

Landowners Guide to Identification and Characteristics:

BLACK OAK (*Quercus velutina*)

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Black Oak (*Quercus velutina*)

Black oak is a common and widely distributed oak that is part of the red oak group. It is a medium-sized tree that can grow up to 80 feet in height. Like many red oaks it is suitable for timber products and its fruit, the acorn, is a valuable wildlife food. Black oak can be found on a wide variety of sites, including those with moist and well drained soils but is most often found on medium to poor soils associated with a south or west facing aspect.

Identification

The leaves of black oak are highly variable as you can see in the photos. They are usually between 4 and 10 inches long with five to seven lobes. The lobes have bristle tips, a distinctive characteristic of red oaks. Sun leaves (leaves found on the outermost layer of the canopy) tend to be shiny and thick with deep sinuses (spaces between lobes) while leaves growing in the shade tend to be broader, less shiny and papery.

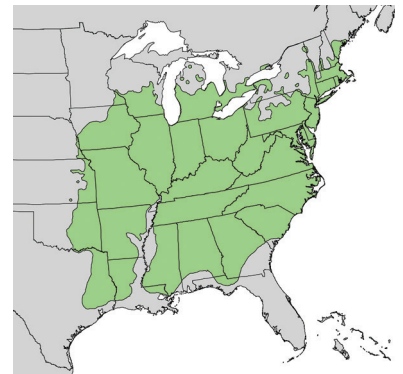


Figure 1: Black oak range map. Photo courtesy: Atlas of United States Trees



Figure 2: Black oak leaves with deep lobes are usually found in full sun. Photo courtesy: Keith Kanoti, Maine Forest Service, Bugwood.org



Figure 3: Large black oak leaves are usually found in shaded locations. Photo courtesy: Chris Evans, University of Illinois, Bugwood.org



Figure 4: Notice the variability of black oak leaves. Photo courtesy: T. Davis Sydnor, The Ohio State University, Bugwood.org

This publication is part of the White Oak Initiative's (www.whiteoakinitiative.org) Landowners for Oaks Series designed to provide foundational information necessary for sustainable management of white oak and upland oak forests.

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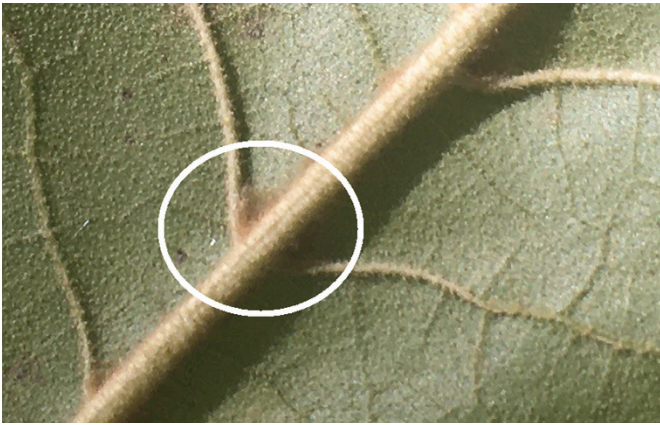


Figure 5: Downy hairs on the underside of a black oak leaf, especially where the leaf vein meets the midrib can be seen as well as felt.

There are small tufts of downy hair where the leaf veins meet on the underside. These velvety hairs are an important identifying characteristic of black oak.

Bark

The bark is gray and smooth on young trees and very dark gray to almost black and deeply furrowed on mature trees. The inner bark is yellow-orange.

Acorns

The acorns are about a half to $\frac{3}{4}$ of an inch and somewhat egg shaped. The scales on the acorn cap are also light brown with a light fuzz.



Figure 7: Black oak terminal buds.

Using the twig and buds to identify oaks can be difficult and tricky. However oaks can be distinguished from non-oaks by the characteristic grouping of buds clustered near the tip of the twig. The twig is reddish brown or grayish with multiple relatively large buds at the tip ($\frac{1}{4}$ to $\frac{1}{2}$ inch long) that are pointed and buff with downy fuzz.



