

# White Oak

*Quercus alba*

Family: Fagaceae (Beech)

**Hardiness Zone:** 3b – 9

**Range:** White Oak is widespread across eastern North America. It is natively found from Maine south to Florida and west to Minnesota and Texas. However, it is not usually found in the high Appalachians, the Delta region of Mississippi, or coastal areas of Texas and Louisiana.

**Growth Habit:** Generally a slow grower, white oak eventually matures into a very large tree with a wide spread irregular crown. Mature trees range in height from 50' to 80' with those in the wild growing to over 100'. When young, White Oak has a pyramidal shape.

White Oak prefers full sun, but it has intermediate shade tolerance, which lessens as it matures. However, seedlings, saplings, and pole-sized trees can survive under forest canopy for over 90 years.

White Oak can be found growing in many soil types, but does best in deep, moist, well-drained, acidic soils.

**Leaves:** New leaves are a bright, grayish-green. Older leaves are dark green to dark blue on the surface with a pale or waxy underside. Mature leaves are 4" - 8.5" long and about half as wide. Each leaf narrows at the base and has 5 – 9 oblong, rounded lobes and a smooth margin.

Fall color develops late, but is generally showy and lasts a long period of time. Color ranges from brown to rich reds to reddish-purple.

**Buds:** Buds are blunt and reddish-brown to brown in color. They are 1/8" – 1/4" long. White Oak terminal buds are multiple.

**Flowers:** Flowers of both sexes appear on the same tree and emerge in the spring with the leaves. Male flowers are yellowish and appear first in 2" – 4" long catkins. Female flowers appear 5 – 10 days later as very small reddish spikes.

**Twigs:** Stout twigs are angled and often shinny. Twigs are brown to purple in color.

**Bark:** The whitish-gray bark is scaly on smaller stems. On larger stems, bark is irregularly blocky or deeply fissured with narrow ridges.

**Fruit:** The fruit is a nut, better known as an acorn. Acorns appear either singly or in pairs on a short stalk. They are 3/4" – 1" long with a light brown, bumpy bowl like cap that covers 1/4 - 1/3 of the nut. Green acorns ripen in the first year to a deep brown color. White Oak acorns mature in about 120 days and fall of the tree about 25 days after maturity, usually in September or October. Viable fruit germinates quickly after falling to the ground. White oak can be a good seed producer, but crops are irregular and it is not uncommon for several years to pass without a crop.

**Pests & Diseases:** There are many pests and diseases that afflict white oak, including gypsy moth, oak wilt, and two-lined chestnut borer. From an economic standpoint, woodborers may be the most devastating as they affect the quality of the wood. However, most pest and disease damage is not significant and white oak remains a strong and long-lived tree.

**Uses:** White oak is the most important lumber tree of the white oaks. It's lumber is used in many applications, including furniture, flooring, and wine. In addition to its lumber value, acorns from white oak are edible and used as food for over 180 birds and mammals.

## Sources

Pictures provided by UConn Plant Database. <http://www.hort.uconn.edu/plants/about.html>

Brand, Mark H. *Quercus alba* – Plant Page. UConn Plant Database of Trees, Shrubs, and Vines. <http://www.hort.uconn.edu/plants/q/quealb/quealb1.html>

Dirr, Michael. Manual of Woody Landscape Plants. Stipes Publishing Company. Champaign, IL, 1990

*Quercus alba* Fact Sheet. Virginia Tech, Department of Forestry, College of Natural Resources. <http://www.cnr.vt.edu/dendro/dendrology/syllabus/factsheet.cfm?ID=35>

USDA Forest Service, *Silvics Manual Volume 2 – Hardwoods*. Agricultural Handbook 654. [http://na.fs.fed.us/spfo/pubs/silvics\\_manual/volume\\_2/carya/ovata.htm](http://na.fs.fed.us/spfo/pubs/silvics_manual/volume_2/carya/ovata.htm)





