

SHUMARD'S OAK *Quercus shumardii* Buckl.

plant symbol = QUSH

Contributed By: USDA, NRCS, National Plant Data Center & the Biota of North America Program



Nobel Foundation Plant Image Gallery
© Samuel Roberts Noble Foundation

Alternate Names

Shumard red oak, southern red oak, swamp red oak, spotted oak, Schneck oak

Uses

Conservation: High survival rates and steady growth make Shumard oak a valuable contributor to rehabilitation and reforestation of bottomlands and upland sites, including minespoils. Shumard oak also provides an excellent shade or specimen tree – to be used in lawns, parks, along streets, and in buffer strips and median plantings. The leaves remain green long into the fall and then turn a deep orange-red. The trees are strong, long-lived, and grow relatively quickly. They potentially grow to a large size and should be planted with this in mind. The species has

been successfully grown in urban areas where air pollution, poor drainage, compacted soil, and/or drought are common. Compared to the similar northern red oak (*Q. rubra*), Shumard oak tolerates a broader range of soil moisture, and its more southern distribution provides stock better suited for that area. Shumard also apparently is little affected by chlorosis, which often is a problem for other oaks in high pH soils.

Industry: The wood of Shumard oak is close-grained, hard, strong, and heavy. It is generally marketed with other red oak lumber for flooring, furniture, interior trim and veneer, cabinetry, and lumber. Numerous species of songbirds, wild turkeys, waterfowl, white-tailed deer, squirrels, and other mammals eat the acorns, which are produced in abundance.

Ethnobotanic: The acorns are bitter, but edible, if the tannins are leached out. They have been ground and used as flour, roasted and ground to make coffee, and eaten whole.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status, such as state noxious status and wetland indicator values.

Description

General: Beech Family (Fagaceae). Native tree growing to 25 m tall, with an open, rounded-spreading crown. Bark dark gray, smoothish, furrowed into ridges on lower trunk and older branches, the trunk sometimes buttressed on older trees. Leaves are alternate, elliptic, 8–18 cm long, to 12 cm wide, deeply divided into 5–9 bristle-tipped lobes broadest toward the tip, the sinuses thumb-shaped, dark green above, with tufts of hairs in vein axils below, commonly turning red in fall. Male and female flowers are borne in separate catkins on the same tree (the species monoecious) on the current year's branchlets. Acorns maturing in the second year, egg-shaped, 1.5–3 cm long, with a flattened, more or less shallow cup. This species is named for Benjamin Franklin Shumard (1820-1869), state geologist of Texas.

Shumard oak belongs to the red oak group (subgenus *Erythrobalanus*) and hybridizes with species of that group:

Q. hypoleucoides, *Q. imbricaria*, *Q. marilandica*, *Q. nigra*, *Q. nuttallii*, *Q. palustris*, *Q. phellos*, *Q. rubra*, and *Q. velutina*.

Variation within the species:

Trees known as *Q. shumardii* var. *texana* (*Q. texana*, *Q. rubra* var. *texana*, *Q. nuttallii*; Texas red oak, Nuttall's oak) are now recognized as *Q. buckleyi* Dorr & Nixon (Dorr & Nixon 1985). *Quercus shumardii* var. *schneckii* (Britt.) Sarg. is now generally regarded as within limits of typical variation for the species. *Quercus shumardii* var. *stenocarpa* Laughlin (Laughlin 1969), with very narrow acorns and shallow acorn cups, has been described from Missouri and Illinois.

Distribution

Shumard oak occurs on the Atlantic and Gulf coastal plains from North Carolina to northern Florida and west to central Texas. Northward, it is common in Missouri, western Tennessee and Kentucky, southern Illinois, Indiana, and western Ohio. Occurrences further north are more local and sporadic. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation

Shumard oak occurs on moist, well-drained loamy soils of stream and river terraces and adjacent ridges and bluffs as well as mesic slopes and poorly drained upland sites, at elevations of 0–500 meters. It is intolerant or only weakly tolerant of flooding and does not usually occur on the lowest river bottoms. Shumard oak is intolerant of shade but rare in early successional stands, probably colonizing gaps in mature forests. It usually occurs as scattered trees with more prominent southern oak species of the oak-hickory forest region.

Flowering occurs from March-April (June) and fruiting from September-October.

Establishment

Shumard oak begins to produce fruit at about 25 years, with optimum production at about 50 years and good crops every 2–3 years. Germination occurs at high frequencies; full light is required for good seedling establishment and growth. Shumard oaks are known to have reached at least 480 years of age.

Management

Shumard oak can be successfully direct seeded or planted as seedlings, but it is difficult to propagate by cuttings. Seed dormancy is broken by stratification for 60-90 days at 1-5° C. Seed can be stored moist and cool overwinter but is best sown outdoors as soon as ripe. Best growth is from seed sown in situ. Young trees from deep pots are relatively easily

transplanted, but those left in a nursery bed for more than two growing seasons without being moved will have problems because of the deep taproot.

