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EXTENSION

# Pecan Trees for the Home or Backyard Orchard



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# Pecan Trees for the Home or Backyard Orchard

Pecan trees are commonly found surrounding both urban and rural dwellings throughout Georgia. They can enhance the environment and provide additional income from the sale of nuts. Pecans are recommended for home planting in the Coastal Plain and Piedmont, but are not recommended for the north Georgia mountains.

When planted, a pecan grown from seed (called a “seedling”) does not produce a tree identical to its parent. In fact, each seedling tree is unique and will have extremely variable nut quality. Therefore, to propagate a tree of a given cultivar, buds or shoots from the parent tree must be grafted onto seedling rootstock.

Some pecan cultivars are not profitable because of their susceptibility to insect pests and diseases such as pecan scab. Many seedling trees and cultivars also produce inferior nuts that may be unsuitable for sale or consumption. In order to successfully produce pecans in a home orchard, low-input management is a must.

## Cultivars

Selecting a cultivar or variety is the most important decision for successfully growing pecans. There are numerous pecan varieties from which to choose, but only a few are suitable for yard-tree planting because many home orchardists are unable to adequately apply pesticides. Destructive diseases and insect pests are difficult to manage without the aid of costly chemical pesticides and an “airblast” pecan tree sprayer. Fortunately, there are scab-resistant cultivars that can produce quality pecan kernels. The highest-quality pecans are those with a high kernel percentage (the kernel comprises much of the nut’s in-shell weight).

Commonly-found cultivars currently recommended for yard-tree plantings include Elliott, Excel, Gloria Grande and Sumner. These cultivars are readily obtained from most pecan tree nurseries that serve the southeastern United States. Other cultivars well-suited to backyard orchards include Amling, Carter, Gafford and McMillan; however, their availability is limited. To ensure good pollination, plant at least two varieties. This is especially important for areas with few surrounding pecan trees.

## Cultivar Descriptions

**Elliott** — “Elliott” has an extremely high quality, small, teardrop-shaped nut. It bears alternately, but nut quality remains high in the “on” years. High scab resistance makes it a good choice for home orchards. “Elliott” is susceptible to late spring freezes and should not be planted in north Georgia or in low spots. Yellow aphids can be a problem, and young trees are slow to come into production.

**Excel** — “Excel” was discovered as a seedling tree, then patented and disseminated by Andy Clough, who operates a nursery on his pecan farm near Blackshear, Ga. Nut size is large and similar to “Desirable,” but the shell is thick. “Excel” currently has high resistance or immunity to scab; however, once new cultivars are widely planted, scab resistance often breaks down. Nut quality has been marginal due to low kernel percentage (49 percent), but most trees are young so it is difficult to assess what the quality of mature trees will be.

**Gloria Grande** — “Gloria Grande” is slow to come into full production, but its primary attributes are a high resistance to scab and consistent yields as a mature tree. “Gloria Grande” will produce a crop of large, thick-shelled nuts in most years. However, it produces fuzzy kernels some years, similar to “Stuart,” and black aphids may damage the foliage most years.

**Sumner** — “Sumner” is slow to come into bearing. Mature tree production is usually average, with fairly regular production. “Sumner” produces large nuts of moderate quality. As a favorite cultivar of black pecan aphids, it is typically one of the first to show damage from this pest. Historically, “Sumner” has been resistant to scab, although susceptibility has recently been reported in some locations.

**Amling** — “Amling” is a cultivar from Alabama. It produces moderate-to-small nuts of good quality with minimal care and no sprays. Scab resistance is excellent, and harvest date is early.

**Carter** — “Carter” is an Alabama cultivar that produces a large nut and has an estimated harvest date of October 18. Veins have been visible on kernels in some years.

**Gafford** — Another Alabama cultivar that produces a good quality nut, “Gafford” has excellent scab resistance. Little is known about its long-term yield potential, but it is reported to be highly insect resistant in Alabama.

**McMillan** — “McMillan” is another low-input cultivar from Alabama that has been highly productive and consistent, with light scab damage on nuts. Its estimated harvest date is October 20.

## Location and Spacing

It is important to plant pecan trees well away from structures, buildings and overhead power lines because of the ultimate size the trees will reach.

