

## Brachystegia spiciformis

msasa

Benth.

Fabaceae - Caesalpinioideae

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### LOCAL NAMES

Bemba (muputu,kampela); English (zebrawood,bean-pod tree); Lozi (mutuya,muputi); Lunda (mupuchi); Ndebele (igonda,igonde); Nyanja (mputi); Shona (msasa,musasa); Swahili (mrihi,mriti,mtundu,myombo); Tongan (musewe); Trade name (msasa)

### BOTANIC DESCRIPTION

*Brachystegia spiciformis* is a tree 8-25 m (max. 28) high with a flat crown. Bark is dark brown or pale grey and smooth when young, later becoming rough, dark grey, deeply fissured vertically, horizontally cracked, slowly flaking in thick, irregular scales. Branches are heavy, thrusting upwards and outwards, often twisting and curving, giving the tree beautiful shape and balance. Gum is deep red.

Leaves are pendulous, dark green, oblong-elliptic, 2.5-8 x 1-4.5 cm, shiny above, smooth or slightly hairy below, common, hairy midrib with a swelling at the base; apex tapering, finally rounded, notched and tipped with a fine hairlike bristle; base markedly asymmetric, narrowed or round; margin entire; each leaf bearing 2-7 but usually 4 pairs of opposite or nearly opposite leaflets, the terminal pair being the largest (2.5-9 cm long) and the bottom the smallest; petiolules very short, petiole up to 2.5 cm long, very finely hairy. Stipule threadlike, falling very early.

Flowers are small, greenish, produced in short, dense, thickset terminal spikes, 3-6 cm long, sweetly scented, simple or with 1 or 2 branches; with white filaments and red anthers.

Pods are usually hidden in the foliage, thinly woody, flat, green, yellow, red-brown to yellowish-green, turning grey or brown and smooth when mature, up to 16 cm long, base narrow, broadening towards the apex, tips strongly beaked splitting explosively to release the seeds. Seeds are round, flat and brown in colour.

The generic name is based in Greek words meaning short or flattened, and roof or cover, but the allusion is not clear. The specific name 'spiciformis' means 'spikelike' and refers to the shape of the inflorescence.

### BIOLOGY

Flowering and fruiting depend on the climatic conditions of a certain year and do not occur every year. In southern Africa, flowering occurs from August to November and fruiting from May to August. The flowers are popular with bees, which probably pollinate them. After pollination, fruit development takes 7-8 months. The species hybridizes readily with *B. glaucescens* and *B. microphylla*.

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## ECOLOGY

*B. spiciformis* occurs in deciduous woodlands on ridges and escarpments. The trees associate with most woodland species and occupy gaps in coastal forests and thickets. They are dominant or codominant with *Julbernardia globiflora* in woodland, most frequent at medium to high altitudes. In Kenya, the species occurs naturally in Kwale and Kilifi Districts on sandy soils 20-40 km inland and south of the Tana River. This is the most widespread species of *Brachystegia* in Zimbabwe and Mozambique and is dominant and ecologically important over large areas of its range, occurring in open, deciduous woodland. Trees are susceptible to frost.

## BIOPHYSICAL LIMITS

Altitude: 15-2 350 m

Soil type: The species tolerates a wide range of soils, develops best on moist, deep, red soils and usually avoids poorly drained and shallow soils.

## DOCUMENTED SPECIES DISTRIBUTION

Native: Angola, Botswana, Democratic Republic of Congo, Kenya, Malawi, Mozambique, South Africa, Tanzania, Zambia, Zimbabwe

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 browsed by livestock.

Apiculture: Flowers provide a good source of pollen and nectar, giving an excellent honey, which granulates very slowly.

Fuel: Trees are a good source of firewood and charcoal.

Fibre: The inner bark is employed to make rope for roof ties, sacks, cloth, corn bins, beehives, and for other purposes.

Timber: The wood is reddish-brown, coarse, not durable, difficult to season, subject to termite attack, tends to twist, split and warp. Even when treated, it is a rather inferior general purpose timber. It can be used for furniture and railway sleepers.

Tannin or dyestuff: The bark is astringent, containing 13% tannin, and an extract of this is used by Africans as a final dressing in tanning hides. It imparts a reddish colour to the finished product.

Medicine: An infusion of the root provides treatment for dysentery and diarrhoea. A decoction is applied as an eyewash for conjunctivitis.

**SERVICES**

Shade or shelter: The flat crown provides fine shade.

Ornamental: The trees are famous for the attractive pink, wine red, copper and bronze colours of their spring foliage and are a suitable species for amenity areas.

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### **TREE MANAGEMENT**

B. spiciformis trees are rather slow growing.

### **GERMPLASM MANAGEMENT**

After collection, pods are dried in the sun until they split and release the seeds. Seed storage behaviour is orthodox. Viability can be maintained for several years in hermetic storage at 3 deg. C with 8-17% mc. On average, there are about 2 600 seeds/kg.

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**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>)