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## Pine, Loblolly (spp.)

### Leaf Identification

**Type:** Simple  
**Arrangement:** Alternate and spiral  
**Venations:** Parallel  
**Margins:** Entire  
**Shapes:** Needle-like

**Fruit Color** Brown

The fruit is dry, cone shaped and oval.

### Environment

This plant tolerates some drought, occasional wetness and some salt.

This plant will grow in dry to occasionally wet soil.

Suitable soil is well-drained/loamy, sandy or clay.

The pH preference is an acidic to slightly alkaline (less than

### *Pinus taeda*

Loblolly Pine

Pinaceae (Pine)

**Type** Tree, woody plant

**Hardy range** 6B to 9A

**Height** 50' to 75' / 15.20m to 22.80m

**Spread** 25' to 35' / 7.60m to 10.60m

**Growth rate** Slow

**Form** Oval

**Exposure** Full sun

**Persistence** Evergreen

**Bloom Color** Yellow

**Bloom Time** Spring

**Leaf Color** Green

**Fall Color** No change in fall color

### Native Habitat

Southeast US to central Florida where annual rainfall ranges from 40 to 60 inches. Occurs commonly in flat poorly drained soils to drier soils in upland sites. Growth is poor on soils that remain saturated for extended periods. Nitrogen deficiency can lead to poor growth on poorly drained soils. Grows in deep well-drained sands best where there is a water table within reach of the root system. Generally found up to about 1200 feet elevation.

Native to the following North American locales: Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, New Jersey, Oklahoma, South Carolina, Tennessee, Virginia

### Crown, Branch and Twig

This plant is asymmetrical with a fine texture and has a open crown.

This plant's bark is not showy.

Branches or twigs are of medium thickness, have a thick and fibrous surface.

### Landscape Uses

- Specimen

### Attributes and Features

- Pest tolerant
- Attracts birds
- Inconspicuous blooms
- Persistent fruit
- Attractive fruit
- Fruit is edible by birds
- Fruit can be a litter problem
- Fruit attracts animals
- Sensitive to ozone



This plant typically grows with one trunk.  
Little pruning is required.  
This plant is very flammable.  
National champion is 148 x 83 feet in Arkansas.

### **Culture Notes**

Loblolly Pine is a southern pine commonly planted for the lumber industry and often found along water in the southeast. It grows best in full sun on well-drained, moist, acid soil and is highly drought-tolerant once established. Pines are often grouped together in a landscape and they are becoming more popular for planting in parks and in commercial landscapes. They create a light shade which allows grass and other plants to easily grow beneath the canopy. Needles are borne in threes. Widely planted for timber and pulpwood. Wood weighs about 50 pounds per cubic foot.

Like many pines horizontal branches break easily in ice and wind storms. Something always seems to be falling from this pine tree; needles, sap, branches, and fruit appear on nearby cars, roofs and sidewalks year round. Unless grown in the open with no other trees nearby, shaded lower branches die as the tree grows taller. Open-grown trees keep more lower branches, probably due to greater sun exposure. It is important to maintain only one leader to the top of the plant.

Dropping needles often discourage people from planting pines near streets, parking lots, or near other pavement. Roots also enjoy growing just under the surface of the asphalt and cracking it. Taproots are well developed and deep on well-drained soils; they are deflected laterally on poorly drained sites. Taproots are smaller and shorter than those on *P. echinata* and *P. palustris*. Probably the most serious problem of Pines in areas with high pH irrigation water is pine chlorosis. The root system is often dominated by a few large diameter roots.

### **Maintain adequate mulch area**

Be sure to clear all turf away from beneath the branches and mulch to the drip line (the edge of the branches), especially on young trees, to reduce competition with turf and weeds. This will allow roots to become well established and keep plants healthier. Locate the tree properly, taking into account the ultimate size, since the tree looks best if it is not pruned to control size. The tree can enhance any landscape with its delightful spring flush of foliage. It can be the centerpiece of your landscape if properly located.

Like most pines, trees best recover from transplanting when moved balled and burlapped, not bare-root. They also grow fine when planted from containers provided plants are not root bound.

### **Tree establishment specifications**

Choose good quality trees for planting. The most common cause of young tree failure is planting too deep. In most instances, the point where the top-most root in the root ball originates from the trunk (referred to as the root flare zone or root collar) should be located just above the soil surface. You may have to dig into the root ball to find the root flare. If there is nursery soil over this area, scrape it off. Never place ANY soil over the root ball. The planting hole should be at least twice the width of the root ball, preferably wider because roots grow best in loose soil. In all but exceptional circumstances where the soil is very poor, extensive research clearly shows that there is no need to incorporate any amendments into the backfill soil. Simply use the loosened soil that came out of the planting hole. Simply planting with the topmost portion of the root ball slightly higher than the surrounding soil might still install the tree too deep - be sure to locate the root flare.

