

Hardwood Lumber and Veneer Series



Black Walnut

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EXPERT
REVIEWED

American Black Walnut (*Juglans nigra* L.) is probably the most famous and unique species of all our hardwoods. Large trees, defect free and exceptionally well-formed, were once common. Because of its rich, brown, lustrous heartwood with a grain pattern and intermediate pore size falling somewhere between the grainy hardwoods, such as oak and the uniform textured woods such as maple and yellow-poplar, the wood became prized for furniture, paneling, military and sporting gun stocks, novelties, and many other items. The wood was abundant and had a natural resistance to decay and insects. Therefore, it was also commonly used for construction purposes, such as barn timbers. Even as late as the 1960s the author witnessed the sale and use of walnut 1 x 12s for hayrack boards because it would not rot.

By the 1970s, the wood became relatively expensive, forcing the furniture and cabinet industry to promote other species. By the mid-1990s, the trend toward light colored hardwoods also lessened walnut's popularity. Today, it is preferred in office furniture, architectural millwork, flooring, high-end gun stocks, specialty, and custom items. Some suppliers feel that it is becoming somewhat more popular again. However, walnut lumber constitutes less than two percent of all hardwood lumber produced.

Black walnut ranges from the east coast to the great plains and from Texas and Georgia north to central Minnesota, Wisconsin, Michigan, and southern Ontario. Most of the best quality trees are found in the central states region from Ohio to Iowa. The largest tree reported is about 7.4 feet in diameter at 4½ feet above the ground.



Chip Morrison

Walnut trees

This species prefers deep, rich, moist soils of alluvial origin. The best trees are frequently found on flood free ledges just above stream banks. The species will live on poorer soils, but growth is slow and the wood quality is generally poor. Many walnut plantations have failed to perform well due to the trees being planted on the wrong sites. The tree has also been widely planted in the northwest.

Walnut is seldom found in pure stands. The best trees usually occur sporadically and in association with yellow-poplar, white ash, cherry, basswood, beech, and hickory.

Wood Color and Texture

Walnut is one of the few species classified as a semi-ring porous wood. The earlywood pores are relatively large and gradually change to smaller pores. Thus, it shows some grain characteristics. It falls between the coarse grain and ring porous woods like oak and the diffuse porous woods like maple. The slower growth wood seems to be softer than wood from fast growth, open-grown trees.

The heartwood is typically a beautiful chocolate brown color, which is not duplicated by any other species. The color can vary from more of a red color to a very dark chocolate brown. The color can also vary in uniformity throughout the board. When first cut from the log, walnut lumber will have a mint green color which changes to a chocolate color as the surface of the board dries.

The amount of white sapwood in younger, fast-growth trees and open-grown trees such as yard trees can be substantial. The commercial industry steams walnut lumber while it is still green. This process darkens the sapwood to appear more like the heartwood, and at this point the sapwood is not considered a defect. The process also tends to make the heartwood more uniform in color and eliminates any purplish cast that can occur.

Some walnut has “flash” or “flare” in the grain pattern. Small quantities of this material generally are not preferred by stock furniture manufacturers or veneer producers as it does not mix well with the straight grained wood. However, highly figured lumber and veneer can be prized for custom type jobs. Large figured logs capable of paneling large rooms can be very valuable as veneer. Walnut also tends to produce a very beautiful pattern of irregular grain in crotches and around large limbs.

Workability

Walnut is rated as intermediate in planing, but it is a good wood for shaping and the best of any commercial hardwood species for turning and boring.

Strength

At 12 percent moisture content, walnut weighs about 38 pounds per cubic foot, making it an



Mike Kerper

Green walnut lumber waiting to be steamed and placed on drying sticks. The white sapwood darkens when steamed.

intermediate weight species. For its weight, it is a relatively strong wood.

Steam Bending

Walnut is rated as one of the better woods to bend.

Drying

Walnut dries relatively easily with a moderate kiln schedule.

Shrinkage

As an intermediate weight wood, the shrinkage of walnut is also intermediate.

