

## Schizolobium parahybum

serebo

### LOCAL NAMES

English (the sky's the limit, reach for the sky, false tree-fern, Brazilian fern tree); Portuguese (guapuruvu, guapiruvu); Spanish (guanacastle); Trade name (serebo)

### BOTANIC DESCRIPTION

Schizolobium parahybum is unarmed, with a cylindrical bole, high buttresses and a wide spreading, open crown.

Leaves bipinnate, large; pinnae 15-20 pairs, fernlike; leaflets small, elliptic, 10-20 pairs, stipules absent.

Flowers golden yellow, large, profusely produced in axillary semi-erect racemes or terminal panicles; bracts minute; bracteoles absent; calyx tube obliquely turbinate; lobes 5, overlapping, reflexed at flowering; petals 5, clawed, subequal, overlapping, uppermost petal innermost; stamens 10, free, subdeclinate; filaments villous, basally rough; anthers uniform, longitudinally dehiscent; ovary sessile affixed to 1 side of calyx tube, many-ovuled, style filiform; stigma minute, terminal.

Pod flat, spoon or tear-drop shaped, exocarp firm, leathery, tardily dehiscent.

Seed large, oblong, compressed, located near apex.

The genus *Schizolobium* has 4-5 members. The generic name is derived from the Greek verb *schizo*, "divide" and *lobion*, "pod"; the inner and outer layers of the pod separate at maturity, whereas the specific epithet is after the Parahyba River in Brazil.

### BIOLOGY

*S. parahybum* is hermaphroditic flowering when leafless.

(Vell. Conc.) S. F. Blake

Fabaceae - Caesalpinioideae



Schizolobium parahybum:  
Fruits and seeds (Soraya Alvarenga Botelho)



Schizolobium parahybum:  
Adult tree: Tree in summer, 15 m in height.  
(Soraya Alvarenga Botelho)



*S. parahybum*: Detail of the bark showing  
lenticels and petiolar scars. (Soraya  
Alvarenga Botelho)

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## ECOLOGY

*S. parahybum* is a widespread pioneer species from tropical and premontane forests zones of the American Atlantic coast, flourishing on well-drained moist soils on plains or hillsides.

## BIOPHYSICAL LIMITS

Soil type: Flourishes on well-drained soils.

## DOCUMENTED SPECIES DISTRIBUTION

Native: Brazil, Colombia, Mexico

Exotic: Costa Rica, Fiji, Indonesia, Kenya, Sri Lanka, US



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.

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### PRODUCTS

Food: A number of amino acids are found in the seeds, however, a seed chymotrypsin inhibitor is also reported.

Fuel: The tree can provide fuelwood.

Timber: Wood with a low specific gravity of 0.28-0.35 g/cu cm The timber is rarely utilized, possibly because of its repulsive smell when fresh. Wood not durable and resistant to insect attack. Quamwood is a potential source of paper pulp and plywood.

Other products: Methyl methacrylate (a plastic monomer) and *S. parahybum* wood are used in manufacture of wood-plastic composites.

### SERVICES

Erosion control: The tree protects surrounding soil from soil erosion.

Shade or shelter: Guapuruvu is an important shade tree.

Nitrogen fixing: No reports of nodulation are given for guapuruvu.

Soil improver: The enormous amount of biomass shed by the tree improves soil fertility.

Ornamental: A spectacular fast-growing tree popularly cultivated as an ornamental, especially beautiful in flower with masses of yellow gold blossoms.

Intercropping: The Brazilian fern tree is a promising agroforestry species, intercropping is possible because of its light shade.

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### **TREE MANAGEMENT**

Guapuruvu is fast growing, three year old plants are often 7-8 m tall; forest specimens reach heights of 30-35 m. Water-stress relating to altered watering regimes seems to little affect growth, or readiness for transplantation in nursery seedlings. In one study nursery seedlings watered at intervals (up to 8 days) were ready for transplanting sooner.

### **GERMPLASM MANAGEMENT**

Seeds usually need mechanical scarification or thermal shock to ensure germination within 5-15 days. The hard, impermeable seed coat promotes dormancy. Breaking of dormancy is by removal of the seed tip, immersion in boiling water, mechanical scarification, chemical (acid, organic solvent), scarification or brief exposure to fire. Immersion in boiling water is the most effective treatment, in terms of both speed of germination and percentage germination, economy and practicality; after 28 days 92% germination was observed in water immersed seeds. There are 500 seeds/kg.

### **PESTS AND DISEASES**

Wood attacked by insects.

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### FURTHER READING

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### 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/>)