

SAWTOOTH OAK

Quercus acutissima

Carruthers

plant symbol = QUAC80



C. Miller
USDA NRCS

Uses

The primary use for this species is as a wildlife food source and cover. It is also a good shade tree.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

Sawtooth oak is a large species, reaching a mature height of 70 feet. The leaves are similar to those of the chestnut but are smaller, 4-8 inches, and have pointed teeth. The acorns are also small in size, ranging from 5/8-3/4 inch long and are enclosed in cups with long, spreading, recurving scales. Approximately 2/3 of the nut is covered by the cup. Trees produce about 150 acorns per pound.

Adaptation and Distribution

Sawtooth oak is native to eastern Asia but was introduced into the eastern United States around 1920. The range of adaptation extends from Northern Florida west to eastern Texas and Oklahoma, northward through Missouri to New York

and into southern New England (USDA plant hardiness zones 5b through 8b). On exposed sites in the northern Finger Lakes Region of New York, it may winterkill. Sawtooth oak is winter hardy and can be grown in droughty and well-drained soils from sandy loam to clay loam. However, the best performance is achieved in deep, well-drained soils. It can also be grown on reclaimed surface mined land where favorable moisture conditions are present and pH is above 5.0.

For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

Establishment

Sawtooth oak may be established, from bareroot seedlings, containerized plants, or acorns. One year old bareroot seedlings or containerized plants should be planted 15-20 feet apart for maximum acorn production. In areas where multiple rows are used, the spacing should be no less than 20 feet apart. In seed orchards, there should be at least 15 plants per planting for effective wind pollination.

Bareroot seedlings must be planted while the plants are dormant (from the average date of first frost in the fall until the average date of last frost in the spring). Containerized plants may be planted later in the spring, but may require frequent irrigation to survive.

Sites for landscape plantings and seed orchards should be prepared by clearing the existing vegetation from an area at least 3 feet in diameter around the newly planted seedling. The seedling should be planted at the same depth it was growing at in the nursery.

Dipping bareroot plants in root gel before planting to retain moisture around the roots will enhance survival and growth. Applying a slow release fertilizer in the planting hole will also enhance survival and early growth. In landscape plantings and seed orchards where 100% survival is required, irrigation and mulch should be applied to conserve water and discourage weeds.

Plant acorns in the early fall. Plant acorns 3/4-1 inch deep. The seedlings should not be transplanted until they reach 12-18 inches in height.

Low maintenance cover crops may be used in seed orchards to provide manageable soil protection. Species such as creeping red fescue, chewing fescue, hard fescue, sheep fescue, creeping bentgrass, redtop, and weeping lovegrass, and centipede grass are low maintenance cover crops. Species such as tall fescue, orchardgrass, reed canarygrass, and perennial ryegrass require extensive fertilization and/or mowing to maintain a good cover and are not low maintenance cover crops for seed orchards.

Management

To achieve desired results, keep competition immediately around the plant to a minimum for 2 years. By this time, the seedlings should be well established. If growth is stunted, eliminate competition and apply a complete fertilizer.

Seed orchards should be fenced to minimize browsing by livestock and deer. Root collars may be necessary if girdling of woody plants by rabbits is a problem. Seed orchards should be mowed to minimize competition from other plants. Tillage between plants and rows will enhance growth and seed production, but a conservation should be developed to reduce the orchard site's erosion potential. Discing on the contour between rows may be a viable alternative to tilling the entire orchard. Low maintenance cover crops used in seed orchards should be maintained as the species requires..

Sawtooth oak is not resistant to herbicides that control broadleaf weeds such as 2,4-D, bromacil, dicamba, picloram, and silvex. It may resprout following herbicide treatments.

Sawtooth oak seedlings do not do well in poorly drained soils or in areas subject to flooding. If under water for 24 hours in the summer, they will not survive.

This plant has been found to be resistant to disease and insect damage.

Cultivars, Improved, and Selected Materials (and area of origin)

'Gobbler' was released in 1986 by the Quicksand Plant Materials Center in cooperation with the Kentucky Agricultural Experiment Station, Kentucky Department of Fish & Wildlife, and the Kentucky Division of Forestry. It was selected for resistance to insects and disease, wildlife food value, and growth form compared to similar use species. Plant materials are available from nurseries throughout the region.

Foundation plants to establish new seed orchards for commercial production are available from the Alderson, West Virginia Plant Materials Center.

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For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS <http://plants.usda.gov> and Plant Materials Program Web sites <http://Plant-Materials.nrcs.usda.gov>.

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