

sesendok

LOCAL NAMES

Filipino (gubas); Hindi (bakotta); Malay (terbulan, sesenduk, sesendok, membulan, kayu labuh, garung); Tamil (terbulan, ekor belangkas); Thai (taphong, lokhao, famo); Trade name (sesendok)

BOTANIC DESCRIPTION

Endospermum malaccense is a medium to large dioecious tree to 40 m high and a diameter of 3 m with diffused dome-shaped crowns. The bole is stout and columnar with thick equal to steep fluted buttresses. The bark of this species is grey-fawn, smooth, hooped and becoming regiose to scaly patches. Inner bark is thick and coarsely granular, cream with orange flecks.

Leaves cordate, 7-25 cm x 4-22 cm, clustered at the end of twigs; leaf blades rounded to strongly heart-shaped at the base while leaf stalks are 13 cm long with two prominently raised glands at the junction of the leaf-blade.

Flowers an erect spikes, 15 cm long and protruding above the leaves; male flower yellow, short side axes, 9-11 stamens and fragrant; the female flower white with a 2-3 celled ovary and a 1.5 mm wide stigma.

Fruits rounded or occasionally bilobed, 13 cm wide, with finely velvety blue-green walls containing white coloured sap.

BIOLOGY

E. malaccense bears fruits at a very early age, normally between 2-3 years of age. It flowers twice a year from February to March and from August to September. Small insects, such as bees and flies, pollinate the species.

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ECOLOGY

It occurs in the lowland to lower montane forest, especially in secondary growth, along streams and on hills and slopes together with *Balakata baccata* (Roxb.) Esser. It is an opportunist species. Its occurrence characterizes former shifting cultivation activities in the Malaysia.

BIOPHYSICAL LIMITS

Altitude: 10-1000 m

Mean annual temperature: 24-30°C

Mean annual rainfall: 150-3000 mm

Soil type: The species grows on a wide range of soil from shallow lateritic to deep sedentary soil. It favours deep well-drained soil but is found occasionally in waterlogged areas.

DOCUMENTED SPECIES DISTRIBUTION

Native: Brunei, Indonesia, Malaysia, Singapore, Thailand

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: *E. malaccense* is a light hardwood timber with an average density of about 400 kg per cubic m at 15% moisture content. The wood is bright yellow and is difficult to differentiate between the sapwood and the heartwood. It is suitable for a wide range of general utility purposes such as for making matchboxes, match splints, drawing boards, black boards and toys. It is a favourite timber for making clogs, pattern making, trays, furniture parts, plywood chests, low grade coffins, disposable chop-sticks and other small articles.

Medicine: The bark is used to treat dropsy and the roots help to heal injuries.

SERVICES

Shade or shelter: Sesendok is as a shade tree.

Reclamation: Sesendok is used in reforestation or may be used in enrichment planting.

Intercropping: The species is used in agroforestry, such as interplanting with rubber in an alley cropping system. After 25 years, both the rubber and *E. diadenum* are harvested together. *E. diadenum* may also be interplanted with short term crops, only for the first three years before the canopy closes above.

TREE MANAGEMENT

Site preparation: The area should be clear-felled and burnt, which is usually carried out during the dry period. Once the area is prepared, transplanting can be conducted during the rainy season at the end of the year.

Planting: Being a light demanding species, *E. malaccense* can be planted in open. The method of establishing is through clear-felling and burning area. This operation is usually carried out during the dry period. Once the area is prepared, transplanting can be done to take the advantage of rainy season at the end of the year.

Husbandry: *E. malaccense* is a pioneer species with a fast growth, which makes it possible to compete with other species. To ensure better competition, closed planting such as 3 x 3 m is suitable eliminating weed problem but also enhancing self-pruning. It regenerates rapidly, is able to self prune and is suitable for coppicing. A mean annual increment of 2.5 cm y⁻¹ in dbh can be attained at age of 13. First thinning of the crop can be carried out about 5 years after planting and the second thinning at 13 to 15 years. The estimated rotation age of is between 18 to 25 years.

GERMPLASM MANAGEMENT

The fruit is collected approximately 2-3 months after flowering, once the fruit has turned slightly yellow. In a heavy fruiting season, a 13-year-old tree can produce 2-3 kg of fruits, or 9000-15,000 fresh seeds. Once clean and dry, the seeds may be cold-stored for up to six months. Seed storage behaviour is intermediate. There are about 40,000 seeds per kilogram.

PESTS AND DISEASES

Pest: *Micronia astheniata* larvae attack and damage mature leaves usually during the dry spell before the flushing of new leaves. Repeated attacks of young plantation can reduce the diameter increment of the trees by more than 50%. The fruit borer, *Dichoerocis punctiferalis*, intense predates fruits reducing the viability of seeds in this species.

FURTHER READNG

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SUGGESTED CITATION

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