Swietenia mahagoni

(L.) Jacq.

Meliaceae

mahogany, Honduran mahogany

LOCAL NAMES
Bengali (mahagni); Creole (kajou peyi); Dutch (mahok); English (West Indian mahogany,Cuban mahogany tree,Dominican mahogany,Jamaican mahogany tree,Spanish mahogany tree,West Indies mahogany,mahogany,Puerto Rico mahogany tree,small leaf mahogany); French (acajou pays,acajou); Hindi (mahagoni,mahagni,mahaagonichetta,ciminukku); Indonesian (mahoni); Malay (cheriamahogany); Spanish (caoba,caoba de Santo,domingo); Tamil (cimainukku,mahagony); Thai (mahokkani-baiyai,mahokkani-bailek); Trade name (mahogany,Honduran mahogany); Vietnamese (gi[as]in[uwj]ga)

Habit at Hilo, Hawaii, Hawaii. (Forest & Kim Starr (USGS))

Habit at Maunaloa, Molokai, Hawaii. (Forest & Kim Starr (USGS))

BOTANIC DESCRIPTION
Swietenia mahagoni is a tall tree, up to 30 m high, with a short, buttressing base, up to 1 m in diameter and a large, spherical crown, many heavy branches and dense shade. The bark is smooth grey on young trees, turning to scaly dark reddish-brown on large trees. The tree is deciduous in areas where it is subject to drought.

Leaves even, pinnate, 10-18 cm long, and bearing 4-10 pairs of leaflets that are shiny, dark green, lance-shaped, 2.5-5 cm long by 0.7-2 cm broad.

Flowers greenish-yellow, 6-8 mm across, in axillary panicles; panicles glabrous, shorter than the leaves.

The light brown seed capsule stands upright, about 6-10 cm long by 4-5 cm diameter, with 5 valves splitting upward from the base. Each valve releases about 20 flat, brown, winged seeds, 4-6 cm long.

Swietenia commemorates Gerard von Swieten (1700-1772), botanist and physician to Maria Theresa of Austria.

BIOLOGY
Flowering and fruiting are regular and annual, varying according to climate but taking place shortly before the rainy season. Development from flower to mature fruit takes about 8-10 months. Flowers are unisexual and the tree is monoecious. Pollination is by insects. Hybridization is frequent, especially with S. macrophylla, wherever the species grow together. Usually 1 flower of the inflorescence develops into a fruit; the other flowers are aborted even if fertilization takes place. The tree fruits well and produces fertile seeds, sometimes as early as at 20 years of age, although usually it does not seed until it is 30-40 years old. Seed production varies according to site and year.

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ECOLOGY
In its original habitat, the climate is warm and equable, with temperatures ranging from 16 to 32 deg. C; rainfall varies from 1250 to 2500 mm, coming mostly in summer but spreading almost through the whole year. Best developments have been observed in areas receiving lower rainfall of 1000-1500 mm, in localities not far from the sea, and at elevations near sea level.

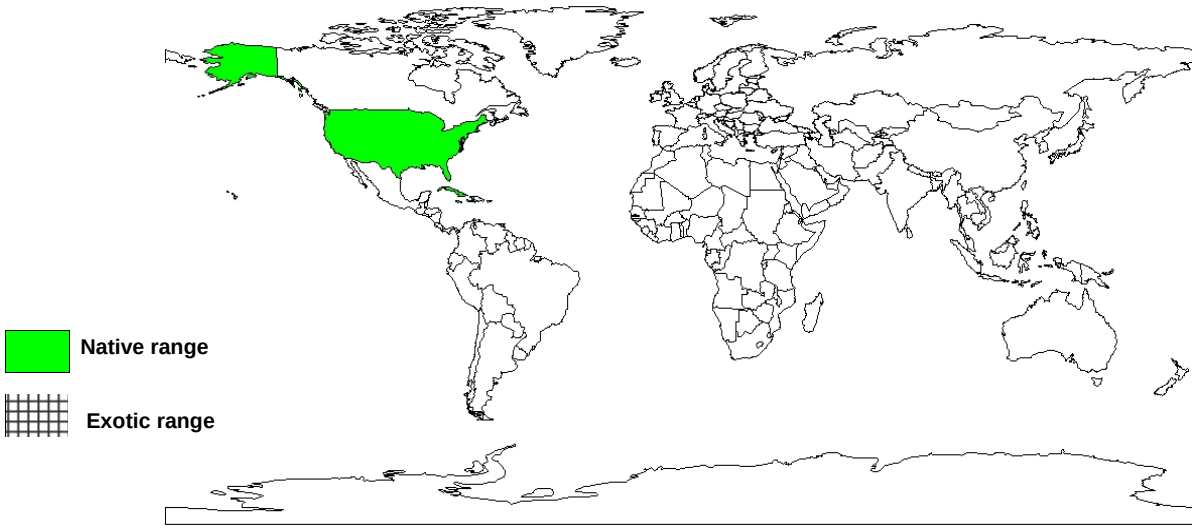
BIOPHYSICAL LIMITS
Altitude: 100-500 m, Mean annual temperature: 16-32 deg. C, Mean annual rainfall: 800-2500 mm