Decay Resistance

The heartwood of walnut is rated as resistant to very resistant to decay. As a result, this beautiful wood has been used for more practical industrial applications, especially in the past.

Commercial Use, Grading, and Value

Because of the unique color, grain characteristics, and the ability to show luster when finished, walnut has been a prized wood for furniture, cabinets, millwork, flooring, and other decorative interior applications including novelties. In the past, straight grain material was used for military gun stocks. The wood, particularly if figured, is still prized for sporting guns.

Hardwood Lumber – Black Walnut

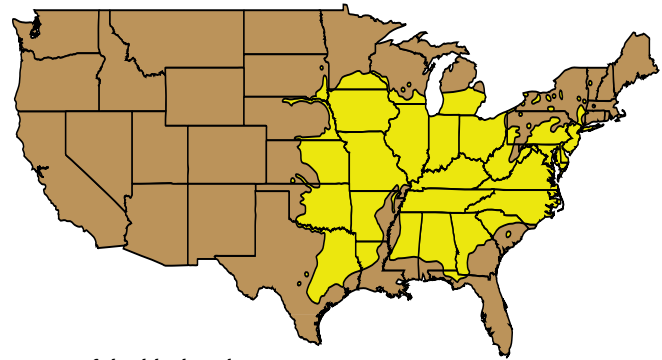
Walnut has a long standing reputation for being a valuable species. Currently, it is not our most valuable species. The very best grade of walnut is priced more than oak and about the same as white maple, but substantially less than cherry. Lower grade walnut is about comparable in price to red oak.

Buyers and sellers should be aware that the National Hardwood Lumber Grades for walnut and butternut are distinctly different than the standard grades that generally apply with slight modification to other species. Short lengths are accepted in the top grades of walnut; some short boards are graded by counting defects (called standard defects), rather than measuring clear cutting areas, minimum board widths for the top grade are narrower and the size of cuttings are smaller. As a result, any one grade in walnut will appear to be of lower quality when compared to lumber graded by the “standard rules”.

Because walnut was such a valuable and in-demand species for so long, it is probably the most studied and researched hardwood species in North America. Scores of articles have been published and genetically superior stock has been offered.

Substantial efforts at planting walnut and caring for plantations have also been published. The Walnut Council is a landowner group specifically devoted to education about the species.

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Range of the black walnut



Chip Morrison

Walnut is referred to as a semi-ring porous wood, which means the growth rings are somewhat distinct but not as bold as in oak or as subdued as woods such as poplar or maple.

Board 1 is a wide, perfect board that shows the characteristic “U” or “V” shaped growth rings found in flat-sawn walnut and excellent uniform color.

Board 2 shows the characteristic chocolate brown heartwood flanked by a white sapwood. The sapwood in walnut is white. Commercial walnut producers steam the lumber while it is still green, and the sapwood will darken as seen on the right edge of Board 4.

Board 3 shows a characteristic knot and numerous small pin knots. A small hole resulting from bird peck and associated discoloration or flagging is evident in the very center of board. Additional flagging or dark streaks can be seen throughout the piece. Bird peck is also referred to as “worm” especially in the veneer industry. It can appear like a worm hole but upon careful examination will show a hole filled with callous tissue that either falls out or can be removed. The callous tissue is formed by the tree to heal over the bird peck.

Board 4 is clear and shows the characteristic grain pattern of walnut. However, the color is not uniform and in the veneer industry this lack of uniformity is called muddy. Bird peck, flagging, and pin knots are also evident.

Board 5 represents a very low grade board cut from the heart of a log. The dark scattered opening on the left is pith or the very center of the tree. Walnut has a large diameter pith which is chambered. The piece also shows a small wild crotch grain pattern that occurs around large limbs or crotches. The top right of the pieces also represents the quartered effect in walnut. A very small ray fleck will be evident upon close examination. On quartered surfaces, pin knots or grain deviations around small limbs will appear as streaks across the growth rings.

The hardwood lumber grades for walnut and butternut are substantially relaxed as compared to those species such as oak and ash that are graded standard. Therefore, when buying wholesale quantities, do not expect a one to one comparison between those species graded standard and those for walnut and butternut.

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