



Figure 19. This breakage resulted from a sharp crotch angle that affected the tree's central leader trunk.

Old Tree Renovation

Many pecan plantings in North Carolina have been neglected for years. Renovating 75-foot-tall trees is costly and usually not economically feasible. Drastic pruning on older trees reduces their productivity for at least three years. This loss can never be recovered. The best way to manage these orchards is to thin out the trees as needed to attain proper light penetration and air movement. After removing the necessary trees, remove any dead, diseased, or damaged branches on the remaining trees. Any branches that are crowding and that cross within the trees also should be removed during the dormant season. If major pruning is planned, it should be done over a period of at least three years. Each year make several large cuts in each tree to minimize the production decrease and the resulting surge in growth from the pruning cuts. Under no circumstances should trees be "de-horned" by significantly cutting back all branches.

Fertilization

Nutrition in pecan orchards should be managed using visual observation, soil analysis, and foliar analysis. Pecan trees should grow at least 8 to 10 inches on lateral terminal branches each year for optimal production. If more or less growth occurs, the fertility program may need to be modified.

Soil samples can be collected and submitted for analysis at the same time as foliar samples. Soil samples should be taken from the soil surface to an 8-inch depth and from the 8-inch to 16-inch depth. Each sample should be a composite of at least 20 subsamples from across a field with the same soil type. Fields under different management systems or different soil types should be sampled separately. The samples can be submitted through your county Cooperative Extension Center. (For information on collecting samples, see *Soil Facts—Careful Soil Sampling*, an online Extension publication: content.ces.ncsu.edu/careful-soil-sampling-the-key-to-reliable-soil-test-information. You will receive a report in the mail with recommendations for correcting the soil pH and any nutrient deficiencies. A soil analysis should be obtained before planting new trees, and the soil should be amended as necessary to a depth of at least 16 inches. Soil pH for pecan trees should be in the range of 6.0 to 6.5. Soil samples can be collected every other year.

Foliar analysis can be determined with leaflet samples collected in mid-to-late July. The sample should consist of at least 100 leaflets from the middle of the compound leaves on the current season's growth. Collect leaflets that are not damaged and those that are growing in full sun. To ensure accuracy, do not collect samples after recent pesticide or nutrient spray applications. Place the leaflets in an open paper bag or in perforated sample bags to allow them to dry. Then submit the sample through your county Cooperative Extension Center along with a nominal fee for analysis. You will receive a foliar analysis report through the mail with recommendations for avoiding or correcting deficiency symptoms.

A rule of thumb for fertilizing nonbearing trees is to apply 1 pound of 10-10-10 fertilizer (10 percent nitrogen, 10 percent phosphorus, and 10 percent potassium) per year of tree age, in late February or early March, not to exceed 25 pounds per tree. For bearing trees, apply 4 pounds of 10-10-10 fertilizer per inch of trunk diameter measured just below the scaffold branches. Broadcast the fertilizer in a broad band around the tree's drip line. Pecan trees also require adequate zinc as determined by a soil analysis. If zinc deficiency symptoms are seen, foliar applications of 1.6 ounces of zinc sulfate in 5 gallons of water applied after 1 inch of new growth in the spring and repeated every three to four weeks will help correct the deficiency.

Managing the Orchard

Pecan orchards should have grassed row middles and vegetation-free strips down the tree rows (fig. 20). The bare strips are usually maintained with herbicides registered for use on pecans. Broadleaf weeds within the grass middles can be controlled with selective herbicides