The Truth about Tree Staking

From "The Curious Gardener" newsletter of Placer and Nevada County Master Gardeners (with some additions from the University of California Integrated Pest Management site: http://www.ipm.ucdavis.edu/PMG/GARDEN/PLANTS/CULTURAL/staking.html.

Trees are living organisms that respond positively and negatively to the care given them including staking practices.

In spite of research-based guidelines by the International Society of Arboriculture (ISA) and other groups, incorrect staking practices seem to abound.

The consequences are stressed trees, injured trees, trees in decline, and in many cases, actual demise. How can we help these living organisms develop into big, happy, healthy trees in our landscape? Keep the following in mind:

- **Remove the nursery stake the day of planting.**

  The stake holds the tree in a viselike grip which keeps it from moving – movement develops strength. The tree is forced to grow a pencil-shaped trunk (the same diameter bottom to top). No taper develops. Weakness and stress result. Also nursery stakes darken the side of the tree where they are located. The buds that grow branches from these locations develop into an asymmetrical canopy.

- **Root growth is diverted by the stake's location in the ground.**

  Often roots are found wrapped around stakes in the root ball. This may cause support roots to grow incorrectly.

- **Re-stake if necessary using stakes shortened to below the foliage and canopy.**

  Wind movement causes rubbing of the branches against stakes, opening up wounds which attract insects. Stress results. In order to add a stake of your own, you need to determine the proper height of the stake. Hold the lower part of the trunk in one hand; bend the top of the trunk to one side, then release the top. Locate the ties about 6 inches above the lowest level at which the trunk can be held and still return upright after the top is deflected. Place stakes 12 to 18 inches from the tree making sure they are perpendicular to the prevailing wind.

- **Trees MUST move in the wind to develop strength.**

  Use panty hose or green horticulture tape for ties: they are flexible and allow trunk movement. Remember to remove the ties when you remove the stakes. If ties are never removed, the trunk grows around them and girdles the food and water vessels, resulting in death. Ties should form a loose loop around the trunk. One way is to use two sections of rubber tubing, each about 18 inches long, attached to opposite posts. Circle each tie around the trunk, cross the ends to form a figure 8 then attach the free ends of the tie to the stake. Another method is to use two ties, each attached to both posts. Overlap the ties twice, once on each side of the trunk between the trunk and each post. Remove any staking after a year or so; if the trunk is then unable to stand alone, determine the cause before re-staking.

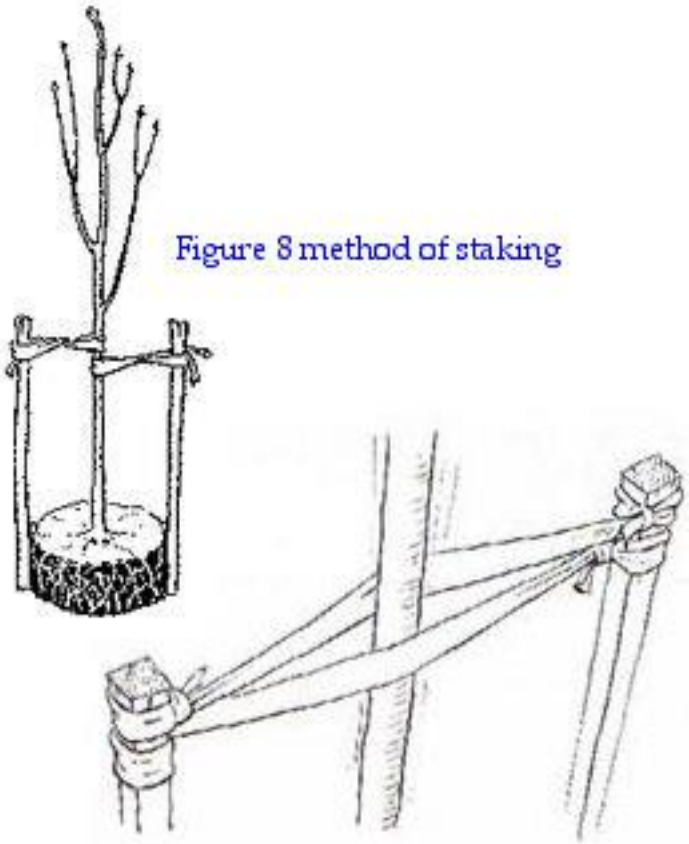

Figure 8 method of staking

Two-tie method of staking

It is better to buy free standing, unstaked trees. If trees must be staked, do so as outlined, removing stakes 12 to 18 months after planting. If trees have been planted according to horticultural standards, the **support roots** will have developed properly and will support the tree even in windy conditions. If the tree blows over it is because these roots did not develop.

This article was edited and submitted by the University of California Cooperative Extension Master Gardeners of Tuolumne County.