Reforestation of agricultural lands to bottomland hardwoods has been successful with Shumard oak direct-seeded to otherwise unprepared sites. Soil fertilization does not improve success in early establishment.

Shumard oak is probably moderately resistant to immediate fire damage, because it persists in some communities that are maintained by periodic fire. Young trees, however, are relatively thin-barked and basal wounding by fire usually results in at least top-kill of such trees, either by girdling the tree or by creating avenues for infection by wood-rotting fungi. Top-killed Shumard oak produces root sprouts.

Initial pruning to develop a central leader will provide better shaped street trees. Pruning in the dormant season or in summer is best, but pruning should be avoided in late spring and early summer in areas where oak wilt is present.

Oak wilt

Shumard oak is highly susceptible to oak wilt infection, a fungal disease that invades the water-conducting vessels and plugs them. As water movement is slowed, the leaves wilt and rapidly drop off the tree. The disease begins with a crinkling and paling of the leaves, followed by wilting and browning from the margins inward. Necrosis may be strongest along the veins or between them. The symptoms move down branches toward the center of the tree and the tree may die within 1–3 months, although some diseased trees may survive up to a year. The disease may be spread by insects (primarily beetles) or pruning tools, but most of the tree loss in oak wilt centers results from transmission through root spread between adjoining trees. A trench (dug and then immediately filled) between neighboring trees severs the roots and prevents fungus spread. Dead and infected trees must be destroyed – once a tree has become infected, there is little chance to save it. The wood may be used for firewood provided it is debarked or covered and sealed during the spring and summer (Johnson and Appel 2000; Roberts 2000; Wisconsin Dept. of Natural Resources 2000; City of Austin 2000).

Oak wilt most seriously infects species of the red oak group (including black and live oaks). Overcup oak, bur oak, white oak, and other members of the white oak group are not as susceptible and can be planted

in oak wilt centers. This disease has reached epidemic proportions in Texas and in the mid-West from Iowa and Minnesota through Michigan and Wisconsin into Ohio, West Virginia, and Pennsylvania.

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

Please check the Vendor Database, expected to be on-line through the PLANTS Web site in 2001 by clicking on Plant Materials.

References

City of Austin 2000. *The oak wilt suppression program*. Austin Parks and Recreation, Austin, Texas. SEP00.
<<http://www.ci.austin.tx.us/oakwilt/>>

Dorr L.J. & K.C. Nixon 1985. *Typification of the oak (Quercus) taxa described by S.B. Buckley (1809-1884)*. Taxon 34:211-228.

Edwards, M.B. 1990. *Quercus shumardii* Buckl. *Shumard Oak*. Pp. 734-737, IN: R.M. Burns and B.H. Honkala. *Silvics of North America. Volume 2. Hardwoods*. USDA Forest Service Agric. Handbook 654, Washington, D.C. SEP00.
<http://willow.ncfes.umn.edu/silvics_manual/Volume_2/quercus/shumardii.htm>

Johnson, J. & D. Appel 2000. *Eight step program to oak wilt management*. Department of Plant Pathology & Microbiology, Texas A&M University, College Station, Texas. SEP00.
<<http://cygnus.tamu.edu/Textlab/oakwilt.html>>

Laughlin, K. 1969. *Quercus shumardii* var. *stenocarpa* Laughlin: *Stenocarp Shumard oak*. Phytologia. 19:57-64.

Nixon, K.C. et al. 1993. *Quercus*. Pp. 445-506, IN: *Flora of North America, North of Mexico. Vol. 3*. Oxford Univ. Press, New York, New York.
<http://hua.huh.harvard.edu/cgi-bin/Flora/flora.pl?FLORA_ID=12395>

Roberts, D.L. 2000. *Oak wilt: A threat to red oaks*. Michigan State University Extension Website. SEP00.
<http://www.msue.msu.edu/reg_se/oakwilt/>

Samuel Roberts Nobel Foundation 1999. *Noble foundation plant image gallery*. Ardmore, Oklahoma. 29nov2000.
<<http://www.noble.org/imagegallery/index.html>>

Sullivan, J. 1993. *Quercus shumardii*. IN: W.C. Fischer (compiler). *The fire effects information system* [Database]. USDA, Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory. Missoula, Montana. SEP00.
<<http://www.fs.fed.us/database/feis/plants/tree/queshu/>>

Waldron, G.E., S.W. Aboud, J.D. Ambrose, & G.A. Meyers 1987. *Shumard oak, Quercus shumardii, in Canada*. Canad. Field-Nat. 101:532-538.

Wisconsin Dept. of Natural Resources 2000. *Oak wilt in Wisconsin: Biology and management*. Wisconsin DNR Website. SEP00.
<<http://www.dnr.state.wi.us/org/land/forestry/fh/diseases/oakwilt.htm>>

Prepared By

Guy Nesom
BONAP, North Carolina Botanical Garden,
University of North Carolina, Chapel Hill, North Carolina

Species Coordinator

M. Kat Anderson
USDA, NRCS, National Plant Data Center, c/o
Environmental Horticulture Dept., Davis, California

Edited: 19jun02 jsp; 29may03 ahv

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>>.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.