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## **The Myth of Tree Topping, Part II**

*“Landscape trees need to be headed back in the nursery to develop proper branching”*

### **The Myth**

An increasingly common practice in production nurseries is the heading back of young trees destined for landscape use. This procedure originated well over 300 years ago as a way of improving survival of bare-root seedlings. It is particularly useful for managing fruit trees and other species used for seed or fruit production. Heading back the leader encourages lateral branching; it also facilitates controlled pollination and insect and disease management. Leader heading at the production nursery is currently performed on many deciduous and coniferous species destined for landscape use rather than crop production. Juvenile trees generally display **excurrent** growth patterns, which are exemplified by a strong central leader but few laterals. When young trees are topped, one of the new resulting branches near the top is subsequently trained to become the leader (Figure 1). Frequently the tree may be headed a second time (Figure 2). The increase in branching and lateral growth causes the tree to acquire a more mature (**decurrent**) appearance. This appearance is important to consumers and when planting specifications require a particular branch distribution along the trunk. Is this practice of heading young trees appropriate for specimens used along streets and in other ornamental settings?

### **The Reality**

Removal of the leader from a young tree, whether done by a nursery, a landscape manager, or a browsing herbivore, induces bud flush below the cut shoot. These new branches grow vigorously and compete with each other to become the new leader. Often there is no clear winner in this competition and the tree develops multiple trunks (Figure 3). To prevent this morphology, a new leader must be selected and trained. Competing branches may need to be removed or trained laterally. In any case, this can be a time-consuming and expensive task. As part of a management system for peaches, apples, and other tree crops, it may be economically feasible since it makes harvesting more efficient (though some recent research disputes the value, citing reduced harvests by topping). The only economic argument for heading young landscape trees in the nursery is to reduce shipping costs by decreasing height.

A second common reason this nursery practice occurs is to create miniature “adult” trees designed to appeal to customers who are not aware of the natural differences between juvenile and adult morphologies. When faced with a choice between a whip-like sapling and one with branches, customers are likely to choose the latter even when the crown is of poor quality and will need corrective pruning in the future (Figure 4).

A final reason for this type of pruning is to force young trees to conform to unrealistic tree specifications. Installation specifications that require a large number of branches in young trees, especially in species that do not develop laterals as juveniles, encourage both the pruning and the purchase of these trees. The young lateral branches are generally too low to become scaffolding branches, and in particular street trees with runaway lateral branch growth will become nuisances to pedestrians and vehicles alike.

As discussed in a prior B&B column (September 2003), the practice of tree topping cannot be justified scientifically, especially with our increased understanding of tree physiology and hazard tree development. Trunk attachments such as those shown in Figure 1 theoretically could become failure points as the tree grows, and there is no argument that the tree shown in Figures 1 and 2 is aesthetically unappealing with its twice-pruned trunk. Yet the practice of heading young trees continues to be

recommended in print and on the web. With such subjective statements as “some species do not branch effectively,” enthusiasts claim that continuous heading of leaders and laterals allow you to “literally build a tree.” However, there is no valid physiological reason to interfere with normal growth patterns of young landscape trees by heading otherwise healthy leaders and laterals.

### **The Bottom Line**

- Juvenile trees, especially decurrent species, usually exhibit excurrent growth until they approach maturity.
- Heading back any tree will result in vigorous, uncontrolled growth, which increases the maintenance costs associated with the tree, both at the nursery or in the landscape.
- If a particular species does not naturally have the desired branching as a juvenile, then another species should be selected.
- Landscape trees are not crops and should not be managed as such.
- Tree standards and specifications should conform to tree biology; we should not expect trees to conform to artificial and unrealistic standards.

For more information, please visit Dr. Chalker-Scott’s web page at <http://www.theinformedgardener.com>.



Figure 1: Headed tree with new leader



Figure 2: Tree with 2 heading cuts



Figure 3: Headed pine with competing new leaders



Figure 4: Young tree headed to mimic adult form