forestry & natural resources

MARKETING AND UTILIZATION

SOME IMPORTANT INDIANA HARDWOODS THEIR CHARACTERISTICS AND USES

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The broad-leaved deciduous trees of Indiana, collectively referred to as hardwoods, are known the world over for their excellent quality. They are famous for many special products such as furniture, face veneers, handles, crates and pallets, barrels, and an infinite variety of everyday items.

Several evergreen or softwood species such as white pine, jack pine, Virginia pine, larch, hemlock, cypress, eastern arborvitae, and eastern red cedar are also native to Indiana. With the exception of eastern red cedar, most of these trees occur sporadically or in very small isolated stands and are not of commercial importance. Red cedar, however, is common and can be found throughout Indiana. Some of the pines have been used for reforestation projects and for horticultural purposes.

Physical and mechanical properties of wood such as color, weight, hardness, and type of grain determine the use of the various tree species. Because of the beautiful color and characteristic grain figure of their wood, high quality logs of red and white oak and black walnut are widely sought after, both in this country and for export. Lower quality material of the oaks may be converted into crossties, pallets and other rough products. Woods such as elm and beech, which bend easily when steamed and hold their shape when dried, are commonly used for furniture parts which require bending. Very hard and heavy woods such as hickory, dogwood and beech are good for fuel.

Most tree cross sections of hardwoods show a conspicuous dark central core surrounded by a light colored outer band. The dark core is called heartwood and the light band sapwood. The heartwood of some trees, such as osage orange and eastern red cedar, is naturally durable or resistant against decay and insects. Heartwood from these trees makes good fence posts, while the sapwood of all species is nonresistant to decay and insect attack. Heartwood can be classified as durable, moderately durable, or non-durable. Since durability within a species can also be affected by other factors, it is generally best to use wood pressure treated with a wood preservative if high resistance to decay or insects is required.

The following pages will provide further information concerning the characteristics and uses of many Indiana species. It is not exhaustive, but will illustrate some properties and common uses.

SPECIES	CHARACTERISTICS[1,2]	USES
Ash	Grayish brown, light brown, or pale yellow streaked with brown, straight and open grained, odorless and tasteless, hard and heavy, high shock resistance and good bending qualities, non-durable.	Handles, furniture, kitchen cabinets, athletic equipment, face veneer.
Aspen	Whitish, creamy to light grayish brown, straight and close grained, tasteless and odorless when dry, disagreeable odor when wet, soft and light, non-durable.	Pulpwood, matches, pallets and crates, particleboard, corestock for plywood.
Basswood	Pale brown, sometimes with a reddish tinge, straight and close grained, characteristic odor on fresh-cut surface, tasteless, soft and light, non-durable.	Concealed furniture parts, food containers, corestock for plywood, millwork.
Beech	Whitish with a reddish tinge to reddish brown, straight to interlocked grain, close grained, odorless and tasteless, hard and heavy, good bending qualities, non-durable.	Concealed furniture parts, woodenware and novelties, toys, crossties, handles, crates and pallets.
Birch, River	Light to dark brown or reddish brown, straight and close grained, odorless and tasteless, hard and heavy, non-durable.	Pulpwood, crossties, kitchen cabinets, crates and pallets.
Buckeye	Creamy white to pale yellowish white, straight and close grained, sometimes with mild characteristic odor, tasteless, light and soft.	Pallets and crates, novelties, drawing boards.
Catalpa	Grayish brown, occasionally with a lavender tinge, straight and open grained, faint aromatic noncharacteristic odor, tasteless, moderately light and soft, durable.	Fence posts, local cabinetry.
Cherry	Light to dark reddish brown, straight and close grained, odorless and tasteless, moderately heavy and hard, non-durable.	Furniture, face veneer, cabinetry, interior trim, paneling, piano actions, woodenware and novelties.
Coffee Tree	Light red to red or reddish brown, straight and open grained, odorless and tasteless, hard and heavy.	Local cabinetry, crossties, crates and pallets.
Cottonwood	Grayish white to light grayish brown, straight and close grained, odorless when dry, characteristic disagreeable odor when wet, tasteless, light and soft, non-durable.	Pulpwood, corestock in plywood, food containers, concealed furniture parts, crates and pallets.