Yard and home orchard trees should be spaced at least 60 to 80 feet apart so they will not crowd as they reach maturity and so thinning will not be required. Crowding can cause misshaped trees and decreased production.

## Planting Trees

Pecan trees are most commonly planted as bare-root transplants; however, container-grown transplants may also be used. Bare-root trees provide a lower initial cost and are more readily available. Bare-root trees should be transplanted while dormant, between December and March — the earlier the better — to get good root establishment by spring. Container-grown trees normally suffer less transplant shock, and can be transplanted from October to May. Although container-grown trees may be planted while non-dormant and in foliage, tree stress is reduced and survival is better if they are planted in the dormant season. In any case, adequate soil moisture is a necessity.

If possible, plant trees the day they are received from the nursery. Many trees bought from mail-order dealers or garden centers will have been out of the ground for several days. If these trees have been stored and handled properly, they should survive and grow. If trees appear dry, soak them in water for several hours to refresh them prior to planting. The major causes of death and/or low vigor in young pecan trees are drying before planting and failing to supply adequate moisture for the first two years following transplanting.

**Bare-Root Trees** — Bare-root pecan trees have long taproots and require a deep planting hole. In most situations, the hole should be at least three feet deep and 12 to 24 inches wide so that all side roots can be properly positioned as the hole is refilled.

When centered in the hole, trees should be set at the same depth they stood in the nursery — usually indicated by a color change on the bark. It is critical that the tree not be planted too deeply because the roots may die from lack of oxygen, leading to tree stress or death. Additionally, trees set too deeply are often easily blown over in a storm when they reach 15 to 20 years of age.

Roots should be arranged in a natural position. Limited root trimming is permissible, but should be kept to a minimum. Twisted, broken or excessively long roots should be trimmed to fit in the hole. Every effort should be made to keep the taproot as intact as possible; however, excessively long taproots may be trimmed. **Do not place fertilizer in the hole.**

After the tree is set at the appropriate depth, begin filling the hole with water. When the hole is  $\frac{1}{2}$  to  $\frac{3}{4}$  full, push dirt into the hole while the water continues to run. When the water level approaches the top of the hole, turn the water off and fill the rest of the hole with dirt. This will prevent air pockets from developing around the roots.

Level — do not pack — the soil around the tree. Very little soil settling should occur, but if it does, additional soil can be added to bring the soil level with the surface again. It is not necessary to create a berm or basin around the tree to hold water.

After planting, prune  $\frac{1}{3}$  to  $\frac{1}{2}$  of the top of the tree and remove any branches to compensate for the large percentage of roots lost when the tree was dug.

The trunk should be protected from cold damage, herbicides and wildlife for the first three years. This can be done by painting the trunk with white latex paint or by placing a 2½- to 3½-foot growing tube or sleeve over the tree. Four-inch corrugated drain pipe is often used for this purpose, and horticultural suppliers also sell pre-cut and ready-made sleeves. Split tubes or sleeves down the length of one side so they can be removed after two years.

Finally, mulch trees with a six-inch layer of pine straw, leaves or **old** sawdust. This helps hold moisture and limits competition from grass and weeds.

**Container-Grown Tree Planting** — Container-grown pecan trees are planted similarly to bare-root trees. After removing trees from containers, check them for pot-bound roots. If this is a problem, the roots should be pulled away from the soil and pruned. If the taproot has become twisted at the base of the container, it should be straightened or cut to encourage new taproot growth.

Place the root ball in the hole and add water and soil as indicated above for bare-root trees. Because container soil mix can act as a wick and pull moisture away from the roots, cover it with an additional inch of soil to prevent roots from drying out.

## Care of Young Trees

**Watering** — To successfully grow pecan trees, it is important to adequately water them (10 to 15 gallons at regular weekly intervals, either by rainfall or irrigation) for the first two to three years. Most young pecan trees lose a large percentage of their roots during digging and transplanting, and their limited root system must be supplied regularly with water. **This is one management practice that must not be neglected.**

**Fertility and pH** — Do not place fertilizer in the planting hole as it may burn the roots, damaging or killing the tree. To accurately determine fertilizer and lime needs, take a soil sample prior to planting. If no soil test was made, use a general rate of about one pound of 5-10-15 fertilizer distributed in a 25-square-foot area around the tree. Make this application in June following planting. The following year, apply one pound of 10-10-10 fertilizer in March and again in June. **Do not place fertilizer within 12 inches of the trunk.**

Young trees should make between two and four feet of terminal growth each year. Where growth is less, apply one pound of ammonium nitrate fertilizer per inch of trunk diameter in June or July. As a general recommendation, apply one pound of zinc sulfate per tree for the first three years following planting. Spread the fertilizer and zinc sulfate in a circle around the tree outside of the planting hole.

