Training Young Pecan Trees

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The first five years of growth are the most important in developing a central leader and scaffold branch framework of the pecan tree. Structural developments in the trees during these years will be evident 30 or 40 years later. Pecan growers will exert few influences that will be effective longer than those exercised in developing the framework of a young pecan tree. This development should be done carefully with a minimum amount of pruning. Considerable planning is required to properly train and prune young trees. Mechanical equipment used for orchard management will influence the training program chosen. Keep in mind the ideally structured tree and always try to shape each tree to this pattern. No two trees are alike and only a few will conform exactly to your picture, but it will serve as a standard.

The type and amount of training and pruning that should be used can be determined, to a considerable extent, by the ultimate use of the tree. Early nut production is directly related to the amount of pruning, with the earliest production being on trees subjected to the least pruning. Backyard growers may be willing to sacrifice some early production in order to have an aesthetically well-shaped tree. However, commercial growers with a large number of pecan trees are more likely to compromise some structural development and form to obtain early production from their trees.

There are several pruning methods commonly used for training young pecan trees. Heading back, branch selection, tip pruning, and pinching are all good methods and need to be practiced during the first few years when establishment of new pecan trees and proper training is critical.

Heading Back

To develop a medium-size, strong, wind-resistant tree for the West, use a central leader or modified central leader system. At planting time, prune the top one-half of the tree (Fig. 1). This usually results in a This publication is scheduled to be updated and reissued 5/05.



Fig. 1 Pruning at planting

whip 36–42" tall. Head-back pruning encourages strong central leader regrowth. Frequently two or three new shoots develop adjacent to the cut-back point in the early spring. However, newly planted trees usually grow slowly during the first season. If growth has not started by July, cut back to 12" above the bud union, to force growth.During winter (dormant season), the strongest and most vigorous shoot should be selected and head back 1/3 to 1/2 (Fig. 2). The second strongest shoot should be removed. The remaining shoot needs to be tip-pruned to reduce growth and encourage short laterals. Lateral shoots will also develop below the cutback point. These lateral shoots can develop into small permanent scaffold limbs. They can be pinched during the summer and usually tip-pruned in the winter.

The previous year's growth of the central leader should be cut back about one-third during the first through fourth (or fifth depending on development) dormant season. Continue to force one strong shoot to grow at the top of the tree (Figs. 2, 3, 4, and 5).

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Fig. 2. First-year dormant pruning.



Branch Selection

When selecting branches that will become permanent scaffold limbs, choose only the branches that form wide angles with the central leader. The selection of the main lateral scaffold branches should be delayed until the dormant period after the first year of growth. It is important to know that at each node (growing point) primary, secondary, and tertiary buds occur.

Scaffold branches from the main central leader trunk may be formed from primary, secondary, or tertiary buds. Those formed from primary buds usually produce narrow crotch angles, and are weaker than scaffolds formed from secondary or tertiary buds. Those should not be used in developing the major scaffold branches of the framework. The shoot from the primary bud may be pruned or pinched out to force the development of a shoot from the secondary bud. The same procedure, pruning or pinching both primary and secondary buds, may be used if a scaffold branch is desired from a tertiary bud.

The main trunk or central leader from which the scaffold branches are formed is more easily developed from a primary bud with its natural tendency for upright growth so the center of the tree will be erect.

When training a young pecan tree, 6 to 10 side branches arranged in a spiral around the central leader are selected and spaced 8–14" apart. Trees having several small scaffold branches can be harvested more easily with a mechanical shaker than those having only two or three large branches. The lowest scaffold branch should not be higher than necessary for attaching the shaking machine, about 4–5 feet should suffice. The exact height will be determined by the type of harvesting equipment to be used.

All side shoots developing below 4 feet, which will not be selected for permanent scaffold limbs, should not be removed until they are 1" in diameter. Their purpose is to manufacture food for central leader extension, sun protection, and girth development. In addition, these lower branches will produce nuts until weakened by excess shade.

Lateral branches frequently grow in clusters instead of the ideal spiral arrangement. When this happens, select the most ideally located one, prune it in the dormant season and shorten the others to a few inches to reduce vigor. Trunks with two central leaders should be pruned because splitting may occur at the junction. If two upright trunks of equal size develop, one must be removed. This should be done as early in the life of the tree as possible. This reduces the probability of "V" trunk development.

Crow's foot is the development of four to six shoots from the end of a young limb. Thin out the limbs so that only two or three remain. Tip-pruning significantly reduces the crow's foot problem. All pruning should be done during the dormant season.



Fig. 4. Third-year dormant pruning.



Fig. 5. Fourth- and fifth-year dormant pruning.

Tip-Pruning

Most cultivars produce extremely vigorous growth in the third, fourth, and fifth seasons. Tipping these vigorous shoots will produce many lateral branches; the most desirable can then be selected for further training. Tip-pruning is practiced on permanent limbs by removing about 2" of terminal growth during the dormant season. Shoots are tip-pruned only when they are 32" or longer (Figs. 2, 3, 4, and 5). This practice stimulates the development of numerous small lateral shoots. Heading back (removal of one-third to onehalf of the shoot length) instead of tip-pruning will usually result in the development of three or four strong shoots directly below the pruning cut.

Tip-pruning will bring pecan trees into commercial bearing at an earlier age and encourage central leader development. It also reduces tree size during the first 10 years. It has been recommended to tip-prune trees until the sixth or seventh year. It is not needed on larger, bearing trees.

Pinching

This pruning is accomplished on trees less than four years old. As small scaffold limbs develop along the trunk, pinching is performed by removing their soft, light green growing points. The growing point can be easily broken off with the fingers. Lateral shoots should grow 12–18" before the growing point is removed during the first season, and 12–32" during the second, third, and fourth growing seasons (Figs. 2, 3, and 4). Pinching results in larger leaves on the lateral shoots. It also inhibits development of large scaffold limbs during the first four years of the tree's life and encourages strong leader development.

Shaping Takes Time

Almost all pruning necessary on young trees can be done during the growing season, if done as soon as needed. Trees trained and pruned in this manner will seldom require the use of a pruning saw.

At least five years are needed to complete the selection of scaffold branches and train the tree to the proper form. Each tree will be different although you attempted to make them appear uniform. It is impossible to select branches on a tree that conform exactly to your ideal, but if you continue to compare each tree with your mental picture of an ideal pecan tree, your orchard will produce maximum yields of high quality nuts.

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