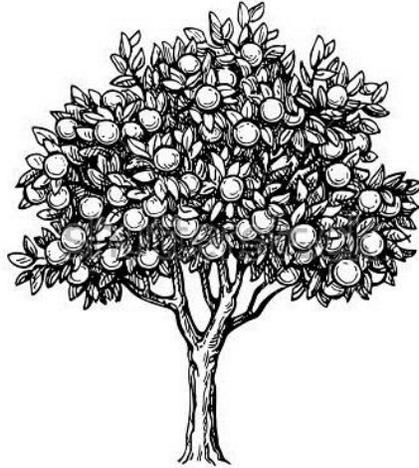


## *Citrus*



Citrus have a rich history. They are beautiful evergreen plants and produce deliciously fragrant spring flowers. But the most important reason why gardeners want a citrus tree is the wonderful fruit.

*All citrus need fertile soil, at least 6 hours of full sun, regular but not excessive water, and excellent drainage.* Citrus should be watered deeply, but allow at least the top two inches of the soil to dry before watering again. Pay extra attention to the watering needs of trees during blooming and fruiting to avoid drought stress or overwatering. The dwarf varieties can be grown almost indefinitely in a container. Non-dwarf types will eventually need to be transplanted into the ground or a very large container or planter, depending on the variety. For containers up to a 20-gallon size, use one of our **quality potting soils**. In containers 20-gallon or larger, you may use a **well-drained garden soil** to fill the container. A citrus tree planted in the ground needs enough space to accommodate its mature size. To prepare native soil, amend with good quality, well draining compost. Mix in enough compost to make the bed 1/3 to 1/2 compost. Amend the soil in an area at least 2 to 3 feet wide and no deeper than the depth of the root ball. If you are concerned about the soil draining sufficiently, plant the tree 1 to 2 inches higher than the surrounding soil, and slope the soil away from the tree trunk.

Citrus is a very heavy feeder. Nitrogen is the primary nutrient citrus require. Use a **high nitrogen fertilizer**. Phosphorus can be toxic to citrus in high enough amounts. Do not use typical bloom fertilizers as they are usually high in P. Normally, we would recommend higher phosphorus to promote fruit growth. This is counterproductive in citrus. You may use only a dry slow-release fertilizer, a liquid fertilizer, or a combination of both. During the growing season, you may fertilize citrus monthly with an organic dry fertilizer, or at every watering with a liquid fertilizer. An annual application of a **mineral supplement** to supply iron is beneficial.

The most limiting characteristic of all citrus is their susceptibility to freeze damage. Citrus vary in terms of cold hardiness. Citrus are tropical to semi-tropical plants. Even cold-hardy varieties *prefer* above-freezing environments. Cold hardiness should be viewed as the ability to handle **SHORT** periods of time exposed to temperatures below 32°. Never forget that it is not just the current temperature to be concerned with. If it is 36°, but there is a 10 mile per hour wind blowing on the tree, wind chill will make the apparent temperature well below freezing. This means you should be taking steps to prevent damage to the tree based on weather conditions, not just a predicted temperature forecast.

There are many ways to protect your tree. If you have containerized citrus, you may bring it indoors or into a garage when temperatures threaten. If a greenhouse or a bright, south-facing window is available, they may be kept indoors all winter.

If you want to plant your citrus in the ground, choose the right planting site. Planting on the south side of your house protects the citrus from the freezing north winds, and can provide the brightest sunlight. Avoid valleys or low areas where cold air collects, and where soil may remain too wet during rainy spells. Outdoor citrus must be covered with **heavyweight row cover** (frost cloth) during mild freezes. For further protection

during harder freezes, adorn the citrus with outdoor incandescent Christmas lights before wrapping thoroughly with row cover or covering it with a makeshift greenhouse. Water the tree before a freeze. Mulch the root zone at least 3 inches deep. As an extra precaution foam pipe insulation can be wrapped around the trunk to ensure that some of the grafted portion will survive.

