

Black Oak (*Quercus velutina*): Black, Yellow, or Red?

by Gary Carlin

Try to explain to a group of young students at Drake Park, that the *Black Oak* or *eastern Black Oak* was originally called *yellow oak* and is actually part of the *red oak group*. The red oak group includes the *black, pin, Shumard, and Nutall's oak*. The other major oak group is white oaks. It includes: *white, burr, chestnut* and *Oregon white oak*. Black Oaks are one of those trees that readily hybridizes and does so indiscriminately with all members of the red oak group. At present it has participated as a parent in at least twelve named hybrid oak species (including: Bush's Oak, Hawkin's Oak, and Lea's Oak).

The Black Oak's species name, *velutina*, comes from the Latin word for "fleece", and refers to the fine hairs found covering the underside of its young leaves. If you really want to be certain you have correctly identified a Black Oak, turn over a leaf and look for reddish-brown hairs in the forks of the veins. The mighty oak is a spreading tree and it is the only tree that can support very large branches that come off the trunk at ninety-degree angles. Branches can span over 135 ft. in length. The tree provides valuable nesting sites and protective covering for many animals. Vines such as poison ivy and Virginia creeper are often found growing on the Black Oak.

The Black Oak is also called yellow bark oak, smooth bark oak and quercitron. The name *quercitron* comes from the natural pigment found in the tree's inner bark that was used to dye wool bright yellow or orange. It was also mixed with another natural pigment source, *cochineal* (cactus eating insect bodies) to produce a brilliant scarlet color. Until the mid 1900's quercitron was still being sold in Europe as a fabric dye. The tree's bark contains *tannins* that are used commercially in the tanning of leather, because Black Oak tree bark contains *Quercitannic acid*, one of the two forms of tannic acid (*gallotanic acid* is the other). Tannic acids are used to stain wood, inhibit corrosion of iron materials, and to enhance the flavor food and drinks (i.e. juice and sodas).

Both male and female flowers called catkins ("tassels") are found on the same tree. Catkins are "slim, cylindrical flower clusters" with no petals. The male catkins are yellow-green and the female tassels are reddish green on short spikes. The catkins appear in the spring as the leaves begin to appear. Once the male catkins release their pollen they drop off the tree to the ground. When pollination occurs, the female catkins become acorns. At 100 years of age it has been estimated that most oak tree species produce over 2,200 acorns a year. Most Black Oak reproduction is by sprouts (vegetative propagation) that come from the tree's stump, broken stems, or roots. The lucky seedlings that emerge from seeds generally do not survive more than a few years. Only one out of 10,000 acorns will actual become a mature oak tree.

The fruit of an oak is its small (1/2 - 3/4-inch), brown acorn. They have an ovoid shape and the caps cover nearly half the acorn. Crack an acorn open and it is bright orange inside from the high concentration of tannin. But don't taste it, as the tannin makes it quite bitter. On the tree you will observe the acorns as individuals or clustered in groups of 2 to 5. For the Black Oak, the acorn maturation period is two years, at which time it ripens sometime in late summer to almost the end of October. In terms of seed dispersal of the acorns, we can thank the squirrels and mice. But if you want to talk about distance of dispersal then we need to look at the blue jay.

Ripe acorns that are toxic to humans can be eaten once the *tannic acid* has been removed by repeated boiling in water. The "leached nut meats" can be added to soups, deep fried, or added to bread dough and muffin batters. Or the nut meats can be dried and ground into flour or slowly roasted and ground into a coffee-like beverage. But try to leave the acorns for the squirrels, mice, chipmunks, raccoons, and birds as they are an important food source in their diets.

The leaves of the Black Oak are four to ten inches long and more variable in shape when compared to most other oak species. They generally have seven to nine lobes and are a dark, glossy green. The wood is usually sold commercially as *red oak* rather than Black Oak and it is used for hard wood flooring, to make furniture, barrels, mine timbers, rungs of ladders, police batons, and railroad ties. Wines and distilled liquors such as brandy, rums, and whiskey are aged in oak barrels are part of the production process. In the fictional world, the wand of Merlin the Magician was said to be made of oak and Robin Hood's merry men met under the giant oak tree of Sherwood Forest.

The inner bark (which contain *quercitannic acid*) is used as a mild astringent to dry, constrict and protect the skin. It also has been used medicinally to treat indigestion, chapped skin/hands, dysentery, fevers, stomach and lung problems, asthma, sore eyes, mouth sores, and hoarseness of the throat. While tree gall (protuberances produced by viral infections) are used to treat bleeding (hemorrhages) and severe dysentery and diarrhea due to its high tannic acid concentrations and greater astringent properties.