

Milicia excelsa

(Welw.) C. Berg

Moraceae

mvuli, mvule, movule, iroko

LOCAL NAMES

English (rock-elm,iroko); French (Simmé,Toumbohiro noir); Hausa (loko); Igbo (oji); Luganda (movule); Swahili (minarui,murumba,mutumba,mvule,mvuli); Trade name (mvule,mvuli,iroko,movule); Yoruba (iroko)

BOTANIC DESCRIPTION

Milicia excelsa is a large deciduous tree 30-50 m high, with a diameter of 2-10 m; bark thick, pale, ash grey to nearly black, then brown, usually fairly rough and flaking off in small scales, but seldom fissured; slash thick, fibrous, cream coloured with brown spots, exuding white latex; trunk lofty, straight and cylindrical, up to 20 m or more to the 1st branches, usually with short, blunt buttresses; crown high, umbrella-like and growing from a few thick branches; branchlets thick, rather zigzag and angular, all more or less horizontal. Branches of female trees hang down but male individuals have upright branches.

Leaves in young trees sandpapery and green above, paler and pubescent below; older leaves often becoming a bright yellow, serrulate at the margin, simple, alternate, 9-20 x 5-10 cm, broadly elliptic or ovate, very shortly acuminate, usually unequally glabrous above and beneath except for minute hairs between the network of veins; about 15 pairs thick parallel, upcurving, pale-coloured lateral nerves, very prominent beneath and looped close to the margin; ultimate veins thick and forming a highly characteristic, more or less rectangular network on the under surface; base subcordate; apex shortly acuminate; edge finely toothed; stalk 2.5-6 cm, stout, glabrous.

Flowers dioecious, axillary, greenish, all floral parts in 4s; male flowers white, closely crowded on pendulous, slender catkins (spikes) 15-20 cm long, dangling from twigs of the outer crown. Female trees produce erect flower spikes about 5-6 cm long and 2 cm thick; female flowers greenish, in shorter and much fatter spikes, the styles of each flower projecting so that the inflorescence appears hairy.

Fruit arranged along a longitudinal axis with 1 seed on each side, 5-7.5 x 2-2.5 cm, green, wrinkled, fleshy and resembling a fat green caterpillar; no change in the colour of the syncarp when mature, but the flesh between the actual fruit softens. Seeds hard, small and lie in the pulp.

BIOLOGY

Male and female flowers are found on separate trees, and *M. excelsa* flowers at slightly different times of the year depending on the area. On the north Kenya coast, flowering can be observed in January or February; at the south coast, from January to March; in western Kenya from October to December as well as in January and February. Flowers appear a few weeks after the partial or complete shedding of leaves or with the new leaves. After pollination, the female flower ripens to a fruit within a month. Birds, bats and squirrels readily eat the fruit and probably disperse the seeds. Normally, seeds ripen before the syncarp.

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ECOLOGY

The species is a secondary tree of wet savannah, rainforest, riverine, groundwater and low-altitude evergreen forests. It is sometimes left in old cultivated areas. The tree can tolerate a dry season of up to 6 months and can grow in areas with mean annual rainfall as low as 700 mm provided it has access to extra water from a perennial stream or underground source. It does not tolerate waterlogging. In Kenya, *M. excelsa* occurs in the moist coastal forests at Buda, Mirima Hill, Shimba Hills, Witu and in the surrounding farmlands. Outside the coastal areas, the species is found near Taveta on the Kenya-Tanzanian border. Scattered trees grow on farmlands in Busia and Siaya Districts in western Kenya, concentrated around Malaba. Because of its high value as a timber tree, the species has been excessively exploited and is now endangered. It is a Guineo-Congolian-East African forest-belt-linking species with extension into riverine forest in the Sudano-Zambezian 'super region'. It is widespread in tropical Africa from Guinea-Bissau to Mozambique.

BIOPHYSICAL LIMITS

Altitude: 0-1600 m, Mean annual rainfall: 100-2200 mm

Soil type: *M. excelsa* thrives in well-drained, relatively fertile soils.

DOCUMENTED SPECIES DISTRIBUTION

Native: Angola, Benin, Burundi, Cameroon, Central African Republic, Congo, Cote d'Ivoire, Democratic Republic of Congo, Ethiopia, Gabon, Ghana, Guinea-Bissau, Kenya, Malawi, Mozambique, Nigeria, Sao Tome et Principe, Sudan, Tanzania, Togo, Uganda, Zimbabwe

Exotic: United States of America



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.

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PRODUCTS

Fuel: *M. excelsa* can be planted for the production of timber and charcoal.

Timber: Mvule is one of the most popular timber species in East Africa. The wood is an attractive brown colour, which darkens on exposure and with oiling; the hard, dark heartwood is durable on the ground, works easily, and is heavy, strong, open grained and resistant to termites. It resembles teak and is mainly used for outdoor construction work, furniture, boats, cabinet work, panelling, frames and floors.

SERVICES

Erosion control: Trees are employed in soil conservation.

Shade or shelter: *M. excelsa* is an excellent shade tree.

Soil improver: The leaves of the tree are used as a mulch.

Ornamental: *M. excelsa* makes a fine avenue tree for cities.

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TREE MANAGEMENT

Compared with other hardwoods, *M. excelsa* is a fast-growing species and coppices readily. Young trees should be protected from browsing. Trees are ready for harvesting at about 50 years of age.

GERMPLASM MANAGEMENT

After extraction, the seeds should be dried in the shade for a few days to 8% mc. Mature and properly dried seeds can be stored in an airtight container at 3 deg. C. for at least 1 year. There are about 475 000 seeds/kg.

PESTS AND DISEASES

Establishment of plantations is difficult because of frequent attacks by a gall fly in the early stages of the growth.

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FURTHER READING

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SUGGESTED CITATION

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