Weed suppression during establishment is essential. Apply a 3-inch thick layer of mulch to at least a six-foot diameter circle around the tree. This area should be at least two feet in diameter for each inch of tree trunk diameter and maintained during the establishment period. Apply a thinner layer of mulch directly over the root ball but keep it at least 10 inches from the trunk. This allows rainwater, irrigation and air to easily enter the root ball and keeps the trunk dry. Placing mulch against the trunk and applying too thick a layer above the root ball can kill the plant by oxygen starvation, death of bark, stem and root diseases, prevention of hardening off for winter, vole and other rodent damage to the trunk, keeping soil too wet, or repelling water.

Regular irrigation after planting encourages rapid root growth that is essential for tree establishment. Trees provided with regular irrigation through the first growing season after transplanting require about 3 months (hardiness zones 9-11), 6 months (hardiness zones 7-8), or one year or more (hardiness zones 2-6) per inch of trunk diameter to fully establish roots in the landscape soil. Trees in desert climates may take longer to establish. Trees that are under-irrigated during this establishment period (and most trees are) often require additional time to establish because roots grow more slowly. Be prepared to irrigate through the entire establishment period, especially during periods of drought.

Irrigation also helps maintain and encourage the desirable dominant leader in the tree canopy on large-maturing trees. Instead of



a dominant leader, trees that are under-irrigated during the establishment period often develop undesirable, low, co-dominant stems and double leaders that can split from the tree later.

Unlike established plants, which do best with deep, infrequent irrigation, research clearly shows that recently transplanted trees and shrubs establish quickest with light, frequent irrigation. For trees planted in spring or summer, provide one (cooler hardiness zones) to three irrigations (warmer hardiness zones) each week during the first few months after planting. Daily irrigation in the warmest hardiness zones provides the quickest establishment. Following the initial few months of frequent irrigation, provide weekly irrigation until plants are fully established. With every irrigation, apply one (cool climates) to two (warm climates) gallons of water per inch trunk diameter (e.g. 2 to 4 gallons for a 2-inch tree) over the root ball only. In most landscapes that receive more than 30 inches of rain or irrigation annually, if the mulch area is maintained weed-free, irrigation does not need to be applied outside of the root ball. Never add water if the root ball is saturated.

In cooler hardiness zones, in all but the driest years, irrigation of spring- and summer-planted trees usually can be discontinued once fall color has begun. Irrigation of fall planted trees, however, should be continued until foliage has dropped from the deciduous trees in the region. In warmer climates, irrigate fall-and winter-planted trees as described for the spring- and summer-planted trees.

In drier, desert climates there is benefit to be gained from applying additional irrigation outside of the root ball area. This is best done by making a large diameter berm four to six inches high, then filling it with water so it percolates into the soil. For the first two years, irrigate twice each week through the spring, once per week in summer provided monsoons arrive, and twice each week again in fall if it remains warm. Taper off watering to once or twice each month in winter and resume twice weekly next spring. For years three to five, water twice per month in spring, summer, and fall and once or twice per month in winter. During years five through seven, water once every three weeks in warm weather and once every six weeks in winter. After this, the drought-tolerant desert trees should be able to survive on natural rainfall.

Trees with good, strong structure need no pruning at planting, except to remove broken twigs. Do not remove branches to compensate for root loss - research has shown that this can be detrimental to establishment.

### **Pests, Diseases and Damaging Agents**

**Pests:** Pine bark beetle, borers, pine tip moth, sawflies. Resists Nantucket pine tip moth in California. This pine is susceptible to the southern pine beetle (*Dendroctonus frontalis*) which has devastated large tracts of loblolly pine plantations. This pest attacks plants about every 7 to 10 years. It is typically initiated in unhealthy loblolly pine, but can infest healthy trees as well. Specialists recommend spacing at least 25 feet apart in parks to help slow the spread of this pest. Keep trees irrigated in dry weather to minimize stress, mulch around trees, and fertilize sparingly but regularly. Forest tent caterpillar. Highly susceptible to pine wilt nematode.

**Diseases:** Fusiform rust (*Cronartium quercuum* f.sp. *fusiforme*), heart rot. Prune to remove rust infected branches in fall and winter before fungus spores emerge and select resistant planting stock. Rust is now believed to infest approximately half of the 2.5 million acres of loblolly and slash pine forests in the southeastern US. Pitch canker is encouraged by over-fertilization with ammonium nitrate.

This plant is sensitive to damage from ozone air pollution. Damage can occur in urban or rural areas because ozone can travel long distances away from where it is formed. Typical symptoms on deciduous trees are a flecking or stippling only on the upper side of the foliage between large veins. The small spots or flecks are white, tan or orange-red. Spots or flecks from one-eighth to one-quarter inch long appear on needles of sensitive conifers. Yellow bands that girdle the needle may form, eventually causing the tips of the needles to die and/or needles to drop from the plant. If you suspect ozone is causing damage on this plant, locate White Pines (*Pinus strobus*) in the area to see if they are damaged. White Pines are very sensitive to ozone damage and can serve as indicators of the presence of ozone in concentrations high enough to cause plant damage.

### **Special Notes**

This plant has aggressive roots.

