

It's Here! The New California Master Gardener Handbook

After only a decade or so, the new Master Gardener Handbook has been published by the University of California, Ag & Natural Resources Division. Several chapters have been rewritten, the information has been updated, and so this publication should serve as a useful reference for the home garden and landscape. Copies can be ordered from UC ANR Publications via the web, www.anrcatalog.ucdavis.edu. We will also order copies for our office, to be sold over the counter.

Winter Pruning of Outdoor Roses

It is well known that pruning can direct growth and modify structure of woody ornamental plants. For hybrid-tea and similar roses (as opposed to shrub- or landscape-type roses), common recommendations are to remove dead and damaged wood as well as older canes showing poor vigor. The amount of pruning is influenced by the function of the rose in the landscape. Roses used for screen plantings can be pruned little to retain their size. Although the pruning practices for greenhouse roses are exacting and have to do with yields of the desired flower size and stem length, rose pruning in home gardens and landscapes is a simple matter. Small and weak canes should be removed, and the number of canes reduced, with the length of canes shortened to the size desired. A recent study conducted by my colleague Jim Downer of UC Cooperative Extension in Ventura County shows it is variety selection rather than pruning that has the most influence on flower number and growth of outdoor roses. I have excerpted material from the paper he and I wrote for the 2013 International Rose Symposium. Here it is:

Pruning practices and effects have been extensively studied for trees. For roses, pruning is a key practice for enhancement of flower production in greenhouses. For outdoor roses, general principles, such as removal of diseased and damaged wood, are usually followed for winter pruning, but there have been few if any published studies of the effects of pruning on flowering of roses in landscapes.

In 2009, more than 500 roses of 8 varieties, both bare-root grafted (hybrid tea) and ungrafted landscape varieties, were transplanted to a field in Santa Paula, CA, USA. Those varieties were 'Brigadoon', 'Chris Evert', 'Crowd Pleaser', 'Gentle Giant', 'Mr. Lincoln', 'Neptune', 'Outta the Blue', and 'Rabble Rouser'. Roses were donated by Weeks Roses of Wasco, CA.

Roses were irrigated with drip irrigation following a several-month establishment period with overhead sprinkler irrigation. Roses were established for one year, and then pruning treatments were applied in the dormant season (January) each year of 2010-2013. Ratings and measurements were performed each spring (April-May) during peak bloom. There were four pruning treatments: 1) unpruned, 2) pruned to a height of 36 inches with five main canes, 3) pruned to 18 inches and four canes, and 4) pruned to 6 inches and three canes.

Growth was measured with a simple growth index (LxWxH) where L is length; W is width; and H is height. Flowers were counted and plant quality ratings assigned with a rating scale where 1=dead; 2=extensive dieback, defoliation and disease, few leaves or flowers; 3=flowers and leaves present, but disease or damage severe; 4=some flowers and foliage of acceptable quality, others diseased or damaged; 5=quality acceptable, some minor disease or other damage; 6=quality good, diseases and defects slight; 7=quality very good, little if any disease or defect; 8=quality excellent, no diseases no defects; 9=quality exceptional, symmetrical bloom, flowers abundant; 10=perfect florist quality, a symmetrical plant with no flaws in full bloom.

The experiment was arranged in a randomized blocked design with eight replications. A two-way ANCOVA (SPSS Inc., v 21.0) was performed to test for treatment effects. Two-way ANOVAS were performed to test for treatment effects within and between each variety.

Plant quality and stem length were little affected by pruning treatment. Number of flowers was greatest in unpruned roses. There were few differences in plant quality between intermediate pruning-severity treatments (36 or 18 inches height). Severe pruning (6 inches) resulted in significantly fewer flowers in most varieties over the four-year study period.

Increases in pruning severity significantly reduced growth of most of the tested varieties. Vigorous growers such as 'Neptune,' 'Outta the Blue' and 'Rabble Rouser' were significantly stunted by the severe pruning treatment. 'Brigadoon' and 'Mr. Lincoln' showed no apparent pruning response, likely because they grew very little and seemed to be poorly adapted to the site and to the disease pressure from rose rust.

The number of flowers varied by pruning treatment in vigorous growing varieties, such as 'Rabble Rouser,' but not in weak varieties such as 'Brigadoon' and 'Mr. Lincoln'. The overall response to pruning severity was a reduction in the total number of blooms produced. In essence, smaller shrubs had fewer flowers.

Rose quality was little affected by pruning in most tested varieties. In some varieties in 2011 and 2013, quality decreased in a few varieties with the most severe pruning treatment when compared to unpruned shrubs. In only a few cases was quality increased by pruning and only in isolated years and varieties ('Gentle Giant' in 2010 and 'Outta the Blue' in 2013). Pruning can improve the apparent quality of a rose by removing diseased canes.

The most obvious response in the trial was due to variety. Quality levels, growth and flower totals were most affected by the variety of rose measured in the study (inter-variety statistical tests are not reported). This suggests that rose performance in a region is dominated by its genetics rather than by the pruning regime implemented for its maintenance.

33rd Annual Landscape Management Seminar

The 33rd Annual Landscape Management Seminar is scheduled for Tuesday, February 3, 2015, at Hodels. Visiting speakers include Jim Downer of UC Cooperative Extension, Ventura County, who will speak about canker diseases and root rots of woody plants, common in the southern San Joaquin Valley. We'll have updates on laws and regulations, a noon demonstration, and an update on the very important citrus greening/Asian citrus psyllid problem. Abate-a-Weed is cooperating as a sponsor for this meeting and is handling registration.

