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Vitex cofassus

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Vitex cofassus Reinw. ex Blume

Taxonomy and nomenclature

Family: Verbenaceae

Vernacular names: New Guinea teak (Eng.); gofasa, gupasa, sassuwar (Indonesia); vitex, garamut, bitum (Papua New Guinea); fata, hasara, hata, vasa (Solomon Is.); vitex, leban (trade name).

Distribution and habitat

The species is native to Sulawesi in Indonesia, the Moluccas, New Guinea, the Bismarck Archipelago and the Solomon Islands.

It is common, locally co-dominant in lowland forest and can be found up to 2000 m altitude in areas with 1500-3500 mm rain per year and distinct wet and dry seasons. Grows well on dry limestone soils with clay to sandy soil textures. It is a very light-demanding species. Widely planted in South Sulawesi.

Uses

The highly valued timber is used for house construction, boats and domestics utensils such as bowls and platters. It is exported in fairly large amounts from Papua New Guinea and the Solomon Islands, mainly to Japan.

Botanical description

A medium to large tree, up to 40 m tall usually without buttresses. Bole up to 130 cm in diameter, deeply and strongly fluted with excellent, pale and dense timber. Leaves opposite with or without fine hairs on the lower side. Inflorescence is terminal, with bisexual flowers, sepals united to form a small cup, petals united basally to form a small tube with 5 lobes, irregular. Corolla whitish to pale purple, four stamens inserted on the corolla tube, ovary superior.

The wood is very strong and durable with density of 700-800 kg/m^3 and contains no silica. Freshly cut wood has a leathery scent. It is difficult to treat with preservatives.

Fruit and seed description

Fruit: the fruit is a fleshy drupe, round to oblong, 5-12 mm in diameter and dark violet when mature. There are 1-4 seeds per fruit.

Seed: the pale brown or black stone (seed + endocarp) is egg shaped and with a mosaic texture. There are about 10,500 seeds/kg.

Flowering and fruiting habit

The tree is deciduous, shedding its leaves in the dry season. Flowering and fruiting differs according to geographic distribution. In South Sulawesi, flowering usually occurs in the rainy season and the fruits mature between August and November. In general this species flowers almost every year and may already start to flower and fruit at the age of 5 years. The flowers are pollinated by insects, possibly bees.

Harvest

Ripe fruits can be collected from the trees by climbing the tree. In young trees a pole pruner or a long stick can be used to collect the fruits. Collection from the ground is also possible, but fruits attacked by fungi or insects should be avoided.

Processing and handling

After collection the fruits are soaked in water and the pulp is removed manually by squeezing the fruits. The seeds (stones) are then washed in water to remove the rest of the fruit pulp. After washing, the seeds are spread out in a thin layer on trays and dried in the sun for 2-3 days before storage.

1. Tree habit; 2. Flowering twig; 3. Flower, front and side view; 4. Fruits. Copyright: PROSEA Foundation.

Storage and viability

The seeds are believed to be orthodox and should accordingly be stored at low moisture content in airtight containers. In Indonesia it is customary to store seed in open containers at room temperature. Under these conditiones, viability of the seed is generally reduced by 50 % within one year. Fresh, untreated seed typically germinates about 30%.

Dormancy and pretreatment

Pretreatment by soaking the seed in hot water (70 ºC) for 10 minutes and allowing the seeds to cool for 24 hours can enhance the germination rate up to 70%.

Seed of *Vitex cofassus*. Photo: Rina Kurniaty.

Sowing and germination

Seeds are sown in a seedbed with a germination medium of soil and sand mixture (1:2 composition). The seeds are sown one cm apart in rows of 15 cm distance, and covered with one cm of fine soil. Germination is epigeal (cotyledons emerge above ground). Seed start to germinate 10-40 days after sowing. After 1½ months in the seedbed, seedlings are transferred to 12 x 18 cm polybags. Seedlings are planted in the field at the start of the rainy season, when they are 3-4 months old.

Selected readings

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