SEED LEAFLET

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Prunus africana (Hook f.) Kalkman

Taxonomy and nomenclature

Family: Rosaceae

Synonyms: *Pygeum africanum* Hook f.

Vernacular/common names: red stinkwood, bitter almond, iron wood, (Eng.); Kanda stick (Cameroon); ol-koijuk, mueri, mutimailu (Kenya); kotofihy (Madagascar); olkonjuku (Tanzania); gyabazito, gwabuzito (Uganda); rooistinkhout, bitteramandel, umDumizula (South Africa); muchambati, muchati (Zimbabwe); mueri (trade name).

Related species of interest: *Prunus crassifolia* (Harm.) Kalkm. is endemic to Kivu (Zaire) although more specimens are required to confirm the status of this species. *P. africana* and *P. crassifolia* are the only African species in the genus *Prunus*.

Distribution and habitat

Native to the tropical African mountain forests from Nigeria in the east across the mainland to Kenya and Tanzania, and south from Ethiopia to South Africa. It grows at altitudes between 900 and 3000 m in areas with mean annual rainfall of about 2000 mm. The species has a high light requirement and grows best in forest gaps. It tolerates light frost and waterlogging and is little drought-resistant.

Unsustainable exploitation and habitat loss have led to a decline in the species and it is listed as vulnerable on the 2002 IUCN Red List of Threatened Species. However, due to its very large geographical range it is in no way in danger of extinction.

The species is fairly easy to cultivate but it is being done only on a relatively small scale, compared with the level of demand. So far cultivation is restricted to Cameroon and Kenya.

Uses

Traditionally the species has been used in local medicine for a number of purposes and today the bark and its extracts are used by the international pharmaceutical industry for the treatment of prostate disorders. With an 'Over The Counter' value estimated at US $ 220 mill. per year, the trade is on a larger scale than that of any other wild-collected African tree. The bark is harvested from wild populations in the Afromontane forests of Madagascar, Cameroon, Kenya and Zaire.

The timber is hard and durable. It is used for the manufacture of various household products and produces high-quality firewood. The leaves can be used for mulch and green manure, the flowers make good bee forage and the attractive shape makes it an popular garden shade tree. In the Afromontane forests the fruits of *P. africana* are an important food source for a number of rare birds and mammals.

Botanical description

A medium to large tree, 10-24 m tall, about 1 m in diameter and with blakish-brown, rough bark. Leaves are alternate and simple, 5-15 cm long, shiny green and with finely toothed margins; the leaves have a faint smell of almonds when crushed. Flowers are bisexual, small, white and fragrant, solitary or in 3-7 cm long inflorescences.

Fruit and seed description

Fruit: the fruits are rounded, often bilobed drupe, about 1 cm in diameter. The fleshy layer surrounding the stone is thin and intensely bitter. At maturity the fruits are dark red or reddish-brown. There are one or two seeds per fruit.

Seed: the seeds are oval and delicate. There are 3500-6000 seeds (stones) per kg.

Details of foliage, flowers and fruits. Drawing from the Flora of Tropical East Africa.

Flowering and fruiting habit

In Kenya the trees flower between November and February and ripe fruits are available 4-6 months later. In South Africa flowering occurs October to May and fruiting September to January. The flowers are pollinated by insects and fruits are dispersed by birds and monkeys that eat the fruits.

Harvest

The fruits are mature when the colour of the skin has changed to deep red. Mature fruits can be collected from the tree or from the forest floor soon after shedding. Fruits that have been lying on the ground for more than a day should not be collected. Mature seeds have a moisture content of about 50%.

Processing and handling

After collection the fruits are depulped without delay. The fruits are soaked in water for a few hours and then the pulp can be removed by rubbing the fruits against a wire mesh under running water or mixing the fruits with sand and then rubbing them against a wire mesh.

In general the seeds must be handled very carefully all through the process of collection, processing and storing. Careless handling can affect seed quality seriously.

Storage and viability

The reports on storage physiology of *P. africana* are contradictory, the seeds have been termed orthodox by some and recalcitrant by others. However, a recent study has shown that the seeds are tolerant to desiccation and can be dried down to 5-10% moisture content without loss of viability and also that they can tolerate storage at -20° C.

Seeds that are fully mature when collected will retain high viability for at least three months even at room temperature. Immature seeds, even if they have been after-ripened, loose viability faster.

Dormancy and pretreatment

Freshly collected, mature seeds normally germinate well, 70-80%. However, there are some indications that the seeds need after-ripening. It is not necessary to remove the pericarp as it does not mechanically restrict germination.

Sowing and germination

The unit for sowing is the depulped fruit (the stone). Germination normally takes place within 30-50 days. In nature, a fruiting tree can produce thousands of seedlings (wildings) that can be collected and transplanted. However, it is often seen that the wildings do not transplant well. In Cameroon the species has been propagated from cuttings. Without the use of hormones, about 10% of the seedlings had rooted after three months.

Selected readings

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Tree left in a farm after clearing the bush. Photo by: Munjuga, Prunus Net, ICRAF

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