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TRANSFORMING LIVES AND LANDSCAPES

Commiphora africana (A. Rich.) Engel.

Taxonomy and nomenclature

Family: Burseraceae
Synonym: *C. pilosa* Engl.; *C. calcicola* Engl. *Heudelotia africana* A. Rich.
Vernacular/common names: African myrrh, poison-grub commiphora (English); mbambara, mponda, mturituri, mtwitwi (Swahili); angka, gafal (Arabic); harige kanniedood (Afrikaans); dabba'un'un, hammessagara (Somali).

Distribution and habitat

Commiphora africana has a widespread native distribution throughout dry zones in Africa south of the Sahara, with rainfall between 300 and 800 mm. It occurs naturally in Angola, Botswana, Burkina Faso, Chad, Eritrea, Ethiopia, Kenya, Mali, Mauritania, Mozambique, Namibia, Niger, Senegal, Somalia, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe

It is a typical species of the dry savannah (*Acacia-Commiphora* bushland). It is primarily a plane and lowland species growing up to 800 masl; occasionally, however, found up to 1600 masl. Occurs in areas with 300-800 mm mean annual rainfall. In the savannah it occurs on a variety of soil types often rocky sites, lateritic crusts and sand. Although it is found on clay, it does not do well on stiff types like vertisols.

Uses

An important multipurpose tree species in an otherwise poor environment. The species mostly used as a fodder species especially for camels and goats, at the end of the dry season when the tree busts into leaf before most other trees and before new grass sprouts. The species is most important for nomadic pastoralists in the Sahel. Wood is termite resistant and has all-round use as utility construction timber and for household implements. Fruits, bark and roots have alleged medical properties and are used in local medicine. Fruits are used for treatment of typhoid fever and as a remedy for stomach problems while bark powder is mixed with porridge and taken as cure for malaria.

In sedentary agroforestry systems the species may be used as fodder species as well as for live fences and hedges.

Botanical description

Commiphora africana is a deciduous shrub or small tree, rarely exceeding 5-10 m. It is low branching with a short trunk and rounded crown. Branches grow upwards, then spreading horizontally. Branches possess long spines from modified branchlets. Bark grey-green, peeling off in papery roles or scales revealing green under-bark. Leaves trifoliate with 1½-2 cm long petiole. Leaflets crenate, hairy under the margin and below; base cuneate. Terminal leaflet up to 4 long and 2½ cm wide; the two side leaflets smaller.

Flowers in axillary clusters of 4-10. Individual flowers are small, about 5-6 mm long, red with 4 free petals forming a corolla tube.

Fruit and Seed description

Fruit: Fruit an ellipsoid drupe, reddish, 8-10 mm long, 6-8 mm across, with short peduncle. The fruits split open when dry and expose a hard, furrowed stone embedded in a red, resinous flesh.
Seed: The seed handling unit is the pyrene / stone with enclosed morphological seed. The stone is about 4-5 mm long with a rough surface. There are about 8000 seeds per kg.

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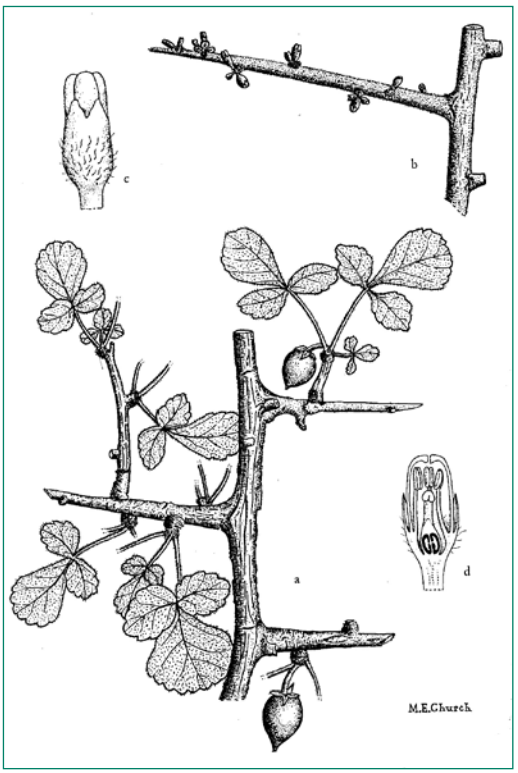
Flowering and fruiting habit

Flowering occurs at the beginning of the dry season usually before the leaf flush. Flowering and fruiting are irregular and do not occur every year. Pollination by insects. The seeds are dispersed by animals and birds.



Shots, leaves, flowers and fruits of *Commiphora africana*. Fram Dale and Greenway 1961.

Harvest

Fruits must be harvested from the tree when they start to split open. Fruit crop often sparse and currently removed by birds. Long handled tools are used to cut down fruits as tree spines makes climbing highly unpleasant.

Processing and handling

The stones are extracted by removing the exo- and mesocarp. The fruit is relatively dry and dry extraction is easiest, e.g. by rubbing seeds between rough surfaces.

Storage and viability

The seeds are orthodox, can presumably be stored for several years at room temperature. Cold storage prolongs longevity.

Dormancy and pretreatment

Imbibition is restricted because of the hard endocarp. Various methods to accelerate imbibition by surface treatment (e.g. acid) may work but is not reported in literature.

Sowing and germination

Germination is hypogeal.

Propagation

Means of propagation: Stakes, large cuttings or seeds. It is easy to propagate with cuttings

Selected readings

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

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

Hines, D. A. and K. Eckman 1993. Indigenous Multipurpose trees of Tanzania, uses and economic benefits for people. FAO Corporate document.

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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