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CUMARU / BRAZILIAN CHESTNUT
(DIPTERYX ODORATA)

Other Common Names: Shihuahuaco, Brazilian Chestnut, Brazilian Teak, Almendro (Costa Rica, Panama), Sarrapia (Venezuela, Colombia), Cumaru (Brazil), Charapilla, Cumarut (Peru).

Distribution: The Guianas, Venezuela, Colombia, and the Amazon region of Brazil; reaches its best development on well-drained gravelly or sandy sites. Cultivated in many areas for the tonka beans used as a flavoring.

The Tree: A large over story tree sometimes to 160 ft in height and trunk diameters to 40 in.; unbuttressed cylindrical boles are generally clear to 60 to 80 ft.

The Wood:

General Characteristics: Fresh heartwood is reddish brown or purplish brown with light yellowish-brown or purplish streaks; upon exposure gradually' becomes uniform light brown or yellowish brown. Sapwood is distinct, narrow, yellowish brown. Luster rather low to medium; texture fine; grain interlocked; waxy or oily feel; taste not distinctive but may have a vanilla-like or rancid odor.

Weight: Basic specific gravity (oven dry weight/green volume) ranges from 0.80 to 0.91; air-dry density 62 to 81 pcf.

Mechanical Properties: (First set of values based on 2-in. standard; second set on 1-in. standard.)

Moisture content (%)	Bending strength (Psi)	Modulus of elasticity (1,000 psi)	Maximum crushing strength (Psi)
Green (74)	19,290	2,690	9,020
12%	27,270	3,030	13,720
12% (24)	22,400	3,010	13,200

Janka side hardness 2,200 lb for green material and 3,540 lb at 12% moisture content. Forest Products Laboratory toughness average for green and dry material is 265 in.-lb. (5/8-in. specimen).

Drying and Shrinkage: The wood is rated as easy to air-season with a slight tendency to check and with moderate warping; drying was uniformly rapid. No dry kiln data available. Shrinkage from green to oven dry: radial 5.0%; tangential 7.6%; volumetric 12.0%.

Working Properties: The wood is difficult to saw and bore; where severely interlocked grain is not present, the wood planes to a smooth surface. Because of its high density and oily nature, the wood glues poorly.

Durability: The timbers have a reputation for being very durable. Laboratory tests also show the heartwood to be very durable in resistance to both brown-rot and white rot fungi. The wood has excellent weathering characteristics.

Preservation: Heartwood absorption and penetration of treating solutions using both open-tank and pressure-vacuum systems are inadequate. Sapwood is reported to treat well, particularly with a high end-grain exposure.

Uses: Heavy construction, cogs and shafts, barge and dock fenders, flooring, railroad crossties, pulp mill equipment, tool handles, bearings, turnery. A substitute for lignum vitae.

SOURCE: US Department of Agriculture – Forest Service