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Black walnut



Black walnut (*Juglans nigra*) is also known as American walnut.

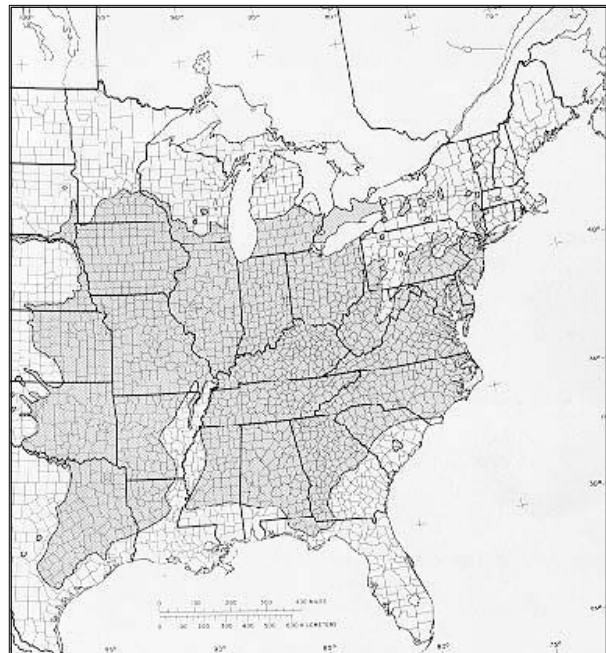
The tree is one of the most sought after of the native hardwoods. The tree grows in small natural groves. They are frequently found in mixed forests. They thrive well on moist alluvial soils. The tree has been heavily logged for its fine straight-grained wood that was used to make furniture and gunstocks. With the decreasing resource, the wood is used these days primarily for veneer. The nuts from black walnuts have been used for food and medicine for a long time. The bark of the tree and shell of the nuts are also used for many purposes.



Native range

The United States Department of Agriculture, Forest Service maintains a website at <http://www.na.fs.fed.us/spfo/>. Among the online publications are the two volumes of 'Silvics of North America'. These documents provide information about the biology of tree species growing in the

forest lands of the United States. It mentions that the black walnut grows throughout the central and eastern parts of the United States, especially in the Appalachians and the Midwest.



Native range of black walnut
Electronic source: Williams, R. 1990



Harvest, storage, and processing

It is important to harvest the nuts before the squirrels get them. The nuts are generally harvested after the first frost. The smooth, green husk enclosing the nuts turns black with time. Care has to be taken while rubbing off the hull because the residues can stain. The husk residues are then removed by rinsing the nuts or by agitating the nuts in a container of water. The nuts are then kept dry and stored in mesh bags in a cool place. The oil in the nuts turns rancid if the nuts are not stored in a cool place.

Nuts are hulled, bagged, and sold to processors who clean the outside and dry the nut to exact moisture specification. Processors are used to crack the shell by running the nuts between large steel wheels. The nutmeats are separated from the shells by passing the cracked shells through another series of rollers with saw-teeth. The nut pieces are then graded, sterilized, boxed, sealed, and made ready for transport. (Thomas and Schumann 1993)



Marketing

Farmers sell black walnuts to rural residents and companies. According to Thomas and Schumann (1993), nutmeats sell for \$6 per pound or more, and uncracked walnuts range in price from \$0.75 to \$1.25 or more per pound.

Commercial shelling of walnuts is carried out in two known plants in the United States. These plants are located in Lodi, California, and Stockton, Missouri. Other than distributing the nutmeats, the plants market their shells too, that are used as fuel in cogeneration power plants.

The nuts are generally sold soon after harvesting, from fall through winter. This is because the nutmeats are at their freshest soon after the harvesting season.

