United States Department of Agriculture
NRCS Natural Resources Conservation Service
Plant Guide

BLACK WALNUT

Juglans nigra L.

plant symbol = JUNI

Contributed by: USDA, NRCS, National Plant Data Center

Robert Mohlenbrock
@ PLANTS

Uses

Ethnobotanic: The bark of black walnut was used by many native groups, including the Cherokee, in tea as a laxative and chewed for toothaches. The Cherokee also ate the fruit of the black walnut. The Chippewa and the Cherokee used the bark to make brown and black dyes. The Comanche created a paste from the leaves and husk of the fruit for treatment of ringworm. Black walnut was also used by the Appalachian, Cherokee, Comanche, Iroquois, and Rappahannock to treat athlete's foot, hemorrhoids, and as an insecticide.

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).

Weediness

This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, or state natural resource or agriculture department regarding its status and use. Weed information is also available from PLANTS.

Description

General: Walnut Family (Juglandaceae). Black walnut is usually a medium sized tree ranging from 70-90 feet tall and 2-3 feet in diameter at breast height. However, black walnut can reach 150 feet tall and 8 feet in diameter at breast height. The branches are widely spread and form a massive crown. The bark is thick and brown to grayish-black in color. The bark has deep furrows and narrow forking ridges. The furrows and ridges form a diamond pattern. The twigs are stout with notched leaf scars. They are light brown to orangish in color. The terminal buds are short, blunt, and covered with a few hairy scales. The leaves are up to 6 dm long with 9-23 leaflets attached directly to a stout rachis without a supporting stalk. The rachises are covered with fine short hairs. Flowers appear in late May to early June. The flowers bear 17-50 stamens, but lack pistils. The fruits are 4-6 cm in diameter and spherical shaped. They can be found in groups of 2-3 or solitary. The fruits have a thick, semi-fleshy, husk covered with short hairs and are yellowish-green in color. The nut is corrugated with rounded ridges.

Distribution: For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Habitat: Black walnut is found in fields and rich woodlands.

Adaptation

Black walnut produces a toxin, known as "juglone", which inhibits the growth of other plants around it, thereby reducing competition. Juglone deprives sensitive plants of energy needed for photosynthate production. The symptoms of plants being affected by juglone include foliar yellowing, wilting, and eventually death. The largest sources of juglone on the tree are located in the buds, roots, and nut hulls.

Establishment

Black walnut is difficult to transplant and therefore, propagation by seed is recommended. Seeds should be planted in the fall in moist, well-drained, deep soil that is rich in organic matter. Black walnut prefers full sun.

Management
Black walnut is a very intolerant tree. Planted in fairly dense stands or under forest competition the tree develops a tall and well formed, clear bole. This bole form results from the tree putting its resources into competing for sunlight and is ideal for wood fiber production. Logs 10 inches in diameter at breast height can be developed in 35 years under ideal growing conditions.

Pests and Potential Problems
Black walnut suffers from a variety of deforming and deadly pests and diseases including parasitic nematodes, mistletoe, fusarium canker, bacterial blight, white trunk rot, and cylindrockadium root rot.

Environmental Concerns
Juglone may be a concern when landscaping or planting black walnut near a garden.

Cultivars, Improved, and Selected Materials (and area of origin)
These materials are readily available from commercial plant sources.

Control
Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method. Trade names and control measures appear in this document only to provide specific information. USDA, NRCS does not guarantee or warranty the products and control methods named, and other products may be equally effective.

References

Carlson, G.G. & V.H. Jones 1940. *Some notes on uses of plants by the Comanche Indians*. Papers of the Michigan Academy of Science, Arts, and Letters 25:517-542.

Correl, D.S. & M.C. Johnston 1970. *Manual of the vascular plants of Texas*. Texas Research Foundation, Renner, Texas. 1881 pp.

Dana, M.N. & B.R. Lerner 1994. Department of Horticulture, Purdue University Cooperative Extension Service. West Lafayette, North Carolina. http://www.agcom.purdue.edu/AgCom/Pubs/HO/HO-193.pdf

Gilmore, M. 1977. *Uses of plants by the Indians of the Missouri river region*. University of Nebraska Press, Lincoln, Nebraska. 109 pp.

Great Plains Flora Association 1986. *Flora of the Great Plains*. University Press of Kansas, Lawrence, Kansas. 1392 pp.

Hamel, P.B. & M.U. Chiltoskey 1975. *Cherokee plants their uses-a 400 year history*. Herald Publishing Company, Sylva, North Carolina. 65 pp.

Harlow, W.M., E.S. Harrar, J.W. Hardin, & F.M. White 1996. *Textbook of dendrology*. 8th edition. McGraw-Hill Inc., New York, New York. 534pp.

Hart, J.H. & J.E. Cummings Carlson 1997. The American Phytopathological Society. http://www.scisoc.org/resource/common/names/blkwalnt.htm

Johnston, Tim. 2000. *Guide to herbs*. Holisticopia http://www.herbweb.com/herbage/A270.htm

Michigan State University, Home Horticulture. 1996. Michigan State University Extension Service, East Lansing, Michigan. http://www.msue.msu.edu/msue/imp/mod03.01700523.html

Moerman, D.E. 1998. *Native American ethnobotany*. Timber press, Portland, Oregon. 927 pp.

Moerman, D.E. 1999. *Native American ethnobotany database: Foods, drugs, dyes and fibers of native North American peoples*. The University of Michigan-Dearborn. http://www.umd.umich.edu/cgi-bin/herb

Rydberg, P.A. 1932. *Flora of the prairies and plains of central North America*. The Science Press Printing Company, Lancaster, Pennsylvania. 969 pp.

Prepared By:
Matthew D. Hurteau
USDA, NRCS, National Plant Data Center, c/o Environmental Horticulture Department, University of California, Davis, California

Species Coordinator:
M. Kat Anderson
USDA, NRCS, National Plant Data Center, c/o Environmental Horticulture Department, University of California, Davis, California

Edited: 08jan02 jsp

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>.