



Commercial names:	engl.: Commoner Lignum vitae, Guayac, Lignum vitae esp.: Guayacán, Lignum vitae, Madera de gaiac, Palo Santo fr.: Gaïac, Gaïac mâle, Gaïac officinal
Common names:	engl.: Tree of life, Wood of life esp.: Guayacán genuino, Guayacán negro, Guayaco, Palo de hierro, Palo sano, Vera, Vera negro fr.: Bois de gaïac, Bois de vie, Bois saint port.: Guaiaco, Pau santo
Subject to CITES regulations:	All parts and derivatives, except seeds, spores, pollen (including pollinia), seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers and cut flowers of artificially propagated plants.
Macroscopic characteristics of the wood:	Wood dark brownish green, diffuse porous, growth rings distinct. The small proportion of sapwood is a pale yellow. The heartwood is light to dark olive green to brownish green with dark streaks. The sapwood is narrower in <i>G. officinale</i> than in <i>G. sanctum</i> . The resin has a slight rose-like scent. The fibres are interlocked. Hardness: exceptionally hard, resistant to nails Grain: uniform and fine. Because of its high content of an oily resin also called <i>guaiaco</i> , it has a smooth feeling similar to that of palisander. Specific weight: 1.23 g/cm ³ . It is one of the densest woods in trade.
Microscopic characteristics of the wood:	Growth rings well-defined. Diffuse porous. Vessels exclusively solitary, few, about 20 per mm ² . Average tangential diameter small: (30 –) 75 (– 175) µm, perforation plates simple. Very small and bordered intervacular pitting. Deposits or gum often observed in the vessel elements. Axial parenchyma apotracheal and vasicentric paratracheal, aliform or confluent, arranged in layers. Fusiform cells frequent. Rays homocellular, exclusively uniseriate and 4 – 6 cells high, distributed in layers. Axial and radial parenchyma with crystals of calcium oxalate. Fibretracheids with thick walls, tracheids sometimes present, (440 –) 590 (– 830) µm.
Characteristics of the trees:	This species grows up to 10 metres in height and 0.5 metres in diameter and has a smooth bark with grey and dark green spots. The part of the trunk suitable for lumber is only 5 metres long.

Distribution: Caribbean, Colombia and Venezuela



Characteristics of trade: The genus *Guaiaicum* is frequently called 'lignum vitae'. The name *guayacán* is also used to designate other species such as *Tabebuia* spp. (Bignoniaceae), *Caesalpinia melanocarpa* (Fabaceae) and *Andropogon angustatus* (Poaceae).

The wood of this species is one of the hardest. Its high density, oily resin content and fine grain make it one of the most important woods for manufacturing bearings, pulleys, pivots and rollers. It is usually exported in the form of logs, planks and finished products.

Use: Bearings for the propeller shafts of ships and lath work: balls, cups, dishes, mallet heads, pulleys, pivots, washers, guides, rollers and wheels. It is also used to manufacture sports equipment, in the textile industry and for the preparation of medicines under the names: Guayaco gum, Guayaco resin, Guayacum, Lignum sanctum and Lignum vitae.

Similar species: There are six species of trees and shrubs in the genus *Guaiaicum*, found in subtropical and tropical America. Lignum vitae is usually traded without use of a scientific name at the species level.

Sometimes, this species can be identified by the origin, for example: *Guaicum unijugum* is endemic to Mexico; *Guaiaicum coulteri* (synonym, *G. planchonii*) is found primarily in the Pacific Coast watershed, from northwestern Mexico to Central America. *Guaiaicum coulteri palmeri* (synonym, *G. palmeri* Vail) is found only in northwestern Mexico, from northwestern Sonora to northern Sinaloa. It can also be found under the name *Guaiaicum guatemalense*, which has been reported from Guatemala to Costa Rica, although it is considered to be a synonym of *G. sanctum* or a hybrid of *G. sanctum* x *G. coulteri*. In both cases, it is listed in the CITES appendices as *G. sanctum*.



The following species are also rather similar.

Latin name	Distribution	Common name
<i>Bulnesia arborea</i>	Colombia, Venezuela	Vera, Guayacán, Guayacán resino, Palo santo
<i>Bulnesia sarmientoi</i>	Argentina, Bolivia, Paraguay	Palo santo
<i>Gymnanthes lucida</i>	Central America, Caribbean	Ébano verde, Granadillo
<i>Tabebuia</i> spp.	Southern Florida, Brazil	Madera verde

Species → Characteristics ↓	<i>Guaiacum officinale</i> <i>G. sanctum</i>	<i>Gymnanthes lucida</i>	<i>Bulnesia arborea</i> <i>B. sarmientoi</i>	<i>Tabebuia insignis</i> <i>T. longipes</i> <i>T. stenocalyx</i>
Colour sapwood	light yellow	white	whitish yellow	light yellow
Colour heartwood	olive green	olive brown	green to brownish green	dark yellow
Grain	fine and uniform	fine	fine	medium
Fibres	interlaced	straight	straight	not straight
Hardness	very hard	very hard	very hard	semihard to hard
Specific weight	1.23 g/cm ³	1.1 - 1.2 g/cm ³	0.9 - 1.0 g/cm ³	0.64 - 0.74 g/cm ³





transverse section



tangential section



radial section