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# Hymenaea coubaril L.

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FOREST & LANDSCAPE

# SEED LEAFLET

No. 139 December 2008

# *Hymenaea coubaril L.*

## Taxonomy and nomenclature

**Family**: Fabaceae (Leguminosae), Caesalpinioideae
**Synonym**: *Hymemaea candollena*, *Hymenaea retusa*, *Inga megacarpa*.
**Vernacular/Common names**: Jatoba Algarrobo (Spanish), Rode locus, simiri, stinking-toe, West-Indian-locust, flour tree (English), jutai, jatai (Portuguese (Brazil)).

## Distribution and habitat

*Hymenaea coubaril* is native to Central and northern South America and the West Indies. As an exotic it has been mainly cultivated in Malaysia, Indonesia, but also tried in e.g. southern India. The species grows in the lowland (< 900 masl), in high rainfall areas (between 1900 and 2150 mm rain per year). It grows best in well drained soil, e.g. sandy ridges or riverbanks. It can grow on clay if it is not waterlogged. It grows well on oxisols with a pH of 5-7.

## Uses

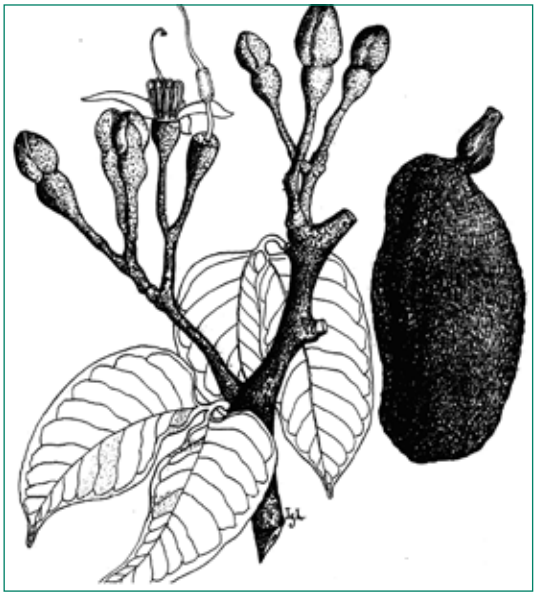
*Hymenaea coubaril* is primarily a timber tree. The wood is hard and strong and used for a number of indoor and outdoor purposes. It is reported resistant to white-rot fungi and termites.

The bark is a source of tannin. The pulp around the seed is edible but not tasty. Its nitrogen fixing ability together with attraction to bees have made the species a useful agroforestry and land rehabilitation tree.

## Botanical description

*Hymenaea coubaril* is an evergreen tree that can grow up to 40 meters tall. The bark is greyish, smooth and thick. Leaves are alternate, divided in two parts, glossy with 1-2 cm long petiole. Each blade oblong, falcately bend, 5-10 cm long and 2-5 cm wide, asymmetrical rounded base and short acuminate apex.

Inflorescence is a 8-15 cm long terminal panicle bearing large, 3-4 cm long and wide yellow flowers. Calyx basically jointed into a tube, apically with free, 1½-2 cm long, 8-10 mm wide lobes. Corolla consisting of 5 oblong, yellow petals. Androecium consists of 10 free, 3½ cm long stamen with red anthers.



From: Fact sheet 98-06, Winrock

## Fruit and Seed description

**Fruit**: The fruit is an indehiscent pod containing 3-10 seeds. The pods are rough, chocolate brown, hard and woody, 5-20 cm long, 2-3.5 cm wide and 2.5 cm thick. The seeds are embedded in a powdery, cream-coloured pulp.
**Seed**: Seeds are hard-coated. They are 2-3 cm long, ellipsoid, slightly compressed and red-brown. 1000 seed weight is 2000-4000 g; i.e. there are from 250-500 seeds per kg. Indian sources indicate 800-900 dry seeds per kg. Large variation in reported seed weight may be partly accounted for by difference in moisture content; fresh, moist seed are relatively heavy.

## Flowering and fruiting habit

Flowering in Indonesia is November – April, which is the rainy season. Development from flower to fruit takes about 5-7 months. Flowering is prolific in open exposed trees.

## Harvest

Harvest by climbing is difficult because the trees are high. Pods are indehiscent and easily picked from under the trees after natural fall. Pods remain long time on the trees after maturity, but fallen pods easily decompose under humid conditions and seeds are lost.

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## Processing and handling

Pods will open upon drying and seeds can be released from pods with gentle mechanical impact on the pods. Pods are light and papery; Most of the pods can be removed by hand (seeds lie under the pods). Small pieces of pods and other light debris is removed by winnowing or other air blowing method.

Pods and seeds of *Hymenaea coubaril*. From: www.central dassementes.com.br

## Storage and viability

The seed exhibit orthodox storage behaviour and dry seeds can be stored for at least a year in a cool and dry place. However, care must be taken that seed do not absorb humidity by keeping the dry seeds in a air tight container. Viability can presumably be prolonged by cold storage.

## Dormancy and pretreatment

Fresh seed with relatively high moisture content (15-20%) may germinate freely without pre-treatment. However, drying makes seed coat impermeable and dry seeds need some pre-treatment e.g. manual scarification (nicking, filing, hot wire burning), or bulk pretreatment by dipping in boiling water or 30-60 minutes in concentrated sulphuric acid.

## Sowing and germination

Germination is epigeal. Seeds may be sown in pots or seed beds for later transplanting. Germination is usually quick with paracotyledons unfolding after 8-12 days at optimal temperature of ≈ 30°C.

## Selected readings

**Boer, E. and A.B. Ella, 2001.** Plant producing exudates. Plant Resources of South-East Asia (PROSEA), No. 18, pages 82-85

**Francis, J.K. 1990.** *Hymenaea coubaril* (L). Algarrobo, locust. SO-ITF-SM-27. Institute of Tropical Forestry. Rio Pedras, Puerto Rico.

**Vozzo, J.A. 2002.** *Hymenaea coubaril* L. In Tropical Tree Seed Manual. US Forest Service. Agriculture Handbook 721, page 518-19

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