

Management Strategies to Improve Native and Seedling Pecan Groves

Pecans are native to North America, including Mississippi. They are common in bottomlands throughout several states. Today, native and seedling pecan trees produce a relatively small percentage of Mississippi's pecans, but they could produce more. However, just having trees is not enough to make them profitable. Most management methods can benefit both native pecan trees and improved pecan cultivars. Adding a management strategy to improve quality and productivity can make both native and seedling pecans more profitable.

Maintaining Tree Spacing

Success is related to several factors. One of the most important is proper tree spacing. Tree spacing in an improved orchard is predetermined; however, in a native setting, tree spacing is random. For native trees, ample space is the key to good yields. If branches of nearby trees touch, the trees are too crowded. Depending on the size of the tree, adequate spacing may be 40 to 80 feet apart. Branch tips of adjoining trees should be no closer than 10 to 15. During the growing season, there should be no more than 50 percent shade at noon.

In an improved orchard, tree removal is usually built into the management strategy. When the trees reach between 20 and 25 years old, removing every other tree is common. When it comes to removing native trees, each tree must be evaluated on its own merits. First, remove all underbrush and non-pecan trees. Look at the remaining pecan trees, and consider removing trees with these characteristics:

- small, light green leaves
- early leaf shedding in the fall
- short shoot growth
- lower branch shedding
- irregular or poor nut production

These are all symptoms of unthrifty trees. Once those trees are removed and healthy trees retained, the process is further refined. It is best to observe a pecan tree for 2 or more years before making any decision to remove it. These are some undesirable characteristics of otherwise healthy-appearing trees:

- poor nut production
- very small nuts (100 or more nuts per pound)
- phylloxera (especially on stems)
- lack of resistance to pecan scab, and late ripening (after the first fall freeze)

You should also remove the following types of trees:

- hollow trees, which may be diseased or provide habitat for destructive animals
- trees that are larger than what harvesting equipment can handle, causing damage to both trees and equipment
- multiple-trunked trees, which compete for resources and are difficult to harvest

Removing native pecan trees is a continual process; trees must be evaluated every year. Tree removal is most commonly done during the winter after harvest.

After you have identified and retained the best-looking trees, evaluate their yields. Here's an easy way to keep track of yields: after every harvest, spray-paint a spot on the trees with the best yields. Do this for several years. After a few years, keep the trees with the most spots and remove the other trees.

Removing trees may expose the remaining trees to damage, such as sunscald and wind damage. Therefore, in heavily wooded areas, thin trees out gradually to allow the remaining trees to adapt to the new conditions. Pecans grow quickly in response to increased light and decreased competition. Yields may decrease temporarily, but the tree should fully compensate in 2 to 3 years.

Managing the Floor

Proper floor management can also help produce high-quality pecans. There are several options open to growers. One method is clean cultivation during summer followed by a cover crop during winter. The benefit of this method is the elimination of competition from weeds and grasses, which can be a problem for young trees. The problem with this method is that it can allow wind and water erosion.

Another option is to have short, uniform vegetative cover. This cover may compete with young trees, especially if the cover includes aggressive grass species. Cool-season crops are typically less competitive. Keeping grass mowed short and grazing livestock are two ways to reduce competition; however, not all pesticides are compatible with grazing.

Reducing Alternate Bearing

Pecans have a strong tendency to alternate bear (that is, yield inconsistently from year to year) when not managed. Under full management, alternate bearing can often be minimized. This is especially true for improved orchards but is also true for native populations.

One management strategy to help with this problem is to increase soil fertility. Because nuts are typically smaller in native groves, fertilizer needs tend to be lower in native orchards than in improved orchards. However, 100 to 150 pounds per acre of actual nitrogen may improve productivity.

Another important way to reduce alternate bearing is crop load thinning. Research indicates that it is not usually beneficial to crop load thin native pecans, although seedling tree populations may differ. In any event, not all trees will require nut thinning every year. Pecan trees respond differently to shaking: some trees dislodge mostly individual nuts, but others dislodge entire clusters and therefore must be shaken harder.

Thinning should be done when the ovule is 50 to 100 percent expanded, before nuts begin to compete for carbohydrate reserves. Trees with large nuts should be thinned at 50 percent ovule expansion, whereas trees with small nuts can be thinned closer to 100 percent ovule expansion. In any case, they should be thinned before the kernel gets to the dough stage.

Timing of crop load thinning will vary with the tree type and location. How much to thin depends on nut size, nut set, and incidence of insects and disease. Thinning is especially important because the number of nuts depends on the number of leaves on the tree. More leaves equals better nut production, with at least eight to ten leaves needed per nut; large nuts require more leaves per nut.

When thinning crop loads, consider the following:

- Thinning too early requires extra force, which can damage the tree.
- Thinning too late reduces the benefits on kernel quality, return bloom, and cold hardiness.
- Not thinning at all could lead to too many fruiting shoots. If the number of fruiting shoots is greater than the optimum nut load, a decrease in nut weight, return bloom, kernel percentage, and grade could result. The effects vary by situation.

Managing in Other Ways

Other management strategies that maximize production include irrigating; controlling insects, diseases, weeds, and animal pests; and using foliar analysis to assess nutritional requirements. These strategies are more common in improved orchards, but can also be beneficial in native situations.

Grafting is another option for native trees. Native pecan trees can be topworked to a cultivar, thus improving the quality of the nut obtained. The best trunks or limbs to work are less than four inches in diameter. The trees should be greater than thirty feet apart.

Pecan nut production and quality can be increased substantially with a few important management strategies. These include tree thinning and removal, floor management, the addition of irrigation, pest control, grafting, soil fertility, and crop load thinning. Not all of these techniques work in all situations, but assessing a native grove appropriately can lead to greater profitability in pecan production.

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