

Pruning Mature Pecan Trees

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From the time the tree comes into economic production, it is a mature tree. There is another group of pruning operations that can help the producer increase or maintain yields and improve nut quality. The other pruning practices are usually accomplished during the training and establishment stage of orchard development.

Mature trees are pruned to decrease shading, to remove bad limb angles, to remove dead limbs, and to remove lower branches to accommodate orchard equipment. Some of the hedging practices include:

Mechanical Hedging

This pruning technique has received much discussion in the past 15 years. Some of the things we know about it are:

- (a) It should be done before the trees go out of production or have a chronic low nut quality problem. Annual records should be kept to learn when nut quantity and quality in pecan orchards are decreasing.
- (b) It can be done economically.
- (c) It increases yields and improves nut quality for a short period of time.
- (d) Hedging is a temporary treatment and must be done again after three or four seasons, depending on the pruning system selected.
- (e) Yield increases from hedging may be smaller with each successive hedging operation.
- (f) Annual light prunings are recommended over heavy prunings (but only branches 1" to 1 1/2" in diameter).
- (g) Light mechanical pruning is also recommended the winter just before the season when a heavy crop is anticipated.

Thinning or Complete Tree Removal

After three or four hedging treatments, benefits are reduced to a point where hedging may not be beneficial. The roots start to compete for moisture and nutrients and the trees will shade each other. The only economical treatment is to remove trees. This practice has been adopted in ultra-high-density and high-density orchards, but growers have been slow in deciding to remove trees after the stand has been expanded over the 30' X 30' or 35' X 35' spacing.

The removal of trees from 30' X 30' spacing is a continuation of the sequence where the space has progressed from 15' X 30' to 30' X 30'. The first step is to remove 25% of the trees by taking out every other tree in every other row. This will give an immediate increase in nut quality and, by the second season after thinning, yields will increase. When the trees start to crowd at this spacing, more trees should be removed, to take out every other tree in the remaining rows leaving tree spacing at about 42' X 42'. This thinning treatment should be increased to 60' X 60' in a few years, which will probably be the final spacing for the life of the orchard.

Mature Tree Cut Back

In instances where trees were planted too close and were allowed to grow together and crowd, growers may try to correct the situation by cutting the trees back severely. This is commonly called *dehorning* or *pollarding*. This pruning process is not effective in bringing the trees back into full production. Part of a 50-year orchard in Mexico was pruned this way and the rest was pruned by tree removal. Under the tree removal system, the orchard was in full production in only 1 year. The trees that were dehorned were not in production 5 years after the dehorning process. A similar demonstration was conducted on a 60-year-old Stuart pecan orchard in Texas. Trees were severely

dehorned or moderately dehorned. The severely dehorned trees have not produced pecans after 3 years.

Corrective Pruning

A certain amount of corrective pruning must be done each year to maintain tree health and to accommodate orchard equipment. Narrow crotches should be removed. Complete branches should be routinely eliminated in the center of the tree to improve sunlight penetration. Branches that are getting in each other's way should also be eliminated routinely to prevent limb shading. Cuts should be made to the nearest crotch to prevent regrowth of suckers. This process will delay orchard crowding but, eventually, it will be necessary to thin the orchard or start mechanical hedging.

Lower scaffold limbs that prevent clamping of the tree shaker during harvest must be removed. Limbs that are low enough, because of the tree's heavy crop, that tractor wheels will run over or damage them should be removed. Dead wood can be removed, but most producers just shake it out during harvest. Those

orchards that have been hedged a couple of times usually have a large amount of dead limbs.

One of the most expensive parts of any pruning operation, whether the orchard is being hedged or trees are being removed, is the removal of prunings. There are as many methods of removing the brush after pruning as there are orchards. Each producer will work out a procedure that fits his situation, labor force, and available equipment. Some firewood can be sold, which might offset some of the brush removal cost.

Summary

Pruning mature trees is expensive but necessary. Most pruning operations that are done to maintain tree size and to reduce shading. Growers should coordinate these pruning operations with the periodic removal of trees to maximize production and maintain quality. Annual light mechanical prunings may be the answer to large orchard operations. If done routinely removed branches will be no thicker than 1" to 1 1/2" in diameter.