Acacia sieberiana

DC.

Fabaceae - Mimosoideae

LOCAL NAMES
Afrikaans (papierbasdoring,platkroonsoetdoring); Arabic (kochai,kouk,kuk,kuka); Bemba (mutandafiwa,munganunshi); English (white thorn,umbrella thorn,flat-topped thorn,paperbark thorn,paperbark acacia,Natal camelthorn); Fula (gie,daneji); Hausa (fara kaya); Lozi (mutubatuba); Luganda (mweramanyo,muwawa); Lunda (muzenze); Ndebele (umsasane,umpumbu,umlaladwayi); Nyanja (mtubatuba,mzizi); Shona (muunga); Somali (chiak,cherin,Jerin); Swahili (mgunga kuu,mgunga); Tigrigna (cheare,nefacia,tseada-chea); Tongan (impangala,mubovwa,mumpangala); Tswana (moremosetlha,more-o-mosetlha); Yoruba (aluki,sie); Zulu (umKhaya,umKhambathi,umKhamba)

BOTANIC DESCRIPTION
Acacia sieberana is a tree 3-25 m tall, 0.6-1.8 m in diameter, with a rather rounded crown; trunk 6 m high; bark rough, yellowish, flaking off in small, rectangular, grey-brown scales; slash yellowish with dark red edges, fibrous, exuding clear gum; spines in pairs at the nodes, straight, white, narrow, tapering to a sharp point, 0.6-12 cm.

Leaves usually sparsely hairy, bunched into small clusters, 6-23 (max. 35) pairs of pinnae 2.5-2 cm long, densely crowded, overlapping, with a common stalk 5-10 cm long; leaflets in 14-52 pairs, 2-6.5 x 0.5-1.5 mm, narrowly oblong, rounded at the apex, with a central midrib; stalks ending in a minute spine.

Flowers cream, white or pale yellow, in heads about 13 mm across, on a slender stalk up to 5 cm long, with a whorl of tiny bracts near the apex; heads may be solitary or in small clusters near the branchlets.

Fruit shiny brown, straight or slightly falcate, with more or less parallel margins, 1.3 cm thick, 9-21 cm long, 1.7-3.5 cm wide, glabrous or nearly so, indehiscent, splitting open tardily releasing about 12 seeds; seeds big - 1 cm long, hard, flat, embedded in a yellow-greenish pulp.

Two varieties are recognized: A. sieberiana var. sieberiana and A. sieberiana var. villosa. The generic name ‘acacia’ comes from the Greek word ‘akis’, meaning ‘point’ or ‘barb’. The species was named after Franz Wilhelm Sieber, a Bohemian botanist, plant collector and traveller of the early 18th century.

BIOLOGY
The pods are produced at the beginning of the dry season, and flowering occurs at the end of it.

Acacia sieberiana slash (Joris de Wolf, Patrick Van Damme, Diego Van Meersschaut)

Acacia sieberiana foliage (Joris de Wolf, Patrick Van Damme, Diego Van Meersschaut)

Tree habit: Tree lopped for fuelwood in the northern highlands of Ethiopia. (Chris Fagg)

ECOLOGY
A. sieberana grows in the savannah and woodland. It occurs with various botanical characteristics in the entire Sahel and other semi-arid regions in Africa. Various varieties and local races exist. The species is especially suited for riverbanks or low ground and replaces A. nilotica in the south of the latter's natural range. A. sieberana is drought and frost resistant.

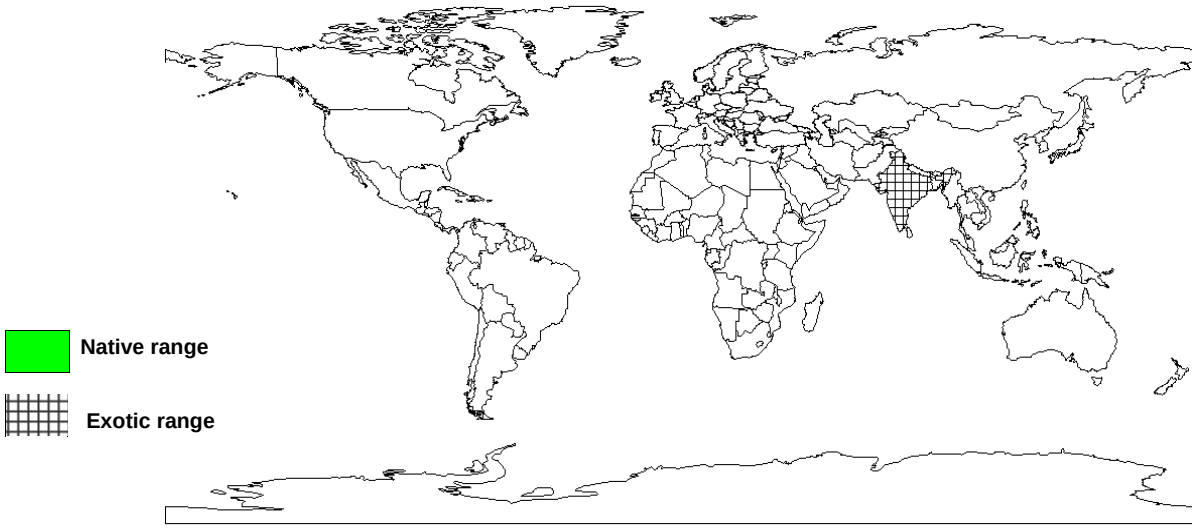
BIOPHYSICAL LIMITS
Altitude: 0-1 850 m, Mean annual temperature: 13-21 deg. C, Mean annual rainfall: 400-800 mm

Soil type: A. sieberana grows on deep, well-drained, heavy clay, light sandy and medium loamy soils of acidic reaction.