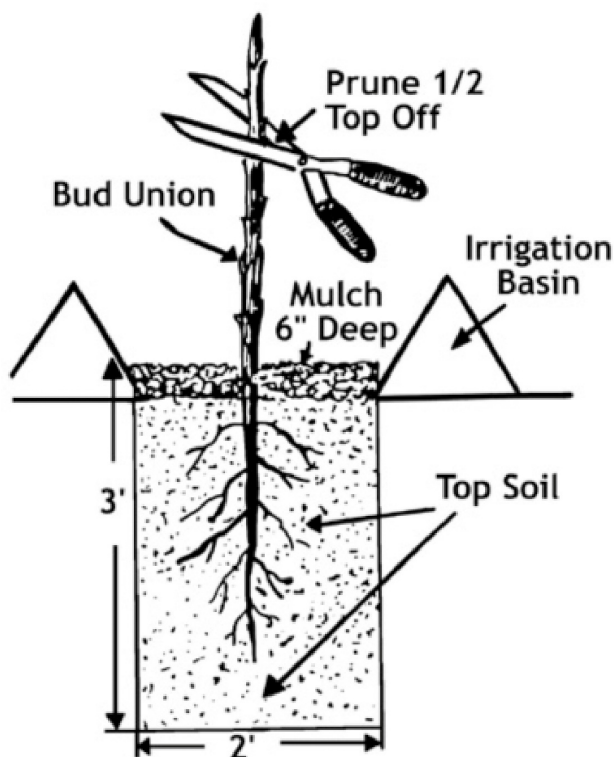


Figure 1. A properly-planted pecan tree.

## Care of Bearing Trees

**Fertilizing** — Fertilization is one of the most important practices for bearing trees. If the trees are to produce a good crop, terminal growth should be six inches each year. In the absence of a leaf analysis or soil test, broadcast four pounds of a complete fertilizer such as 10-10-10 for each inch of trunk diameter (measure 4½ feet above soil level), up to a maximum of 25 lbs. per tree. Ammonium nitrate may also be used at a rate of one lb. per inch of trunk diameter, up to a maximum of eight lbs. per tree. This fertilizer should be applied in mid- to late March.

Zinc nutrition is especially important in pecan production. Zinc needs are best determined by analyzing leaf samples taken in late July or early August. Mailing kits and instructions for taking samples are available from your county Extension office. The leaf analysis report will tell you how much zinc to apply.

In the absence of a leaf analysis, apply one pound of zinc sulfate to young trees and three to five pounds to large trees each year. A soil pH of 6.0 to 6.5 assures the availability of essential nutrients. If the pH is too low or too high, uptake and use of nutrients is impaired. Apply lime as suggested in the soil test report to correct low soil pH.

**Water** — Water has more of an effect on pecan production than any other environmental factor, particularly where nut quality is concerned. Drought stress affects nut size and filling, as well as leaf and shoot growth. Adequate soil moisture is important at bud break for stimulating strong, vigorous growth; from bloom through shell hardening for nut size; and during the nut filling stage for optimizing kernel percentage. If trees do not receive adequate soil moisture levels late in the season, shuck split and energy reserves are affected.

The nut sizing period normally occurs from May 1 through August 15. Even though this is not a critical water-use stage for pecan, serious drought conditions during this period can affect yield. The most common visible effects of an extended drought during this period are excessive nut drop and “shell hardening” on small nuts. Lack of sufficient water during the nut sizing period also causes small nuts and may lead to water stage fruit split, which results from a sudden influx of water during the nut filling stage in some varieties.

The nut filling stage occurs from about August 15 to the first week of October, depending on variety. The most critical period for water use is during the first two weeks of September. Reports from other areas of the country indicate that as much as 350 gallons of water per day can be required by each tree during the nut filling stage. Lack of sufficient water during the nut filling stage will lead to poorly-filled nuts, poor nut quality and increased alternate bearing.

