Entandrophragma utile

(Dawe & Sprague) Sprague

Meliaceae

utile, mufumbi, acajou-sipo

LOCAL NAMES
English (sipo mahogany,mufumbi mahogany,mahogany,feather sepele,budongo heavy mahogany,Ashanti cedar,African cedar); French (sipo,assie,acajou); Luganda (muyovu,mukola); Trade name (utile,mufumbi,acajou-sipo)

BOTANIC DESCRIPTION
Entandrophragma utile is a large tree up to 60 m and more in height, with a DBH of more than 250 cm. Crown regular with few massive branches, leaves clustered at branchlet ends. Bole long, cylindrical, scarcely tapered; butresses rounded, extending up the bole for 2-5 m. Bark thick (up to 4 cm) grey-brown, regularly cracked and fissured into squarish, scale-like pieces which persist on the tree.

Leaves pinnate, up to 50 cm long, leaflets 16-32, opposite, subopposite or alternate, oblong-lanceolate, up to 14 x 5 cm; apex gradually acuminate, base unequally rounded and usually subcordate; lower surface almost glabrous; venation closely reticulate. Leaf petiole slightly winged, covered with short rusty hairs.

Inflorescence up to 20 cm long, calyx tomentollous, scarcely lobed. Petals 0.5 cm long, densely puberulous to tomentollous. Staminal tube 0.3 cm long, urceolate, margin subentire.

Capsule club-shaped, rounded at the apex, 14-21 x 4.5 cm; valves 0.8 cm thick, thickened and incurved at the apex, dehiscing from the apex and remaining firmly attached at the base.

Seeds 9.5 x 2 cm, dark brown, obliquely truncate at the base.

The leaves of this species are easily mistaken for those of Canarium schweinfurthii in herbaria. This tree has been extensively exploited in Nigeria, Cameroon and the Central African Republic. Its wild populations are greatly diminished.

BIOLOGY
E. utile is a hermaphroditic species, new leaves sprout at the beginning of the rainy season. Fruits are wind dispersed.

Entandrophragma utile:
31-year-old stand: Forestry Research Institute of Ghana trial plots at Benso in the wet evergreen forest ecological zone of Ghana. (Dominic Blay Jr.)

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ECOLOGY
E. utile is a climax community heliophyte- light demanding species. In Uganda it grows in mixed to climax rain forests. E. utile is primarily a lowland tree species occuring between 0-500 m in West Africa and below 1 400 m in Uganda. It normally occurs with other Entandrophragma spp.

BIOPHYSICAL LIMITS
Altitude: 0-1 400 m
Mean annual temperature: 24-26 deg C
Mean annual rainfall: 1 400-2 500 mm

DOCUMENTED SPECIES DISTRIBUTION

Native: Angola, Cameroon, Central African Republic, Congo, Cote d'Ivoire, Democratic Republic of Congo, Ghana, Liberia, Nigeria, Sierra Leone, Uganda

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.

PRODUCTS
Fodder: Leaves browsed by animals.

Fuel: E. utile is an excellent source of fuel wood and charcoal.

Timber: Produces an excellent timber, specific gravity about 0.54-0.75 g/cu cm, similar to that of mahogany (Khaya spp.), reddish in colour and fine grained, with multiple uses in high class joinery and furniture, canoes, railway coachwork, plywood manufacture and decorative veneer. The wood seasons well and is easy to work. Its natural durability is good, it glues well, has good strength attributes for fastening with nails and screws, and can be easily processed. Large quantities, of ready or part sawn timber are exported to Europe. Wood drying was significantly affected by temperature but little affected by pressure, high pressure causes excessive thickness shrinkage. Drying defects were considerably reduced by starting with a temperature of 120 deg C and increasing it by 10 deg C steps to a final value of 150 deg C at a constant pressure of 15 Kp/sq cm (Okoh 1984).

Medicine: The bark of this tree is used in Cameroon to treat malaria and bark extracts have displayed fungicidal activity against Pyricularia oryzae. This plant is traditionally used in Nigerian medicine, and is claimed to achieve complete healing of peptic ulcers in humans. Tests in mice and rats supported these claims at least in part.

Other products: A sterol, 7alpha,20(S)-dihydroxy-4,24(28)-ergostadien-3-one, has been isolated from the bark of E. utile. Other compounds isolated from the bark are the tetranortriterpenoids utilin B & C, and entilin D, a heptanortriterpenoid.

SERVICES
Erosion control: Important in protecting soil from erosive activities of water.

Shade or shelter: Mufumbi is an ideal shade tree.

Reclamation: E. utile is used in afforestation in Cote d'Ivoire.

TREE MANAGEMENT
E. utile is a light demanding species requiring 50-90% of full daylight, however young seedlings require shading until fully established. Once at the sapling stage they demand a great amount of light. The species grows slowly; diameter growth rates of 1.0-1.5 cm per annum can be expected. Seedlings should be protected from browsers.

GERMPLASM MANAGEMENT
Seed storage behaviour is orthodox, seeds tolerate dessication to 4% moisture content, 92% germinate following 240 days subsequent hermetic storage at 2 deg C. Soaking in water for 12 hours hastens germination. Seeds are hand picked and there are 1 880 seeds/kg. Seed damage by insects can be prevented by adding ash in storage containers.

PESTS AND DISEASES
Poria [Oligoporus] placenta and Nodulisporium sp. cause decay of E. utile wood. Fusarium, Gibberella fujikuroi and Nectria rigidiuscula infect E. utile seeds. The borer Xylosandrus compactus attacks young shoots. Trunk rot by Phellinus spp. and other fungi reduces value of mature timber. Their fatty seeds are avidly devoured by animals, a fact that interferes with natural regeneration.

FURTHER READNG

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SUGGESTED CITATION

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