University of California
Agriculture and Natural Resources

UCCE Master Gardener Program
San Luis Obispo County

GROWING CITRUS TREES IN POTS

LINDA ROBERTSON, UC MASTER GARDENER

There is a long tradition of growing citrus trees in pots. In the 17th and 18th centuries, European gentry had orangeries and gardens lined with citrus trees in containers that were moved into heated greenhouses for the winter. Movable citrus trees are a good idea if you live in a climate with cold winters, have limited space or poor soil. A potted citrus tree, with its scented flowers and bright-colored fruit, can make a nice accent on a patio or deck. Citrus are resilient and with adequate care, they can live a long time in a container.

Choosing a tree:

SLO County, has a myriad of microclimates, and citrus that produce well in South County may not fruit well in Los Osos or Morro Bay. Consider summer heat and frost risk in your own landscape microclimate when choosing your citrus trees. Some varieties of grapefruit and oranges need more hot weather than we get on the Central Coast to produce good fruit. If you live in a cool area, you can gain some heat by placing your tree in the warmest, sunniest part of your yard or patio or near a south facing wall.

All citrus varieties are cold sensitive; although they will survive a night or two at 30 degrees or so, extended cold can cause branches to die back and even kill the trees. Young trees and trees in containers, are more susceptible to freezing temperatures than a mature tree in the ground.

Citrus vary in cold tolerance. Lemons and Bearss limes tend to be more tolerant of cold weather, but Mexican limes, also known as Key limes, are very cold sensitive. Yuzu, a Korean citrus, is one of the most cold-tolerant varieties; its peel and juice, which have a unique, aromatic scent, are used in Asian recipes.

Because most of California is under a citrus quarantine because of Huanglongbing (HLB or citrus greening disease) always buy trees from a reputable licensed California nursery and do not move citrus plants out of the county where it was purchased. Citrus trees grafted onto dwarfing rootstocks stay compact and make good container trees. You can buy a non-dwarf tree for a container, but it may need some effort to keep it small.

Citrus varieties for the Central Coast:

Lemons, limes, most mandarins, Valencia oranges, Robertson and Washington navel oranges, Oroblanco grapefruit, kumquats and blood oranges. More exotic varieties include kumquat hybrids (Eustis limequat, Indio mandarinquat), Buddha's Hand, calamondins, kaffir limes, bergamot orange, finger limes, and yuzu.

A favorite is the variegated pink lemon, also called the pink lemonade lemon. Its leaves are a showy green and white; its flowers are large and heavily scented. The fruits are striped when immature and grow into big lemons with pinkish flesh.

The Cal Poly Farm has a citrus orchard with dozens of varieties. Sampling the fruit varieties during their winter and spring U-picks can help you choose a variety for your yard.

Planting:

Citrus do not need special care when transplanting. If the root ball is dry, soak in water for an hour. Loosen the root ball if root bound and plant with the crown at the soil surface.

Containers: Small trees can be planted in 14-16 inch pots. If they become root bound transplant to a larger container such as a resin wine tub. These containers are light enough to move and the size is optimal for ensuring adequate soil moisture. Every few years the tree will need to be wrestled out of its pot to add new soil. This is best done when the tree isn't flowering or fruiting.

Soil: Commercial palm and cactus mixes drain better than regular potting mix and help prevent plant roots from getting waterlogged. Never use regular garden soil as it will not drain adequately. Good drainage is important for the health of citrus roots. To promote good drainage, do not set the pot directly on the ground, a drip tray, or a patio, but raise it to keep the bottom of the pot at least a half inch or so above the surface. The little terracotta pot lifters sold in garden stores work well, or you can just use boards or bricks - anything that will keep them level and above the ground surface.

Maintenance:

Location: Citrus trees should be kept in a spot where they get at least 6 hours of sun per day. The trunks and branches are prone to sunburn if they are not well shaded by leaves. Trees can be protected by painting their trunks and exposed branches every year or two with a solution of half water and half interior white latex paint.

Watering: Citrus have a reputation as a Mediterranean plant, but they are from China. They are not drought tolerant and need regular watering year-round. Watering every three days is usually adequate, though they may need more frequent water in hot weather. In hot weather, soil in a pot can dry out even with regular watering. Periodically check the soil to ensure: water is penetrating to the tree's roots, and if it isn't, give the soil a thorough drenching until it is moist throughout the container.

Fertilizing: Trees in pots need fertilizer more often than those in the ground. Apply a citrus fertilizer according to the package directions once a month from about February through October. It is best not to fertilize during the winter, to prevent the plant from putting out new growth during the frost season. Commercial citrus fertilizers will keep the tree healthy, but a little extra iron applied occasionally also seems to help.