<i>Type</i>	<i>Varieties</i>	<i>Min Temps</i>
Kumquat	Changshou, Meiwa, Nagami	<i>Low teens</i>
Satsuma	Arctic Frost, Brown Select, Little Sweetie, Miho, Owari, Seto	<i>Upper-mid teens</i>
Mandarins	Honey/ Kishu/ Ponkan	<i>Mid to low 20's</i>
Orange	Navel Orange/ Blood Orange/ Republic of Texas/ Cara Cara/ Valencia	<i>Upper 20's</i>
Tangelo/Tangerine	Orlando/ Algerian	<i>Upper 20's</i>
Grapefruit	Bloomsweet / Nules/ Ruby Red/ Rio Red	<i>Upper 20's</i>
Lemon	Frost Eureka/ Improved Meyer/ Iranian/ Lisbon/ Variegated Pink	<i>Mid 20s-32°</i>
Lime	Key/ Mexican/ Persian/ Thai	<i>Above 32°</i>

Most of the citrus sold at The Natural Gardener are on a grafted rootstock. The rootstock is chosen to keep the tree small (dwarf), and to improve cold hardiness or adaptability to our soil. During a freeze, it is not unusual for a tree to freeze back so far that no “live” parts appear to exist above the soil level. Later in the spring, you may see new shoots appear from **BELOW** the graft/ground level. This means you are seeing growth from the rootstock, NOT from the original tree you had. These shoots will not produce fruit (well, they may produce fruit, but it will not be very tasty). Effectively, your tree is no longer the type of citrus you started with. At this point, it would be better to remove the plant and start with a new one.

The exception to the above is a new cultivar of Satsuma called “Arctic Frost”. It is a quality fruit, sweet with few seeds and heavy production. It is new to the Central Texas area. It is a non-dwarf variety that is grown on its natural roots and is very cold hardy. If it were to freeze to the ground, any returning shoots would be the same as the original tree. This makes it a better choice for surviving our cold weather as an in-ground planting in our area. This does not mean it can go without protection; it is just a hardier citrus. It will also grow to 12 feet in height if planted in-ground, 6 feet tall if planted in a container<sup>1</sup>. Most of our dwarf plants should reach only 6 to 8 feet in height when planted in-ground.

Citrus do not require significant pruning. During early tree development, it is important to remove suckers from the base of the tree. These shoots are likely to be the rootstock variety, will not produce desirable fruit, and without removal they will interfere with tree development. Mature citrus trees do not require pruning of the canopy for production or tree health except when substantial injury occurs following disease or freeze damage.<sup>2</sup> Citrus do not require fruit thinning. Typical citrus trees go through three distinct periods of fruit drop. First is the drop of about 70 to 80 percent of the flowers during and immediately following bloom. The second drop occurs a couple of weeks later, involving small fruit of pea-size to marble-size. The third drop occurs in late May, involving larger fruit, almost golf ball in size.<sup>3</sup> Young citrus trees can be alternate-bearing. This means you may have one year of very good production, followed by zero production the next year. This is normal in young trees. As they mature, they will become more consistent and begin bearing every year.

If your citrus gets eaten by a strange caterpillar that looks like bird poop – don’t kill it! It’s a Swallowtail butterfly! If there are any other pest issues, put a sample in a plastic bag and bring it to our diagnosticians.

Finally, one of the hardest parts about growing citrus is waiting for the fruit to ripen. Ripening times vary among varieties and from year to year, but expect citrus fruit to ripen in the fall through winter. **COLOR IS NOT A GOOD INDICATOR OF RIPENESS.** Once picked, the fruit will NOT ripen off of the tree, so consider “sampling” some fruit to check for proper ripeness/sweetness before harvesting the entire tree.

<sup>1</sup> AgriLife Today, “Arctic Frost satsuma mandarin hybrid named new Texas Superstar”, June 10, 2015

<sup>2</sup> University of Florida IFAS Extension, Publication #HS-867

<sup>3</sup> Texas AgriLife Extension, Fruit and Nut Resources: Citrus