

***Khaya anthotheca* (WELW.) C. DC. (MELIACEAE) - AN EXOTIC SPECIES IN BANGLADESH**

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*Khaya* A. Juss., a member of Meliaceae, is a small genus with six species, four in tropical Africa and two in Madagascar and the Comores (Wiselius, 1998). The genus is easily recognized by its paripinnate leaves and round or mainly spherical 4-5 valved, dehiscent woody capsules. Members of *Khaya* was introduced in many trial plantations of Peninsular Malaysia and Indonesia (Wiselius, 1998), but there is no record of its introduction in Bangladesh. *Khaya* species are tall with cylindrical boles and fast growing in nature. About two decades back one species of *Khaya* was introduced in Bangladesh by nursery men as a fast growing tree species and gave a fancy name, *lumbu* meaning tall tree (in Bangla 'lomba' means tall and the vernacular name was derived from the vernacular word *lomba*). It is being cultivated in homesteads almost throughout the country, but mostly in south-western parts of Bangladesh. Because of the lack of flowering and fruiting materials it could not be identified. Its flowering and fruiting specimens were collected from Jessore in 2009. The botanical samples are preserved in Bangladesh Forest Research Institute Herbarium (BFRIH), Chittagong. With above flowering materials the exotic *lumbu* tree has been identified as *Khaya anthotheca* (Welw.) C. DC. from the Herbarium, Royal Botanic Gardens, Kew.

Taxonomic enumeration of *Khaya anthotheca* based on Bangladesh materials is as follows.

***Khaya anthotheca*** (Welw.) C. DC. Monogr. Phan. 1: 721 (1878). Hutchinson & Dalziel, Fl. West Tr. Africa 1: 699 (1954).

Synonyms: *Garretia anthotheca* Welw., Apont. Phytogeogr.: 587 (1859). *Khaya nyasica* Staf. ex Bak. f. (1911).

*Vernacular names:* East African mahogany, Nyasaland mahogany, red mahogany, smooth-barked mahogany, white mahogany, Uganda mahogany (English); Acaujo (French); *lumbu* (Bangla).

A large tree, up to 60 m tall, with a straight rounded stem that reaches a considerable height before branching; buttress very small at base (markedly buttressed in matured old trees); bark fairly smooth (but flaking in large trees), greyish brown, inner bark dark brownish-pink with whitish streaks, exuding gum like sap, twigs glabrous. Leaves spirally arranged, but clustered near the ends of branches, new flushes towards the crown sometimes light reddish; with 4-16 pairs of leaflets; leaflets sub-opposite or nearly so, apical 4 pairs opposite, elliptical to ovate-elliptical or oblong-elliptic, 15-23 x 6.5-8.0 cm, entire, glossy green above, pale below, glabrous, base obtuse or rounded and slightly asymmetrical and oblique in many leaflets, apex abruptly tapering into a short point, lateral veins 6-20 pairs, distinct on the lower surface; stipules absent; petiole and rachis together up to 28-60 cm long; petiolules 0.6-1.5 cm long, petiolules of lower leaflets comparatively longer. Inflorescence a 25-45 cm long panicle. Flowers unisexual, male and female lowers very similar in appearance, regular, small, c. 10 mm in diameter, yellowish,

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4-merous, sweet scented, bracteolate, bracteoles 2. Sepals 4, 0.2-0.4 mm long, gamosepalous, imbricate. Petals 4, 3.5-4.0 mm long, gamopetalous, valvate. Stamens 8, fused into an urn-shaped tube 3-5 mm long, epipetalous, alternating with rounded lobes; disk cushion-shaped; filament short; anthers 2-celled, oblong, dehiscent transverse. Ovary superior, globose to conical, 1-2 mm in diameter, 4-5 celled; style up to 1 mm long; stigma disk-shaped; male flowers with rudimentary ovary, female flowers with smaller, non-dehiscing anthers. Fruit a woody capsule, oval-ovoid, 3-5 cm in diameter, dehiscent into 4 valves (4-5 valved). Seeds arranged in rows around the central column, light brown, surrounded by a narrow wing, 1-2 × 1.5-3.0 cm. *Flowering*: February - March. *Fruiting*: July - August.

*Specimens examined*: **Jessore**: Panishora, Godkhali, Jikorgacha 14.3.2006, M.K. Alam 0972 (BFRIH); Aranda, 14.7.2007, Ibrahim Khalil 10918 (BFRIH).

*Chromosome number*:  $2n = 50$  (Maroyi, 2008).

*Ecology*: In east and southern Africa, it is found in rainforest and riparian forest, up to 1,500 m altitude. In plantations it requires fertile deep soils and plenty of water. It is susceptible to fire (Maroyi, 2008).

