



**USDA Forest Service  
Forest Products Laboratory  
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## Wood Technical Fact Sheet

Intsia bijuga

and I. palembanica

Merbau

Ipil

**Family:** Leguminosae

**Other Common Names:** Tat-talun (Burma), Lumpha, Lumpho (Thailand), Kwila (New Guinea Vesi (Fiji Islands), Ipil (Philippines), Merbau (Malaya).

**Distribution:** Indo-Malayan region, Indonesia, Philippines, and many of the western Pacific islands as well as Australia. May be locally common in lowland forests, transition zones behind mangroves.

**The Tree:** A large tree often with a rather short, thick bole, sometimes to 50 ft, often fluted; trunk diameters to 5 ft above large spreading buttresses.

### The Wood:

**General Characteristics:** Heartwood yellowish to orange brown when freshly cut, turning brown or dark red brown on exposure; sapwood pale yellow to light buff, sharply demarcated from the heartwood. Texture rather coarse; grain straight to interlocked or wavy; luster variable; has a characteristic odor when dry material is worked, and an astringent taste.

**Weight:** Basic specific gravity (ovendry weight/green volume) 0.68; air-dry density 50 pcf.

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

Moisture content Bending strength Modulus of elasticity Maximum crushing strength

(%)(Psi)(1,000 psi)(Psi)

Green (37) 12,850 2,020 6,770

15% 16,810 2,230 8,440

Green (7) 15,000 2,150 8,040

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12% 300 2,610 11,700

12% 1) 20,000 2,320 9,500

Jan. side hardness 1,500 to 1,925 lb for dry material. Forest Products Laboratory toughness about 190/in.-lb average for wet and dry material (5/8-in. specimen).

**Drying and Shrinkage:** Seasons well with little degrade. Kiln schedule T3-C2 is suggested for 4/4 stock and T3-C1 for 8/4. Shrinkage green to oven-dry: radial 2.7%; tangential 4.6%; volumetric 7.8%. Movement in service is rated as small.

**Working Properties:** Rather difficult to saw because of gumming of teeth and dulling of cutting edges, dresses smoothly in most operations, finishes well. Stains black in the presence of iron and moisture.

**Durability:** Heartwood has an average service life of 6 years in Malayan stake tests but generally reputed to have good durability; highly resistant to termite attack. Sapwood prone to powder-post beetle attack.

**Preservation:** Heartwood is impermeable, but sapwood is treatable.

**Uses:** Flooring, furniture, paneling, fine joinery, decorative turnery, cabinetmaking, musical instruments, specialty items. The wood is also a dye source.

**Additional Reading:** (7), (9), (11), (37), (51)

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