Citrus Gardening in Alameda County

Choosing best citrus for our area: Citrus is a subtropical plant – it has no chill requirement, but is frost sensitive and requires summer heat to produce sugar. (See table)

- Grapefruit & most oranges require extra summer heat to sweeten adequately
- Sour fruited citrus (Lemon, Lime, Calamondin, Kumquat) ripen properly in our area
- Mandarins and some oranges are borderline in cooler areas of the county - variable sweetness

Planting your citrus tree:

- Choose a warm, sunny exposed spot that gets 8 hours of sun and protected from the wind
- Provide enough room – space standard size citrus trees 12+ feet apart, dwarf citrus trees 6+ feet apart
- Break up any clay soil/compaction layers, use a mixture of your soil and good-quality soil amendment
- Dig hole to depth of nursery pot and 2x pot diameter
- Root ball top at 1 inch above soil line, producing a slight mound
- MULCH 3-4 inches and 3 feet outside canopy – retains moisture

Watering tips:

- Newly planted trees need watering immediately and deeply
- Water demand is highest during spring flush until fruit is 1" in diameter
- Watering frequency varies with temperature and maturity – citrus trees like **deep, infrequent watering** so soil becomes dry to about 2" below soil surface just before next watering
- Container plants usually need watering twice a week, but be sure soil surface dries out in between
- Drip irrigation with enough drippers that are moved out and increased in numbers as tree grows

Feeding your citrus: Citrus need an adequate supply of essential nutrients (nitrogen, potassium, phosphorus) and micronutrients (zinc, iron, & occ. manganese) – fertilize 2-4 times/year depending on tree age

- Increases yield and quality of fruit; promotes tree's natural resistance to disease
- Apply 1st application of NPK fertilizer in Feb then at a few 4-6 wk intervals until July.
- Avoid late-season fertilization – makes rind rough, may affect fruit quality
- Scatter fertilizer evenly around root zone or in the path of irrigation water, then water thoroughly
- Micronutrient application: apply liquid chelated micronutrient solution onto leaves or to soil with zinc sulfate or iron sulfate

Pruning tips:

- Control tree size for harvesting ease, encouraging new growth, improving air circulation and light
- Light pruning can be done any time, heavier pruning best in early spring
- Citrus naturally round out into a shapely shrub or tree, occasional erratic branch can be cut way back
- Citrus can be pruned or shaped into hedges or espaliers
- Remove undesirable dead wood and prune off any suckers that arise below the graft

Pest management:

- Most common pests are sucking insects – aphids, scale and whitefly
- Sooty Mold (black film on leaf surfaces) feeds on the honeydew produced by sucking insects
- Control ants with sticky coating (Tanglefoot) at trunk base applied on tape/wrap, not directly on wood
- Control white fly with frequent hosing using a 360-degree spray wand bug blaster
- Leaf miner rarely harms tree, just unattractive leaves

Asian citrus psyllid update: The Asian citrus psyllid (ACP) is a tiny pest that acts as a carrier or vector spreading *Huanglongbing* (HLB)/aka citrus greening disease, a devastating disease of citrus trees. This bacterial disease is transmitted to healthy trees by the psyllid after it feeds on infected plant, eventually killing the tree. Quarantines exist prohibiting transfer of plant or plant material out of county, as in Alameda.

FAQs:

Why is the foliage yellow? Uniform pale yellowing of new leaves while older leaves are dark green suggests nitrogen deficiency. Yellowish foliage with green veins usually reflects lack of iron or iron availability. Also, leaves on an overwatered tree will turn yellow and drop.

What type of fertilizer to use? Choose an organic fertilizer specifically for 'Citrus & Fruit Trees' – provides nutrients, amends the soil while improving texture, water infiltration & retention, and nutrient holding capacity. The nitrogen, phosphorus and potassium (NPK) ratio is usually 7:3:3 with varying amounts of additional organic matter and living organisms (fungi, bacteria, earthworms).

Why do blooms or fruit drop off? Some fruit drop is normal, especially in hot summer months. If fruit or bloom drop is excessive, proper watering is often the solution. Extremely hot, dry, or windy weather will trigger fruit drop. If you observe excessive fruit and leaf drop a few days after a heavy watering, the tree became too dry before it was watered. Best bet is a consistent watering schedule, checking soil moisture as seasons change.

