



***Carya* spp.**

Family: Juglandaceae

Hickory

Hickory (*Carya* spp.) is composed of at least 16 species native to Asia [4], Central America [4] and North America [1]). The word *carya* is from the Greek name for nut. This group can be split into the true hickories and the pecans based on microanatomy.

True Hickory Group (earlywood without parenchyma bands):

Carya glabra-bitternut, black hickory, broom hickory, brown hickory, coast pignut hickory, false shagbark, hard shell, little pignut, little shagbark, nutmeg hickory, oval pignut hickory, pignut, **pignut hickory**, red hickory, redheart hickory, small fruited hickory, small pignut, smoothbark hickory, swamp hickory, sweet hickory, sweet pignut, sweet pignut hickory, switch-bud hickory, true hickory, white hickory

Carya lacinosa -big shagbark, big shagbark hickory, big shellbark, big shellbark hickory, bigleaf shagbark hickory, bottom shellbark, king nut, ridge hickory, **shellbark hickory**, thickbark hickory, thick shellbark, thick shellbark hickory, true hickory, western shellbark

Carya ovata-bird's eye hickory, Carolina hickory, curly hickory, littlenut shagbark hickory, little pignut, little shagbark, mockernut hickory, red hickory, redheart hickory, scalybark hickory, shagbark, **shagbark hickory**, shagbark walnut, shellbark, shellbark hickory, shellbark tree, skid hickory, small pignut, small pignut hickory, southern hickory, southern shagbark hickory, southern shellbark, sweet walnut, true hickory, upland hickory, white hickory, whiteheart hickory, white walnut

Carya tomentosa-big-bud, big hickory, black hickory, bullnut, common hickory, hardbark hickory, hickory-nut, hognut, mockernut, **mockernut hickory**, red hickory, true hickory, white hickory, whiteheart hickory

Pecan Hickory Group (earlywood with parenchyma bands):

Carya aquatica-bitter pecan, bitter water hickory, faux hickory, lowground hickory, lowland hickory, noot hickory, not hickory, pecan, pecan hickory, pignut hickory, swamp hickory, water bitternut, **water hickory**, wild pecan

Carya cordiformis-bitter hickory, bitternut, **bitternut hickory**, bitter pecan tree, bitter pignut, butternut, butternut hickory, highland hickory, pig hickory, pignut, pignut hickory, pig walnut, redheart hickory, swamp hickory, white hickory, yellowbud hickory

*Carya floridana**-Florida hickory, **scrub hickory**

Carya illinoensis-faux hickory, **pecan**, pecan hickory, pecan nut, pecan tree, sweet pecan

Carya myristicaeformis-bitter water hickory, bitter waternut, blasted pecan, **nutmeg hickory**, scalybark hickory, shagbark, shagbark hickory, shellbark hickory, swamp hickory, upland hickory

Carya pallida-pale hickory, paleleaf hickory, pallid hickory, pignut hickory, **sand hickory**

Carya texana-**black hickory**, buckley hickory, pignut hickory, Texas hickory

* not commercial

Distribution

Eastern to midwestern United States.

The Tree

Hickory trees can reach a height of 140 ft (43 m), with a diameter of 4 ft (1.2 m).

The Wood

General

The sapwood of hickory is white, tinged with brown, while the heartwood is pale to reddish brown. The wood is known for its strength and shock resistance. It is difficult to dry or season. It rates above average in most working properties, except in shaping and nail-holding ability. The wood of pecans is rated slightly below that of true hickories.

