

## Crossopteryx febrifuga

(G. Don.) Benth.

Rubiaceae

### LOCAL NAMES

English (ordeal tree); Swahili (mzwale)

### BOTANIC DESCRIPTION

*Crossopteryx febrifuga* is a deciduous savanna tree 1.8-15 m tall, with a rounded crown and pendulous branchlets. Bark pale grey to dark brown, scaly, finely reticulate; young stems glabrous to densely hairy pubescent. Young leaves tender green.

Leaf blades elliptic, elliptic-oblong, ovate, obovate or almost round, 1.5-13.5 cm long, 1.2-7.5 cm wide, rounded to shortly acuminate at the apex, broadly cuneate to rounded at the base, glabrous to densely pubescent or velvety; petioles 0.5-1.8 cm long; stipules 2-3 mm long, acuminate.

Inflorescences dense and strongly fragrant, 6-10 cm long; peduncles up to 6 cm long. Calyx tube 1 mm long; lobes elliptic to linear, 0.5-1.5 mm long, obtuse or acute. Corolla creamy white or pale yellow, densely pubescent outside; tube tinged pink, 5-11 mm long; lobes round 1.5 mm long and wide. Style exerted for 3-5 mm long, 2.5-3.5 mm wide.

Fruit globose, dark purple or black, 6-10 mm across.

*Crossopteryx* is a monospecific African genus with a wide distribution. The generic epithet is derived from Greek "krossoi" and "pteron" meaning fringed wing and is based on its seed shape. The specific epithet *febrifuga* relates to its medical use in fever treatment.

### BIOLOGY

*C. febrifuga* is hermaphroditic.



*Crossopteryx febrifuga* (Paul Latham)



*Crossopteryx febrifuga* flower and fruit (Paul Latham)

**ECOLOGY**

*C. febrifuga* is a component of deciduous woodland and wooded grassland. Also found in *Brachystegia* woodland, often on stony hillsides. Tolerates fires.

**BIOPHYSICAL LIMITS**

Altitude: 1-1450 m

Soils: Prefers rocky soils.

**DOCUMENTED SPECIES DISTRIBUTION**

Native: Angola, Burkina Faso, Cote d'Ivoire, Democratic Republic of Congo, Ethiopia, Kenya, Mozambique, Senegal, South Africa, Sudan, Tanzania, Uganda, Zimbabwe

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**

Fodder: Bushbuck browse the leaves and shoots.

Fuel: The wood is used for fuel.

Timber: The wood is hard, fine textured, with a pale pink tinge and used for building domestic implements e.g utensils, tool handles. Wood also used for sculptures.

Poison: Betulic acid, isolated from the stem bark; showed cytotoxicity against a human colon carcinoma cell line. The bark is used by South African witchdoctors for ordeal trials.

Medicine: The bark is used in African traditional medicine for the treatment of dysentery, diarrhoea and fevers.

Other products: Leaf extracts yielded the flavonoids quercetin-3-arabinoside, quercetin-3-galactoside, quercetin-3-glucoside, myricetin-3-galactoside, quercetin-3-rutinoside, vitexin, isovitexin, two compounds tentatively identified as the xylosides of vitexin and isovitexin, orientin and isoorientin. Two bisdesmosidic saponins were also isolated from the roots. A triterpene saponin, with a ursadienedioic acid aglycone part, was isolated from the root bark and its structure was determined.

**SERVICES**

Shade or shelter: *C. febrifuga* provides adequate shade.

Reclamation: *Crossopteryx* has a higher intrinsic resistance to fire (bark properties), a 20-mm diameter stem of *Crossopteryx* survives exposure to 650 deg C, and can withstand frequent fires.

Soil improver: The pH, available phosphorus, cation exchange capacity, total carbon content, and total nitrogen content were greater under *C. febrifuga* tree clumps. Potential soil respiration and mineral nitrogen accumulation was also greater beneath *C. febrifuga*. Soil water content was lower beneath canopies when soil moisture was greater than field capacity.

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**FURTHER READING**

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**SUGGESTED CITATION**

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