

WARNING: TOPPING IS HAZARDOUS TO YOUR TREE'S HEALTH!

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What is Topping?

Topping is the drastic removal or cutting back of large branches in mature trees. The tree is pruned much as a hedge is sheared and the main branches are cut to stubs (Figure 1). Topping is also referred to as heading, stubbing or dehorning.

Why Are Trees Topped?

Many homeowners have their trees topped, often by so-called professionals when their trees have reached heights which they consider unsafe. They fear a strong wind might blow these large trees over. This fear is largely unjustified. The extensive root system of a healthy tree, if left relatively undisturbed, provides adequate support for the tree. An old healthy tree with a good root system is actually less likely to blow over than a smaller tree with its smaller, less developed root

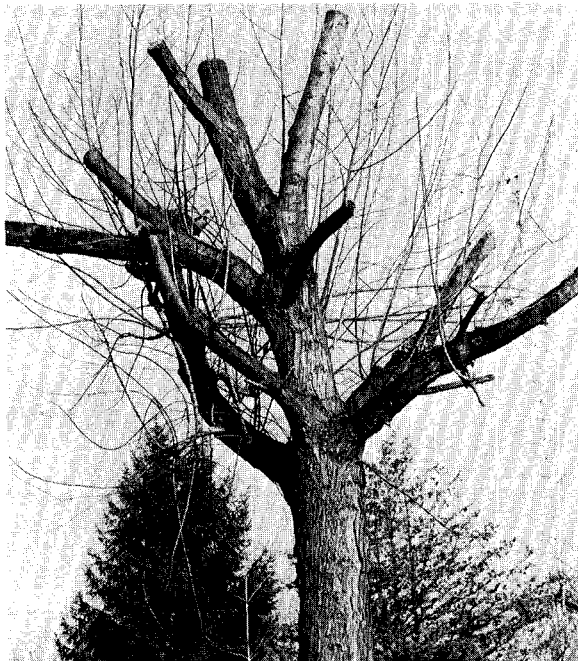


Figure 1. A tree that has been topped. DO NOT do this to your trees!

system.

Some homeowners believe that the stimulation of new growth associated with topping is actually beneficial to the tree. Although the tree appears rejuvenated with new foliage and branches, this only serves to mask the real injury topping does to the tree.

Trees may also be topped to remove potentially hazardous dead and diseased branches which may break off during ice or wind storms. Unfortunately, topping removes both healthy as well as unhealthy limbs. The hazardous limbs are best removed by selective pruning instead of topping.

Large, mature trees are often topped to prevent interference with overhead utility wires (Figure 2). They are also topped when they block views, interfere with buildings or other trees, or shade solar collectors or other areas (e.g., lawns and gardens) where sunlight is wanted. In some of these situations, removing large limbs may be necessary; however, correct pruning alternatives such as proper early training, selective thinning out of branches and limbs, or whole tree removal should be considered and adopted where feasible.

Why Is Topping Injurious to Trees?

Topping can injure a tree in the following ways:

- Removing much of the tree canopy upsets the crown-to-root ratio and seriously affects the tree's food supply. A 20-year-old tree has developed 20 years worth of leaf surface area. This leaf surface is needed to manufacture sufficient food to feed and support 20 years worth of branches, trunks, and roots. Topping not only cuts off a major portion of the tree's food-making potential, it also severely depletes the tree's stored reserves. It is an open invitation for the tree's slow starvation.

- Removing the tree's normal canopy suddenly exposes the bark to the sun's direct rays, often scalding the newly exposed outer bark.

- Topping removes all the existing buds which would ordinarily produce normal sturdy branches.

- Large branch stubs left from topping seldom close or callus. Nutrients are no longer transported to the large stubs and that part of the tree becomes unable to seal off the injury. This leaves the stubs vulnerable to insect invasion and fungal decay (Figure 3). Once decay has begun in a branch stub, it may spread into the main trunk, ultimately killing the tree. Fruiting bodies of decay fungi (Figure 4) are often visible on the bark of decaying trees.

- Topping stimulates the regrowth of dense, upright branches just below the pruning cut (Figure 5). These new shoots, referred to as "suckers" or "water sprouts," are not as structurally sound as are the naturally occurring branches. These water sprouts often consist of succulent growth which is more susceptible to diseases such as fire blight (rosaceous trees) and herbivorous insects such as aphids and caterpillars.

- Since water sprout regrowth is generally rapid and vigorous, a topped tree often will grow back to its original height faster and denser than a tree that has been properly pruned or thinned. This makes topping, at best, only a temporary solution to oversized trees.

- Some tree species (e.g., sugar maple, oak and beech) do not readily produce water sprouts. Without the resulting foliage, a bare trunk results and the tree quickly dies.

