

Dialium guineense

Willd.

Fabaceae - Caesalpinioideae

LOCAL NAMES

English (tumble tree, black velvet, Sierra Leone tamarind, velvet tamarind); French (tamarinier noir, dialium de Guinée, afambeau); Fula (meko, kedebe, mako, mekahi); Igbo (icheku); Mandinka (kosito); Wolof (solam, solom); Yoruba (awin)

BOTANIC DESCRIPTION

Dialium guineense is a tree to 30 m high, with a densely leafy crown, but often shrubby. Bole without buttresses, Bark smooth, grey; slash reddish, yielding a little red gum.

Leaves sometimes finely hairy, with a common stalk 5-13 cm long, with an odd terminal leaflet and usually 2 pairs of opposite or alternate leaflets, the lower pair being somewhat smaller; leaflets mostly 3.5-10 x 2.5-5 cm, elliptic to broadly elliptic, sometimes slightly obovate; blunt at the apex or abruptly and shortly acuminate, symmetrical and rounded or slightly cuneate at the base; leathery, glabrous above and with the midrib slightly sunken, sometimes finely hairy beneath.

Flowers usually whitish, in large terminal, or occasionally axillary, panicles up to 30 cm long; branches spreading out widely and more or less horizontally; the whole inflorescence at first covered with very short, brownish hairs; individual flowers with short stout stalks, the buds about 2 mm long.

Fruits usually abundant, more or less circular and flattened, but sometimes almost globose, up to 2.5 cm in diameter, densely velvety, black; each fruit with a stalk about 6 mm long with a little collar near the apex, with a brittle shell enclosing 1 seed (or exceptionally 2), embedded in a dry, brownish, sweetly acidic, edible pulp.

The origin of the generic name is not known; J. E. Smith, a noted 18th century English botanist, sought it and could not discover it, nor have modern botanists.

The specific name means 'of Guinea'.

BIOLOGY

In Nigeria, the tree flowers from September to October and fruits from October to January. In Ghana, in September to November the tree is covered with small white flowers in panicles; fruit ripens in March to May but may be earlier and may persist longer. Animals, which like to eat the pulp in which the seeds are embedded, help disperse the fruit. However, the fruit can also be transported by water since it floats; transport by sea currents may lead to long-distance dispersal.



Dialium guineense slash (Joris de Wolf, Patrick Van Damme, Diego Van Meersschaut)



Dialium guineense foliage. (Joris de Wolf, Patrick Van Damme, Diego Van Meersschaut)



Dialium guineense flowers. (Joris de Wolf, Patrick Van Damme, Diego Van Meersschaut)

ECOLOGY

D. guineense grows in dense savannah forests, shadowy canyons and gallery forests. It is found from Senegal to Sudan along the southern border of the Sahel. This is the most common and widespread *Dialium* in Nigeria. In Ghana, *D. guineense* is found along transition zones bordering high forest, in riverian forest of the savannah woodland, in coastal scrub, and in riparian vegetation of the Volta near Ada.

BIOPHYSICAL LIMITS

Mean annual rainfall: <2100-2600 mm

Soil type: Naturally found on moist, sometimes brackish soils.

DOCUMENTED SPECIES DISTRIBUTION

Native: Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Cote d'Ivoire, Equatorial Guinea, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Sao Tome et Principe, Senegal, Sierra Leone, Sudan, Togo

Exotic:



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 pulp is red, with a sweet-sour, astringent flavour similar to baobab, but sweeter. It is peeled and eaten raw; it can be a little constipating. The thirst-quenching, refreshing fruit pulp can also be soaked in water and drunk as a beverage. Leaves are bitter; they may be used to cook 'domoda', a Ghanaian dish that tastes both sweet and bitter.

Fuel: The tree is said to make good firewood and charcoal.

Timber: Sapwood is white with distinct ripple marks; the heartwood is red-brown. Because of the high silicate content of the timber, axes and saws quickly get blunt. The wood is hard, durable, heavy, light brown, with a fine texture. It is used for vehicles, houses and flooring.

Medicine: Bark and leaves are used against several diseases.

TREE MANAGEMENT

Harvesting the trees is difficult because the wood is dense. They often have tall buttresses, which have to be slashed before cutting, as much of the wood would be wasted if the trunk were cut above the buttress. The logs cannot be transported by river as they sink in water.

GERMPLASM MANAGEMENT

Seed storage behaviour is orthodox.

FURTHER READING

CABI. 2000. Global Forestry Compendium. CD-ROM. CABI

Hong TD, Linington S, Ellis RH. 1996. Seed storage behaviour: a compendium. Handbooks for Genebanks: No. 4. IPGRI.

Keay RW. 1989. Trees of Nigeria. Clarendon Press Oxford.

Szolnoki TW. 1985. Food and fruit trees of Gambia. Hamburg. Federal Republic of Germany.

Taylor CJ. 1960. Synecology and silviculture in Ghana. CJ Taylor.

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/>)