

Canarium schweinfurthii

white mahogany, African canarium

Engl.

Burseraceae

LOCAL NAMES

English (purple canary tree, incense tree, gum resin tree, bush candle tree, African elemi); French (elemier d'Afrique, elemi de Moahum, elemi d'Ouganda); Luganda (muwafu); Swahili (mpafu, mbani); Trade name (white mahogany, African canarium)

BOTANIC DESCRIPTION

Canarium schweinfurthii is a large forest tree with its crown reaching to the upper canopy of the forest, with a long clean, straight and cylindrical bole exceeding 50 m. Diameter above the heavy root swellings can be up to 4.5 m. Bark thick, on young tree fairly smooth, becoming increasingly scaly and fissured with age. The slash is reddish or light brown with turpentine like odour, exuding a heavy, sticky oleoresin that colours to sulphur yellow and becomes solid.

Leaves are pinnate, clustered at the end of the branches, and may be 15-65 cm long, with 8-12 pairs of leaflets, mostly opposite, oblong, cordate at base, 5-20 cm long and 3-6 cm broad, with 12-24 main lateral nerves on each side of the mid-rib, prominent and pubescent beneath. The lower leaflets are bigger than the upper ones. The lower part of the petiole is winged on the upper side.

The creamy white unisexual flowers about 1 cm long grow in inflorescences that stand in the axils of the leaves and may be up to 28 cm long.

The fruit is a small drupe, bluish-purple, glabrous, 3-4 cm long and 1-2 cm thick. The calyx is persistent and remains attached to the fruit. The fruit contains a hard spindle-shaped, trigonous stone that eventually splits releasing 3 seeds.

Canarium comes from the vernacular name 'kenari' in the Molucca Isles.

BIOLOGY

The seeds are mainly dispersed by hornbills and elephants. Flowers are unisexual.

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ECOLOGY

C.schweinfurthii is distributed throughout tropical Africa in rain forest, gallery forest and transitional forest from Senegal to west Cameroon and extending to Ethiopia, Tanzania and Angola.

BIOPHYSICAL LIMITS

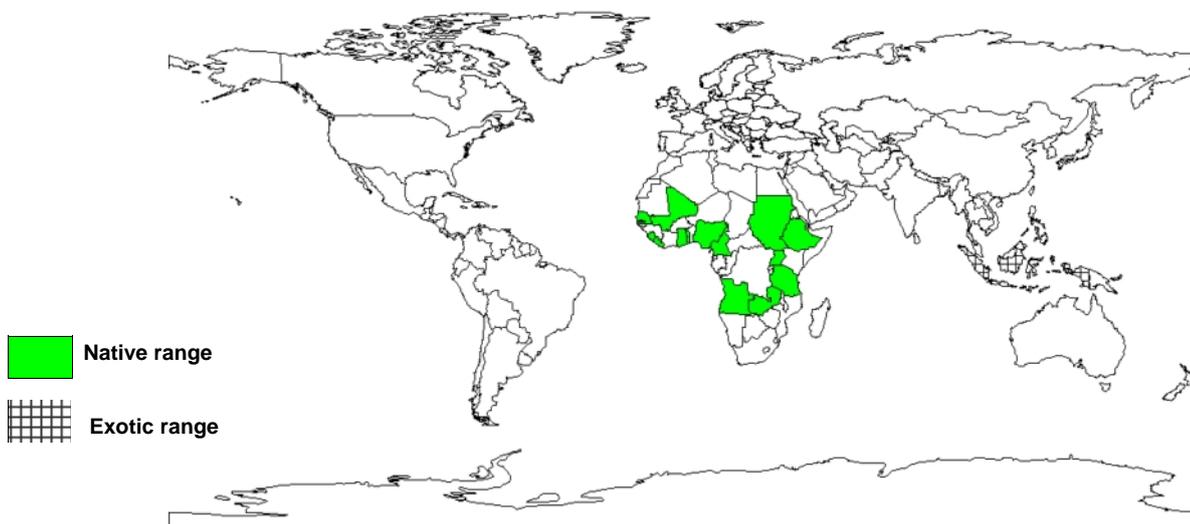
Altitude: 0-1 600 m

Mean annual rainfall: 900-2 200 mm

DOCUMENTED SPECIES DISTRIBUTION

Native: Angola, Cameroon, Ethiopia, Ghana, Guinea-Bissau, Liberia, Mali, Nigeria, Senegal, Sierra Leone, Sudan, Tanzania, Togo, Uganda, Zambia

