

# SEED LEAFLET

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## *Trichilia emetica* Vahl

### Taxonomy and nomenclature

**Family:** Meliaceae

**Subspecies/varieties:** there are two recognised subspecies, subsp. *emetica* and subsp. *suberosa*.

**Synonyms:** *Trichilia roka* (Forssk.) Chiov., *T. umbrifera* Swynn., *T. somalensis* Chiov., *T. grotei* Harms, *T. jubensis* Chiov.

**Vernacular/common names:** um shara, um hagi, safsaafa (Arabic.); Cape mahogany, Natal mahogany (Eng.); muwamaji (Kenya); Jan saiwa (Nigeria); gormas (Somalia); mafura, mgolimazi (Tanzania); roo-essenhout, ashapa (South Africa); musikili (Zambia); mafura nut (trade name).

### Distribution and habitat

The species as a whole is widespread in most of sub-Saharan Africa. Subsp. *emetica* is found in Eastern Africa from Sudan in the north to Botswana and Swaziland in the south. Subsp. *suberosa* is confined to West Africa, extending, in the eastern part of its range, into Sudan and Uganda where the two subspecies may hybridise.

Both subspecies grow in riverine forests and on various types of woodland. Subsp. *emetica* is generally found in open riverine forests and open savannah woodlands subject to grass fires while subsp. *suberosa* prefers the more fertile soils of river banks and seasonally flooded riverbeds. It grows from sea level up to 1800 m in areas with 500-2300 mm rain per year.

### Uses

Trees are planted in agroforestry systems to provide shade and the wood is used for timber and firewood. The wood works well; it is light (560-597 kg/m<sup>3</sup>), usually pinkish in colour and with little difference between heartwood and sapwood. It is vulnerable to borers but produces beautiful furniture. Also used for carvings, musical instruments, dugout canoes and other minor uses.

From the seed aril is made a milky suspension used for cooking. Seed oil (mafurra or mafurreira tallow) is used for manufacturing soap and cosmetics and making candles. The oil is obtained by skimming the water in which the seeds have been boiled after being ground and pounded.

The pressed seedcake that is left after extracting the oil contains approximately 16% protein and is

suitable as a fertiliser. The seeds are unfortunately not suitable for human consumption. Bark, roots and seed oil are used for medicinal purposes.

The trees are often planted along roads as an ornamental and in cities to provide shade. Because of the spreading, evergreen crown it has become popular for planting in car-parking areas.

### Botanical description

Evergreen or semi-evergreen tree, 8-20 m tall. Subsp. *suberosa* is generally a smaller tree or even a shrub. Bark dark grey to brown, corky in subsp. *suberosa*. Leaves compound with 4 to 5 pairs of leaflets plus a terminal leaflet. Leaflets elliptic, 12-15 cm long with entire margins. Flowers creamy-green, in about 5 cm long, compact heads. The sexes are separate but male and female flowers are similar in appearance.



Cluster of fruits. Photo from: van Wyk (1994).

### Fruit and seed description

**Fruit:** a woody, dehiscent capsule, rounded, 2.5-3 cm in diameter; creamy, green or light brown and velvety on the surface. The fruits are borne in dense, pendent clusters. Each fruit has an up to 1 cm long neck connecting it to the stalk. At maturity it splits into 2 or 3 valves exposing the 2-6 seeds.

**Seed:** the seeds are 15-20 mm long, shiny black and almost completely covered by the bright red aril. There are typically 500-1000 seeds per kg.

## Flowering and fruiting habit

In South Africa the trees flower in August-October and fruits mature in December-March. In Tanzania flowering is in July-November and fruit setting is in February-April. Seed production varies from year to year, some years very little seed is produced.

Little is known about the biology of this species but it has been reported that hornbills eat the seeds and thus disperse them.

## Harvest

When the capsules begin to open it indicates the seeds are mature. It is recommended to collect ripe fruits from the tree just before opening. Seed collected from the ground often has a low quality.

## Processing and handling

The seeds are recalcitrant and should be treated accordingly during transport and processing. It is important that the seeds are not allowed to dry, as even a few percent reduction in moisture content will lower the viability. During all steps, the fruits/seeds should be protected from direct sunlight and wind. Pack fruits/seeds in small containers with only a few kg in each and avoid stacking containers on top of each other.

To extract the seed, it is recommended to spread the ripe fruits out on a mesh in the shade until all the fruits have opened and then separate the seeds from the debris by shaking. However, great care must be taken to avoid desiccation. After extraction, the seeds are immersed in water and empty seeds and debris that float on the surface are removed. The fleshy aril is then removed by maceration in water and the seeds are spread out in thin layers on a mesh until they are dry on the surface. 4 kg fruits contain about 1 kg seed.

## Storage and viability

The seeds do not tolerate drying and should be stored hydrated, i.e. at the moisture content they have after extraction. Recent trials showed that even a few percent reduction in moisture content will reduce germinability but also that when stored with fresh moisture content at 16°C the seeds can retain almost full viability for at least 4 months.

Even without aril the seeds are highly susceptible to fungal infections during storage.

## Dormancy and pretreatment

It is not clear whether the seed have dormancy but both germination percentage and speed increase drastically when the aril is removed. In a recent trial, germination of freshly harvested seeds increased from 20% to 93% by the removal of the aril and germination time decreased from 14 to 8 days.

## Sowing and germination

Germination is epigeal. In the nursery germination normally takes 10-20 days to complete. Seeds can be sown either in seedbeds or in containers. After 6-8 months the seedlings are ready to be planted out. Outplanted seedlings require some shade and they are sensitive to weed competition.

## Selected readings

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Tree habit. Photo: van Wyk (1994).

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