Tropical Timberwoods, Inc.

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Mora

Scientific Name: Mora excelsa and Mora gonggrijpii

Distribution: *M. excelsa:* Widely distributed in the Guianas and less so in the Orinoco Delta of Venezuela; dominant on river levees and plains forming dense stands. *M.gonggrijpii;* Restricted to Guyana and Surinam, a dominant species best adapted to hillsides on heavy clay soil.

The Tree: Usually 100 to 120 ft. high and 2 to 3 ft. in diameter with clear boles 60 ft. and more above very large buttresses that may extend 15 ft. up the trunk. Trees of *M. excelsa* 160 to 200 ft. high and 4 ft. in diameter are reported.

General Characteristics: Heartwood yellowish red brown, reddish brown or dark red with paler streaks; sapwood 2 to 6 in. wide, distinct, yellowish to pale brown. Texture moderately fine to rather coarse, rather harsh to the feel; luster medium to high; grain is straight to commonly interlocked, very variable; astringent taste and a slightly sour odor.

Weight: Basic specific gravity (ovendry weight/green volume) 0.76 to 0.84; air-dry density 59 to 65 pcf.

Mechanical Properties: (First set of data based on the 2 in. standard, the second the 2 cm standard.)

Moisture Content (%)	Bending Strength (Psi)	Modulus of Elasticity (1,000 Psi)	Max. Crushing Strength (Psi)
Green (75)	12,630	2,330	6,400
12%	22,100	2,960	11,840
Green (42)	13,600	2,150	7,150
12%	24,400	2,790	12,700
NOTE: duplicate values under "Moisture Content" represent multiple tests conducted at different times.			

Janka side hardness 1,450 lb. for green material and 2,300 lb. at 12% moisture content. Forest Products Laboratory toughness average for green and dry material is 228 in. lb. (5/8 in. specimen).

Drying and Shrinkage: Experience is variable, reported to air-season and kiln-dry rather slowly with a tendency to split, check, and collapse but without serious bowing or cupping; also reported to be only moderately difficult to air-dry with only slight checking and warp. Kiln schedule T3-C2 is suggested for 4/4 stock and T3-C1 for 8/4. Shrinkage green to ovendry: radial 3.1%; tangential 7.6%; volumetric 10.4. Movement in service is rated small.

Working Properties: The wood is moderately difficult to work but yields smooth surfaces in sawing, planing, turning, or boring unless interlocked grain is present then there may be considerable "pick up" and chipped grain.

Durability: Results are variable; material from Surinam and Guyana is rated durable to very durable in resistance to brown-rot and white-rot fungi. Service life of 15 to 20 years in ground contact is reported. *M. gonggrijpii* is rated very resistant to dry-wood termites; *M. excelsa* considerably less so, not resistant to marine borers.

Preservation: Sapwood responds readily to preservative treatments; heartwood resists impregnation, penetration is very shallow, and absorptions are low.

Uses: Industrial flooring, railroad crossties, shipbuilding, heavy construction, high quality charcoal wood.