**Quercus acutissima: Sawtooth Oak**

Edward F. Gilman and Dennis G. Watson

---

**Introduction**

Sawtooth oak is an attractive, large, deciduous tree, 50 feet in height or taller with a rounded, broad, pyramidal shape. The leaves are similar to chestnut (*Castanea*) and have small bristles at the edges. New spring leaves are an attractive bright yellow-green and fall color varies from dull yellow to brown. Brown leaves hang onto the tree into the winter which makes the tree unattractive to some people. The trunk and bark of sawtooth oak are gray-brown and deeply furrowed. The trunk flares out at the base lifting sidewalks and curbing if planted in tree lawns less than eight feet wide or too close to walks.

---

**General Information**

- **Scientific name:** *Quercus acutissima*
- **Pronunciation:** KWERK-us ack-yoo-TISS-ih-muh
- **Common name(s):** Sawtooth oak
- **Family:** Fagaceae
- **USDA hardiness zones:** 5B through 9A (Fig. 2)
- **Origin:** not native to North America
- **Invasive potential:** little invasive potential
- **Uses:** specimen; shade; street without sidewalk; parking lot island > 200 sq ft; tree lawn > 6 ft wide; urban tolerant; highway median
- **Availability:** somewhat available, may have to go out of the region to find the tree

---

**Description**

- **Height:** 35 to 45 feet

---

2. Edward F. Gilman, professor, Environmental Horticulture Department; and Dennis G. Watson, former associate professor, Agricultural Engineering Department, UF/IFAS Extension, Gainesville, FL 32611.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. For more information on obtaining other UF/IFAS Extension publications, contact your county’s UF/IFAS Extension office.

U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida, IFAS, Florida A & M University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Nick T. Place, dean for UF/IFAS Extension.
**Quercus acutissima: Sawtooth Oak**

**Foliage**
- **Leaf arrangement:** alternate (Fig. 3)
- **Leaf type:** simple
- **Leaf margin:** serrate, pectinate
- **Leaf shape:** obovate, oblong, ovate
- **Leaf venation:** pinnate
- **Leaf type and persistence:** deciduous
- **Leaf blade length:** 2 to 4 inches, 4 to 8 inches
- **Leaf color:** green
- **Fall color:** yellow
- **Fall characteristic:** showy

![Figure 3. Foliage](image)

**Flower**
- **Flower color:** brown
- **Flower characteristics:** not showy

**Fruit**
- **Fruit shape:** oval
- **Fruit length:** .5 to 1 inch
- **Fruit covering:** dry or hard
- **Fruit color:** brown
- **Fruit characteristics:** attracts squirrels/mammals; showy; fruit/leaves a litter problem

**Trunk and Branches**
- **Trunk/bark/branches:** branches droop; not showy; typically one trunk; thorns
- **Pruning requirement:** needed for strong structure
- **Breakage:** resistant
- **Current year twig color:** brown
- **Current year twig thickness:** medium
- **Wood specific gravity:** unknown

**Culture**
- **Light requirement:** full sun
- **Soil tolerances:** clay; sand; loam; acidic; slightly alkaline; well-drained; occasionally wet

**Drought tolerance:** high
**Aerosol salt tolerance:** moderate

**Other**
- **Roots:** not a problem
- **Winter interest:** no
- **Outstanding tree:** yes
- **Ozone sensitivity:** unknown
- **Verticillium wilt susceptibility:** resistant
- **Pest resistance:** resistant to pests/diseases

**Use and Management**

Sawtooth oak prefers a well-drained, acid soil but will adapt to most soils except highly alkaline. The trunk remains straight and usually dominant over the lateral branches forming a pyramidal shape in the early years making this tree very suitable for urban planting. Growth is rapidly adding three feet in height each year after planting. As it ages, it grows into a broad, rounded canopy that could make it useful as a shade tree, street or parking lot tree or a lawn tree specimen. It is largely untested as a street tree but deserves a chance to show its urban adaptability. Lower branches need to be shortened then removed early when planting this as a street or parking lot tree since they will droop toward the ground as the tree grows older, requiring removal to allow for vehicular traffic. Leave the more upright, spreading branches to create more clearance beneath. Lower branches can be left on trees grown in more open areas to allow for full development of the picturesque, low branching, open form. Multi-trunked specimens can reportedly break up at about 25-years-old due to embedded bark and poor attachment so maintain the central leader.

The acorns of sawtooth oak are large (1-inch-long) and are produced in large quantities in the fall. They are quite popular with wildlife. The acorns may cause a litter problem for some if the tree is located near walkways, driveways or house gutters. But squirrels and other wildlife love the acorns. Trees grow best in well-drained soil in the full sun. Irrigation helps trees become established but once established, they grow very fast without irrigation. This is one of the fastest growing trees in Auburn’s shade tree trials.

Propagation of Oaks by seed is the most common. Propagate by stratifying acorns in fall. Acorns will germinate in spring. Some seeds may germinate near existing plants.

**Pests**

No pests of major concern although the potential list is long. It is usually pest-free.
Galls cause homeowners much concern. There are many types and galls can be on the leaves or twigs. Most galls are harmless so chemical controls are not suggested.

Scales of several types can usually be controlled with sprays of horticultural oil.

Aphids cause distorted growth and deposits of honeydew on lower leaves. On large trees, naturally-occurring predatory insects will often bring the aphid population under control.

Boring insects are most likely to attack weakened or stressed trees. Newly planted young trees may also be attacked. Keep trees as healthy as possible with regular fertilization and water during dry weather.

Many caterpillars feed on oak. Large trees tolerate some feeding injury without harm. Trees repeatedly attacked, or having some other problem, may need spraying. Tent caterpillars form nests in trees then eat the foliage. The nests can be pruned out when small. Where they occur, gypsy moth caterpillars are extremely destructive on oaks. Fall cankerworm has been a problem in some years.

Twig pruner causes twigs to drop off in the summer. The larvae ride the twig to the ground. Rake up and destroy fallen twigs.

Lace bugs occasionally suck juices from leaves causing them to look dusty or whitish gray.

Leaf miners cause brown areas in leaves. To identify leaf miner injury tear the leaf in two across the injury. If the injury is due to leaf miner, the upper and lower leaf surfaces are separate and black insect excrement will be seen.

Diseases

No diseases are of major concern although the list of potential problems is long. Usually this oak is disease-free.

Anthracnose may be a serious problem in wet weather. Infected leaves have dead areas following the midrib or larger veins. These light brown blotches may run together and, in severe cases, cause leaf drop. Trees of low vigor, repeatedly defoliated, may die. Trees defoliated several years in a row may need spraying, to allow the tree to recover.

Canker diseases attack the trunk and branches. Keep trees healthy by regular fertilization. Prune out diseased or dead branches.

Leaf blister symptoms are round raised areas on the upper leaf surfaces causing depressions of the same shape and size on lower leaf surfaces. Infected areas are yellowish-white to yellowish-brown. The disease is most serious in wet seasons in the spring but it usually does not need to be treated.

A large number of fungi cause leaf spots but are usually not serious. Rake up and dispose of infected leaves.

Powdery mildew coats leaves with white powdery growth and is generally harmless.

Shoestring root rot attacks the roots and once inside moves upward, killing the cambium. The leaves on infected trees are small, pale or yellowed and fall early. There is no practical control. Healthy trees may be more resistant than trees of low vigor.

Chlorosis due to micronutrient-deficiency occurs on high pH soil.