Planting and Early Care of Deciduous Fruit Trees

The salubrious climate of the southern San Joaquin Valley allows many kinds of deciduous trees fruit to thrive. The typical winter fog is also beneficial for deciduous fruits because fog events increase the number of chilling hours. Mountain locations are also suitable for fruit species, such as apples, which require additional chilling and cooler summer temperatures to develop quality fruit. However, mountain sites may experience an increased risk of late spring frost, an event that can destroy the crop. Desert locations may be suitable for some fruit varieties, and good yields may be obtained in home orchards – again if late frost does not injure the crop.

When planting, choose a location that will receive plenty of sunlight and, if possible, will be protected from wind. Allow plenty of space for the mature trees. For full-size trees, 20 to 24 feet is a typical spacing. Soil amendments in the planting hole are generally not necessary, and may prove deleterious. It's best to settle the soil with water rather than tamping the soil. Whitewash, or white latex paint diluted 1:1 with water, is recommended for the trunks of young trees to prevent sunburn.

When selecting fruit trees, be sure to obtain a variety suitable for your location. The widest selection is often found in early spring when bareroot trees become available, and bareroot fruit trees are preferable to container stock. Attention to variety selection may also reduce some pest problems. For example, mid-season peaches mature during the annual green fruit beetle flight, whereas later- or earlier-maturing varieties avoid this insect. If cross pollination from another variety is necessary for fruit set, such as for sweet cherries, be sure to get a compatible pollinator, or use a two-in-one or three-in-one grafted tree. It's a good idea to label varieties so that if a tree dies it can be replaced. Similarly, labeling branches of grafted trees may prevent an inadvertent pruning cut which completely removes the pollinating limb. Nemaguard rootstock is preferred for stone fruits where nematodes may be a problem, which is most locations in Kern County. For apple trees, rootstocks of the MM series give varying degrees of dwarfing. For helping in variety selection, a publication, *Deciduous Fruit for the Home*, is available at the UC Cooperative Extension Office, 1031 S. Mt. Vernon Avenue, Bakersfield.

Pruning Deciduous Fruit Trees in the Home Orchard

There are three pruning phases in the life of a deciduous fruit tree. The first occurs at planting, when the first cut should be made to foster development of a vase-shaped structure, since an open-center form is preferred for almost all deciduous fruit species on the San Joaquin Valley floor. After a bareroot tree is planted, the trunk should be headed about knee high, or 24-32 inches above the soil surface. This cut may be emotionally difficult to make, because it may seem \$10 of a \$15 tree has been summarily removed. In reality, this most-important cut serves to establish low orientation points of structural branches (a low head), which will allow most pruning, harvesting, and pest management to be performed without a ladder during the life of the tree. When we purchase a tree at the nursery, we are paying for a well-developed root system and the top (scion) variety. The upper structure of the tree may be pretty, but should be removed upon planting. Trees in agricultural fields need higher heads for equipment passage, but at home a low head greatly facilitates tree care.

The second phase of pruning serves to establish structure, and this phase begins the year following establishment. The low heading cut will result in several branches growing outward at various directions and angles, and three or four strong, upwardly growing branches spaced at

intervals around the trunk should be selected as scaffolds. Additional branches can be removed. Pruning the next few years emphasizes structural development, including a well-spaced system of scaffolds and laterals.

The third phase of pruning begins with the onset of maturity, which is 5 - 7 years for most fruit trees. At this stage, the tree should be pruned for fruit production, with consideration of the location of fruiting wood. Pruning at this stage serves to invigorate and direct growth of the tree, with a goal of keeping it forever young; that is, annually producing new fruiting wood. Deciduous fruits differ greatly in the amount and location of wood that should be removed. Of trees often found in home orchards, peaches should be pruned the most severely and cherries the least. A detailed discussion is beyond the scope of this article, but principal determinants for pruning are the location and amount of fruiting wood. For example, peaches bear fruit on terminal wood of the previous season, so well-spaced lateral shoots with flower buds are retained. For peaches, it is common to thin (remove) half to two-thirds of the laterals, and to head (shorten) remaining fruiting wood. Apricots, plums and sweet cherries bear fruit laterally on spurs, which live three, five, and ten years, respectively. Therefore, up to 1/3 of the wood may be removed in mature apricots, about 1/5 of the wood in plums, and only light annual pruning is needed for sweet cherries.

If you would like more information, UC Cooperative Extension has an excellent 47-page publication, no. 21171, titled *Pruning Fruit and Nut Trees*. It is available at the Cooperative Extension Office, 1031 S. Mt. Vernon Avenue, Bakersfield.

Wood Ashes for the Garden and Landscape

Wood ashes from fireplaces or stoves may accumulate in winter. There are several potential benefits of adding wood ashes to soil, first in their potassium content. Potassium, or potash, is necessary for the healthy growth of fruits and vegetables. After nitrogen, it is the nutrient used in greatest quantity in plants, and wood ashes contain about 5 to 7 percent potassium. Ashes from hardwoods contain more potassium than those from soft woods. Wood ashes also contain about 1½ percent phosphorus, also a necessary nutrient. To preserve nutrient content, ashes should not be stored where rain will leach out nutrients. Ashes may be spread at a rate of 5 to 10 pounds per 100 square feet of soil followed by incorporation. The minerals contained dissolve easily so ashes should not be used close to seedlings to prevent fertilizer burn.

However, there are several potential disadvantages of using wood ashes as a fertilizer. Many Kern County soils are already high in potassium, and further additions may not be beneficial. Unlike many soil amendments and fertilizers, ashes are strongly alkaline in reaction. Soils in Kern tend to be too alkaline already, and wood ashes further increase pH. For larger gardens and landscapes, mixing small amounts of wood ashes with soil should not be harmful, and is a way of returning plant nutrients to soil.

A free one-sheet publication "Wood Ashes as a Garden Fertilizer" is available from the Cooperative Extension Office, 1031 South Mt. Vernon Avenue, Bakersfield, CA 93307.

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