Markhamia lutea

(Benth.) K.Schum.

Bignoniaceae

markhamia

LOCAL NAMES
Amharic (botoro); English (markhamia); Luganda (nsambya,lusambya); Somali (sogdu); Swahili (mtalawanda,mgambo); Trade name (markhamia)

BOTANIC DESCRIPTION
Markhamia lutea is an upright evergreen tree 10-15 m high, with a narrow, irregular crown and long taproot. Bark light brown with fine vertical fissures.

Leaves compound, often in bunches, thin and wavy, each leaflet up to 10 cm, wider at the tip, often with round outgrowths at the base.

Flower buds yellow-green and furry, splitting down 1 side as flower emerges. Flowers bright yellow, in showy terminal clusters, each trumpet shaped, to 6 cm long, with 5 frilly lobes, the throat striped with orange-red.

Fruit very long, thin, brown capsules, to 75 cm in length, hanging in clusters and tending to spiral, splitting on the tree to release abundant seed with transparent wings, 2.5 cm long and yellow-whitish when mature.

The genus was named after Sir Clement Markham, who introduced the famous quinine-yielding cinchona into India. The specific name, 'lutea', is Latin for golden-yellow.

BIOLOGY
M. lutea trees flower for much of the year. In western Kenya, flowering occurs from August to September, followed by seeding in February to March, while east of Mt Kenya, the flowering period is December to January and the seeding period July to August. Fruits develop within 6 months of insect pollination.

Two-year-old trees in provenance trial in Malava, Kenya. (Anthony Simons)

Markhamia lutea line planting with beans at Kifu (Thomas Raussen)

Amenity use: M. lutea at the ICRAF Hq compound (Kenya). Note the very showy flowers. (AFT team)

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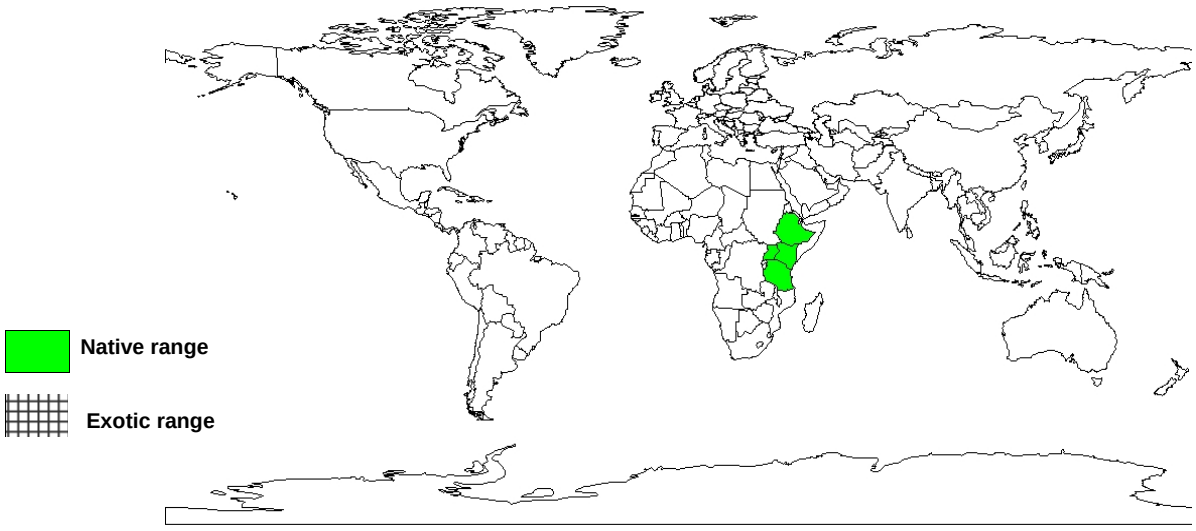
ECOLOGY
M. lutea is common in the lake basins and highland areas of eastern Africa. The tree is drought resistant but cannot withstand waterlogging.

BIOPHYSICAL LIMITS
Altitude: 900-2000 m, Mean annual temperature: 12-27 deg. C, Mean annual rainfall: 800-2000 mm

Soil type: Trees prefer red loam soil but can tolerate well-drained, heavy, acidic clay soils.

DOCUMENTED SPECIES DISTRIBUTION

Native: Ethiopia, Kenya, Tanzania, Uganda
Exotic:



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS
Apiculture: M. lutea provides good bee forage.

Fuel: Trees are a source of firewood and produce good charcoal. Fuelwood is used to cure tobacco in western Kenya.

Timber: The wood, which is fairly resistant to termites, is used for furniture, poles, posts, tool handles and boat building.

Medicine: Leaves are known to have medicinal value.

SERVICES
Erosion control: Recommended for use in soil-conservation.

Shade or shelter: The species provides useful shade and acts as a windbreak.

Soil improver: It provides mulch, which enhances soil-moisture retention and increases organic matter.

Ornamental: Attractive and worth planting as a screen or background tree for gardens and on golf courses.

Boundary/barrier/support: M. lutea poles can be used as props to support banana trees.

TREE MANAGEMENT
M. lutea grows fast in good forest soil, and plants can attain growth rates of more than 2 m/year. They should be planted in a deep hole, as the roots are long. Trees can be pruned and pollarded to reduce shading and are coppiced when they are about 1.7 m in height. Pods should be collected from the trees after they turn grey.

GERMPLASM MANAGEMENT
Seed storage behaviour is orthodox, but seeds are better sown fresh. After extraction, seeds can be dried in the sun to 5-10% mc. Mature and properly dried seeds can be stored in hermetic storage at 3 deg. C for several years with no loss in viability. On average, there are about 75 000 seeds/kg.

PESTS AND DISEASES
Young trees are often attacked by shootborers, resulting in crooked stems.

FURTHER READNG

Albrecht J. ed. 1993. Tree seed hand book of Kenya. GTZ Forestry Seed Center Muguga, Nairobi, Kenya.

Beentje HJ. 1994. Kenya trees, shrubs and lianas. National Museums of Kenya.

Bekele-Tesemma A, Birnie A, Tengnas B. 1993. Useful trees and shrubs for Ethiopia. Regional Soil Conservation Unit (RSCU), Swedish International Development Authority (SIDA).

Birnie A. 1997. What tree is that? A beginner's guide to 40 trees in Kenya. Jacaranda designs Ltd.

Hong TD, Linington S, Ellis RH. 1996. Seed storage behaviour: a compendium. Handbooks for Genebanks: No. 4. IPGRI.

ICRAF. 1992. A selection of useful trees and shrubs for Kenya: Notes on their identification, propagation and management for use by farming and pastoral communities. ICRAF.

Katende AB et al. 1995. Useful trees and shrubs for Uganda. Identification, Propagation and Management for Agricultural and Pastoral Communities. Regional Soil Conservation Unit (RSCU), Swedish International Development Authority (SIDA).

Mbuya LP et al. 1994. Useful trees and shrubs for Tanzania: Identification, Propagation and Management for Agricultural and Pastoral Communities. Regional Soil Conservation Unit (RSCU), Swedish International Development Authority (SIDA).

Noad T, Birnie A. 1989. Trees of Kenya. General Printers, Nairobi.

SUGGESTED CITATION

Orwa C, Mutua A , Kindt R , Jamnadass R, Simons A. 2009. Agroforestree Database:a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/af/treedb/)