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# Cordelia africana Lam.

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# SEED LEAFLET

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# *Cordia africana* Lam.

## Taxonomy and nomenclature

**Family**: Boraginaceae
**Synonym**: *C. holstii*., *Cordia abyssinica* R.Br
**Vernacular/common names**: East African cordia, large-leafed cordia, Sudan teak (English) Makumari, Muringa (Kikuyu); Samotet (Nan), Gambil (Arabic), Makobokobo( Swahili).

## Distribution and habitat

*C. africana* is native to eastern and southern Africa including Angola, Democratic Republic of Congo, Djibouti, Eritrea, Ethiopia, Ghana, Guinea, Kenya, Malawi, Mozambique, Saudi Arabia, South Africa, Sudan, Tanzania, Uganda, Yemen, Zimbabwe, Altitude range 550-2,600 masl, mean annual rainfall 700-2 000 mm.

The species occur at medium to low altitudes, in woodland, savannah and bush, in warm and moist areas, often along riverbanks. It is frost tender. It will grow in drier conditions but thrives in good rainfall areas and is scattered in occurrence. It occurs in afro-montane rainforest and undifferentiated afro-montane forest (mixed Podocarpus forest), usually along margins and in clearings. It is an early colonizer in forest regrowth. It is often left when forests are cleared for cultivation, as the tree is an excellent shade tree for crops. Also found in riverine forest and secondary bushland, transgressing into humid types of woodland. In West Africa, this species seems to be restricted to montane and submontane habitats; it has limited distribution in the lowland habitats of the Democratic Republic of Congo.

## Uses

Mature fruits have a sweet, mucilaginous, edible pulp. Leaves provide fodder for the dry season. The species provides good bee forage, as the flowers yield plenty of nectar. Beehives are often placed in the trees.

**Fuel**: Trees are a good source of firewood. The heartwood is pinkish-brown, reasonably durable, relatively termite resistant; it works easily and polishes well but is often twisted and difficult to saw. It is used for high-quality furniture, doors, windows, cabinet making, drums, beehives, joinery, interior construction, mortars, panelling and veneering.

**Medicine**: The fresh, juicy bark is used to bind a broken bone; this splint is changed occasionally with a fresh one until the bone is healed.

*C. africana* is planted as a shade tree in coffee plantations; it is usually left in the fields, as it provides excellent shade for crops. Leaf fall in the dry season is heavy, and the leaves make good mulch. Trees are planted in amenity areas.

Flowering branch, From Dale and Greenway 1963

## Botanical Description

*C. africana* is a small to medium-sized evergreen tree, 4-15 (30) m high, heavily branched with a spreading, umbrella-shaped or rounded crown. Bole typically curved or crooked. Bark greyish-brown to dark brown, smooth in young trees, but soon becoming rough and longitudinally fissured with age; young branchlets with sparse long hairs. Leaves alternate, simple, ovate to subcircular, 7.5-17.5 (max. 30) cm long, 3.5-10.2 (max. 30) cm broad; thinly leathery; dark green above, paler green and velvety below; with

prominent parallel tertiary net-nerves (about 7 pairs of lateral nerves); apex broadly tapering or rounded; base rounded to shallowly lobed; margin entire; petiole slender, 2.5-7.6 cm long. Buds oval, stalkless, pleated open into flowers that are bisexual, white, sweet scented, shortly pedicelate or subsessile, massed in compact panicles covering the crown, with a white mass of attractive flowers; calyx less than 1 cm long, strongly ribbed, back of lobes covered with short, soft, brown hairs; corolla lobes crinkled, white, long-exerted, funnel-shaped, about 2.5 cm long; cymes many flowered.

## Fruit and Seed description

**Fruit:** a drupe, smooth, spherical, oval tipped, fleshy, 1.3-1.5 cm long; green when young, yellow to orange when mature; with a sweet, mucilaginous pulp and short remains of the calyx at the base; contains 2-4 seeds.

**Seed**: Seed is the pyrene/ stone / endocarp enclosing the morphological seed. Seeds lack endosperm. There are about 18,000 seeds/kg.

## Flowering and fruiting habit

Flowering starts when trees are 3-5 years old. In Sudan, flowering occurs in October to December and fruiting from January to April; in Kenya, flowering is from April to June. It is repeated at intervals over several weeks and is evidently triggered off by rain showers. After pollination by insects, fruit development takes a period of almost 6 months. Fruit is eaten and probably dispersed by birds.

## Harvest

Fruits are collected by shaking or pruning fruit bearing branches onto a tarpaulin.

## Processing and handling

The fruits should be depulped immediately after collection by rubbing over a wire mesh under running water. Sometimes it may be recommendable to mix the fruits with fine sand to accelerate extraction of the sticky pulp from the seeds. The pulp and the stones are separated by floating water. After extraction the stones can be dried in the sun 6-8 % moisture content.

## Storage and viability

Seeds have orthodox (desiccation tolerant) storage behaviour. Seeds can be stored for at least 1 year in hermetic storage at 3°C with no loss in viability.

## Dormancy and pretreatment

Seeds are soaked in cold water for 6 hours and germinate within 40-60 days under ideal conditions; expected germination rate of mature healthy seed lots is 50-80 %.

## Sowing and germination

Seedlings require 4-6 months in a nursery before planting out.

## Selected readings

**Beentje, H.J. (1994):** Kenya Trees, Shrubs and Lianas National Museums of Kenya, Nairobi, Kenya. 722p.

**Dale, I.R. and Greenway, P.J. 1961**. Kenya trees and shrubs. Buchanan's Kenya Estates Ltd.

**FAO Corporate document**. Indigenous Multipurpose trees of Tanzania, uses and economic benefits for people.

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Seedleaflets are a series of species wise extension leaflets for tropical forest species with special emphasis on seed technology. Leaflets are compiled from existing literature and research available at the time of writing. In order to currently improve recommendations, FLD encourage feedback from users and researchers who have experience with the species. Comments, corrections, improvements and amendments will be incorporated into future edited leaflets. Please write your comments to: SL-International@life.ku.dk