Mechanical Properties (2-inch standard)

	Specific gravity	MOE X10 ⁶ lbf/in ²	MOR lbf/in ²	Compression		WML ^a in-lbf/in ³	Hardness lbf	Shear lbf/in ²
				Parallel lbf/in ²	Perpendicular lbf/in ²			
True Hickory Group								
<i>Carya glabra</i> (pignut hickory)								
Green	0.66	1.65	11,700	4,810	920	31.7	–	1,370
Dry	0.75	2.26	20,100	9,190	1,980	30.4	–	2,150
<i>Carya lacinosa</i> (shellbark hickory)								
Green	0.62	1.34	10,500	3,920	810	29.9	–	1,190
Dry	0.69	1.89	18,100	8,000	1,800	23.6	–	2,110
<i>Carya ovata</i> (shagbark hickory)								
Green	0.64	1.57	11,000	4,580	840	23.7	–	1,520
Dry	0.72	2.16	20,200	9,210	1,760	25.8	–	2,160
<i>Carya tomentosa</i> (mockernut hickory)								
Green	0.64	1.57	11,100	4,480	810	26.1	–	1,280
Dry	0.72	2.22	19,200	8,940	1,730	22.6	–	1,740
Pecan Hickory Group								
<i>Carya aquatica</i> (water hickory)								
Green	0.61	1.56	10,700	4,660	880	18.8	–	1,440
Dry	0.62	2.02	17,800	8,600	1,550	19.3	–	–
<i>Carya cordiformis</i> (bitternut hickory)								
Green	0.60	1.40	10,300	4,570	800	20.0	–	1,240
Dry	0.66	1.79	17,100	9,040	1,680	18.2	–	–
<i>Carya illinoensis</i> (pecan)								
Green	0.60	1.37	9,800	3,990	780	14.6	1,310	1,480
Dry	0.66	1.73	13,700	7,850	1,720	13.8	1,820	2,080
<i>Carya myristicaeformis</i> (nutmeg hickory)								
Green	0.56	1.29	9,100	3,980	760	22.8	–	1,030
Dry	0.60	1.70	16,600	6,910	1,570	25.1	–	–

^aWML = Work to maximum load.

^bReference (98).

^cReference (59).

Drying and Shrinkage

Type of shrinkage	Percentage of shrinkage (green to final moisture content)		
	0% MC	6% MC	20% MC
True Hickory Group			
<i>Carya glabra</i> (pignut hickory)			
Tangential	11.5	9.2	3.8
Radial	7.2	5.8	2.4
Volumetric	17.9	14.3	6.0
<i>Carya lacinosa</i> (shellbark hickory)			
Tangential	12.6	10.1	4.2
Radial	7.6	6.1	2.5
Volumetric	19.2	15.4	6.4
<i>Carya ovata</i> (shagbark hickory)			
Tangential	10.5	8.0	3.3
Radial	7.0	5.6	2.3
Volumetric	16.7	13.4	5.6
<i>Carya tomentosa</i> (mockernut hickory)			
Tangential	11.0	8.8	3.7
Radial	7.7	6.2	2.6
Volumetric	17.8	14.3	6.0
Pecan Hickory Group			
<i>Carya aquatica</i> (water hickory)			
Tangential	-	-	-
Radial	-	-	-
Volumetric	13.6	-	-
<i>Carya cordiformis</i> (bitternut hickory)			
Tangential	-	-	-
Radial	-	-	-
Volumetric	13.6	-	-
<i>Carya illinoensis</i> (pecan)			
Tangential	8.9	-	-
Radial	4.9	-	-
Volumetric	13.6	-	-
<i>Carya myristicaeformis</i> (nutmeg hickory)			
Tangential	-	-	-
Radial	-	-	-
Volumetric	-	-	-

References: 0% MC (98),
6% and 20% MC (90).

Kiln Drying Schedules^a

Condition	Stock				
	4/4, 5/4, 6/4	8/4	10/4	12/4	16/4
Standard	T8-D3	T6-D1	-	-	-

^aReferences (6, 86).

Working Properties Hickory is considered difficult to machine and glue. It holds nails well, but it tends to split. It is susceptible to bird peck.

Durability: Rated as slightly or nonresistant to heartwood decay.

Preservation: Extremely resistant.

Uses: Tool handles, furniture, cabinetry, ladder rungs, dowels, sporting goods (including baseball bats, skis and archery equipment), flooring, veneer, plywood, fuelwood, charcoal.

Toxicity: No information available at this time.

Additional Reading and References Cited (in parentheses)

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