

Basic Facts about White and Red Oaks

By Susan Camp

The only way you can respond to some questions is to take a deep breath, pause, gaze sagely at the questioner, and say, “That is a very good question,” affording you time to scan through everything you know about a topic in order to frame a coherent response.

I used this technique recently when a friend asked, “How do you differentiate one oak tree from another? There are so many kinds, and the leaves and acorns all have different shapes.”

The topic of oak trees is immense and presents a lot to think about on the spur of the moment: size, home region, bark, leaves, acorns, hybrids, regional common names, and some of the information overlaps from species to species.

Oaks (*Quercus* spp.) belong to the Beech family (Fagaceae), a fact that surprised me when I first heard it in Tree Steward class. About 90 species of oaks are native to the United States, and many have at least three or four common names. Most native oak species grow in the eastern half of the country, and around 27 species are native to Virginia.

So, to answer my friend’s question about identifying oak trees, I deferred to the most basic answer, which my husband learned in Boy Scouts: how to tell a white oak from a red oak at first glance. White oak (*Quercus alba*) leaves have rounded lobes and lack bristles. The tips of red oak (*Quercus rubra*) leaves are sharply pointed. There is much more to know about white oaks and red oaks, but the difference in leaf appearance is a good place to start.

White oak is also known as Eastern, American, or Northern white oak, among other regional common names. The mature white oak is a large, deciduous, broadleaf tree that ranges in height from 50 to 100 feet with a spread of 50 to 80 feet. Its shape is pyramidal when young and rounds with age to develop into a magnificent shade tree, so it needs sufficient space to develop. The species name “alba” refers to the gray, ashy color of the bark.

White oak prefers full sun to part shade and grows best in rich, moist, acidic soil with good drainage, but it will tolerate clay or rocky soil, drought, and close proximity to black walnut trees. Numerous insect pests and diseases attack white oak, but rarely cause significant damage.

Each 4-to-9-inch leaf has 7 to 9 deeply rounded, fingerlike lobes without bristles. Leaf color is pinkish in spring, shading to dark green in summer. Fall leaf color is brown to dark red. The spring flowers are yellowish-green and insignificant, and male and female catkins appear on the same tree. The $\frac{3}{4}$ to 1-inch-long acorns are oval and light brown when ripe with a warty cap covering $\frac{1}{4}$ to $\frac{1}{3}$ of the fruit.

Red oak, also called American, Eastern, or Northern red oak, is a medium-sized tree of 50 to 75 feet with a broad, rounded spread of similar size. The bark is light gray and develops longitudinal lines with maturity.

Red oak prefers full sun and grows well in acidic, fertile, sandy, well-drained soil. It will tolerate drought, black walnut trees, and air pollution. Chlorosis or yellowing of the leaves, occurs in alkaline soil.

The dark green leaves have gray undersides and 7 to 11 sharply toothed lobes. Leaves turn brown in the fall. Flowers are yellowish-green and insignificant with separate male and female catkins appearing on the same tree. The $\frac{3}{4}$ to $1\frac{1}{2}$ inch round, reddish-brown acorns have flat caps and appear in early fall.

Both species of oak are important food sources for numerous moth species. Deer, black bears, small mammals, wild turkeys, woodpeckers, and blue jays consume the acorns.

Many other interesting and beautiful species, like live, willow, and cherrybark oaks grow well on the Middle Peninsula.

See NCState Extension Gardener Plant Toolbox and Missouri Botanical Garden Plant Finder entries “*Quercus alba*” and “*Quercus rubra*” for further information.