



***Quercus acutissima*: Sawtooth Oak¹**

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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.

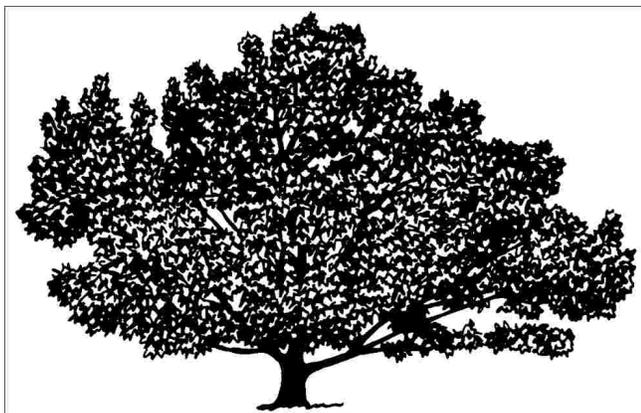


Figure 1. Mature *Quercus acutissima*: Sawtooth Oak

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

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

Spread: 35 to 50 feet

Crown uniformity: symmetrical

Crown shape: pyramidal, round

Crown density: moderate

Growth rate: moderate

Texture: coarse

Foliage

Leaf arrangement: alternate (Fig. 3)

Leaf type: simple

Leaf margin: serrate, pectinate

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Figure 2. Range

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

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

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
Invasive potential: little invasive potential
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

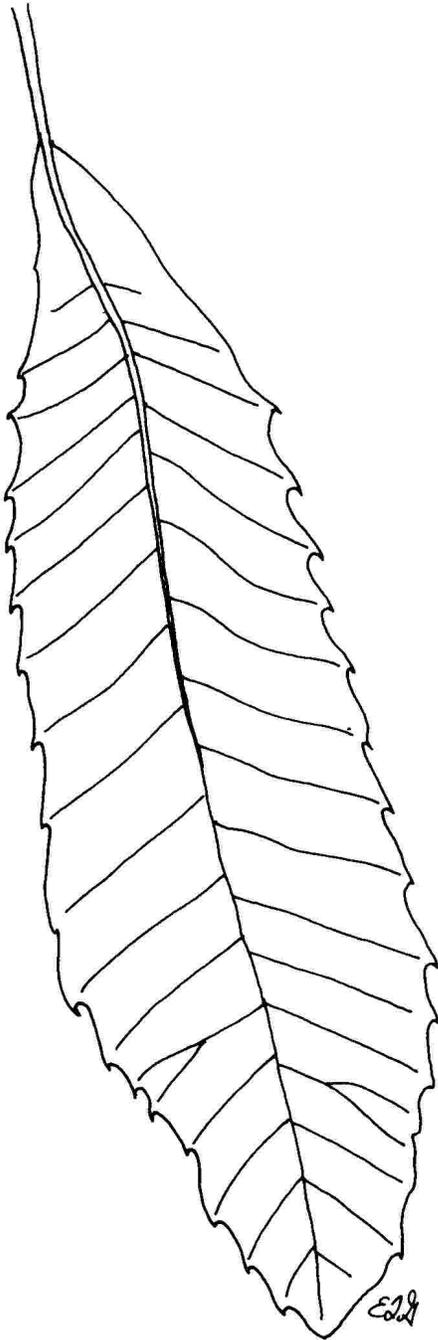


Figure 3. Foliage

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' 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.