How do I tell if fruit is ripe? All citrus fruits only ripen while on the tree. Watch for the color to change, then check for a slight softening of the fruit. Lemons are ready when yellow, and generally hold on the tree for months. It may be necessary to taste fruit to be certain of ripeness.

Citrus Chart for Alameda County area

Citrus Type	*Standard Height*	*Dwarf Height*	*Additional plant information*
Calamondin	8-15'	2-4'	A kumquat/mandarin orange hybrid (*Fortunella margarita x Citrus retitulata*) that requires less summer heat, accepts some shade. Fruit looks like a miniature 1" orange with 9-10 seedless segments; has zesty acid pulp & bitter rind; peels easily.
Grapefruit	15-25'	6-10'	(*Citrus paradisi*) Best bet in our area is 'Oroblanco', a grapefruit/pummelo hybrid, relatively sweet & juicy fruit with good flavor. May take up to 18 months to ripen in cool summers. Pink varieties have high heat requirement – 'Rio Red', 'Star Ruby'
Kumquat	15-20'	3-6'	(*Fortunella sp.*) Small orange fruit with sweet edible rind, tart pulp, cold-hardy decorative plant with fruit & flowers. 'Nagata' - most commonly sold, oval fruit 1" long, thornless. 'Meiwa' - fruit larger, round & pulp a bit sweeter than Nagata.
Lemon	12-20'	4-7'	'Improved Meyer' - (*Citrus meyeri*) is not a true lemon (*Citrus limon*), sweeter & less acidic than other lemons. 'Eureka' - bears nearly year-round, fruit tangy with few seeds. 'Variegated Pink Eureka Lemon' - green & white leaves, green fruit streaked with gold, maturing to a pale yellow when ripe, light pink flesh is low-seeded and tangy.
Lime	10-20'	4-7'	'Bearss' (*Citrus latifolia*) - seedless limes on vigorous, nearly thornless trees, superbly flavored limes all year. 'Mexican' (*C. aurantifolia*) - highly productive, seedy lime, high acidity pulp, yellow fruit when ripe. Finger lime (*Microcitrus australasica*) 8-12' thorny tree, 3" slender green to purplish fruit, tiny green to pinkish caviar shape vesicles.
Limequat	4-8'	3-5'	(*Citrus floridana*) 'Eustis' limequat - 'Mexican' lime/kumquat hybrid, cold tolerant, bushy tree, small, oval, greenish-yellow seeded fruit, sweet tasting skin & bittersweet pulp.
Mandarin	10-25'	3-6'	(*Citrus reticulate)* 'Satsuma' - cold hardy and vigorous; seedless, very sweet fruit. 'Gold Nugget'- seedless, sweet & rich flavor. 'Algerian Clementine' - sweet/tart flavor, few seeds. 'Tangerines' have reddish-orange skin, all are Tanger mandarin varieties.
Orange	10-20'	8-10'	(*Citrus sinensis*) 'Troviata' - requires less summer heat than other oranges; small juicy fruit with mild flavor. 'Cara Cara' - sweet, slightly tangy pink-orange flesh
Pummelo	15-25'	4-8'	(*Citrus maxima*) Grapefruit ancestor, thick rind, bitter membrane. 'Valentine Pummelo'- recent pummel/mandarin/ruby blood orange hybrid, matures near mid-February.
Tangelo	10-15'	2-4'	(*Citrus x tangelo*) Hybrid of Duncan grapefruit & Dancy mandarin, not an orange. Minneola' aka 'Honeyball' - fruit has colorful tangy (sweet-acid), juicy mandarin taste.

Resources:

All about citrus: http://homeorchard.ucanr.edu/Fruits_&_Nuts/Citrus/

Peirce, Pam. (2010). *Golden Gate Gardening 3rd Ed*. Seattle: Sasquatch Books

Asian Citrus Psyllid & HLB disease (Pest Hotline: 1-800-491-1899): https://www.cdfa.ca.gov/plant/acp/regulation.html

An Interactive Website for Asian Citrus Psyllid Management: http://ucanr.edu/sites/acp/

http://ucanr.edu/sites/scienceforcitrushealth/Outreach_Resources/PowerPoint/