

LOCAL NAMES

English (mkanyi fat, kagne butter); Swahili (msambu, mkani)

BOTANIC DESCRIPTION

Allanblackia ulugurensis is a medium to large evergreen forest tree to 30 m tall, with a straight and slightly buttressed bole. The branches are drooping and often conspicuously whorled. The bark is red-brown or brownish-grey and when slashed exuding yellow latex.

Leaves simple, opposite, dark green, 7.5-19.5 cm long by 4-11 cm wide; oblong or elliptic elongated, slightly emarginated or rounded at the apex and broadly cuneate at the base; with many pairs of lateral nerves running at a wide angle to the midrib; stalk stout, 0.7-1.4 cm long.

Flower unisexual, dioecious, clustered towards the ends of the drooping branchlets, axillary, fleshy, pedicel short, up to 5 cm across when expanded and 1.5 cm across in bud form. Sepals 5 unequal overlapping, red-brownish, elliptic or almost rounded with the inner 4-7.5 mm long and 4-6.5 mm wide and the outer nearly round up to 1.2 cm long and wide. Petals 5, rounded about 2 cm long. Male flowers reddish pink. Stamen-bundle clavate, about 1-1.5 cm long and 0.7-1.2 cm wide, angled pointing towards the centre of the flower. Female flowers stamens reduced to staminodes; ovary ovoid, 1.5 cm long, arranged in 2 rows; with the large 5-lobed stigmas forming a cap over the apex.

Fruit reddish pink but ochraceous when dry, conical-oblong drupe, 10-13.5 cm long and 6.5-8 cm in diameter, hanging at the end of a short stalk.

Seeds irregular in shape, brittle-shelled, 3-3.6 cm long by 2.2-2.3 cm in diameter, embedded in a gelatinous pulp on one angle.

The generic name '*Allanblackia*' is after a 19th-century Kew botanist, Allan Black. The specific epithet '*ulugurensis*' refers to one of the plant's endemic distribution localities in Tanzania.

There are 9 species in the genus *Allanblackia* accepted according to Bamps (1969). These are *A. ulugurensis* Engl., *A. stuhlmannii* Engl. (endemic to East Africa), *A. kisonghi* Vermeesen, *A. kimbiliensis* Spir (endemic to Congo-Kinshasa). The rest such as *Allanblackia floribunda* Oliv., *A. parviflora* A. Chevalier, *A. gabonensis* (Pellegr.) Bamps, *A. marienii* Staner, *A. stanerana* Exell & Mendonca occur in several countries of Central Africa.

BIOLOGY

Flowering occurs in October to January. Fruits start to ripen in December and continue until February. Insects pollinate this species. Rodents and monkeys eat the flowers and fruits, thus dispersing the seeds



Seedling in Kihansi (AFT team)



Sapling at Kihansi forest (AFT team)

ECOLOGY

A. ulugurensis occur in the upper-storey, evergreen forest rain-forest of Ulunguru, Nguru and Ruaha valley associated with other tree species such as Cephalosphaora usambarensis, Ochna holstii, Strombosia scheffleri, Albizia gummifera, Anthocleista zambeziaca, Bombax rhodognaphalon, Newtonia buchananii, Chrysophyllum albidum, Parinari excelsa, Myrianthus arboreus, Isoberlinia scheffleri and Macaranga kilimandscharica.

BIOPHYSICAL LIMITS

Altitude: 700-2050 m

Mean annual temperature: 12.8-30 deg C.

Mean annual rainfall: 1200-2400 mm.

Soil type: Occur in yellow-red sandy loam soils at higher altitudes and red to yellow-red sandy clay loam soils derived from coarse grained siliceous rocks in lower altitudes especially dominated latosols.

DOCUMENTED SPECIES DISTRIBUTION

Native: Tanzania

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 seeds yield an edible white fat used in cooking and lighting. The seeds are dried in the sun for several days, pounded into a powder and boiled in water. The fat or oil, which floats on water, is removed for use. The seeds has recently been collected from the natural forests and sold to General Agricultural products Export Company (GAPEX) for export.

Apiculture: It's a bee forage

Dyestuff: The sap produced from the tree yields a yellow dye.

Timber: The timber is suitable for furniture, crates, boxes and beehives.

Medicine: The fat is used against coughs and chest problems.

Lipids: Seeds yield an edible fat used in cooking, soap making and cosmetics

SERVICES

Shade or Shelter: The tree is used for shade and is a suitable amenity planting.

TREE MANAGEMENT

This is a potential plantation species that should be grown in full sun on well-drained soils.

GERMPLASM MANAGEMENT

Ripe fruits are collected from the ground. Seeds are extracted by breaking the fruits and the pulp around the seed cleaned by washing in water. They are dried and stored. The seed storage behaviour is recalcitrant. These seeds weigh about 115 seeds/kg.

FURTHER READING

- Bamps P, Robson N & Verdcourt B. 1978. Flora of tropical East Africa. Guttiferae. Crown Agents, London.
- Eckey EW. 1954. Vegetable Fats and Oils, Reinhold Publishing Corp. p 687
- FAO. 1983. Food and fruit bearing forest species. 1: Examples from Eastern Africa. FAO Forestry Paper. 44/1. Rome.
- Hilditch. 1958. Chemical Contribution of Natural Fats. pp 264-5.
- Hutchinson J and Dalziel JM. 1954. Flora of West Tropical Africa, Vol. 1, Part1. Crown Agents for Overseas Administrations.
- Mabberley DJ. 1987. The plant-book: A portable dictionary of the higher plants. Cambridge, UK: Cambridge Univ. Press.
- Menniger AD. 1977. Edible nuts of the world. Horticultural Books Inc.
- Peters CR, O'Brien EM and Drummond RB. 1992. Edible wild plants of sub-Saharan Africa. Royal Botanic Gardens, Kew.
- Poulsen JR, Clark CJ, Connor EF, and Smith TB. 2002. Differential resource use by primates and hornbills: implications for seed dispersal. Ecology. 83: 228-240.

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>)