Technology Transfer Fact Sheet
Center for Wood Anatomy Research
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Eschweilera spp.

Family: Lecythidaceae

Manbarklak

Kakeralli

Other Common Names: Oxito, Olleto (Panama), Coco de mono, Montanero (Venezuela), Coco cristal, Tete congo (Colombia), Haudan, Kakeralli (Guyana), Oemanbarklak, Manbarklak (Surinam), Mata-mata, Atereba, Jarana (Brazil).

Distribution: About 60 species are distributed from eastern Brazil through the Amazon Basin to the Guianas, Trinidad, and Costa Rica.

The Tree: Most species reach heights of 90 to 120 ft with trunk diameters of 16 to 24 in., sometimes up to 40 in. Boles are moderately well formed, 40 to 60 ft long; often somewhat fluted or slightly buttressed.

The Wood:
General Characteristics: Heartwood of most species is light brown, grayish brown, reddish brown, or brownish buff, sometimes with black streaks, usually distinct from the yellowish sapwood. Luster low; grain typically straight; texture fine and uniform; without distinctive odor or taste. Depending on species, silica content may be as high as 2.4%.

Weight: Basic specific gravity (ovendry weight/green volume) varies with species from 0.62 to 0.95, mostly about 0.85; air-dry density ranges from 48 to 74 pcf, averaging about 64.

Mechanical Properties: (First two sets of data based on the 2-in. standard; the third on the 1-in. standard.)

Moisture content (%)	Bending strength (Psi)	Modulus of elasticity (1,000 psi)	Maximum crushing strength (Psi)
Green (73)	10,870	1,480	3,880
12%	14,460	1,760	6,370
Green (73)	17,110	2,700	7,340
12%	26,470	3,140	11,210
12% (24)	30,300	3,180	13,400

Janka side hardness for green material ranges from 1,280 lb to 2,480 lb. Forest Products Laboratory toughness average of green and dry material ranges from 239 to 365 in.-lb (5/8-in. specimen).

Drying and Shrinkage: The wood is rated as fairly difficult to air-season, drying rates are slow to moderate. Warp and checking are rated as slight to moderate, depending on species. No kiln schedule data available. Shrinkage from green to ovendry typically: radial 5.8%; tangential 10.3%; volumetric 15.9%.

Working Properties: Most of the species are difficult to work because of the high density and high silica content (excepting *E. tenax*); specially tipped cutters are suggested.

Durability: Most species are highly resistant to attack by both brown-rot and white rot fungi. Also most of the species have gained wide recognition for their high degree of resistance to marine-borer attack. Resistance to dry-wood termite attack is variable, depending on species.

Preservation: Highly resistant to preservation treatments.

Uses: Marine and other heavy construction, industrial flooring, pulp mill equipment, railroad crossties, piling, and turnery.

Additional Reading: (24), (44), (56), (73)

24. Food and Agriculture Organization. 1970. Estudio de preinversion para el desarrollo forestal de la Guyana Venezolana. lnforme final. Tomo III. Las madera del area del proyecto. FAO Report FAO/SF: 82 VEN 5. Rome.
44. Llach, C. L. 1971. Properties and uses of 113 timber-yielding species of Panama. Part 3. Physical and mechanical properties of 113 tree species. FO- UNDP/PAN/6. FAO, Rome.
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.