

## Cumaru

- Scientific name: *Dipteryx odorata* (Aublet.) Willd., Leguminosae.
- Other popular names: camaru, camaru-ferro, cambaru, cambaru-ferro, champagne, cumaru-yellow, large-leafed cumaru, dark-cumaru, cumaru-iron, pink-cumaru, purple-cumaru, cumaru-true, cumbari, cumbaru-iron, muirapagé.
- International names: charapilla (Peru), cumaru (ATIBT, 1982; BSI, 1991), ebo (Costa Rica; Honduras; Panama), faux gaiac (French Guiana), cayenne gaiac, koemaroe (Suriname), sarrapia (Colombia; Venezuela), Tonka (Guyana).
- Occurrence:
- Brazil: Amazonia, Acre, Amapá, Amazonas, Mato Grosso, Pará, Rondônia.
- Other countries: Central America, Bolivia, Colombia, Guyana, French Guiana, Peru, Suriname, Venezuela.

### GENERAL FEATURES

Sensory characteristics: heartwood and sapwood distinguished by color, heartwood light brownish-yellow; moderate brightness; imperceptible smell and taste; high density; hard to cut; great reverse; fine to medium texture, attenuated fibrous appearance; surface not glossy.

Macroscopic Anatomical Description:

- Axial parenchyma: visible under the lens, aliphatic paratracheal, of occasionally rectangular confluence.
- Rays: Visible only under lens on top and tangential face, thin, numerous, stratified (3 mm per mm).
- Vessels: visible to the naked eye, small to medium; few; diffuse porosity; solitary, twinned, and multiples of 3 to 6; clogged with oil-resin.
- Growth layers: slightly distinct, marked by fibrous zones.

Source: (IPT, 1989a)

### DURABILITY / TREATMENT

Natural Durability: The heartwood is highly resistant to attack by xylophagous organisms (rotting fungi and termites). (IPT, 1989a) In field trials with cuttings in contact with the soil, this species presented high durability to xylophagous organisms (Jesus et al., 1998) and was considered to last more than 12 years of service in contact with the soil. (SUDAM / IPT, 1981; Fosco Mucci et al., 1992) Has shown low resistance in field trials to marine xylophages. (Lopez, 1982)

Treatability: impervious to preservative solutions; (IPT, 1989a) the heartwood is not treatable with creosote (oil-soluble) or CCA (water-soluble), even under pressure. (IBDF, 1988; IBAMA, 1997a)

### PROCESSING CHARACTERISTICS

Workability: Cumaru wood is difficult to work with, but receives excellent finishing in turning. Bad finish on planer and sandpaper jobs, it is difficult to drill. Due to the oily nature, Madeira has difficulty in gluing. Accepts polishing, painting, varnish and chandelier. (IBAMA, 1997a; Jankowsky, 1990)

Drying: It is relatively easy to air dry, with a slight tendency to crack superficially, with moderate warping. Artificial drying is slow but virtually defect free. (Jankowsky, 1990)

Drying program can be obtained from (Jankowsky, 1990)

### PHYSICAL PROPERTIES

Mass Density ( $\rho$ ):

- Apparent at 15% humidity ( $\rho_{ap, 15}$ ): 1090 kg / m<sup>3</sup>
- Basic (basic): 908 kg / m<sup>3</sup>

Contraction:

- Radial: 5.3%
- Tangential: 8.2%
- Volumetric: 13.6%

Results obtained according to ABNT Standard MB26 / 53 (NBR 6230/85).

Source: (IPT, 1989a)

### MECHANICAL PROPERTIES

Flexion:

- Resistance (fM):
  - Green wood: 123.8 MPa
  - Wood at 15% humidity: 178.3 MPa
- Proportionality Limit - Green Wood: 83.8 MPa
- Elasticity Module - Green Wood: 18547 MPa

Results were obtained according to ABNT Standard MB26 / 53 (NBR 6230/85).

Source: (IPT, 1989a)

Parallel Fiber Compression:

- Resistance (fc0):  
Green wood: 59.3 MPa  
Wood at 15% humidity: 94.2 MPa
- Proportionality Limit - Green Wood: 44.5 MPa
- Elasticity Module - Green Wood: 19306 MPa

Results obtained according to ABNT Standard MB26 / 53 (NBR 6230/85).

Source: (IPT, 1989a)

Other properties:

- Shear - Green Wood: 14.2 MPa
- Hardness janka - Green wood: 9787 N
- Normal fiber traction - Green wood: 7.5 MPa
- Cracking - Green Wood: 1.1 MPa

Results obtained according to ABNT Standard MB26 / 53 (NBR 6230/85).

Source: (IPT, 1989a)

## USES

Construction:

- External heavy:
  - bridges
  - poles
  - posts
  - piles
  - supports
  - crosspieces
  - railway sleepers
- Internal Heavy:
  - rafters
  - rafters
- Lightweight:
  - jamb
- Light internal, decorative:
  - liners
  - wainscoting

Floors:

- tacos
- boards

- parquet
- stair steps

Furniture:

- High quality:  
decorative pieces of furniture

Other Uses:

- tool handles
- transport
- boats