

Landowners Guide to Identification and Characteristics: **CHINKAPIN OAK (*Quercus muehlenbergii*)**

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Chinkapin Oak (*Quercus muehlenbergii*)

Chinkapin oak is found throughout eastern and central North America and is a member of the white oak group. This oak grows well on alkaline soils. It typically grows 35 to 80 feet tall. The foliage and acorns are an important wildlife food.

Identification

The leaves are the easiest characteristic to use for identifying oaks. Chinkapin oak leaves are deciduous, somewhat oblong narrowing at the top and bottom of the leaf. The margins are coarsely scalloped or serrated to toothed and each tooth is tipped with a small gland or callus. The upper surface of the leaf is shiny green with a pale underside.

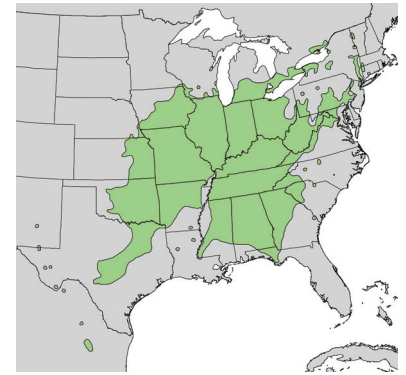


Figure 1: Chinkapin oak range map.
Photo courtesy: Atlas of United States Trees



Figure 2: Chinkapin oak leaves have scalloped to coarsely serrated edges.
Photo courtesy: Chris Evans, University of Illinois, Bugwood.org

Figure 3: Chinkapin oak seedlings start out with some shade tolerance, but gradually become intolerant.
Photo courtesy: Karan A. Rawlins, University of Georgia, Bugwood.org

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Bark

The bark is light grey and somewhat flaky. Chinkapin oak has a slightly different, yet distinguishing bark pattern than white oak. It is slightly flaky, never establishing the large shingle-like flaky pattern as seen in white oak.

Acorns

The acorns are a half to 1 inch long. They are somewhat egg-shaped to oval with a thin bowl-shaped cap that has light fringe on the edge. They turn dark brown when they mature, becoming darker than other upland oaks. They mature in one growing season, dropping in the fall and germinating upon dispersal by gravity, birds or small rodents.

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 orange-brown or slightly grayish. The buds are orange-brown with scales that have grayish edges that can be seen with a hand-lens.



Figure 4: Terminal buds of chinkapin oak. Photo courtesy: T. Davis Sydnor, The Ohio State University, Bugwood.org



Figure 5: Chinkapin oak acorns are dark brown and can appear almost black. Photo courtesy: Paul Wray, Iowa State, 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: Chinkapin oak typically begins acorn production around 20 years, acorn production varies from year to year. Large trees greater than 20 inches in diameter produce the best acorn crops. The acorns are dispersed by birds, rodents and gravity in the fall. The acorns mature on the tree in one growing season, drop in late summer or early autumn and germinate upon dispersal.
- Regeneration via sprouting: Chinkapin oak sprouts vigorously after disturbance or damage to the tree. It both stump and root sprouts.

Site Location and Competition:

- Chinkapin oak is commonly found on dry soils especially soils of limestone origin including bluffs and hillsides but can also be found in valleys and near rocky streambanks.
- It is most commonly found with post and black oak but is scattered with other tree types including bur oak and hackberry throughout its range.

Sunlight Requirement:

- Chinkapin oak is considered shade intolerant even though young seedlings appear to start out as exhibiting some shade tolerance.

Other Oaks that Look Similar:

- Chinkapin oak leaves can be confused with swamp chestnut oak and chestnut oak but are distinguishable by the presence of small glands near the marginal leaf tips that can be seen with a hand-lens.
- The bark looks similar to white and post oak.

Uses:

- This species is used for lumber, cabinets, furniture and pallets.
- The wood makes excellent firewood because of its high fuel value.
- The leaves of young chinkapin oak are commonly browsed by deer and rabbits while beaver feed on the bark and twigs.
- The high-quality acorns are a reliable food source for the red-headed and red-bellied woodpeckers, northern bobwhite, ruffed grouse and wild turkey.

Other Facts:

- Historically the wood was used to fuel the steamboats on the Ohio River.
- Chinkapin oak's scientific species name *muehlenbergii* honors an 18th and 19th century Pennsylvania minister and botanist, Gotthilf Mühlenberg.
- When roasted the chinkapin oak acorns are sweet and edible. They were an important food source for Native Americans.
- As of 2020, the National Champion chinkapin oak was 66 feet tall and 278 inches in circumference. It is located in Rockingham, Virginia.

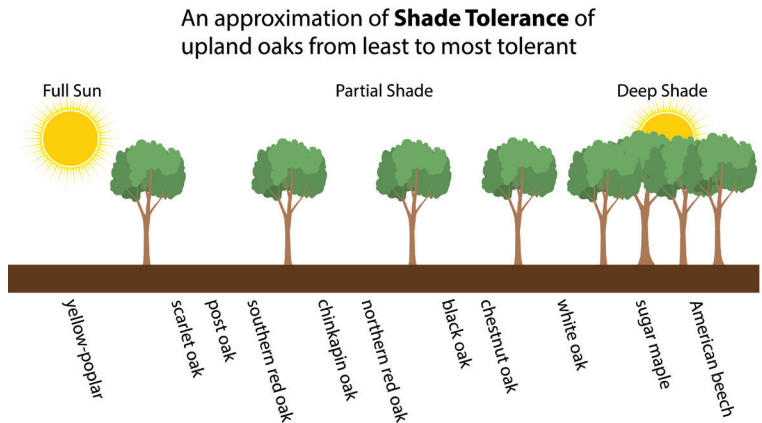


Figure 7: Shade tolerance of upland oaks.

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 6: Chinkapin oak has flaky bark.