

Pseudosamanea guachapele

(Kunth) Harms

Fabaceae - Mimosoideae

LOCAL NAMES

Spanish (gavilán, frijolillo guachapele, frijolillo, cenicero, brasilillo)

BOTANIC DESCRIPTION

Pseudosamanea guachapele is a large tree with a spreading crown, well-formed bole without significant buttresses.



Tree: Tree of *Pseudosamanea guachapele* showing the typical branchy habit and spreading crown. The tree is leafless and in full flower during the early dry season. Comayagua Valley, central Honduras. (Colin Hughes)



Flowers and foliage: Flowers are arranged in heads, with a central enlarged nectar producing flower. The individual flowers have numerous white stamens, fused at the base into a tube and exerted beyond the tubular corolla. (Colin Hughes)



Flowers: Close-up of flowers which are arranged in heads, with a central enlarged nectar producing flower. The individual flowers have numerous white stamens, fused at the base into a tube and exerted beyond the tubular corolla. (Colin Hughes)

ECOLOGY

Its natural distribution ranges from Mexico to Bolivia (including Venezuela and Surinam). This species is found in drought-deciduous forest and at the drier edges of gallery forest. It occurs at low elevations from 0-800 m, however it has been planted up to an altitude of 1200 m. *P. guachapele* requires an annual dry season of approximately 4-5 months. It grows well in dry, poor and rocky soils, and even tolerates small fires. This species is unable to tolerate bad drainage or floods, but has been planted successfully in some humid areas.

BIOPHYSICAL LIMITS

Altitude: Altitude range: 0 – 1 200 m

Mean annual temperature: 20 - 40°C

Mean annual rainfall: 700 – 2 300 mm

Soil: It prefers light to medium textured freely draining neutral soils and has special tolerance to shallow, infertile soils.

DOCUMENTED SPECIES DISTRIBUTION

Native: Bolivia, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Nicaragua, Panama, Peru, Surinam, Venezuela

Exotic: Egypt, Haiti, Honduras, India, Kenya, Mexico, US, Zambia



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS

Fodder: Browsed by animals during field trials in Malawi, has high potential as a fodder source.

Timber: Heartwood is rated durable to very durable upon exposure to both white-rot and brown-rot fungi, specific gravity 0.55-0.6. Reported to have excellent weathering characteristics. Produces good quality timber with a high proportion of heartwood, widely appreciated within its native range. The wood is moderately durable and finishes well. Used in shipbuilding for planking, ribs, decking, railroad crossties, general construction, flooring, decorative veneers and furniture components. Reported to be somewhat difficult to air season. A moderate rate of drying resulted in some warping and slight checking.

Tannin or dyestuff: This species has the capacity to develop a high proportion of heartwood from an early age, which is yellowish-brown and produces a golden dye.

SERVICES

Shade or shelter: It has been found appropriate in silvopastoral and agroforestry practices; it is utilised in hedgerows, as a shade tree in pastures, and also in protection areas.

Intercropping: Often used for shade in coffee plantations.

Nitrogen fixing: *P. guachapele* is a valuable tree due to its multiple uses, such as the ability to fix nitrogen and soil improvement.

TREE MANAGEMENT

Stand establishment mainly through stump plants, natural regeneration and planting stock. *P. guachapele* is shade intolerant and requires plenty of light, however seedlings may withstand partial shade in the first two years. If grown in the open this species develops poor form with a short bole and a wide spreading crown. However, if grown at a high density and with artificial pruning during the first four years, it will develop a good bole form.

GERMPLASM MANAGEMENT

There are between 23 000 and 29 000 seeds /kg. The recommended seed pre-treatment methods are either manual scarification or hot water treatment. The seed is immersed in very hot water (90 deg C) for two minutes then transferred to cold water. Seed storage behaviour is orthodox.

PESTS AND DISEASES

P. guachapele may be susceptible to defoliation by ants (*Atta* sp.), which may slow growth. *Mocis latipes* defoliates mature trees. *Umbonia crassicornis* is an insect that attacks the shaft and young branches. Nursery seedlings are susceptible to attack by *Oncideres* sp., *Phyllophaga* sp., and the larvae of *Agrotis* sp., and rats (*Rattus* sp.) sometimes cause bark damage.

FURTHER READNG

CABI. 2000. Global Forestry Compendium. CD-ROM. CABI

Hughes CF & Pottinger AJ. 1997. Albizia species in Mexico and Central America. International Workshop on Albizia and Paraserianthes, Ed. Zabala NQ. 57- 65, Winrock International.

Mesen F et al. 1992. The development of vegetative tree propagation techniques for small holders. El Chasqui: 6- 18.

Mzoma RN. 1990. Evaluation of multipurpose trees for Social forestry. International Tree Crop Journal. 6 (2&3):151-172.

Stewart JL. et al. 1992. Wood Biomass estimation of Central American dry zone species. Oxford Forestry Institute, University of Oxford.

Timyan J. 1996. Bwa Yo: important trees of Haiti. South-East Consortium for International Development. Washington D.C.

SUGGESTED CITATION

Orwa C, Mutua A , Kindt R , Jamnadass R, Simons A. 2009. Agroforestry Database:a tree reference and selection guide version 4.0 (<http://www.worldagroforestry.org/af/treedb/>)