

**UC MASTER GARDENER PROGRAM
OF SAN LUIS OBISPO COUNTY**



The UC Master Gardener Program is a public service and outreach program under the University of California Division of Agriculture and Natural Resources (UC ANR), administered locally by participating UC Cooperative Extension offices (UCCE). Our mission is to extend research based knowledge and information on home horticulture, pest management, and sustainable landscape practices to the residents of California.

**FRUIT TREES:
CARE AND MAINTENANCE ~ WINTER AND SUMMER PRUNING**
Charles Davis and Kim McCue, UC Master Gardeners

Success with deciduous fruit trees is a function of:



1. Finding varieties which are climatically suited to the environment, the key element is insuring they get the right number of winter chill hours.
2. Ensuring they get the right amount of sunlight and irrigation.
3. Providing pollenizer varieties where needed.
4. Protecting the trees when young from predation from gophers.
5. Ensuring that proper pruning is done in both winter and summer.
6. Proper thinning of developing fruit.
7. Disease protection.

WINTER CHILL HOURS

1. Many fruit varieties require sufficient chilling hours before dormancy is broken.
2. Cumulative Chill hours (between 32 and 45 degrees; November 1-February 28).
3. UC Fruits and Nuts website: http://fruitsandnuts.ucdavis.edu/Weather_Services/
4. Chill hours from CIMIS Stations: Atascadero—1097; Nipomo—345; SLO—344; SLO West—575.
5. Impacts of too few or too many chill hours: flower, leaf and fruit development.
6. List of coastal and inland varieties of trees: See *Suggested Fruit and Nut Varieties* in reference section at end of document.

ENVIRONMENT – THINGS TO CONSIDER

1. At least 6-8 hours of sunlight daily—more is better.
2. Right size tree for space: dwarf: up to 10'; semi-dwarf: 12-18'; standard: 25-30'
3. Trees are either self-fruitful; self-sterile; partially self-fruitful.
4. Self fruitful: peaches, nectarines, persimmons, pomegranates, quince, sour cherries, most apples, apricots and figs. Self-Sterile: Sweet cherries, pluots and apriums, most pears, some plums and apples. Partially self-fruitful: many apples.
5. Use of gopher baskets; location near water/drip irrigation; grafted rootstocks and bud union.
6. Use of soil amendments in planting hole discouraged; mulching against weeds, evaporation encouraged; slope soil away from trunk; whitewashing young trees (with 1:1 diluted inexpensive white indoor latex paint) encouraged.
7. Single—10' centers; multiple plantings in same hole—18" spacing. Look for trees with rootstock identification; varied water requirements.

BARE ROOT PLANTING TECHNIQUES AND REQUIREMENTS

1. Advantages of bare root fruit trees include less expense, ability to inspect and prune damaged roots and control over scaffolding structure.
2. Dig a hole sufficiently large to accommodate all the roots without bending them. Amend the soil only to improve water retention in sandy soil or to improve permeability of high clay soils. Use compost or garden soil for amending; avoid mulch which will bind up soil nitrogen.
3. Plant the tree at the same level it was grown at the nursery by checking for the dark soil line on the rootstock.
4. Ensure the bud union, where the tree has been grafted to the rootstock, is approximately 4" above the soil line, and that it is planted facing north to avoid sunburn. Water thoroughly to settle soil around roots.
5. Build a basin around the tree and place mulch 2" thick around the trunk to a radius of 3' to inhibit weeds. Keep this area free from all plant growth so the new tree is not competing for nutrients.
6. Slope the soil away from the trunk so that water is not in contact with the bud union or tree trunk to avoid disease.
7. Install irrigation for the tree.



8. If using either an open center or modified central leader system, head back the trunk of your new tree to knee height, 18-24" from the ground. The first set of scaffolding branches will grow from this point.
9. The bark on young fruit and nut trees is thin and sunburns easily; give it a whitewash of white interior latex paint diluted with water at a 1:1 ratio.



WINTER AND SUMMER PRUNING



1. Both winter and summer pruning are needed, and serve several key functions.
2. Winter: The main objective in winter pruning is to maintain strong tree structure with well-placed scaffolding branches and to remove dormant buds to invigorate the remaining buds. It is also the appropriate time to eliminate dead, broken, crossing, weak, or poorly spaced branches. Up to 50% of last year's growth can be removed on the fast-growing fruit trees (such as peach and nectarine). Twenty percent of last year's growth can be pruned from fig, apple, pear and plum. It is best to time winter pruning during a 7-day rain free period to allow the pruning cuts to dry.
3. Summer: Summer is the time to maintain a manageable tree size and open up the canopy and interior of the tree to light and air circulation (usually June or July in San Luis Obispo County). For mature trees, remove the vigorous upright shoots that are not needed as permanent branches. Head cut and thin branches to control tree height. Up to 30% of the foliage from the tops and sides of the tree can be pruned back without disturbing next year's shoot growth, flowering or fruit production.
4. Types of pruning: modified central leader; open center; espalier; fruit bush. At planting, determine which you want to do. Training is done to create scaffold branches, angled 45-60 degrees from trunk (for strength), evenly spaced.
5. Modified Central Leader: 2-3 tiers of branches, separated by 18-24" of trunk height.
6. Open Center: 3-4 scaffold branches re-branch and grow upward in a vase shape.
7. Espalier: fairly small number of branches spaced in ornamental configuration against a flat surface—fan shaped, U-shaped, in straight cordons, etc.
8. Fruit Bush: Multiple trees planted in the same hole, each pruned to a single canopy.
9. Care must be taken especially in winter pruning NOT to cut away branches that will bear fruit in the spring and summer. Here are the points you need to keep in mind for each type of tree and how it bears fruit:
 - Almonds---on 1 year old wood.

