

Musanga cecropioides

R. Br.

Moraceae

LOCAL NAMES

English (umbrella tree, cork wood, aga umbrella tree); French (parasolier); German (schirmbaum); Luganda (mugungwa, mugunga)

BOTANIC DESCRIPTION

Musanga cecropioides is an evergreen straight stemmed tree up to 18 m tall. The tree's crown is umbrella-like, with very stout and pithy branchlets producing no latex. Stilt roots thin and unbranched when young, low and massive when older. Bark smooth and grey, slash pinkish or often greenish, thin, very soft, pulpy-granular, brownish on exposure. Short spines are sometimes found on the trunk. Large stipular sheaths enclose the bud.

Leaves digitately divided into 12-15 spreading entire, narrow, shortly acuminate segments, up to 45 cm long and 10 cm broad, covered with greyish indumentum beneath; lateral nerves numerous, very conspicuous beneath; stipules large, conate, 15-20 cm long, densely pubescent.

Male trees are sympodial in growth, producing leaf opposed (terminal) panicle like inflorescence of small heads on new wood, each flower with joined sepals round a single stamen and accompanied by 2 glands. Male flowers in numerous small round heads about 4 mm in diameter, female inflorescence short and club-like, about 2 cm long on a peduncle up to 12 cm long, each flower with a fused calyx, a pistil with a basal ovule and a single style and a pair of glands which secrete substances attractive to ants.

Fruit yellowish green (later brownish), succulent, up to 8 cm and containing numerous achenes.

The generic epithet is derived from the Congolese name of the tree. Some authors place the genera *Musanga* and *Myrianthus* in the family Cecropiaceae.

BIOLOGY

The fruits are dispersed by elephants and other animals.



Musanga cecropioides:
Canopy (Dominic Blay Jr.)



Musanga cecropioides:
Tree: A disturbed site on the Kumasi-Wassa Akropong road in the Western Region of Ghana. (Dominic Blay Jr.)



Musanga cecropioides:
Stilt roots (on the right hand stem): *M. cecropioides* on a disturbed site on the Kumasi-Wassa Akropong road in the Western Region of Ghana. (Dominic Blay Jr.)

ECOLOGY

M. cecropioides is a pioneer colonizer constituting the first phase of succession leading to the rebuilding of rain forest. Abundant in forest clearings, swamp forest, river or lakesides, it has shown height increments of up to 5 m in one year. The tree is short-lived (life span ca 20 years) dying before it is overshadowed by taller species.

BIOPHYSICAL LIMITS

Altitude: 700-1 200 m

Mean annual rainfall: 1 300-2 500 mm

Soils: Prefers newly disturbed forest soil.

DOCUMENTED SPECIES DISTRIBUTION

Native: Angola, Cameroon, Cote d'Ivoire, Democratic Republic of Congo, Ethiopia, Ghana, Liberia, Nigeria, Sierra Leone, Sudan, Togo, Uganda

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: The fruits are eaten by elephants and other animals.

Fuel: Provides poor quality firewood.

Timber: The wood is very light, white or slightly pink in colour when freshly cut, soft and coarse grained and about 265 kg/cu m at 12% moisture content. In Ghana the timber is used as roofing material. The wood is also used in making drums, construction of canoes and utensils. The poles are very commonly used as rafters, the stems are often hollowed out to make palm wine containers.

Alcohol: The bark shavings are added as intoxicants in the preparation of palm wine.

Medicine: The bark decoction is used in treating chest related ailments, the trunk sap reportedly has lactogenic activity in nursing mothers. The large stipular sheath and inflorescence are boiled in soup and administered to promote menstruation (emmenagogue). Bark infusion of *M. cecropioides* is gargled to allay toothache. The root bark is eaten with kola nut to cure coughs, and the bark from callouses is tied on to wounds where it is supposed to effect a cure.

Other products: The ash of freshly felled trees is used as a salt substitute.

SERVICES

Shade or shelter: Provides shade in intermediate forests.

Nitrogen fixing: *M. cecropioides* forms vesicular arbuscular mycorrhiza.

Soil improver: Leaf litter of the umbrella tree enriches the soil and is ideal as compost material.

Ornamental: With its attractive crown and foliage the umbrella tree is a good ornamental candidate.

Boundary or barrier or support: The soft wood of *M. cecropioides* is occasionally used as palings on farms.

Intercropping: *M. cecropioides* is used as a shade tree in coffee plantations. Prospects of its use in agroforestry systems especially for fallow depend alot on the fallow time and its soil improvement ability. With care it could be a valuable nurse tree for young shade bearers in natural regeneration.

TREE MANAGEMENT

In open naturally regenerating forest *Musanga* sometimes inhibits regeneration of valuable species, management with sodium arsenite which readily kills the tree in less than 24 hours, arboricides kill the tree in 2 weeks. *Musanga* is a light demanding species and should not be subjected to intense shade

GERMPLASM MANAGEMENT

The seeds are reportedly very difficult to raise artificially however, the seeds may show orthodox seed storage behaviour. There are 24 000 seeds/kg which appear to remain viable for years.

FURTHER READING

Abbiw D. 1990. Useful plants of Ghana. Intermediate Technology Publications and the Royal Botanical Gardens, Kew.

Foresta H de, Schwartz D and De-Foresta H. 1991. *Chromolaena odorata* and disturbance of natural succession after shifting cultivation: an example from Maycombe, Congo, Central Africa. Biotrop Special Publication. 44: 23-41.

Hutchinson J and Dalziel JM. 1954. Flora of West Tropical Africa, Vol. 1, Part1. Crown Agents for Overseas Administrations.

Kunkel G. 1965. The trees of Liberia: German Forestry Commission to Liberia Report No.3. BLV.

Lawson GW. 1986. Plant Ecology in West Africa. John Wiley & Sons, Chichester.

Steentoft M. 1988. Flowering plants in West Africa. Cambridge University Press, Cambridge.

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>)