

## Calodendrum capense

Cape chestnut

(L. f.) Thunb.

Rutaceae

### LOCAL NAMES

Afrikaans (wildekastaing,kastainghout); English (wild chestnut,Cape chestnut); Trade name (Cape chestnut); Xhosa (umBaba); Zulu (umBhaba,umBaba)

### BOTANIC DESCRIPTION

In the forest, *Calodendrum capense* is tall, up to 20 m or more in height, but in open country and on the forest margin it is shorter and more spreading. Trunk is grey and smooth even in old trees and often buttressed and lichen covered in the forest. Branches are opposite, the young ones hairy and flexible, soon becoming smooth and more rigid.

Leaves simple, without stipules, opposite, untoothed, borne on short stalks, 5-13 (max. 22) x 3.5-7.5 cm; dark green, oval or oblong, aromatic, tips bluntly pointed or round, base tapering to slightly lobed, margin entire and rather wavy, midrib conspicuous on the undersurface. Parallel veins conspicuous, branching out almost at right angles from the midrib to the edge of the leaves; blades studded with oil glands appearing as tiny spots when the leaf is held to the light.

Flowers borne in rather open terminal sprays or panicles, bisexual; petals 5, long, narrow, hairy, 4 x 0.5 cm, curling downwards, with a faint sweet scent; alternating with 5 petallike stamens or staminodes, which are slender, graceful, longer than the petals, dotted with crimson or purple glandular dots, upright. Petals and staminodes together make a light, airy flower in shades of rich pink or mauve marked purple or wine red, very occasionally white; fertile stamens 5, with 5 white filaments, as long as the petals, bearing purple-brown anthers; ovary glandular, on a long gynophore.

Fruit knobbly, 5-valved, brown and woody capsule, 3.5-6 cm in diameter, containing several seeds. Seeds small, 1.5 cm long, angled, oily, jet black or black striped with white edge, smooth.

The generic name comes from the Greek words 'kalos', meaning 'beautiful' and 'dendron', meaning 'tree'; the specific name 'capense' means from the Cape.

### BIOLOGY

Trees start flowering when 6-8 years old. In southern Africa, the flowering season is usually early summer, but it is erratic, for trees may be seen in full bloom as early as July and as late as March. Fruiting occurs from January to May. Butterflies feed from the flowers and probably pollinate them. Samango, vervet monkeys and various bird species eat fruits and probably disperse the seeds.



Foliage and flowers (Ellis RP)



Flower colour varies from white to deep pink. Large (40-60mm in diameter) with 5 petals and 5 petal-like staminodes spotted with deep maroon gland dots. (Ellis RP)



*Calodendrum capense* specimen at the Nairobi arboretum. (AFT team)

## Calodendrum capense

(L. f.) Thunb.

Cape chestnut

Rutaceae

### ECOLOGY

*C. capense* can be found growing in wooded ravines, in evergreen fringe forest, at the coast, sometimes in scrub. It is not restricted to any specific habitat. Trees in forests tend to have straight stems, sometimes buttressed, but trees growing in hot, dry valleys are low and gnarled with dark grey bark and small leaves and flowers. Well-established trees growing in favourable tree or bush groups can survive up to 8 degrees of frost. They can also grow in areas with bitterly cold winters but will not flower regularly. The hardy and drought-resistant trees occur naturally from Kenya in the north to the western Cape in the south. In Uganda, the species occurs only rarely in scattered patches of woodland in Mbarara District.

