



## *Copaifera* spp.

**Family:** Leguminosae

### Copaiba

**Other Common Names:** Copaiba (generally in Latin America), Camiba, Cabino blanco (Panama), Cabimo, Palo de aceite (Venezuela), Canime, Copaiba (Colombia), Copaibarana, Copahyba (Brazil), Cupay (Paraguay), Timbo-y-ata (Argentina).

**Distribution:** Varies with species and ranges from Panama southward to Argentina and Paraguay. *C. reticulata* has wide distribution in the Amazon region and is the source of copaiba balsam.

**The Tree:** May reach a height of 100 ft and a trunk diameter of 4 ft.

#### The Wood:

**General Characteristics:** Heartwood reddish brown, variable often with a coppery hue and sometimes streaked; not very sharply demarcated from the pinkish gray or nearly white sapwood. Luster rather silky and golden; grain usually straight; texture medium; oily exudations sometimes present, the woods of all species contain gum or oil canals. Dry material without distinctive odor or taste.

**Weight:** Basic specific gravity (ovendry weight/green volume) varies with species from 0.46 to 0.64; air-dry density 34 to 49 pcf.

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

Moisture content (%)	Bending strength (Psi)	Modulus of elasticity (1,000 psi)	Maximum crushing strength (Psi)
Green (75)	12,980	2,270	6,070
12%	21,200	2,650	10,700
Green (30)	8,580	1,350	3,900
15%	11,300	NA	5,980
12% (41)	12,900	NA	6,500

Janka side hardness 1,390 lb for green material, 1,740 lb at 12% moisture content. Forest Products Laboratory toughness average for green and dry material is 204 in.-lb. (5/8-in. specimen).

**Drying and Shrinkage:** Reported to have a slow to moderate rate of drying. *C. aromatica* air-dried with bow being the only degrade. No information available on kiln schedules. Shrinkage green to ovendry: radial 4.4%; tangential 9.2%; volumetric 14.6%.

**Working Properties:** The wood is easy to work and finishes very smoothly; a small amount of material showed fuzzy grain after planing.

**Durability:** *C. officinalis* is reported to be vulnerable to attack by decay fungi, insects, and dry-wood termites. *C. aromatica* and other species are reported to be highly durable.

**Preservation:** *C. officinalis* heartwood as well as other species difficult to very difficult to preserve using pressure-vacuum systems; good absorption and penetration of sapwood is reported.

**Uses:** Carpentry, general construction, interior trim, furniture, turnery, suggested for particleboard and excelsior cement board. Trees are highly valued for their gum or balsam.

**Additional Reading:** (30), (41), (44), (75)

30. Instituto de Pesquisas Tecnológicas. 1956. Tabelas de resultados obtidos para madeiras nacionais. Bol. Inst. Pesqu. téc. São Paulo No. 31.

41. Laboratorio Nacional de Productos Forestales. 1974. Características, propiedades, y usos de 104 maderas de los altos llanos occidentales. Universidad de Los Andes, Merida.

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/SF PAN/6. FAO, Rome.

75. Wangaard, F.F., W.L. Stern, and S.L. Goodrich. 1955. Properties and uses of tropical woods, V. Tropical Woods No. 10:1-139.

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