

PIN OAK

Quercus palustris Muenchh.

Plant Symbol = QUPA2

Contributed by: USDA NRCS New York State Office



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Uses

Even though the wood is heavy, strong, and hard, pin oak is typically used for fuel wood, wood pulp, and railroad ties, since it tends to warp. Due to this species' form, adaptability, growth rate, longevity, and fall foliar display, it is popular for ornamental usage. Pin oak is utilized by many game species, especially wood ducks, white-tail deer, and wild turkey. Due to its use by these highly sought after animals, pin oak is commonly planted for food plots.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

Pin oak is a moderately large tree with normal heights ranging from 70 to 90 feet with diameters between 2 and 3 feet. Trees reaching 120 feet tall with 5-foot diameters are occasionally encountered on good sites. The bark of this tree is smooth, reddish to grayish-brown during the juvenile period, becoming darker and shallowly fissured as the tree growth slows with age. The lower branches of pin oak are prostrate to descending, with smooth, slender, reddish-brown twigs. Clusters of pointed buds are

located at the tips of twigs. Three to five inch alternate leaves have 5 to 7 points or lobes with bristled tips and deep C-shaped sinuses. The leaves change in color from a dark green to a deep scarlet red in fall. The leaves are deciduous but will usually persist on the tree into winter.

The flowers of pin oak emerge soon after new leaves unfold in spring (April to mid-May). The acorns that develop are roundish, short stalked, 3/8 to 1/2 inches long, and capped with a thin and shallow saucer-like cup. The acorns will take 16 to 18 months to develop from pollination to maturity. When mature the acorn turns light brown to reddish-brown, and will drop from September to November. In 30 to 35 year old stands of pin oak, 4,000 to 20,000 sound acorns per acre yields have been documented. There are 410 acorns per pound.

Pin oak is often confused with scarlet oak (*Q. coccinea*) due to similar appearance. Scarlet oak is an upland species that prefers soils with good drainage on dry sites.

Adaptation and Distribution

Pin oak's native range spans from Rhode Island, Pennsylvania, Michigan, to Kansas south to North Carolina and northern Arkansas. This tree grows under a wide range of site conditions, but is a true bottomland tree. It is seldom found growing above elevations of 800 feet, or on sloped ground. Pin oak grows in practically pure stands with good growth rates on wet, shallow sites with heavy soils that drain poorly. On better quality sites it will often grow larger, but is normally out competed by other species.

For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

Establishment

Both seed and stump sprouts are sources of natural regeneration for pin oak. Although viable acorns sink, this species is often dispersed by water, as well as animals, wind, and gravity. In areas that are regularly flooded, acorn damage by insects is reduced and germination is typically faster than most other species. Since there is more than adequate annual seed yields and adequate moisture on the forest floor in spring, it is not uncommon to see seedlings blanketing the ground under pin oak.

Under nursery production conditions, mature acorns are placed on raised beds in fall or spring, but germination will not occur until spring. Shoot elongation begins about the same time as leaf out of established trees and continues until fall. Seedlings are distributed by most nurseries as 1 year old bareroot stock for field plantings, but balled and burlapped saplings are distributed for ornamental uses.

Management

Pin oak typically requires management only during the first few years after outplanting to a permanent site. Weed competition and deer browse must be managed in many locations. Site preparation to control weeds the year prior to outplanting will pay dividends in increased growth rate. Contact herbicides, used according to the label, and/or control by tillage are most commonly used. There are a variety of deer control products that may be useful such as tubes or mesh sleeves over the seedling. Weeds and deer control require repetitive action and maintenance to be effective.

Pests and Potential Problems

Livestock must be kept out of tree and shrub planting areas. Insect and diseases include gypsy moth and oak wilt. Gypsy moth should be controlled when the trees are young, but older trees can tolerate infrequent defoliation. Little can be done about oak wilt. Entire stands may be killed by prolonged flooding.

Cultivars, Improved, and Selected Materials (and area of origin)

‘Crownright,’ ‘Sovereign.’ The species is available through numerous native plant nurseries. Nursery produced seedlings are currently grown from local or regional seed sources.

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For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

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