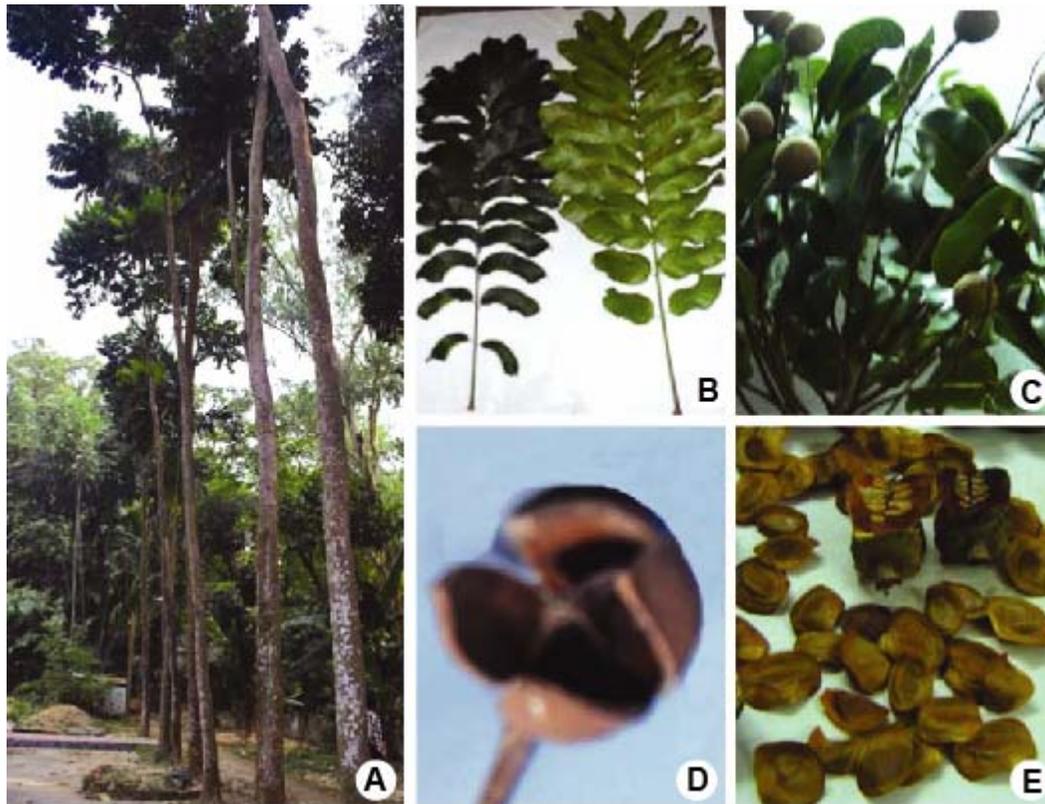


Fig. 1. *Khaya anthotheca* (Welw.) C. DC. A) Trees of c. 10 years old at BFRI campus; B) Leaves; C) A fruiting twig; D) A dehiscent fruit; E) Seeds.

*Origin and geographical distribution*: *Khaya anthotheca* is widespread, from Guinea Bissau east to Uganda and Tanzania, and south to Angola, Zambia, Zimbabwe and Mozambique. It is

fairly widely grown in plantations within its natural area of distribution, but also in South Africa, tropical Asia and tropical America (Maroyi, 2008). In Bangladesh it is planted in homesteads throughout plain districts with alluvial soils.

*Uses:* The wood is highly valued for furniture, cabinet work, decorative boxes and cases and veneer, and is also commonly used for window frames, paneling, doors and stair cases. It is suitable for light flooring, ship building, vehicle bodies, sporting goods, musical instruments, toys, novelties, carving, plywood and pulpwood (Maroyi, 2008). The bitter bark is widely used in traditional medicine in Africa. It is taken to treat cough, whereas bark decoctions or infusions are taken to treat fever, cold, pneumonia, abdominal pain, vomiting and gonorrhoea, and applied externally to wounds, sores and ulcers. Pulverized bark is taken as aphrodisiac and to treat male impotence. In Tanzania, root decoctions are drunk to treat anemia, dysentery and rectal prolapse. In this country, the bark has been used by the *Shambaa* people for reddish brown dyeing. In DR Congo, the leaves are said to be used for making arrow-poison. *K. anthothea* is fairly commonly planted as an ornamental shade tree and roadside tree. It is occasionally planted as a shade tree in agroforestry systems (Maroyi, 2008).

*Note:* Hossain and Uddin (2010) cited *lambu* as *Dysoxylum gobarum*/ *D. procerum*. In *Dysoxylum*, the cells of ovary are 1-2 ovuled, but in *Khaya* cells of ovary are many ovuled. So it seems that *lambu* identified by Hossain and Uddin (2010) as *Dysoxylum* was not correctly identified, because our specimens, popularly known as *lambu* contains many ovules in cells of the ovary. *K. anthothea* is very close to *K. grandifoliola* C. DC. The leaves of species examined from Bangladesh look like *K. grandifoliola*, but this species has larger fruits with thicker valves. The 4-valved fruits also indicate *K. senegalensis* (Desr.) A. Juss., but this species has smaller and fewer leaflets (Xander van der Burgt, personal communication).

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