add ¼ cup, or a healthy squirt, of lemon-scented dishwashing liquid (preferably NOT antibacterial)

Spray two or three times a week if problems arise. In organic gardening, and with proper pruning, there should be few bug problems.

If the **bottom leaves** of the stem turn yellow/brown and fall off, it could be an indication that cigarette smoke, chemical sprays or pesticides may have been used in the area. Tomatoes are very sensitive to these things.

A thirsty bug or bird might cause a **hole** in the fruit.

Black netting, placed one foot above the mature plantings, is best for preventing birds from getting to your harvest. This must be firmly anchored at least a foot from the plants, leaving room for further growth as well. This is usually not necessary until the fruit start to ripen.

Larger predators require larger measures. **Deer** can jump a fence 5 feet tall. They can also push weakly supported netting to the desired plant to eat. I have also seen fence posts set around a garden; three feet high with a wire strung from post to post deter the deer, because they are afraid to trip on the wire. Big dogs are a great deterrent, but either a 6-foot fence, or Tabasco spray will work too. The spray will not harm the fruit or the deer. It will just give a spicy flavor and cause them to find another restaurant!

To keep **cats, dogs and squirrels** from the garden, sprinkle chili powder along the perimeter of the garden, twice a week for two weeks, to deter them from the area.

Mildew will cause **black spots** on yellow leaves or **white “powder”** on leaves. Prevention is the best “cure”. Following the steps above of mulching, pruning, etc. will avoid most of this problem, but if it starts, remove the affected fruit and leaves carefully to avoid contamination on the rest of the plant. Dust the plant with pulverized lime or Spray the remaining plant with a fungicide like “GreenCure” as per directions, and hope it does not continue.

General wilt will happen when the plants do not have enough water. Water the plant deeply at the base drip line as soon as you discover the problem. If it is late in the day, give enough to help it through the night, then a deep watering in the morning.

Yellow leaves are often a sign that the plants have *too much* water,

- from too much rain,
- or too much watering,
- or poor drainage in the soil
- or poor drainage in a container.

A digging fork pushed into the soil, at the drip line, will allow the extra moisture to drain away. Find a way to siphon off the water by trenching a flat bed or draining a container. Raised beds do not usually have this problem, but thrusting a digging fork into the soil at various intervals in the bed will drain the area well. That much water will also reduce the amount of nutrients available to the plant because of “leaching”, so an extra feeding would be good as well.

First Frost

The date for the first frost is unpredictable these days. Anywhere in September or October, we will hear on the weather report of the warning. Usually the first is a light frost. For this, we can cover the plants with a plastic sheet or row cover. Some people use a large trash bag, but be sure to remove it by 8:00 in the morning to prevent too much heat from building up under it. Be careful not to touch the branches with the cover if possible, as it will damage the plant.

Quite often more warm weather continues for quite a while after these light frosts with a few more scares to go before the final heavy frost. There have been years we have been able to still pick vine ripened Tomatoes the end of October!

Heavy frost

Pick as many of the tomatoes as you can to bring into the house to ripen during the next month. The kitchen windowsill is a handy place to ripen the fruit, but light is not necessary for them to ripen. I have heard that a brown paper bag of green tomatoes will ripen well when a red apple or two is included in the bunch. Just remember that “out of sight, out of mind” is often true. I have lost good produce this way, so try to remember where they are.

Another idea is to take the whole plant out of the ground with the fruit still on the vines, turn it upside down and hang it high in a garage, basement or barn so the tomatoes will ripen on the plant and will be more delicious than ripening off the stem.

And then, there are fried green tomatoes...

When you **freeze, dry or can** these treasures, you will reap your harvest again and again through the winter!

Clean up

Remove the vines and roots from the beds or containers, and then chop them up to add to the compost pile. Fluff up the soil of the bed to even the soil and mix in some of the mulch from the season. Add some more compost and a layer of fall leaves (up to 2 feet thick) for a winter blanket. Two feet of leaves compacts and decomposes to two inches of mulch by the end of the winter and provides rich nutrients to begin the following year.

If you do not get to the full clean-up, fruit that dropped from the plants will leave their seeds in the soil and will show up in the spring as volunteer plants. That is not a bad thing, if you plan ahead for these extra treasures and plan space for them. Seeds that over winter and germinate in the garden soil tend to be more vigorous and productive than the ones I start in the house. Just another gift of the natural world for the home gardener! I plant them where I can and pot up the extras for gifts to other would-be gardeners.

Enjoy the “fruits” of your labors and start making plans for next year!