Garapa

Scientific name: Apuleia leiocarpa (J. Vogel) J.F. Macbr., Leguminosae.
Other popular names: amarelinho, barajuba, garapeira, egg yolk, grápia, grapiapúnha, jataí, muirajuba, muiratuá.
International names: printing (ATIBT, 1982).
Occurrence:
• Brazil: Amazon, Atlantic Forest, Acre, Amapá, Amazonas, Bahia, Espirito Santo, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Pará, Paraná, Rio Grande do Sul, Rondônia, São Paulo.
• Other countries: Argentina, Paraguay, Uruguay.

GENERAL FEATURES

Sensory characteristics: heartwood and sapwood distinguished by color, heartwood ranging from yellowish-beige to yellowish-brown; glossy and smooth to the touch surface; imperceptible smell and taste; average density; hard to cut; great reverse; Medium texture.
Macroscopic Anatomical Description:
• Axial parenchyma: visible to the naked eye, aliphatic paratracheal, with a rectangular and confluent extension, in short, oblique portions, and also forming wavy and irregular tangential bands.
• Rays: visible only under lens on top and tangential face; fine; stratified.
• Vessels: visible to the naked eye, small to medium; diffuse porosity; solitary and multiples of 2 to 4; clogged with oil-resin.
• Growth layers: distinct, slightly individualized by darker tangential fibrous zones.
Source: (IPT, 1983)

DURABILITY / TREATMENT

Natural Durability: Heartwood has moderate resistance to attack by rotting fungi and high resistance to dry Wood Termite. In a laboratory test, this wood was considered resistant to the rotting fungi Glocophyllum trabum, Coriolus versicola and Poria monticola. In a field trial, with cuttings in contact with the soil, this wood had an average life of less than 9 years (Fosco Mucci et al., 1992).
Treatability: presents low permeability to preservative solutions when subjected to pressure impregnation (IPT, 1989a)

PROCESSING CHARACTERISTICS

Workability: Garapa wood is easy to work with as long as appropriate tools are used due to the presence of silica; but it sticks well and provides a good finish (Jankowsky, 1990)

Drying: It is difficult to air dry. Drying should be slow and well controlled to avoid high incidence of defects (Jankowsky, 1990).

Drying program can be obtained from (Jankowsky, 1990)

PHYSICAL PROPERTIES

Mass Density (ρ):

• Apparent to 15% humidity (ρap, 15): 830 kg / m³

• Basic (basic): 670 kg / m³

Contraction:

• Radial: 4.4%

• Tangential: 8.5%

• Volumetric: 14.0%

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

Source: (IPT, 1989a)

MECHANICAL PROPERTIES

Flexion:

• Resistance (fM):

Green wood: 93.8 MPa

Wood at 15% humidity: 125.3 MPa

• Proportionality Limit - Green Wood: 43.1 MPa

• Elasticity Module - Green Wood: 14107 MPa

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

Source: (IPT, 1989a)

Parallel Fiber Compression:

• Resistance (fc0):

Green wood: 37.3 MPa

Wood at 15% humidity: 54.3 MPa

• Moisture influence coefficient: 5.1%

• Proportionality Limit - Green Wood: 29.7 MPa

• Elasticity Module - Green Wood: 14460 MPa

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

Source: (IPT, 1989a)

Other properties:

• Flexural impact strength - 15% wood (shock):

Work absorbed: 40.0

• Shear - Green Wood: 12.7 MPa

• Hardness janka - Green wood: 7257 N

• Normal fiber traction - Green wood: 9.6 MPa

• Cracking - Green Wood: 1.0 MPa

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

Source: (IPT, 1989a)

USES

Construction:

• External heavy:
  bridges
  piles
  railway sleepers
  crosspieces
  posts
  poles
• Internal Heavy:
  rafters
  rafters
• Lightweight:
  doors
  shutters
  sashes
• Light internal, decorative:
  cords
  garnishes
  liners
  baseboards

Floors:

- tacos
- boards
- parquet
- stair steps

Furniture:

- High quality:
    - decorative furniture

Other Uses:

- tool handles
- transport