Figure 6: Black oak bark. Photo courtesy: Vern Wilkins, Indiana University, Bugwood.org



General Information

Reproduction and Regeneration:

Most hardwood trees use seed and vegetative (root and stump sprouting) regeneration to reproduce.

- Seed regeneration via acorn: Black oak typically begins acorn production around 20 years, with best production between 40 and 70 years. Black oak usually has consistent acorn production. The acorns mature in two growing seasons and drop in late summer or early fall; they will germinate the following spring. The acorns are scattered and dispersed by squirrels, rodents and blue jays.
- Regeneration via sprouting: Black oak sprouts from the root collar and cut stumps.

Site Location and Competition:

- Black oak can be found from the bottom to the top of the slope but is most common on the upper slopes facing south or west with dry, coarse soils.
- It is second to post oak in its tolerance of dry, coarse soils.
- Black oak can be commonly found growing with scarlet oak, post oak, chestnut oak and southern red oak.



Figure 8: Black oak seedlings in the understory are larger with very shallow lobes.



Sunlight Requirement:

- Black oak is classified as intermediate in shade tolerance, but less tolerant than white oak and chestnut oak.

Other Oaks that Look Similar:

- Black oak can be confused with northern red oak, scarlet oak and occasionally southern red oak. However, only black oak leaves have the small tufts of downy velvety hairs where the leaf veins meet on the underside.

Uses:

- The wood is similar to northern red oak and used for flooring, furniture and trim.
- The tree provides good wildlife cover and nesting sites for both birds and mammals, particularly cavities for cavity nesting birds like the northern flicker.
- The acorns are eaten by squirrels, mice, white-tailed deer and turkey. Acorns from all red oaks are a valuable food source for wildlife throughout winter, since they do not germinate until the following spring.

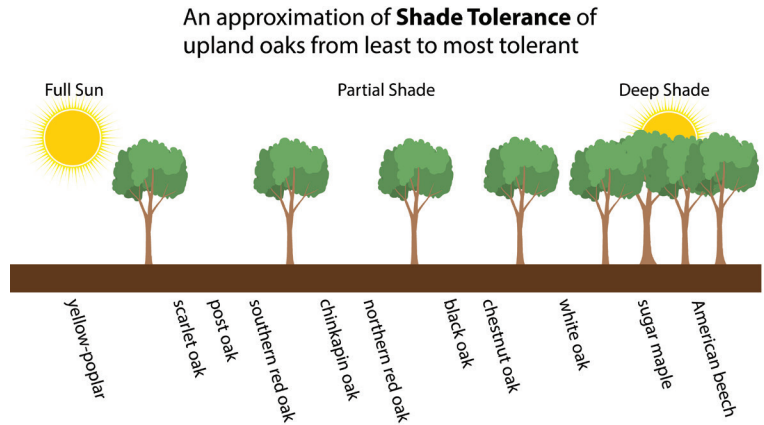
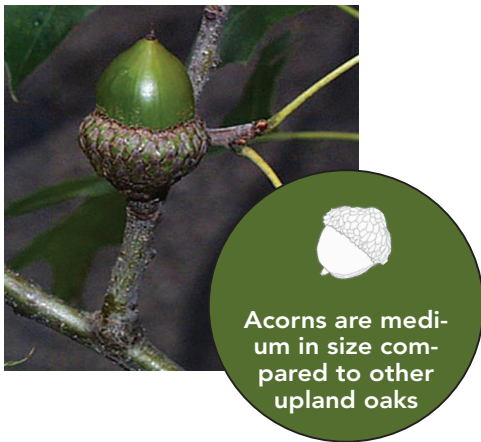


Figure 10: Shade tolerance of upland oaks.

The photos at the top of page one represent a few of the many benefits and uses of white oak, making it one of the most important tree species in the Eastern United States. Photos and images courtesy of the authors or the University of Kentucky Department of Forestry and Natural Resources unless otherwise noted.

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Figure 9: Black oak acorn. Photo courtesy: Paul Wray, Iowa State University, Bugwood.org



Other Facts:

- The scientific species name for black oak *velutina* means “velvety” and refers to the downy hairs on the underside of the leaf.
- The National Champion black oak as of 2020 is in Hartford, Connecticut. It is 78 feet tall and 347 inches in circumference.

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