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# SEED LEAFLET

No. 108 November 2005

PhytoTrade AFRICA

# *Kigelia africana* (Lam.) Benth.

## Taxonomy and nomenclature

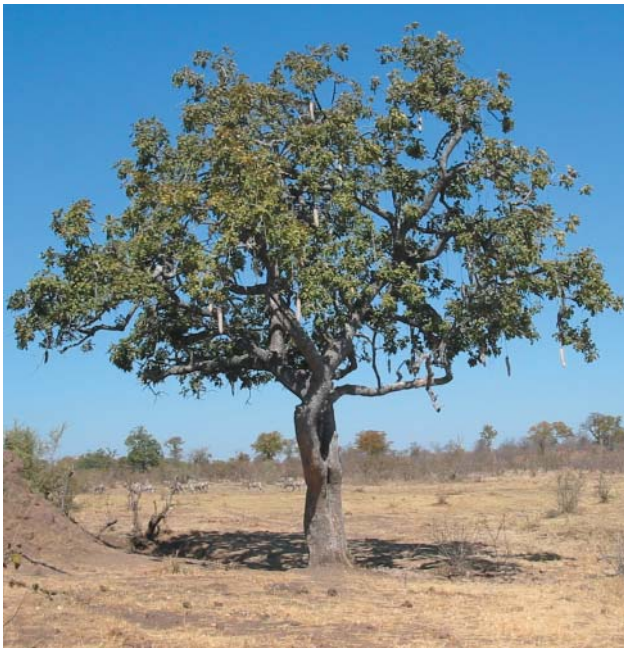
**Family**: Bignoniaceae

**Synonyms**: *Bignonia africana* Lam., *Crescentia pinnata* Jacq., *Kigelia aethiopum* (Fenzl) Dandy, *K. pinnata* (Jacq.) DC and others. The species is very variable but it is now generally accepted that there is only one species in the genus and thus all *Kigelia* spp. are synonymous for *Kigelia africana*.

**Vernacular/common names:** sausage tree, cucumber tree.

## Distribution and habitat

The species is widespread in Sub-Saharan Africa, although rare in some regions. It has been introduced as an ornamental tree to Cape Verde and Madagascar, as well as to Iraq, Pakistan, India, China, South-East Asia, Australia, Hawaii and Central and South America. It grows along watercourses, in riverine fringes, alluvial and open woodland, high-rainfall savannah and shrubland. It occurs on sandy loams, loamy red clay soils, sometimes rocky, damp or peaty soil, from sea level up to 3000 m altitude with annual rainfall of 900-2000 mm. It does not tolerate frost, but if young plants are protected for the first 2-3 years from cold winds in colder areas, they will survive.



Fruiting tree. Victoria Falls, Zimbabwe. Photo: C. Rønne

## Uses

The wood is used for production of furniture, joinery, dugout canoes, boxes, shelving and building material. Heartwood is pale brown to reddish-yellow, sapwood is white/yellow. The wood is soft but strong, 655 kg/m$^3$. The wood is susceptible to insect and fungal attack (rust disease caused by *Newinia kigeliae*). All parts of the tree are used in traditional medicine for a number of illnesses ranging from blood and circulatory system disorders to digestion and infection problems. The toxic fruit is used commercially to treat skin disorders. A yellow dye can be extracted from the roots. Seeds are roasted and eaten during famine. The nectar from the flower is used as a source of sugar. Slices of baked fruit are used for beer fermentation. The species is also suitable for erosion control, shade and shelter and as an ornamental, but as it has a rather invasive root system it should be kept clear of buildings.

## Botanical description

Semi-evergreen, small to medium sized tree normally 10-12 m tall, occasionally up to 25 m, with a low-branching trunk up to 80 cm in diameter and a rounded crown. Bark is grey, thinly flaky. Leaves are opposite and compound with 3-5 pairs of leaflets plus a terminal leaflet. Each leaflet is 6-10 cm long and with rough hairs on both sides. The showy flowers are bisexual and unpleasantly scented, velvety reddish-purple or maroon, up to 10 cm long, in 6-12-flowered, drooping sprays.

## Fruit and seed description

**Fruit**: the fruits are sausage shaped, up to 1 m long and 18 cm in diameter, and weighing up to 10 kg. They are greyish-brown when ripe and contain a hard fibrous inedible pulp in which many seeds are embedded. The fruits do not open at maturity.

