



Swartzia spp.

Family: Leguminosae

Wamara

Bannia

Other Common Names: Naranjillo (Mexico, Honduras, Panama), Parakusan (Guyana), Gandoe, Ijzerhart (Surinam), Alma negra (Colombia), Orura barrialera (Venezuela), Icoje (Peru), Pau ferro, Mututy (Brazil).

Distribution: Southern Mexico, through Central America, the West Indies and southward to northern South America; especially abundant in the Guianas and the Amazon region.

The Tree: Size varies considerably with species, some reaching heights of 110 ft with trunk diameters commonly to 24 in., but reaching 36 in.

The Wood:

General Characteristics: Heartwood dark brown, reddish brown, or nearly black, in solid color or somewhat variegated; sharply demarcated from the nearly white to yellowish sapwood. Texture very fine to medium; luster usually medium; grain straight to irregular; without distinctive odor or taste. Dust irritating to some workers.

Weight: Basic specific gravity (ovendry weight/green volume) 0.87 to 1.02; air- dry density 65 to 75 pcf.

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

Moisture content (%)	Bending strength (Psi)	Modulus of elasticity (1,000 psi)	Maximum crushing strength (Psi)
Green (75)	22,870	3,000	12,930
12%	26,370	3,630	15,440
Green (42)	21,400	2,480	10,500
12%	32,600	3,220	16,500
15% (34)	23,460	2,620	12,900

Janka side hardness 3,325 to 4,060 lb for dry material. Forest Products Laboratory toughness average for green and dry material is 260 in.-lb (5/8-in. specimen).

Drying and Shrinkage: Generally reported to be moderately difficult to air-dry because of checking and warp. Kiln schedule T2-C2 is suggested for 4/4 stock and T2-C1 for 8/4. Shrinkage green to oven-dry: radial 3.9%; tangential 7.6%; volumetric 11.2%. Movement after manufacture of some species is reported high.

Working Properties: The woods are difficult to work because of their high density, but finish very smoothly and takes a high polish. Workers should be protected from the irritating dust of some species (*S. bannia*).

Durability: Heartwood is very resistant to attack by decay fungi and resistant to dry-wood termites. Not resistant to marine borers.

Preservation: No information available.

Uses: inlay, parquet flooring, turnery, furniture, cabinetwork, violin bows, specialty items, suggested as a substitute for ebony.

Additional Reading: (34), (42), (46), (75)

34. Japing, H. W. 1957. Tests of the most important mechanical and physical properties of 41 Surinam wood species. Meded. Inst. Trop. Amst. No. 122 (Afd. trop. Prod. No. 46).
42. Lavers, G. M. 1969. The strength properties of timbers. For. Prod. Res. Bull. No. 50. H. M. Stationery Office. London.
46. Longwood, F. R. 1962. Present and potential commercial timbers of the Caribbean. Agriculture Handbook No. 207. U.S. Department of Agriculture.
75. Wangaard, F. F., W. L. Stern, and S. L. Goodrich. 1955. Properties and uses tropical woods, V. Tropical Woods No. 103:1-139.

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