In general, small local growers or harvesters supply the nutmeat to larger regional processors and distributors. These processors and distributors package the nuts for sale to bakeries, candy makers, food stores, and at times through mail order catalogs. Vacuum packaging keeps the natural flavor for a longer time and is, therefore, the preferred method of packaging. (Thomas and Schumann 1993)



(Source: Hammons Products Company. 2000)

Hammons Products Company in Missouri is the nation's leading supplier of Eastern Black Walnuts to the foodservice, food manufacturing, industrial, and consumer markets. More information on the company and its products can be found at <http://www.hammonsproducts.com/>



Conservation and management concerns

Using nut-bearing crops in an agroforestry system requires little or no tillage. It provides a permanent cover during both growing and dormant seasons, resulting in lower runoff rates and soil loss.

Black walnuts trees need a minimum permanent spacing area of as little as 50 feet square. The trees are usually grown widely spaced with crops of wheat, milo, soybeans, or fescue grown between the rows. (Thomas and Schumann 1993)



Medicinal and non-food uses

Walnut products have a history of medicinal uses. American Indians used inner bark tea as an emetic and laxative. They chewed the bark for toothaches. The bark is still used as a dentifrice in Pakistan. The husk is chewed for colic and use as a poultice for inflammation. *Juglans insularis* is used in Cuba as an herb decoction used in bath water for treatment of various skin diseases of children. Fruit husk juice is used for ringworm. Juglone from fruit and bark of *J. nigra* acts against dermatomycosis. It was used by Greeks and Romans to cure coetaneous mycoses. Walnut pollen is a common allergen. Ellagic acid and juglone is being studied for use as cancer therapy drugs. The leaf extract has been used as phytoestrogen body cream and, together

with Ginseng, can be used for making vaginal lubricants.

A strong tincture of the leaves and nuts of black walnut has been used as a remedy in the treatment of bilious and cramp colic. The decoction has also been used as an effective vermifuge. The rind of the green fruit has been used in the treatment of ringworm, tetter, and diphtheria. The nut is a food source rich in manganese that is important for nerves and cartilage. (Please refer to the Dictionary of Modern Herbalism by Mills for further information on these terms.)

It is important that you exercise caution when considering using walnut products for medicinal purposes; seek professional advice before using them.

Uses of black walnut shell

The shell of the black walnut is one of the most difficult shells to crack. While this creates a challenge for processors, it also creates market opportunities. The hard shell is an important product in its own right.

- Metal cleaning and polishing: Processes eastern black walnut shell is the perfect medium for cleaning jet engines, electronic circuit boards, ships and automobile gear systems. This soft grit abrasive is well suited for air blasting operations, de-burring, de-scaling, and polishing operations because of its elasticity and resilience, giving great durability. Eastern black walnut shell is nontoxic and dust free and can be used on plastic, aluminum, and soft alloys,

leaving the surface smooth without scarring.

- Oil well drilling: Black walnut shell is used widely in oil well drilling for lost circulation material in making and maintaining seals in fracture zones and unconsolidated formations.
- Paints: The paint industry uses the shells for new plaster-effect paint. Paint and varnishes mixed with this light-bodied agent are far superior to ordinary sand paint. It covers plastic, wallpaper, brick, and wallboard and conceals surface cracks and gouges. The paint goes directly over taped and filled joints, and the surface can be repainted with flat wall paint if desired.
- Explosives: explosive manufacturers use black walnut shells as a filler in dynamite. It is compatible with other materials and works well in this use.
- Cosmetic cleaner: Black walnut shells are ideal as the gritty, rough agent in soap, cosmetics, and dental cleansers.
- The oil from walnut kernels is high in unsaturated fats and can be used in cooking.

(Excerpt from Thomas and Schumann 1993)



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(You may be able to find some of these or other publications in your local library. Another valuable resource is your local cooperative extension office.)

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This is part of a series of fact sheets on non-timber forest products. The full set of fact sheets is available at the Non-timber Forest Products website: <http://www.sfp.forprod.vt.edu/>

Please give us your comments on this fact sheet and suggestions for future fact sheets. Direct your comments to Tom Hammett, Department of Wood Science and Forest Products, 210 Cheatham Hall (0323), Virginia Tech, Blacksburg VA 24061. Phone: (540)-231-2716. E-mail: himal@vt.edu.

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