- Apples---borne terminally on 2 year old wood; spurs may be fruitful for 8-10 years.
- Apricots---on 1 year old wood.
- Cherries--- borne laterally on 2 year old wood; spurs may be fruitful for 10-12 years.
- Citrus---on this year's shoots, needs little pruning other than dead branches, water sprouts and to maintain size/form.
- Figs---on last year's wood (early summer) and on this year's wood (late summer/fall).
- Nectarines---on 1 year old wood.
- Olives---on 1 year old wood.
- Peaches---on 1 year old wood.
- Pears (European)---borne terminally on 2 year old wood; spurs may be fruitful for 8-10 years.
- Pears (Asian)--- borne terminally on 2 year old wood; spurs may be fruitful for 6-8 years.
- Persimmons---on the end 3-4 buds on year old wood.
- Pomegranates---on current year's wood.
- Plums (European and Japanese)--- borne laterally on 2 year old wood; spurs may be fruitful for 6-8 years.
- Quince---on current year's wood.

FRUIT THINNING

1. Thinning is done to avoid: (1) alternating bearing years, (2) breakage of branches due to excessive crop, and (3) to allow for better air circulation around the fruit to prevent disease (especially if the fruit is touching).
2. Trees not normally needing fruit thinning: cherries, figs, pomegranates, citrus, olives, quince and nut trees.
3. Trees normally needing thinning: Stone Fruits: peach, nectarine, apricot and plum; Pome Fruits: apples, Asian pears, and most European pears.
4. Thinning should always be done if the crop is excessive, relative to the vigor of the tree.
5. Thinning can be done from right after bloom until just before harvest. It is best to wait until after any natural drop occurs (generally early April for early ripening fruit to mid-May for late ripening fruit). Waiting too long reduces the tree's vigor which may result in a "light" bearing year the next year because the tree needs to recover.

HOW TO PROPERLY THIN FRUIT

1. Fruits that can be thinned by hand: Apricots-3-4" apart, Plums-4-6" apart, Peaches and Nectarines-5-7" apart.
2. Fruits with thicker stems should be thinned with clippers: Apples leave 1-2 per spur; Pears leave 1-2 per spur.



Thin to retain only circled fruit

DISEASE PROTECTION

1. Peach Leaf Curl (*Taphrina deformans*): attacks peaches and nectarines.
2. Apricot Dieback (*Eutypa lata*): fungal disease; DO NOT prune apricot or aprium trees in winter.
3. Do not prune persimmons or figs in summer, only in winter.
4. Sanitize pruning tools with a 10% mixture of Clorox and water.

HOW WE DO IT IN OUR DEMONSTRATION GARDEN



UCCE San Luis Obispo Master Gardener Program Demonstration Garden Orchard Plot



FERTILIZATION	IRRIGATION	PEACH CURL SPRAYING
<p>In response to the drought, in our Demo Garden we do not currently fertilize the fruit trees at all. Fertilization can increase vegetative growth, which increases evapotranspiration – something we do not want to see in the middle of a drought.</p> <p>When we did fertilize, it was at the end of January, to get the tree ready for spring growth, and at the end of May, using a balanced ammonium based fertilizer 10-10-10, in granule or liquid form, applied to top 4-8" on soil from canopy line inward. We do not fertilize the deciduous fruit trees after September.</p>	<ol style="list-style-type: none"> 1. The orchard is planted on a moderately deep clay loam soil with high water holding capacity. 2. Each tree has one 2 gallon/hour emitter 3. Irrigation starts in April/March for one hour twice a week, in July through September for 2 hours twice a week. Irrigation is turned off Oct through March. 4. This schedule can be altered depending on how many emitters you have per tree and your soil type. Basically you don't want to water unless top 4 inches of soil is dry. We have currently cut this schedule by one third due to drought and have seen no problems. 	<p>The Demo Garden Peach leaf curl spray schedule, using copper spray, is as follows:</p> <p><input type="checkbox"/> 1st spray: First week of December</p> <p><input type="checkbox"/> 2nd spray: First week of January</p> <p><input type="checkbox"/> 3rd spray: This is the most important spray, to be done just as the flowers show the first blush of pink, but before they open. You are looking for the pink color only. Spray will not be effective if the bud is open, and may damage the bud.</p>

References:

Bianchi, Mary. 2002. *Suggested Fruit And Nut Varieties: For San Luis Obispo And Santa Barbara Counties Backyard Orchardists*. Ebook. 1st ed. San Luis Obispo: UC Agriculture and Natural Resources. <http://cesanluisobispo.ucanr.edu/files/61216.pdf>.

Ingels, Chuck A, Pamela M Geisel, and Norton V Maxwell. 2007. *The Home Orchard*. Oakland, Calif.: University of California, Agriculture and Natural Resources.

Pittenger, Dennis R. 2015. *California Master Gardener Handbook*. 2nd ed. Oakland, CA: University of California, Agriculture and Natural Resources Communication Services.

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GARDENING QUESTIONS? ASK THE MASTER GARDENERS AT HELPLINE: 805-781-5939



Website: Master Gardeners San Luis Obispo

Availability ↗	on VMS > Documents/Presentations > INFO DOCS > FRUIT TREES: Care and Maintenance~Winter and Summer Pruning	
History ↗	Original: 5/22/16	Revised: month/year: 1/13/17, 5/8/17