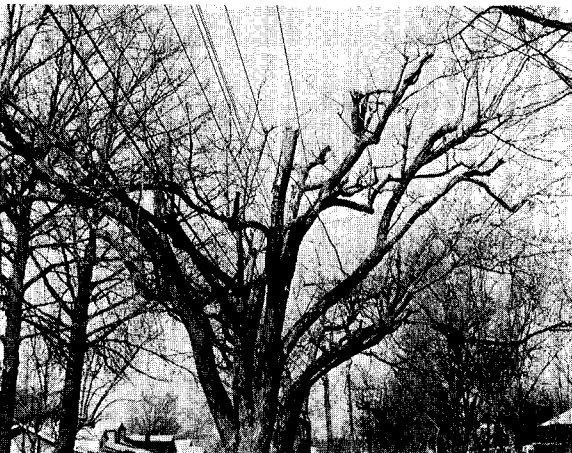


Figure 2. Trees are often topped to eliminate interference with utility lines.

- Deteriorating branch stubs, along with weak water sprout growth, make topped trees highly vulnerable to wind and ice damage.

- From an aesthetics aspect, topping disfigures the tree. Unsightly branch stubs, conspicuous pruning cuts and a broom-like branch growth replace its natural beauty and form. The practice of topping probably started in Europe where people did not really want shade trees, but instead wanted trees that would still allow the sun to shine in their gardens. Species used there such as London plane and linden can survive many such topplings. Topped trees are unnatural substitutes for *shade trees* meant to offer several lifetimes of beauty and enjoyment.

What Are the Alternatives?

There are situations where reducing the tree crown is desirable and necessary. A less injurious alternative for accomplishing this is "thinning-out" which involves removing selected branches by pruning them back to the lower lateral branches (Figure 6). This reduces the tree's height and spread while retaining its natural shape. Only selected portions of the tree's canopy are removed, reducing the likelihood of sun scald damage. Pruning cuts are made close to the trunk, leaving only the collar of the removed branch instead of stubs. These pruning cuts are less conspicuous than those left from topping and they "heal" more rapidly and completely. Thinning-out requires greater skill and time than topping but, in

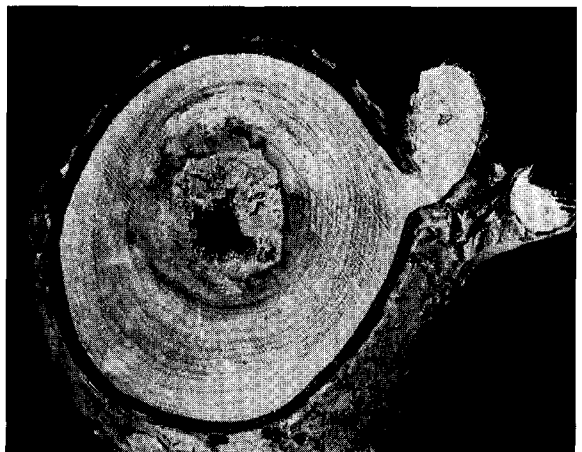


Figure 3. Internal decay, often not visible from the outside, weakens tree limbs.



Figure 4. A conk (fungal fruiting structure) is a visible sign of decay in trees.

most situations, it is well worth it.

In many circumstances, it may be better to remove a tree you consider too large and replace it with a smaller one. Before replanting, consider the potential height and spread of the tree at full maturity. Avoid planting where the tree will eventually interfere with utility lines or other obstacles. Careful planning ahead can often eliminate the necessity of drastic pruning in the future.

Careful and judicious pruning while the tree is young can eliminate the need for major pruning later on. This can effectively control tree growth and preserve the natural form of the tree without causing serious damage to tree health. Pruning is a continuing task which requires foresight, but it is also a good investment in time and money.

Conclusion

Topping damages hundreds of large, beautiful trees each year. Many people are unaware of the detrimental effects of topping. Others regard trees as blocks of wood rather than living organisms that can be easily injured. This type of misinformation about tree care needs to be corrected. Trees are subjected to a number of stresses during their lifetime. Many of these, such as lightning, flooding, and drought, are stresses that we have little or no control over. Topping is also a form of stress, but it is a stress that can be



Figure 5. Dense, upright branches develop as a result of topping.

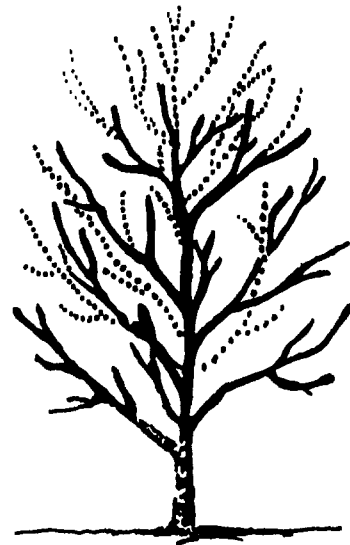


Figure 6. The tree crown can be reduced by "thinning-out" selected branches.

avoided.

Unfortunately, even some "knowledgeable" tree service companies indiscriminantly top trees. Avoid patronizing those companies which advocate topping.

Adapted from University of Kentucky Cooperative Extension Publication, ID-55. Departments of Plant Pathology and of Horticulture and Landscape Architecture, Lexington, Kentucky 40546.