Repotting: Yellow leaves in a container tree can be a sign of nitrogen deficiency, which may be due to nutrient deficiency, overwatering or cold soil temperatures.

Container citrus trees will gradually use up the soil in their pots and slowly sink into them. Every few years they will need to be wrestled out of their pots so that new soil can be added. This is best done when the tree isn't flowering or fruiting heavily, to avoid loss of fruit.

Frost Protection Strategies:

Citrus will manage air temperatures near freezing but need protection from frost. Sustained temperatures below freezing will cause dieback of leaves and branches and can be fatal to small trees. Things you can do to help a tree weather a cold spell include:

- Water your trees well when you anticipate a cold snap. The water taken up by the leaves helps them withstand cold and frost.
- Use frost covers, such as floating row covers, bedsheets, tablecloths to avoid leaf damage. Wrap the trees loosely and fasten or anchor the covers to secure from wind.
- Use lights such as incandescent Christmas tree mini lights (not LED), with or without a frost blanket to raise the temperature of the air near the tree a few degrees.
- If you live in an area where you get sustained temperatures below freezing move the tree inside or to a heated greenhouse for the winter.

Pruning:

Prune citrus very gently, if at all - only for shape or to control their size. Unlike deciduous fruit trees, do not thin the canopy, as a dense canopy is best to protect the trunk and branches from sunburn. Do prune out crossing, tangled branches and long weak branches.

Pruning dead wood: Citrus trees will experience dieback naturally from drought or frost. Dead-looking wood can be deceptive; the trees often grow new leaves from such branches. Citrus trees tend to have a flush of new growth in early spring. A good time to prune for dead wood is in the late spring, after that flush. Branches and twigs that are still gray, brittle and leafless by then can be removed. Removing dead material improves the tree's appearance and encourages new growth.

Harvesting:

Some trees produce fruit all year, while others have a crop only during winter or early spring. Some varieties drop their fruit when it is ripe, but most citrus keep their fruit on the tree, and it can be difficult to tell when it is ready to pick. Taste one from time to time to see whether they have developed enough sugar to be tasty. Look for fruit that has colored up and has a bit of give when squeezed. Note that Bearss Limes are yellow when ripe. It is best to cut fruit from the tree with pruners, to avoid tearing or breaking the twigs holding them. Like a lot of other fruit, citrus are prone to alternate bearing, meaning they may have a heavy crop one year and a light one the next.

Pests and Diseases:

Ants: Ants crawling into your tree is a clear indication that insect pests are present. Ants protect pests from beneficial insects that would control pest populations. Excluding ants from your tree will help control pests. An effective ant control is Tanglefoot, a sticky barrier substance, that is applied to a band encircling the tree trunk. This is only effective if all paths for the ants are controlled: don't let any leaves touch the ground or fence and remove stakes.

Whiteflies, aphids, scale and mealybugs: All of these insects siphon plant phloem and produce honeydew favored by ants. A black sooty mold often grows on this sticky substance covering the leaf surfaces. This mold is unsightly and can block sunlight from reaching the leaves, thereby disrupting photosynthesis. Whiteflies and mealybugs cover themselves with white cottony material which is evident on leaves, twigs and fruit. These pests seldom cause serious harm but can reduce tree vigor. Often just keeping ants out of the tree is adequate for control. Repeatedly spraying pests off of leaves with a strong spray of water can be helpful.

Leaf miners: A very common pest causing crinkled leaves with shiny curvy tunnels that eventually dry to a brown. They prefer new leaves so avoid late summer fertilizing or pruning when they are active in the late summer. No treatment is effective or needed as the trees will tolerate this pest.

Thrips: Thrips are tiny insects that lightly scrape the skins of the fruit and cause superficial corking and scarring that does not affect fruit quality.

Citrus bud mite: These pests infest the flower buds of citrus trees, causing fruit to grow distorted or to drop off while small. It affects mostly lemons near the coast.

Asian Citrus Psyllid: see references for information on this important pest.

References:

Asian Citrus Psyllid and Huanglongbing Disease Management Guidelines--UC IPM.
http://ipm.ucanr.edu/PMG/PESTNOTES/pn74155.html

California Citrus Threat. *Protect Your Citrus - California Citrus Threat*.
https://californiacitrusthreat.org/protect-your-citrus

Residential ACP Management. UCANR.
http://ucanr.edu/sites/ACP/Homeowner_Options/Homeowner_Management/