Soil type: It thrives best on deep, rich soil and avoids stiff, heavy soils; well-drained sandy soils are best. It is a complete failure in dry localities and poor soils.

DOCUMENTED SPECIES DISTRIBUTION

Native: Bahamas, Cuba, Haiti, Jamaica, Netherlands Antilles, US

Exotic: Bangladesh, Benin, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Fiji, Gambia, Ghana, Guinea, Guinea-Bissau, India, Indonesia, Liberia, Malaysia, Mali, Mauritania, Niger, Nigeria, Philippines, Puerto Rico, Senegal, Sierra Leone, Sri Lanka, Togo



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
Fuel: In Haiti, much of the branch wood and most of the crooked stems are converted to charcoal, particularly in regions isolated from urban markets by poor roads.

Timber: S. mahagoni was the original mahogany in commercial trade and was exported from Hispaniola in the 16th century. The heartwood is highly resistant to decay and insect attack, performing better than all other mahoganies on the world market. It is noted for its low and uniform shrinkage and its ability to hold shape much better than other woods of similar densities. The wood works well and finishes to an exceptionally smooth, lustrous surface. The wood is therefore the choice for high-quality furniture and cabinetwork, joinery, boats and pattern work. Wood carvers use a significant amount of the wood in turnery and sculpture.

Medicine: S. mahagoni is a medicinal plant throughout the Caribbean. The bark is considered an astringent and is taken orally as a decoction for diarrhoea, as a source of vitamins and iron, and as a medicine to induce haemorrhage. When the bark is steeped to a red liquid, it is taken to clear blood, increase appetite, and restore strength in cases of tuberculosis.

SERVICES
Shade or shelter: Farmers generally plant the species along garden boundaries or around the courtyard, where it provides deep shade.

Ornamental: S. mahagoni has thrived as an ornamental tree in various parts of India.

TREE MANAGEMENT
The seedlings of S. mahagoni require light; if they are deprived of overhead light they are damaged by insects. They do not develop if the overhead shade is too dense; best results are obtained by irregularly interrupted cover.

GERMPLASM MANAGEMENT
Without any special treatment, seeds lose much of their viability in 3 months and almost entirely in 6 months. Dried in the sun and sealed in airtight containers, they remain fairly viable for over 6 months. The seeds were provisionally classified as recalcitrant because of widespread reports of their short life span, but to the contrary, their viability can be maintained in hermetic air-dry storage at room temperature for 1 year. There are 3350-3500 seeds/kg.

PESTS AND DISEASES
Throughout the Greater Antilles, the mahogany web worm (Macalla thyrsisalis) causes defoliation and webbing. In the Caribbean, the mahogany shoot borer (Hypsipyla grandella) bores into the buds, shoots and stems; in Asia, H. robusta attacks the tree. The coffee tree borer (Apate monachus) attacks both live and dead trees, penetrating deeply into branches, deforming trunks and making them susceptible to breakage in high winds. In Haiti an unidentified shoot borer, a caterpillar and the snout beetle (Pachnaeus litus) attack the tree. This beetle attacks the seed capsules. In Puerto Rico, wet-wood termites (Nasutitermes costalis) consume dead branches and occasionally the tree trunks.

Heart and butt rots are common in older trees, apparently entering through basal scars and branch stubs. In Puerto Rico, leaf blight (Phyllosticta swietenia) results in defoliation under humid nursery conditions. Diseases of seedling nurseries in Haiti include leaf spot, anthracnose, leaf blister, damping off and stem blight.

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SUGGESTED CITATION

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