Hopea odorata

Roxb.

Dipterocarpaceae

white thingan, thingan, merawan

Hopea odorata (Chongrak Wachrinrat)

LOCAL NAMES
Burmese (thingan net,sauchi); English (white thingan); Lao (Sino-Tibetan) (kh'e:n); Malay (merawan siput jantan,chengal pasir,chengal mas); Thai (takhian-yai,takhian-thong); Trade name (white thingan,thingan,merawan); Vietnamese (sao den,koki mosau)

BOTANIC DESCRIPTION
Hopea odorata is a medium-sized to large evergreen tree with a large crown growing to 45 m tall, bole straight, cylindrical, branchless to 25 m, with diameter of up to 4.5 m or more and prominent buttresses, bark surface scaly, grey to dark brown, longitudinally furrowed, yellow or reddish inside.

Leaves ovate-lanceolate, 7-14 by 3-7 cm, falcate, base broadly cuneate, venation scalariform, midrib applanate to slightly channeled above, glabrous on both surfaces, petiole 2 cm long, slender.

Flowers small, sweet scented, yellowish-white, very shortly pedicelled, in one-sided racemes, stamens 15, anthers narrowly ellipsoid, ovary ovoid, punctate or glabrous.

Fruit small, ovoid, wings oblanceolate, rounded, 3-4 cm long, finely veined lengthwise.

The specific epithet means odour and refers to the sweet smell of the flowers.

BIOLOGY
Hopea flowers and fruits almost regularly every two years. It is pollinated by thrips (Thysanoptera). The period between anthesis and maturity of the fruit is about three months. The small white and fragrant flowers appear between February and April and the fruits ripen at the beginning of the rainy season in May and June. The fruits are dispersed by wind and seeds germinate readily on falling to the ground.

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ECOLOGY
H. odorata is a riparian species usually occurring on deep rich soils, most commonly along the banks of streams and in damp situations up to 600-m altitude. It is chiefly found in the Andamans, in moist tropical evergreen forests and occurs sporadically in pure groups, but is not gregarious over large areas. In Myanmar, it occurs in moist tropical forests.

BIOPHYSICAL LIMITS
Altitude: 0-600 m
Mean annual temperature: 25-27 deg. C
Mean annual rainfall: 1 500-3 000 mm
Soil type: It is found typically on deep rich soil, usually along the banks of streams and in damp situations.

DOCUMENTED SPECIES DISTRIBUTION

Native: Bangladesh, Cambodia, China, India, Laos, Malaysia, Myanmar, Thailand, Vietnam
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.

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PRODUCTS
Timber: The sapwood is pale yellow or greyish yellow turning pale brown on exposure, heartwood yellowish-brown to brownish red sometimes with dark streaks, turning purplish on exposure, with lustrous white resin canals at irregular intervals, becoming dull with age. The wood is very hard and heavy weighing 755-kg/cu m, difficult to saw but finishes well. It is chiefly used for boat-building, dug-out canoes and for construction purposes, where durability and strength are of primary importance. It is also used for carts, presses flooring, roofing, piles, fence-posts, ploughs, furniture, etc. It is a first class sleeper wood.

Gum or resin: The tree yields a resin known as rock dammar in commerce, which the Burmese use to caulk boats, in painting pictures and in preparation of varnishes. A composition prepared by mixing the resin with bees-wax and red ochre is used for fastening spear and arrowheads.

Tannin or dyestuff: The leaves, bark and wood contain 11, 13-15, and 10% tannin respectively, and are used for tanning.

Medicine: The dammar is applied on sores and wounds. In Indo-China, the bark is used as a masticatory.

Other products: The bark yields a supple pale leather. Leaves have a softening effect and are used for finishing mangrove-tanned leathers.

SERVICES
Shade or shelter: The tree is sometimes used to provide shade.

Reclamation: The species is used for reforestation in Southeast Asia.

TREE MANAGEMENT
Germination rate has been found to be 73% in unshaded beds, 83% in shaded beds and 40% in direct field sowings. Generally, a shade crop is grown to protect the young seedlings from the first hot weather and to keep weeds down. The young plants need full overhead light and the shade crop should be cut back periodically to ensure it does not overtop the tree. Weeding, occasional watering and loosening of the soil around the plants is recommended in the nursery. Dibbling is done at an espacement of 7.5 by 7.5 cm. About 70g of seed is enough for a sq. m of nursery bed.

GERMPLASM MANAGEMENT
There are about 3 000-4 600 seeds/kg. Seeds are recalcitrant and die within five days due to dehydration. If dried at 35 deg. C to 33 % moisture content, seeds could stay viable for 1-2 months at 15 deg. C, maintaining a germination rate of over 60 %. If stored at 4 deg. C, the seeds can stay viable for about three months.

PESTS AND DISEASES
Attacks by defoliators have frequently been noticed in plantations towards the close of the rains and continue until the end of the hot weather when new and healthy leaves appear. Stem borers attack saplings in the natural forest. The weevil Nanophyes shorea attacks seeds. Several beetles and larvae of insects of the orders Coleoptera and Isoptera bore in the dead wood and fallen wood.

FURTHER READNG

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SUGGESTED CITATION

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