DOCUMENTED SPECIES DISTRIBUTION

Native: Angola, Benin, Botswana, Burkina Faso, Cameroon, Chad, Congo, Cote d'Ivoire, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Kenya, Liberia, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Portugal, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe

Exotic: India



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: A. sieberana produces an edible gum.

Fodder: Pods, young shoots and leaves are highly nutritious and serve as forage for livestock in the dry season. In Sudan, pods are collected for fattening sheep but are said to taint milk.

Apiculture: Flowers are good bee forage, and hives are often placed on the trees.

Fuel: A. sieberana is a good source of firewood and charcoal.

Fibre: The bark is used to make a cordage fibre.

Timber: The termite resistant, moderately hardwood has a featureless, off-white grain with little distinction between heartwood and sapwood. It is easy to work and is used in making furniture, tool handles and mortars.

Gum or resin: The tree yields a gum of good quality that has been used to make ink.

Tannin or dyestuff: The bark and pods contain tannin.

Poison: The leaves contain large quantities of prussic acid at certain times, especially when wilted, and have been known to cause death in cattle.

Medicine: Pounded bark is used to relieve fever in children. A decoction of the root is taken as remedy for stomach-ache. The bark, leaves and gums are used to treat tapeworm, bilharzia, haemorrhage, orchitis, colds, diarrhoea, gonorrhoea, kidney problems, syphilis, ophthalmia, rheumatism and disorders of the circulatory system. It is also used as an astringent. The pods serve as an emollient, and the roots for stomach-ache, acne, tapeworms, urethral problems, oedema and dropsy.

SERVICES
Shade or shelter: A. sieberana has occasionally been planted as hedge, a windbreak and a shade tree in villages, rangelands and fields.

Nitrogen fixing: A. sieberana fixes atmospheric nitrogen.

Boundary or barrier or support: The branches make good fences.

TREE MANAGEMENT
The trees respond well to lopping, pollarding and coppicing. The seedlings need to be protected from fire and browsing.

GERMPLASM MANAGEMENT
The seeds can be stored if kept cool, dry and insect free; ash is added to reduce insect damage. On average there are 3250 seeds/kg.

PESTS AND DISEASES
The wood is susceptible to borer attack.

FURTHER READNG

Anon. 1986. The useful plants of India. Publications & Information Directorate, CSIR, New Delhi, India.

Beentje HJ. 1994. Kenya trees, shrubs and lianas. National Museums of Kenya.

Bein E. 1996. Useful trees and shrubs in Eritrea. Regional Soil Conservation Unit (RSCU), Nairobi, Kenya.

Bekele-Tesemma A, Birnie A, Tengnas B. 1993. Useful trees and shrubs for Ethiopia. Regional Soil Conservation Unit (RSCU), Swedish International Development Authority (SIDA).

Coates-Palgrave K. 1988. Trees of southern Africa. C.S. Struik Publishers Cape Town.

Dale IR, Greenway PJ. 1961. Kenya trees and shrubs. Buchanan's Kenya Estates Ltd.

Drummond BR. 1981. Common trees of the Central Watershed Woodlands of Zimbabwe. National Resources Board.

Eggeling. 1940. Indigenous trees of Uganda. Govt. of Uganda.

El Amin HM. 1973. Sudan acacias. Forest Research Institute Publishing Section Information Department.

Hines DA, Eckman K. 1993. Indigenous multipurpose trees for Tanzania: uses and economic benefits to the people. Cultural survival Canada and Development Services Foundation of Tanzania.

Katende AB et al. 1995. Useful trees and shrubs for Uganda. Identification, Propagation and Management for Agricultural and Pastoral Communities. Regional Soil Conservation Unit (RSCU), Swedish International Development Authority (SIDA).

Kokwaro JO. 1976. Medicinal plants of East Africa. East African Literature Bureau.

Noad T, Birnie A. 1989. Trees of Kenya. General Printers, Nairobi.

Palmer E, Pitman N. 1972. Trees of Southern Africa Vol. 2. A.A. BalKema Cape Town.

Sahni KC. 1968. Important trees of the northern Sudan. United Nations and FAO.

Storrs AEG. 1995. Know your trees: some common trees found in Zambia. Regional Soil Conservation Unit (RSCU).

Timberlake J, Fagg C and Barnes R. 1999. Field guide to the Acacias of Zimbabwe. CBC Publishings, Zimbabwe.

Timberlake J. 1980. Handbook of Botswana Acacias. Ministry of Agriculture, Botswana.

von Maydell HJ. 1986. Trees and shrubs of the Sahel - their characteristics and uses. GTZ 6MBH, Eschborn.

SUGGESTED CITATION

Orwa C, Mutua A , Kindt R , Jamnadass R, Simons A. 2009. Agroforestree Database:a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/af/treedb/)