### BIOPHYSICAL LIMITS

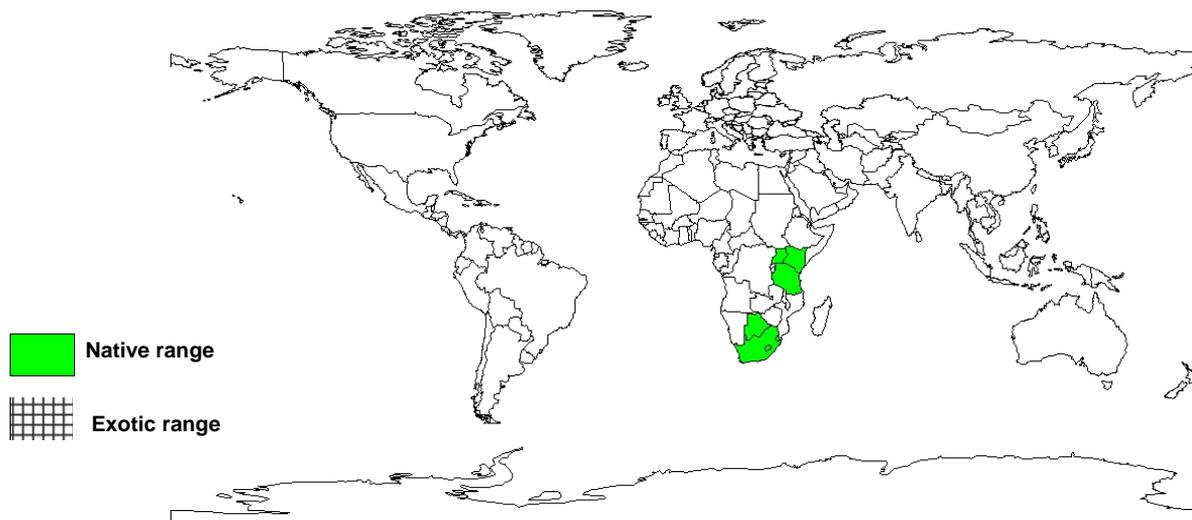
Altitude: Up to 2 200 m, Mean annual temperature: As low as -5 deg. C

Soil type: *C. capense* thrives in deep, fertile and moist forest soils, grows on black cotton soils and is able to tolerate drier sites.

### DOCUMENTED SPECIES DISTRIBUTION

Native: Botswana, Kenya, Lesotho, South Africa, Swaziland, 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.

## **Calodendrum capense**

(L. f.) Thunb.

Cape chestnut

Rutaceae

---

### **PRODUCTS**

Fuel: *C. capense* is suitable for firewood and charcoal.

Apiculture: Trees provide bee forage.

Timber: The timber is white or light yellow, sometimes with brown markings, and with little difference between sapwood and heartwood. It is fairly hard, moderately heavy (700-800 kg/cubic m), bends well and is easily worked. It is used for tent bows, wagon making, yokes, planking, shovel handles and furniture.

Essential oil: The kernel yields a lemon-yellow, rather bitter, fixed oil that can be used for making soap.

### **SERVICES**

Shade or shelter: Trees provide valuable shade and also act as windbreaks.

Ornamental: *C. capense* has a non-aggressive root system; at the coast, where it is evergreen, it is suitable for street and parking lot planting. It makes an attractive specimen tree, especially on a lawn, with its light grey bark, large leaves, masses of pink flowers and knobbly fruit.

Soil improver: Leaf-fall is very heavy so trees provide mulch.

Intercropping: *C. capense* is grown in banana plantations.

## **Calodendrum capense**

(L. f.) Thunb.

Cape chestnut

Rutaceae

---

### **TREE MANAGEMENT**

*C. capense* is slow growing in most conditions; it coppices while young, and pollarding is a suitable practice. In warm areas with high rainfall, the growth rate can be up to 850 mm/year. Trees can be planted either in the shade or in full sun. They respond well to regular watering, and cut flowers are long lasting in water.

### **GERMPLASM MANAGEMENT**

Seeds can be stored for up to a year if kept insect-free. There are about 600 seeds/kg.

### **PESTS AND DISEASES**

Seeds are susceptible to insect attack. The instar larvae of the citrus swallowtail (*Papilio demodocus*), green-banded swallowtail (*Papilio nireuslyaus*) and emperor swallowtail (*Papilio ophidicephalus*) butterflies feed on the leaves of trees. Thirteen other insect species have also been identified as feeders on *C. capense*.

## **Calodendrum capense**

(L. f.) Thunb.

Cape chestnut

Rutaceae

---

### **FURTHER READING**

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

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

Coates-Palgrave K. 1988. Trees of southern Africa. C.S. Struik Publishers Cape Town.

Dale IR, Greenway PJ. 1961. Kenya trees and shrubs. Buchanan's Kenya Estates Ltd.

Eggeling. 1940. Indigenous trees of Uganda. Govt. of Uganda.

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.

Palmer E, Pitman N. 1972. Trees of Southern Africa Vol. 2. A.A. Balkema Cape Town.

Venter F, Venter J-A. 1996. Making the most of Indigenous trees. Briza Publications.

Wayne T. 1984. A pocket directory of trees and seeds in Kenya. KENGO.

### **SUGGESTED CITATION**

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