

Dalbergia latifolia

Roxb.

Fabaceae - Papilionoideae

rosewood, Indian rosewood, East Indian rosewood, Bombay black

LOCAL NAMES

Bengali (swetasal,sital); English (black rosewood,blackwood,Bombay black wood,East Indian rosewood,Indian palisandre,Java palisandre,Roseta rosewood); French (palisandre de l'Inde,Palissandre Asie,Palissandre d'Asie); German (Indischer Rosenholzbaum,Indisches Rosenholz,Palisander); Gujarati (kalaruk,shisham); Hindi (sital,bhotheula,shisham,bide,beete,chava); Indonesian (sonokeling,sonobrits); Javanese (pallisander,sonosungu,sonokeling,sonobrits); Nepali (sital); Sanskrit (shishapa); Tamil (karundoviral,eruvadi,iridi,itti,palkonda); Trade name (East Indian rosewood,rosewood,Bombay blackwood,Indian rosewood); Urdu (shisham); Vietnamese (tr(aws)c)

BOTANIC DESCRIPTION

Dalbergia latifolia is predominantly a single-stemmed deciduous tree with a dome shaped crown of lush green foliage, which on wet sites are not shed. The trees reach a height of 20-40 m with a girth of 1.5-2m. The bark is gray, thin with irregular short cracks, exfoliating in fibrous longitudinal flakes.

Leaves are alternate, odd-pinnate with 5-7 unequal sized leaflets originating from the same rachis. Leaflets are broadly obtuse, dark green above and pale below.

Flowers are white in axillary panicles, 0.5-1 cm long.

The brown pods are oblong-lanceolate and pointed at both ends. They contain 1-4 smooth brown seeds and do not open at maturity.

The name is in honour of the Swedish brothers Nils and Carl Dalberg, who lived in the 18th century. The former was a botanist and the latter explored Surinam. The specific name is Latin and means broad-leaved.

BIOLOGY

In drier natural habitats, *D. latifolia* sometimes sheds leaves (either partially or sometimes fully) by the end of January and fresh foliage appears in April-May. Flowering begins by December and normally continues to March or rarely October. In moist conditions, the trees remain evergreen throughout the year. The species in the genus *Dalbergia* have developed wings and hairs and often air spaces within the seed coat or pericarp. They are therefore normally wind-dispersed.

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ECOLOGY

Indian rosewood is reported to be scattered in the dry deciduous forests throughout the Indian peninsula. It grows in the sub-Himalayan tract from Oudh eastwards to Sikkim, Bihar, Orissa, and throughout central and southern India. Optimum growing conditions for the species are reported to be in the Bombay region.

BIOPHYSICAL LIMITS

Altitude: 0-1 500 m

Mean annual temperature: 8-44 deg C

Mean annual rainfall: 750-5 000 mm

Soil type: The species grows on a variety of soil formations including gneiss, trap, laterite, alluvial, and bolder deposits. It grows best on well-drained, deep, moist soils. *D. latifolia* is common on deep loams or clays containing lime. It also grows well on black cotton soils. Shallow dry soils and poor drainage stunt tree growth.

DOCUMENTED SPECIES DISTRIBUTION

Native: India, Indonesia

Exotic: Kenya, Malaysia, Myanmar, Nepal, Nigeria, Philippines, Sri Lanka, Vietnam



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

Apiculture: Like other member of the genus *Dalbergia*, its honey is dark amber and strong flavoured.

Timber: The sharply defined sapwood is yellowish or pale yellowish-white, often with a purplish tinge. Heartwood varies in color from rose to dark-brown with darker purple-black lines or deep purple with black lines. The darker streaks impart an attractive figure to the timber. The heartwood darkens with age and weighs about 850 kg/cu. m. The wood is fragrant, very hard and difficult to work because of its high density.

Rosewood has exceptional dimensional stability, and retains its shape very well after seasoning. The heartwood is rated as very durable, and is generally highly resistant to attack by termites and decay fungi. Heartwood resistance to termites is reported to be only moderate in India. The sapwood, however, is liable to powder-post beetle attack. It is used to make premium-grade furniture, paneling, veneers, and interior and exterior joinery. Secondary uses of the wood include knife handles, musical instruments, agricultural implements calico-printing blocks, mathematical instruments, and boat keels and screws. Fine furniture, decorative veneer, specialty items, joinery, bedroom suites, figured veneer, living-room suites, office furniture, tables.

Medicine: Medicines are made from the tannins in the bark, for diarrhoea, worms, indigestion, and leprosy. These tannins also produce an appetizer.

SERVICES

Shade or shelter: The species is planted as a shade tree in coffee plantations and on roadsides.

Nitrogen fixing: *D. latifolia* is known to be a nitrogen fixing tree.

Soil improver: *D. latifolia* leaf litter decomposes slowly releasing nutrients gradually and it is used as a mulch.

Intercropping: The tree is usually intercropped with annual crops under taungya or with fruit trees.

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TREE MANAGEMENT

As pure stands, *D. latifolia* is spaced at 1.2 - 2.5 by 1 - 1.8. Wider spacing may produce crooked stems. For agroforestry systems spacing of 3 by 1 - 6 by 2 m are common. Trees are usually harvested in 30-40 years. *D. latifolia* is generally managed by clear felling followed by artificial regeneration. After planting or direct sowing, regular weeding is necessary until trees can withstand weed competition. Loosening soil around seedlings also improves growth. Weeding and soil loosening should be done before weeds become dense.

GERMPLASM MANAGEMENT

Seeds remain viable for a period of about 6 months and lose their viability appreciably when kept for more than one year. Seed viability can be extended to 9-12 months by drying seeds to 8 % moisture content and storing them in airtight containers, however, germination will decrease to 30-40%.

Studies in India reveal considerable variation in seed weight (18,500 to 40,000 seeds per kilogram). Germination takes 7 to 25 days and the germination varies from 45 to 80% for fresh seeds.

PESTS AND DISEASES

More than 40 species of insects, including defoliators, bark feeders and sap suckers, are known to be associated with living trees of *D. latifolia*. The damage caused by them is insignificant and there is no threat from any of them in the establishment of nurseries or plantations. The rust fungi *Uredo sissoo*, *Maravalia achroa* and *Maravalia pterocarp* have been reported to cause foliage infections in nursery seedlings. A *Meliola* sp. causes a sooty mould of seedlings. Root rot of *D. latifolia* caused by *Phellinus gilvus*, and *Corioloopsis sanguinaria* are the other minor diseases of the tree, reported from India.

D. latifolia seedlings and saplings are readily browsed by cattle and goats.

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FURTHER READING

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SUGGESTED CITATION

Orwa C, A Mutua, Kindt R, Jamnadass R, S Anthony. 2009 *Agroforestry Database: a tree reference and selection guide* version 4.0 (<http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp>)