Technology Transfer Fact Sheet
Center for Wood Anatomy Research
USDA Forest Service • Forest Products Laboratory • One Gifford Pinchot Drive • Madison, Wisconsin 53726–2398

Nyssa spp.

Family: Nyssaceae

Tupelo

Tupelo contains about 5 species native to the United States [3] and eastern Asia [2].

Nyssa aquatica-Bay-poplar, Bastard Cottonwood, Big Tupelo, Bowl Gum, Chickasawatchie Whitewood, Cotton-gum, Gray Gum, Gum Cottonwood, Hickory Poplar, Ladle Gum, Large Tupelo, Olivetree, Pawpaw Gum, Rootwood Tupelo, Sap Gum, Sour Gum, Swamp Gum, Swamp Poplar, Swamp Tupelo, Trade Tupelo, Tupelo Gum, Water Gum, **Water Tupelo**, White Gum, Wild Olivetree, Yellow?Gum

Nyssa ogeche-Gopher Plum, Limetree, Ogeechee Lime, Lone Tupelo, Ogeechee?Plum, **Ogeechee Tupelo**, Sour Tupelo, Sour Tupelo Gum, White Tupelo, Wild Limetree

Nyssa sylvatica-Blackgum, **Black Tupelo**, Bowl Gum, Gum, Pepperidge, Plain Black Gum, Quartered Black Gum, Sour Gum, Stinkwood, Swamp Blackgum, Swamp Tupelo, Tupelo Gum, Yellow Gum, Yellow Gumtree, Wild Pear-tree

Nyssa sylvatica var. *biflora*-**Blackgum**, Swamp Blackgum, Bouw Gum, Lowland Black Gum, Lowland Gum, Sour Gum, Southern Gum, Swamp Black Gum, Swamp Tupelo, Tupelo Gum, Water Gum,

Distribution

The eastern to southeastern United States.

The Tree

Tupelo trees reach heights of 100 feet, with a diameter of over 3 feet.

The Wood

General

The sapwood of Tupelo is a light gray brown, while the heartwood is darker. It has interlocked grain, with a natural tendency to warp when dries, especially when flat sawn. It shows a characteristic figure when quartersawn. It has no characteristic odor or taste. It is moderately strong, but difficult to glue.

Mechanical Properties (2-inch standard)

				Compression				
	Specific gravity	MOE $X10^6$ lbf/in^2	MOR lbf/in^2	Parallel lbf/in^2	Perpendicular lbf/in^2	WML[a] in-lbf/in^3	Hardness lbf	Shear lbf/in^2
				Nyssa aquatica (water tupelo)				
Green	0.46	1.05	7,300	3,370	480	8.30	710	1,190
Dry	0.50	1.26	9,600	5,920	870	6.90	880	1,590
				Nyssa sylvatica (black tupelo)				
Green	0.46	1.03	7,000	3,040	480	8.00	640	1,100
Dry	0.50	1.20	9,600	5,520	930	6.20	810	1,340

[a]WML = Work to maximum load.

[b]Reference (98).

[c]Reference (59).

Drying and Shrinkage

	Percentage of shrinkage (green to final moisture content)		
Type of shrinkage	0% MC	6% MC	20% MC
	Nyssa aquatica (water tupelo)		
Tangential	7.6	6.1	2.5

Radial	4.2	3.4	1.4
Volumetric	12.5	10.0	4.2
	Nyssa sylvatica (black tupelo)		
Tangential	8.7	6.2	2.6
Radial	5.1	3.5	1.5
Volumetric	14.4	11.1	4.6

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

Kiln Drying Schedules[a]

	Stock				
Condition	4/4, 5/4, 6/4	8/4	10/4	12/4	16/4
	Nyssa sylvatica (water tupelo)				
Standard	T12-E5	T11-D3	T11-D3	T9-C2	T7-C2
	Nyssa sylvatica var biflora (black gum)				
Standard	T10-E3	T8-D2	—	—	—

[a]References (6, 86).

Working Properties: It is moderately strong, but difficult to glue.

Durability: It lacks any natural durability.

Preservation: It is easily penetrated with preservatives.

Uses: Furniture, shipping containers, millwork, veneer, plywood, cross ties, bridge ties and crossing planks.

Toxicity: No information available at this time.

Additional Reading and References Cited (in parentheses)

6. Boone, R.S., C.J. Kozlik, P.J. Bois & E.M. Wengert. 1988. Dry kiln schedules for commercial woods - temperate and tropical. USDA Forest Service, FPL ?General Technical Report FPL-GTR-57.

21. Darwin, jr., W.N. 1972. Tupelo. USDA Forest Service, American Woods Series, FS-?269.

29. Elias, T.S. 1980. The complete trees of North America, field guide and natural history. Van Nostrand Reinhold Co., New York, 948 pp.

40. Hausen, B. M. 1981. Wood Injurious to Human Health: A Manual. Walter deGruyter & Co., Berlin, Germany; New York, NY.

55. Little, Jr., E.L. 1979. Checklist of United States trees (native and naturalized). USDA Forest Service, Ag. Handbook No. 541, USGPO, Washington, DC.

59. Markwardt, L.J. and T.R.C. Wilson. 1935. Strength and related properties of woods grown in the United States. USDA Forest Service, Tech. Bull. No. 479. USGPO, ?Washington, DC.

64. Mitchell, J.; Rook, A. 1979. Botanical Dermatology: Plants and Plant Products Injurious to the Skin. Greenglass Ltd., 691 W. 28th Ave., Vancouver, British ?Columbia, Canada V5H 2H4.

68. Panshin, A.J. and C. de Zeeuw. 1980. Textbook of Wood Technology, 4th Ed., McGraw-Hill Book Co., New York, 722 pp.

74. Record, S.J. and R.W. Hess. 1943. Timbers of the new world. Yale University Press, ?New Haven, 640 pp.

86. Simpson, W.T. 1991. Dry kiln operator's manual. USDA Forest Service, FPL Ag. Handbook 188.

90. Summitt, R. and A. Sliker. 1980. CRC handbook of materials science. Volume 4, wood. CRC Press, Inc., Boca Raton, FL. 459 pp.

98. USDA Forest Service, FPL. 1987. Wood handbook: wood as an engineering material. Ag. Handbook 72.

105. Woods, B.; Calnan, C. D. 1976. Toxic Woods. British Journal of Dermatology; 95(13):1-97 Published by Blackwell Scientific Publications, Oxford, England OX2 ?OEL.