**Seed**: pale, hard, obovoid, 10 x 7 mm. There are typically 9.000-10.000 seeds per kg.

## Flowering and fruiting habit

The trees flower at the end of the dry season. In Southern Africa flowering occurs from June to November and fruits are borne from November to June. In West Africa the trees flower in November-December. The flowering period for a single tree continues for several months. Flowers open in the evening, and remain open for one night only. The tree is out-crossing. Pollination studies suggest, that the most important pollination

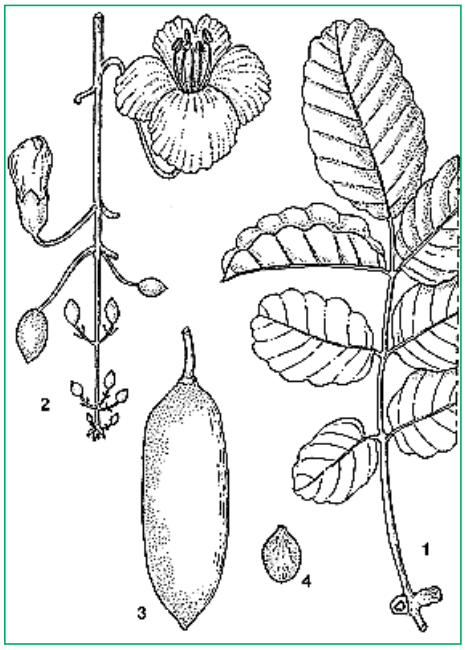
vectors are nectar eating bats and outside of its natural distribution area, fruit-setting may fail. However, the flowers are also visited by sunbirds and monkeys for nectar, which may play a role in pollination. Fruits can remain on the tree for up to one year. Seeds are released only on decay of the fallen woody fruits, or dispersed when eaten by game and livestock. Elephant and rhinoceros are reported as seed distributors. The tree begins to flower at the age of 6 years.

## Harvest

Mature fruits can be collected from the ground after fruitfall. However, the fruits are often shed before they reach full maturity and if collected, the seed may subsequently need after-ripening. After harvest, the fruits are transported to the processing site in bags that allow ventilation, e.g. jute bags.

## Processing and handling

Extraction of the seeds is very labour intensive. The best way is to split the fruit between two large stones, scrape the seeds out and rub them against a wire mesh to remove the pulp. The number of viable seeds per kg fibrous fruit pulp is between 3400 and 7700.




1, Leaf; 2, part of inflorescence; 3, fruit; 4, seed. From: Grace & Davies (2002).

## Storage and viability

Seed storage behaviour is orthodox and the seed should be dried to low moisture content and stored cold. Seeds survive drying to approximate 3% moisture content. Even at ambient temperature, viability is maintained for more than 3 years in airtight storage. The seeds will retain viability for 3 months when stored moist. Aerobic conditions are essential for the successful moist storage of orthodox seeds; therefore the seeds need to be ventilated frequently.

## Dormancy and pretreatment

It has been reported that germination improves after 1 year of storage. This could be caused by a physiological dormancy or simply because the fruits are shed before the seeds are fully mature and continue their development on the ground. Soaking the seed in hot or boiling water for one minute prior to sowing will enhance germination.

## Sowing and germination

The reports on germination are very different. According to some, germination rate is poor, and seeds are slow to germinate while others find it is consistent around 80%. In the nursery, seeds are placed in seedling trays filled with pure river sand and pressed into the sand until the tip is level with the sand. The seeds are covered with a shallow layer of sand or compost and kept moist. Seeds usually germinate within 10-25 days. The young plants are sensitive to cold winds but will survive if protected for the first 2-3 years. Cuttings and wildings can also be used for propagation.

## Selected readings

**Diniz, M.A. 1988**. *Bignoniaceae*. Flora Zambesiaca. Vol. 8 part 3. London.

**Grace, O.M. and Davis, S.D., 2002**. *Kigelia africana (Lam.) Benth*. [Internet] Record from Protabase. Oyen, L.P.A. & Lemmens, R.H.M.J. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://database.prota.org/search.htm

**Palgrave, K.C. 1977**. *Trees of Southern Africa*. Struik Publishers, Cape Town.

**Sanon, M.D., Gaméné, C.D., Sacandé, M. and Neya, O. 2004.** *Desiccation and storage of Kigelia africana, Lophira lanceolata, Parinari curatellifolia and Zanthoxylum zanthoxyloides seeds from Burkina Faso*. **In**: Sacandé. M., D. Jøker, M.E. Dulloo and K.A. Thomsen (eds.). 2004. *Comparative Storage Biology of Tropical Tree Seeds*. IPGRI, Rome, Italy.

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