

LOCAL NAMES

English (monkey fruit)

BOTANIC DESCRIPTION

Dactyladenia barteri is a climbing shrub or small tree, up to 12 m tall; bole fluted, often multiple, crooked, up to 25(-40) cm in diameter; bark brittle, slash thin and watery white, turning reddish; crown dense, spreading. Young shoots dark red, covered with whitish arachnoid tomentum, early caducous; branches more or less scandent, slender, hispid, and very quickly glabrescent when young, with numerous lenticels when old.

Leaves alternate, simple; stipules often attached near the base of the petiole, linear, 4-6 mm long; petiole 3-4 mm long; blade elliptical-oblong to ovate, 7-13(-15) cm x 3-5.5(-7) cm, dark glossy green, turning reddish-brown when senescent, base acuminate, sometimes broadly acuminate and somewhat asymmetrical, apex acuminate; lateral veins in 4-6 pairs, some circular glands often present on the underside of the blade near the base and apex.

Inflorescence a terminal or axillary raceme, single or sometimes in pairs, 3-4(-12) cm long, puberulous, many flowered; peduncle up to 1(-4) cm long; bracts elliptical-lanceolate, 2-4 mm long, tricuspidate, often with circular glands; pedicel articulated; flowers bisexual, zygomorphic; receptacle tubular, 4-6 mm long, puberulous; sepals 5, 4-5 mm long, puberulous outside; petals 5, oblong-obovoid, white, caducous; stamens 15-20, 25 mm long; pistil with 1-locular ovary, a filiform style slightly longer than the stamens, and a 3-lobed stigma.

Fruit a single-seeded drupe, compressed-ovoid, 2.5 cm x 3.5 cm x 5 cm, green, surface often ferruginous-tomentose, apex often slightly tuberculate.

BIOLOGY

The monkey fruit usually flowers during the dry season, between October and February in West Africa. Fruits mature at the beginning of the rainy season, between March and May. *D. barteri* is open-pollinated, the main pollinators being red ants.

ECOLOGY

D. barteri occurs in lowland forest with at least 1 200 mm rainfall per year. In the forest-savanna transition zone, it is found along riverbanks, sometimes on the inland side of mangrove forest. It is well adapted to leached, acid and infertile soils and can survive occasional flooding and fires.

BIOPHYSICAL LIMITS

Altitude: 0-300 m

Mean annual temperature: 20-34 deg C

Mean annual rainfall: 1 200 mm

Soil type: It is well adapted to leached, acid and infertile (ultisols) soils and can survive flooding.

DOCUMENTED SPECIES DISTRIBUTION

Native: Cameroon, Gabon, Ghana, Liberia, Nigeria, Sierra Leone

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

Fodder: Leaves are used as fodder.

Timber: Wood is dark red, hard, durable and resistant to termite attack. Stems are used for construction work.

Medicine: In Nigeria and Liberia, the bark and roots are used medicinally as a purgative and against a variety of ailments.

SERVICES

Erosion control: The shrubs have an extensive root system that holds the soil.

Soil improver: Monkey fruit produces large amounts of litter and recycles appreciable quantities of nutrients through its deep root system and the dense canopy aids in weed suppression. It has shown promise as mulch because of its slow decomposition rate.

Boundary or barrier or support: Stems provide good quality poles for staking yams and for construction.

Intercropping: The tree has shown promise in alley cropping systems on acid soils in Nigeria.

TREE MANAGEMENT

In traditional cropping systems, *D. barteri* is retained, planted scattered, or in hedgerows. Established trees coppice well, even after pollarding or burning and are fire resistant. It is planted at a spacing of 2-3 m between the hedgerows in fallow systems in Nigeria. Planted at 4 m x 4m, it can produce 6t/ha dry prunings, 4 ton twigs and 9 ton wood within 8 months with a nutrient yield of 85 kg N, 5 kg P, 43 kg K, 18 kg Ca and 46 kg Mg. At the beginning of the cropping cycle, the shrubs are burnt and the stems cut at a height of 10-20 cm above ground.

GERMPLASM MANAGEMENT

Seed germinates readily and can be stored for up to 6 months at 15 deg C when treated with copper sulphate.

FURTHER READING

Faridah Hanum I, van der Maesen LJG (eds.). 1997. Plant Resources of South-East Asia No 11. Auxillary Plants. Backhuys Publishers, Leiden, the Netherlands.

Hauser S. 1993. Root distribution of *Dactyladenia (Acioa) barteri* and *Senna (Cassia) siamea* in alley cropping on ultisol. 1. Implication for field experimentation. *Agroforestry systems*. 24: 111-112.

Kang BT, Versteeg MN, Osiname O and Gichuru M. 1991. Agroforestry in Africa's tropics: three success stories. *Agroforestry Today*. 3(2): 4-6.

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>)