

POCHOTE (SPINY CEDAR)

Common names

(English) : Spiny Cedar

(French) : Mahot coton

(Spanish) : Pochote, Saqui-saqui, Tolu

Botanic description

Bombacopsis quinata reaches a height of 40 m and a trunk diameter of more than 1 m in natural stands. Its most distinguishing features are its spiny main stem, fluted base, a rather wide spreading crown of heavy branches and a somewhat irregular bole inclined to be buttressed and completely clothed with heavy prickles towards the base; bark pale grayish-brown, trunk and branches generally covered by hard, stout spines up to 2 cm long. The leaves alternate, palmate and composite, with 3-5 oblong or obviate glabrous leaflets. They fruit a woody 5-valved capsule that upon bursting frees soft brown vegetable wool enclosing 30-120 small, brown seeds.



Ecology and distribution

History of cultivation

The interest in and planting of *B. quinata* is restricted to its natural distribution. The Solomon Islands is the only place where its introduction in trials has been reported. However, *B. quinata* did not show any promise as a plantation species there.

Natural Habitat

B. quinata is found in dry to very dry, or wet tropical forests, associated with *Acacia costaricensis*, *Acacia farnesiana*, *Albizia caribaea*, *Albizia saman*, *Anacardium excelsum*, *Astronium graveolens*, *Cedrela odorata*, *Cordia alliodora* and *Swietenia macrophylla*.

Geographic distribution

Native: Colombia, Costa Rica, Honduras, Nicaragua, Panama, Venezuela.

Biophysical limits

Altitude: 0-900 m, Mean annual temperature: 21-27 deg C, Mean annual rainfall: 800-3000 mm Soil type: *B. quinata* grows in a wide variety of situations, ranging from well-drained upland soils to imperfectly drained Vertisols, on low, flattened sites. Soil reactions at most locations are within pH 6-8.

Reproductive Biology

B. quinata is a monoecious species that is highly self-incompatible. It flowers at the beginning of the dry season. The stigmas of the flower protrude slightly from the anther, which appears to be an adaptation to avoid self-pollination. When the flower opens, the pistil is receptive and the pollen on the anthers is ready to be transported by pollinating agents, primarily bats (*Glossophaga soricina*) and occasionally nocturnal moths. The bats are attracted to the flowers by the nectar located in nectar sacs in the ovary. Pollination occurs as the pollinators move among the trees to collect nectar. Capsule ripens after 3-4 months, releasing wind-dispersed seeds.

Propagation and management

Propagation methods

B. quinata is relatively easy to propagate vegetatively. Large diameter cuttings from semi-mature trees root well. They have been used successfully to establish clonal seed orchards in Colombia, Costa Rica and Venezuela. Best rooting is obtained from cuttings from shoots, which develop following felling of young trees, or from cuttings from stem material of young nursery stock. Sprouting is enhanced when trees are felled at the end of the dry season before leaf flush. Seeds do not require pregermination treatment and initiate root radicles within 8 days of sowing.

Tree Management

Adequate weed control is essential to achieve acceptable survival and growth. Fertilization is not generally required at plantation establishment, in young plantations or on sites with good native soil fertility. Pruning and thinning are performed in plantations managed for veneer production. Pruning to leave a single stem is required within 1 year after planting to eliminate multiple stems that develop from sprouting of stump plants. This formation pruning occurs during the 1st dry season following planting, but on best sites where rapid tree growth occurs, it must be done 3-4 months after planting. Branch pruning is done to produce clear wood and begins when the trees are approximately 6 m tall, with the removal of lower branches up to 3 m stem height. Tentative thinning regime calls for the reduction of stems from a planting density of 1000 to 550 trees/ha at 5-7 years, with subsequent thinning to 300 trees/ha in 11-13 year-old plantations. At final harvest (age 16-18 years), trees are expected to have an average mean diameter at breast height of 40-45 cm.

Germplasm Management

Seed storage behavior is orthodox; seeds tolerate desiccation to 7.2% mc with 90% germination; 77% germination is achieved after 1 year subsequent storage at 5 deg. C. Seeds lose viability rapidly if the capsules are collected too early, but seed

collected from capsules harvested at full maturity keep well for at least 2-3 years. There are 32 000 seeds/kg.

Functional uses

Products

Timber: The heartwood of *B. quinata* is reddish in color and the sapwood cream or white. The wood is known for its durability and workability; it is used for furniture, doors, window and ceiling frames, roof construction, interior paneling, particleboard, plywood and veneer.

Services

Boundary or barrier or support: In Costa Rica and Nicaragua the establishment of living fencerows from vegetative propagated stakes is common practice, with spacing's ranging from 2-5 m. Shade or shelter: In other occasions, the trees have been left standing to give shade in coffee plantations (Nicaragua) or, most frequently, as remnant trees in cattle pasture. Intercropping: There are examples of intercropping with maize, although only for the first two years of the plantation, due to a quick canopy closure.