

## Chukrasia tabularis

A. Juss.

Meliaceae

yonhim, yinma, Chittagong wood, chickrassy

### LOCAL NAMES

Bengali (pabba,boga poma,chikrassi); Burmese (yinma,tawyinma,kinthatputgyi); English (bastard cedar,white cedar,East Indian mahogany,Indian redwood,Burma almond wood,chickrassy,chittagong wood); Hindi (chikrassi,pabba,madagari,boga poma); Khmer (voryong); Lao (Sino-Tibetan) (nhom khao,nhom hin,nhom); Malay (cherana puteh,suntang puteh,surian batu,repoh); Tamil (agil,maleivembu); Thai (fakdap,siat-ka,siay-ka,yom-hin); Trade name (Chittagong wood,chickrassy,yonhim,yinma); Vietnamese (l[as]t hoa)

### BOTANIC DESCRIPTION

*Chukrasia tabularis* is an evergreen or deciduous, monoecious, medium-sized, sometimes fairly large tree up to 30 (max. 40) m tall; bole branchless for up to 18 (max. 32) m, with a diameter of up to 110 (max. 175) cm, without buttresses; bark surface rusty brown or deep brown, deeply fissured or cracked, with lenticels, inner bark reddish.

Leaves paripinnate, 30-50 cm long, with 4-6 pairs of opposite or alternate, entire, asymmetrical and acuminate leaflets (imparipinnate and lobed or incised when juvenile)with dentate margins, glabrous or with simple hairs.

Flowers unisexual, small, in axillary (sometimes appearing terminal) thyrses, tetramerous or pentamerous, up to 16 mm long; calyx lobed; petals free, contorted, reflexed in open flowers, white, in 10-30 cm long panicles.

Fruit an erect woody ovoid or ellipsoid capsule 2.5-5.0 cm long, opening by 3-5 valves from the apex; valves separating to a woody outer and inner layer, apex of those in the inner layer deeply bifid; locules appearing as 1 locule due to the breaking of the septae; columella with sharp ridges. Seeds 60-100 per locule, flat, with terminal wings arranged in layers on the central columella.

Seed about 1.2 cm long, flat and with a brown membranous wing twice the length of the remaining portion of the seed. Cotyledons thin, radicle facing the wing; endosperm absent.

### BIOLOGY

*C. tabularis* is monoecious, flowers are unisexual. Flowering normally begins when the tree is 8-9 years and in some places there is a masting period every 2-3 years. It flowers and fruits annually; in Southeast Asia, the tree is leafless from December to March. Flowering starts in April and continues until June/July and the fruits ripen in January-March. The winged fruits are disseminated by wind.

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### ECOLOGY

*C. tabularis* is usually found scattered in lowland evergreen forest or deciduous forest. It is a dominant tree, occurring in top canopy in natural forests. In peninsular Malaysia, it occasionally occurs as a colonizer of bare land, including road cuttings. In Sarawak, it is notably found on limestone. *C. tabularis* usually avoids heavy and wet soils. It is regarded as a pioneer species and common in former shifting cultivation areas. It thrives in areas with uni- as well as bimodal rainfall regimes.

### BIOPHYSICAL LIMITS

Altitude: 20-1 450 m, Mean annual temperature: 14-27 deg. C, Mean annual rainfall: 1800-3800 mm

Soil type: It is usually found on well-drained soil in the plains and on hills.

### DOCUMENTED SPECIES DISTRIBUTION

Native: Bangladesh, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Sri Lanka, Thailand, Vietnam

Exotic: Cameroon, Costa Rica, Nigeria, Puerto Rico, South Africa, US



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.

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### PRODUCTS

Fuel: The wood can also be used as a fuel.

Timber: Heartwood is pale reddish-brown, yellowish-red to red, darkening to dark yellowish-brown, reddish-brown to medium dark brown on exposure, sharply differentiated from the yellowish-white, pale yellowish-brown, pinkish-brown or greyish-brown sapwood; dark streaks may be rather prominent. The density is 625-800 kg/cubic m at 15% mc. The grain is interlocked and sometimes wavy, producing a rose figure; texture moderately fine but uneven. Freshly cut wood has a fragrant odour, but dried wood has no characteristic odour or taste. Planed surfaces have a high lustrous satiny sheen.

The timber is highly prized for high-grade cabinetwork, decorative panelling, interior joinery such as doors, windows and light flooring, and for carving, toys and turnery. It is also used for railway sleepers, ship and boat building, furniture, musical instruments (including pianos), packing cases, sporting goods, lorry bodies, mallet heads, anvil blocks, brush wares, drawing equipment, rifle butts, veneer and pulp. In India, the timber is also used for light to medium-heavy construction work, such as for posts, beams, scantlings and planks. The wood peels well and gives exceedingly fine veneer. It is suitable for commercial and moisture proof plywood.

Gum or resin: A yellow, transparent gum exudes from the trunk and is marketed in admixture with other gums.

Tannin or dyestuff: The flowers contain a red and a yellow dye. The young leaves and bark contain 22% and 15% of tannin respectively.

Medicine: An extract of the bark has powerful astringent properties and has been used as a febrifuge.

### SERVICES

Intercropping: The straight bole and self-pruning ability of *C. tabularis* make it a suitable tree for growing in combination with crops, such as banana, Citrus spp. and guava. Its coppicing and pollarding ability make it particularly suitable for home gardens.

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### **TREE MANAGEMENT**

In India, growth of seedlings proved moderately fast over the 1st 2 years. After 2 years, the plants had reached a height of 1.2-2.1 m; after 3 years, 2.8-3.4 m with a diameter of 4-5 cm; after 6 years, 5.5 m tall and a diameter of 15 cm, indicating a mean annual increment of 2.5 cm. Another source in India records a height of 13 m and a mean diameter of 5.2 cm for 5-year-old plants. A planting trial in western Java, using seeds from Sumatra, showed a mean height of 13 m and a mean diameter of 18 cm 10 years after planting. The tree coppices particularly well. First major thinning is required in the 4th year and thereafter every 5 years. The 1st thinning should be comparatively light as the species tends to branch and fork.

### **GERMPLASM MANAGEMENT**

Seed storage behaviour is orthodox; loss in viability after 1 year of hermetic air-dry storage at room temperature; little loss in viability (by 4%) following 6 months of hermetic storage at 10 deg. C with 6% mc. Fresh seed retain its viability for a relatively short period, about 3 months. There are about 50,000-100 000 seeds/kg.

### **PESTS AND DISEASES**

Like most species of the subfamily Swietenioideae, the shoot borer *Hypsipyla* attacks *C. tabularis*. It is also attacked by *Hypsipyla* spp. in plantations in Africa and Central and South America. It has been observed that the trees recover after the 7-8th year, with no more damage afterwards. Some larvae are known to bore into dead wood, while others bore into living stems or defoliate. White fibrous rot and brownish butt rot attack the trees. In unfenced plantations, deer browse the trees and cause severe debarking problems.

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### **FURTHER READNG**

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