

Technology Transfer Fact Sheet**Center for Wood Anatomy Research**

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Hymenolobium excelsum

Family: Leguminosae

Para-Angelim

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Other Common Names: Erejoeroe, Lialiadan koleroe, Saandoe (Surinam), Angelim do Para, Caramate, Sapupira amarella (Brazil).

Distribution: Upland forests of the central and eastern parts of the Brazilian Amazon region and extending northward into the Guianas and southward to Rio de Janeiro.

The Tree: A medium-sized to very large tree, sometimes 150 ft in height with diameters to 10 ft.

The Wood:

General Characteristics: Heartwood when fresh is light orange tan to orange brown turning to pale brown on exposure with a rather gradual transition to the white or grayish sapwood. Texture rather coarse and uneven; luster rather low; grain straight to interlocked; without distinctive odor or taste. Alternating zones of dark and light tissue give a figure of the Partridge wood type.

Weight: Basic specific gravity (ovendry weight/green volume) 0.6; air-dry density 47 pcf.

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

Moisture content (%)	Bending strength (Psi)	Modulus of elasticity (1,000 psi)	Maximum crushing strength (Psi)
Green (73)	14,610	1,950	7,460
12%	17,610	2,050	8,990
12% (24)	13,300	2,000	9,050

Janka side hardness 1,720 lb for both dry and green material. Forest Products Laboratory toughness average for green and dry material is 203 in.-lb. (5/8-in. specimen).

Drying and Shrinkage: Reported to be moderately difficult to air-dry season. Rated drying fast to moderate with moderate warp and slight surface and end checking. No data on kiln schedules available. Shrinkage green to ovendry: radial 4.4%; tangential 7.1%; volumetric 10.2%.

Working Properties: The wood is easy to work in all operations and machines to a smooth surface.

Durability: In laboratory tests heartwood was rated very durable upon exposure to white-rot and durable in resistance to a brown-rot fungus. Exposure tests indicate the heartwood is only

moderately resistant to marine borers.

Preservation: Heartwood and sapwood are both reported to respond well to pressure-vacuum treatments; test specimens, however, had high end-grain exposure.

Uses: Heavy construction, turnery, and furniture.

Additional Reading: (24), (56), (73)

26. Gerry, E. 1952. information leaflet. Foreign woods. Imbuia, Embuia, or "Brazilian walnut," Phoebe porosa. USDA For. Serv. Mimeo. No. R1924.

56. Record, S. J., and R. W. Hess. 1949. Timbers of the new world. Yale University Press, New Haven, Conn.

73. Wangaard, F. F., A. Koehler, and A. F. Muschler. 1954. Properties and uses of tropical woods, IV. Tropical Woods No. 99:1-187.

From: Chudnoff, Martin. 1984. *Tropical Timbers of the World*. USDA Forest Service. Ag. Handbook No. 607.