



# Hymenaea courbaril

Family: Leguminosae

## Courbaril

**Other Common Names:** Cuapinol, Guapinol (Mexico), Guapinol (Central America), Locust, Kawanari (Guyana), Rode lokus (Surinam), Algarrobo (Spanish America), Jatahy, Jatoba (Brazil).

**Distribution:** Southern Mexico, throughout Central America and the West Indies to northern Brazil, Bolivia, and Peru. The tree's best development is on ridges or slopes and high riverbanks.

**The Tree:** May grow to a height of 130 ft with trunk diameters of 5 to 6 ft; usually less than 100 ft high with diameters of 2 to 4 ft. Boles are well formed, often clear for 40 to 80 ft, and basally swollen or buttressed in large trees.

### The Wood:

**General Characteristics:** Heartwood is salmon red to orange brown when fresh, becoming russet to reddish brown when seasoned; often marked with dark streaks. Sapwood is usually wide; white, gray, or pinkish. Texture is medium to rather coarse; grain mostly interlocked; golden luster; without distinctive odor or taste.

**Weight:** Basic specific gravity (ovendry weight/green volume) 0.71 to 0.82; air- dry density 52 to 61 pcf.

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

Moisture content (%)	Bending strength (Psi)	Modulus of elasticity (1,000 psi)	Maximum crushing strength (Psi)
Green (74)	12,940	1,840	5,800
12%	19,400	2,160	9,510
12% (24)	25,100	2,870	14,200

Janka side hardness at 12% moisture content 2,350 to 3,290 lb. Forest Products Laboratory toughness average for green and dry material is 230 in.-lb (5/8-in. specimen).

**Drying and Shrinkage:** The wood is rated as slightly difficult to air-dry; it seasons at a fast to moderate rate 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 oven-dry: radial 4.5%; tangential 8.5%; volumetric 12.7%-values are low for a wood of this density.

**Working Properties:** The wood is moderately difficult to saw and machine largely because of its high density, but except in planing it can be machined to a smooth surface. The wood is somewhat difficult to plane because of the interlocked grain. It is easy to glue and finish satisfactorily; steam-bending properties comparable to white oak.

**Durability:** Laboratory evaluations rate the wood very resistant to brown-rot and white-rot fungi; actual field exposure trials also rate the wood as very durable. Heartwood is also rated very resistant to dry-wood termites; little resistance to marine borers.

**Preservation:** Heartwood is not treatable using open-tank or pressure-vacuum systems. Sapwood, however, is responsive.

**Uses:** Tool handles and other applications where good shock resistance is needed, steam-bent parts, flooring, turnery, furniture and cabinet work, railroad crossties tree-nails, gear cogs, wheel rims, and other specialty items. Tree exudes a rosin-like gum known commercially as South American copal. Seed pods contain an edible pulp.

**Additional Reading:** (24), (44), (46), (74)

24. Food and Agriculture Organization. 1970. Estudio de reinversion para el desarrollo forestal de la Guyana Venezolana. Informe final. Tomo III. Las maderas 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.
46. Longwood, F. R. 1962. Present and potential commercial timbers of the Caribbean. Agriculture Handbook No. 207. U.S. Department of Agriculture.
74. Wangaard, F. F., and A. F. Muschler. 1952. Properties and uses of tropical woods, III. Tropical Woods 98:1-190.

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