SPECIES	CHARACTERISTICS[1,2]	USES
Dogwood	Sapwood light pinkish brown, very wide; heartwood dark brown, frequently variegated, straight and close grained, odorless and tasteless, very hard and heavy.	Shuttles for textile weaving, bobbin heads, golf club heads, jewelers blocks, mallet heads.
Elm, American (White Elm)	Light brown to brown, frequently with a reddish tinge, straight or sometimes interlocked grain, open grained. Generally without characteristic odor or taste, moderately hard and heavy, good bending qualities, non-durable.	Furniture, face veneer, paneling, fruit and food containers, crates and pallets.
Elm, Slippery (Red Elm)	Brown to dark brown, frequently with shades of red, sometimes with interlocked grain, open grained, odorless and tasteless, moderately hard and heavy, good bending qualities, non-durable.	Same as American Elm.
Blackgum	Sapwood white to grayish white, very wide; heartwood greenish to brownish gray, interlocked and close grained, odorless and tasteless, moderately hard and heavy, non-durable.	Pulpwood, concealed furniture parts, fruit and food containers, crates and pallets, crossties.
Sweetgum (Red Gum)	Reddish gray to varying shades of reddish brown, the darker grades frequently with darker streaks of pigment figure (called figured redgum in the trade), interlocked and close grained, odorless and tasteless, moderately hard and heavy, non-durable.	Furniture, kitchen cabinets, plywood, pulpwood, fruit baskets, crossties, crates and pallets.
Hackberry	Heartwood yellowish gray to light brown streaked with yellow, straight or sometimes interlocked grain, open grained, odorless and tasteless, moderately hard and heavy, non-durable.	Furniture, millwork, fruit baskets, crates and pallets.
Hickory	Pale brown to brown or reddish brown, straight and open grained, odorless and tasteless, hard and heavy, non-durable.	Furniture, tool handles, ladder rounds, sporting goods, woodenware and novelties.
Locust, Black	Greenish yellow to dark yellowish, greenish, or golden brown, straight and open grained, odorless and tasteless, hard and heavy, durable.	Fence posts and poles, insulator pins, crossties, crates and pallets, woodenware and novelties.
Locust, Honey	Light red to reddish brown, straight and open grained, odorless and tasteless, hard and heavy, moderately durable.	Local construction and local cabinetry.

SPECIES	CHARACTERISTICS[1,2]	USES
Maple, Hard	Light reddish brown, straight grained but occasionally curly, wavy or birds eye, close grained, odorless and tasteless, hard and heavy, non-durable.	Furniture, factory, gymnasium and home flooring, bowling alley floors and pins, musical instruments, sporting and athletic equipment, crossties, pulpwood, crates and pallets.
Maple, Soft	Light brown sometimes with a grayish or greenish tinge or with a faint, purplish cast, straight and close grained, odorless and tasteless, moderately hard and heavy, non-durable.	Furniture, food containers, crates and pallets, pulpwood.
Mulberry	Orange yellow to golden brown, turning rustic brown on exposure, straight and close grained, odorless and tasteless, hard and heavy, durable.	Fence posts, local cabinetry.
White Oak Group	Light brown to dark brown, straight and open grained, odorless and tasteless, very hard and heavy, durable.	Furniture, kitchen cabinets, face veneer, flooring, posts, whisky barrels, crates and pallets, millwork, paneling, crossties, heavy timbers.
Red Oak Group	Pinkish to light reddish brown, straight and open grained, generally odorless and tasteless, bacterially infected oak with rancid odor, very hard and heavy, non-durable.	Same as white oak except not suitable for whisky barrels or other "tight cooperage" and is not decay resistant.
Osage Orange	Golden yellow to bright orange, darkening upon exposure, often with reddish streaks along the grain, straight and close grained, odorless and tasteless, very hard and heavy, durable.	Posts, insulator pins, archery bows, previously used as dyewood (yellow, green, brown).
Persimmon	Heartwood usually very small, blackish brown to black, often streaked irregular in outline, straight and fairly close grained, odorless and tasteless, very hard and heavy.	Golf club heads, shuttles, bobbins, small tool handles.
Sassafras	Dull grayish brown to orange-brown or dark brown, straight and open grained, odor of sassafras, moderately hard and heavy, durable.	Locally for furniture and paneling, fence posts, millwork.
Sycamore	Light to dark brown or reddish brown, irregularly interlocked and close grained, odorless and tasteless, moderately hard and heavy, non-durable.	Concealed furniture parts, millwork, paneling, fruit containers, crates and pallets, pulpwood.

SPECIES	CHARACTERISTICS[1,2]	USES
Tuliptree (Yellow Poplar)	Variable in color, ranging from yellow to tan or brown, frequently marked with shades of purple, dark green, blue or black, straight and close grained, odorless and tasteless moderately light and soft, non-durable.	Furniture, millwork, corestock for plywood, face veneer, fruit containers, crates and pallets.
Walnut, Black	Light brown to rich chocolate or purplish brown, straight and somewhat open grained, mild characteristic odor when worked, tasteless, heavy and hard, stable when dry, durable.	Furniture, face veneer, paneling, gun stocks, interior trim and paneling, woodenware and novelties.
Walnut, White (Butternut)	Light chestnut brown, frequently variegated with pigment figure, straight and somewhat open grained, odorless and tasteless, moderately light and soft.	Furniture, face veneer, paneling, interior trim, novelties.
Willow	Light brown to pale reddish or grayish brown, frequently with darker streaks along the grain, straight and close grained, odorless and tasteless, moderately light and soft, non-durable.	Concealed furniture parts, corestock for plywood, caskets, crates and pallets, woodenware and novelties.
Eastern Red Cedar	Purplish or rose red when first exposed, aging to dull red or reddish brown sometimes with light streaks, straight and close grained, characteristic cedar odor and taste, moderately heavy and hard, durable.	Posts, woodenware and novelties, wardrobe and closet linings, "aromatic" particle board.

[1]Except as noted, color refers to heartwood or the darker central core of the tree. Sapwood is generally light colored and not characteristic.

[2]Open grain refers to those woods with large pores and thus a somewhat uneven surface, as in oak. Close grained refers to woods with small pores and thus a smooth surface, as in maple. In diameter, pores are the largest cells in hardwoods. In open grained woods they appear as tiny openings on a smooth end grained surface or as long narrow slits on a longitudinal surface.

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