Euclea divinorum

Hiern

Ebenaceae

LOCAL NAMES
English (magic gwarra); Luganda (nsikizi); Swahili (mdaa); Tswana (motlhakola); Zulu (umhlangula)

BOTANIC DESCRIPTION
Euclea divinorum is a shrub or small tree up to about 6 m tall, often branching from the base or sometimes with a single stem. Bark grey, fairly smooth in young trees but fissured in older specimens. Crown much branched and grey-green in colour.

Leaves simple, coriaceus, lanceolate, margins wavy, sub-opposite or alternate, 3.5-9 cm long and 1-2.5 cm wide. Upper surfaces light green or grey green, sometimes with a yellowish tinge, lower surface pale and smoother in texture. Nerves visible as fine lines and midrib raised below.

Flowers small, cup-shaped and creamy in colour borne on a short dense head, flowers and inflorescence covered with tiny, rusty-brown dots. Male and female flowers on separate trees.

Fruit a round, thinly fleshed berry, usually 1-seeded, purple when ripe.

The botanical author of the species, William Phillip Hiern noted the popular use of the plant by diviners and thus coined the specific epithet divinorum for it.

BIOLOGY
E. divinorum is dioecious. The fruits are at times dispersed by Hornbills.

E. divinorum leaves (Bob Bailis)

E. divinorum bark (Bob Bailis)

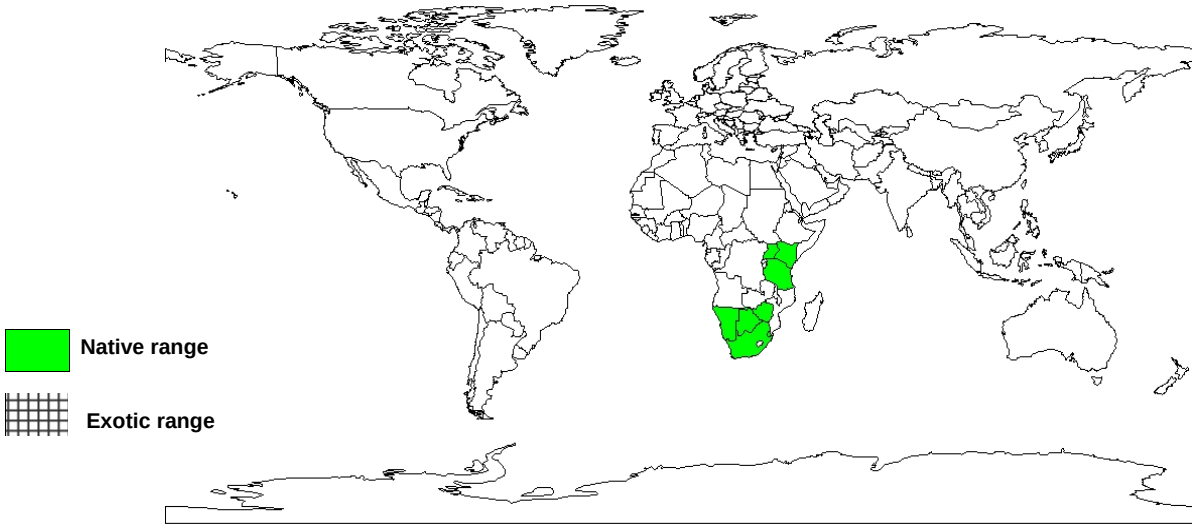
Young E. divinorum (Bob Bailis)

ECOLOGY
E. divinorum is a species common in bush, dry forest margins, thornscrub and open woodlands. It is usually associated with Acacia spp. and also grows on anthills and river banks in hot dry areas below 900 m. Inter-specific competition between E. divinorum and A. nilotica leads to conversion of open grasslands to densely vegetated woodlands. The successional dynamics of Acacia-Euclea savannahs appear to depend on the browsing of A. nilotica and other Acacia spp. by large mammals especially elephants.

BIOPHYSICAL LIMITS
Altitude: 1-2 400 m
Mean annual temperature: 17 deg C
Mean annual rainfall: 700 mm
Soil type: Prefers mesic calcareous valley clays and sometimes rocky ground.

DOCUMENTED SPECIES DISTRIBUTION

Native: Botswana, Kenya, Namibia, South Africa, Swaziland, 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
Food: The fruits are edible. In East Africa the bark is used in the preparation of fatty-meat and milk soups. The roots are chewed to impart a red colour to the mouth.

Fodder: The leaves are browsed by wild animals such as the rhino, giraffe and grey duiker.

Fuel: Branches used as firewood in some East African localities.

Tannin or dyestuff: The bark is rich in phenolics (123 mg/g) and tannins(94 mg/g). The bark extract is used in dyeing baskets woven from Hyphaene petersiana (mokola palm) leaves. Leather produced from E. divinorum has a deep red colour that provides an aesthetically pleasing alternative to black wattle and other available barks. The root is used in the production of black floor mats. In Ovamboland a purple ink is made by boiling the fruit.

Alcohol: The fruit is used in making beer.

Poison: Tannic and gallic acid extracts in this plant may contain sufficient amounts of inhibitory constituents to interfere with the virulence and growth of enamel cavity causing bacteria in vivo.

Medicine: E. divinorum branches are used as chewing sticks for oral care. The fruits are said to be strongly purgative. In Kenya the root decoction is used as a purgative and the bark infusion as an appetizer. Decoctions of the root are used by the Zulu for toothache.

Other products: The pentacyclic triterpenes and naphthoquinones, lupeol, lupene, betulin, 7-methyljuglone, isodiospyrin, shinalone, catechin and the novel 3 beta-(5-hydroxyferuloyl) lup-20(30)-ene were isolated from roots of E. divinorum collected in Zimbabwe.

SERVICES
Erosion control: The species is important in protecting soil.

Shade or shelter: The plant is a good shade tree.

Reclamation: Because of its tolerance of high arsenic soil levels E. divinorum can be used in reclamation of gold mine pit wastes.

Other services:
In South Africa the tree is used to repel witches and other evil, the branches are hung above entrances into huts and kraals.

TREE MANAGEMENT
The plant has remarkable coppicing and root suckering ability and if not checked, tends to weediness, dominating pasture to the detriment of wildlife and pastoralism. Use of arboricides is recommended in weedy situations.

FURTHER READNG

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SUGGESTED CITATION

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