Exotic: Indonesia



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

Food: The slightly greenish outer pulp of the fruit is oily and edible. It can be eaten raw or softened in warm water to improve palatability. The pulp oil is about 71 % palmitic acid and 18 % oleic acid. The seed-kernel is oily and edible. They are cooked, and in Nigeria, sometimes prepared into a vegetable-butter and eaten as a substitute for shea-butter. They contain several fatty acids including oleic (36 %), linoleic (28 %), palmitic (26 %), stearic (7 %).

Fuel: The elemi makes a good fuelwood, igniting readily and burning with a lot of heat. The resin burns readily and is used as a bush candle.

Timber: The sapwood, often very thick up to 15 cm is white with pinkish reflections. The heartwood is pinkish when freshly cut but darkens to light brown mahogany colour. The wood, slightly coarse in texture, has interlocked grains, thus causing a fine striped figure on quarter-sawn boards. Used as a substitute for true mahogany, it seasons slowly but fairly well, works easily, stains and polishes well. End splitting may occur during the drying process. The wood is attacked by termites and fungi. Impregnation of the heartwood is difficult. The timber is used as core veneer, for decorative paneling, parquetry, furniture, flooring and for general utility purposes. Locally, the wood is used for mortars, planks, and canoes.

Gum or resin: The bark exudes a heavy, sticky oleoresin that smells like turpentine and solidifies to a whitish resin. It is obtained by slashing the bark and allowing the colourless exudation to trickle to the ground where it solidifies into a sulphur-yellow opaque resin. The resin is used as primitive illuminant and as incense and releases a lavender-like smell. The flame is very smoky and soot is collected as carbon-black from the outside of pots held over it for use in tattooing and to make ink in Liberia. The resin is also used to repair broken pottery, for caulking boats and as a gum for fastening arrowheads to shafts.

Essential oil: The resin contains 8-20 % of an essential oil, the main constituent of which is limonene. It is rich in phellandrenes, and contains also resins and a bitter principle.

Poison: The resin is used as a fumigant against mosquitoes.

Medicine: In the past, the resin was exported to Europe for pharmaceutical use. It was used as a substitute for gum-mastic in making wound dressings in World War II. A bark decoction is used against dysentery, gonorrhoea, coughs, chest pains, pulmonary affections, stomach complaints, food poisoning, and it is purgative and emetic. The resin is used against roundworm infections and other intestinal parasites. It is an emollient, stimulant, diuretic and has action on skin-affections and eczema. The pounded bark is used against leprosy and ulcers. Root is used against adenites whereas root scrapings are made into a poultice.

Other products:

The seeds are strung into necklaces or attached to traditional instruments. The bark of young trees is split off in Gabon to make boxes.

SERVICES

Shade or shelter: The elemi is often left standing on cleared land to provide shade and has potential as a wind break.

Reclamation: The tree has been planted for reforestation in Uganda.

Ornamental: The trees' symmetrical branching makes it an attractive avenue and shade tree.

Intercropping: The tree does not compete with crops and has potential for intercropping.

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TREE MANAGEMENT

This tree is amenable to mixed culture plantation husbandry.

GERMPLASM MANAGEMENT

The ripe fruits should be collected when they fall to the ground and allowed to decompose, the stones should then be separated from the outer fruit coats. Seeds can be stored for a long time.

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FURTHER READING

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SUGGESTED CITATION

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