**Insect Control** — Although backyard or home orchard pecan trees seldom develop serious insect problems, treating the trees if pests do begin to build can be difficult. Whole-tree spraying is not an option. However, some of the most likely pests can be controlled effectively with insecticides that are available without a pesticide license, using application techniques that are safe to use around children and pets and are compatible with the typical home environment. **Follow all label directions to minimize risks.**

*Weevils* — Pecan weevils can be controlled by spraying tree trunks with an insecticide containing the active ingredient carbaryl. Mix the pesticide in a hand sprayer and spray a two-foot-wide band around the tree trunk about waist high, taking care to get thorough coverage. Treatment should usually begin in mid-August and repeated about three weeks later.

*Aphids* — Pecan aphids can be controlled with root-zone applications of a systemic insecticide containing the active ingredient imidacloprid. Mix the labeled amount in a bucket of water and pour the solution around the base of the tree. For large trees, the insecticide should be mixed in two-to-three gallons of water per tree. Young trees can be treated effectively with one-to-two gallons of solution. Follow the label indications to determine the correct amount of insecticide for the size of tree being treated. Pecan trees can tolerate surprisingly large numbers of aphids, particularly yellow aphids, without loss of yield. Treat when honeydew accumulation under the tree is heavy, and

when sooty mold begins to blacken the lower leaves. Rainstorms will wash off the honeydew and reduce aphid populations directly, so treatment may not be necessary in most years if the weather cooperates.

**Livestock Control** — If trees are planted in pasture areas, they will need to be fenced in to prevent animals from feeding on them.

**Disease Control** — Diseases can severely limit pecan production. The major pecan disease is pecan scab, a fungus that is prevalent throughout the southeastern U.S., and that can devastate unsprayed, susceptible cultivars. Pecan scab occurs on leaves, twigs and nut shucks. All tissues are most susceptible when young and actively growing, becoming less easily infected when mature. Leaves are susceptible from bud break until they reach maturity. Nut shucks are susceptible from development until maturity.

The best way to control scab is to plant scab-resistant varieties. In many cases, pecan scab cannot be controlled on susceptible varieties without spraying. The severity of pecan scab in a given year is determined by rainfall frequency — the longer the period of leaf/nut wetness, the heavier the scab pressure.

Scab lesions are typically small, brown-to-black spots, one to five millimeters across, with a velvety or rough appearance when the fungus is sporulating. If conditions favor further scab development, the lesions can coalesce, covering much of the leaf or nut surface.

Sanitation can almost always help reduce losses from scab and other minor diseases. Nearly all fruit and foliage diseases of pecans, including scab, overwinter on plant parts infected the year before. **Complete** removal and destruction of leaves and shucks during the winter can reduce carry-over of scab and other diseases and help control them. Removing limbs touching the ground not only promotes air movement under the tree but also helps reduce the leaf wetness necessary for disease infection. Spraying the lower limbs with a home garden sprayer will ensure disease control on those limbs. If you plan to spray, make the first application at bud swell and continue every 14 to 21 days until mid-August.

**Birds and Squirrels** — Squirrels are often a serious pest, especially if trees are located near a wooded area. Hunting in season can minimize damage from squirrels. If it becomes necessary to kill squirrels out of season, a permit from the Georgia Department of Natural Resources is required.

No chemicals are currently legal for poisoning squirrels or birds; however, barriers and trapping do offer some protection from squirrels.

*Barriers* — Individual trees can be protected from squirrels by banding the trunk with a metal shield about 24 inches wide, encircling the trunk about five feet above the ground. Slots on the metal, instead of holes, will allow the metal band to slip past the fastening spikes as the tree grows. Partially withdraw the spikes each year to prevent them from becoming embedded in the trunk.

*Trapping* — Live traps and size 1½ leg hold traps will catch squirrels. Release trapped animals in wooded areas.

## Harvesting Pecans

Harvesting the nuts as soon as they mature is essential for preventing nut loss due to predation and deterioration, and ensures better quality. One of the quickest ways to lose nut quality is to let them lay on wet ground. Harvest early and store nuts in a clean, dry place.

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