

Cananga odorata

sananga oil, perfume tree, kenanga wood

(Lam.) Hook.f & Thoms

Annonaceae

LOCAL NAMES

Burmese (sagasein,kadatngan,kadatnyan); English (perfume tree,ylang-ylang); Filipino (ilang-ilang,alang-ilang); Hindi (chettu sampangi,karumugai); Khmer (sreng,chkhe); Malay (kenanga utan); Thai (kradanga-ton,kradangnga-thai); Trade name (perfume tree,sananga oil,kenanga wood); Vietnamese (ng[o]jc t[aa]y,ho[af]ng lan)

BOTANIC DESCRIPTION

Cananga odorata is a small to large forest tree to 40 m tall and about 45 cm in diameter with a straight stem, an irregularly-shaped crown and a sometimes drooping, brittle branch formation. When grown for perfume extraction, it is normally not more than 3 m tall. The trunk is generally cylindrical in shape up to the first branch and without buttresses. The bark is smooth, pale grey to silvery.

Leaves simple, alternate, 13-29 cm by 4-10 cm, arranged in two ranks, simple and without stipules, puberulent below, medium green; the stalk is slender, 1-2 cm long, narrowly grooved above and smooth; the leaf blade is ovate-oblong and the base is often of unequal sides, sometimes rounded or heart-shaped, the margins are more or less wavy, the midrib and lateral veins are whitish hairy on both sides.

Inflorescence a raceme, 1-4 cm long, with 2-6 flowers on short, leafless, axillary shoots. Flowers bisexual, axillary, 5-7.5 cm long, dull green and turning yellowish with age; pedicel 2-5 cm long; stamens numerous, 2-3 mm long; ovaries several to many, free, style oblong and slender.

Fruit pendulous, consisting of many (7-16) separate, globose-obovoid monocarps, about 25 mm by 15 mm on stalk 10-20 mm long; monocarp dark green becoming blackish when ripe, 2-12-seeded with seeds embedded in yellowish oily pulp arranged in 2 rows.

Seeds flattened, ellipsoid, 9mm by 6 mm by 2.5 mm, pale brown, surface pitted, hard, with a rudimentary aril.

BIOLOGY

Both cultivated and wild trees flower throughout the year with marked seasonal peaks after periods of dry weather. In Peninsular Malaysia there is regular flowering for several weeks between February and May and often a second flowering between August and October. In Java, there are 3-4 peaks in flowering; flowering is most abundant at the end of the rainy season, while flowers are richer in oil during the dry season. In Florida, this tree blooms twice a year in June/July/August and near December but usually bloom almost continuously all year long.

Squirrels, bats, monkeys and birds eat the oily fruits, by which means the seed is dispersed.



habit at Keanae Arboretum Maui, Hawaii
(Forest & Kim Starr)



Fruit at Keanae Arboretum Maui, Hawaii
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ECOLOGY

Cananga odorata grows well in more humid lowland tropics or moist valleys, sometimes with other evergreen and teak trees. It prefers well light places, fertile sandy loam and volcanic soils. In Java it grows gregariously in moist evergreen forest and in teak forest.

BIOPHYSICAL LIMITS

Altitude: 0-1800 m

Mean annual temperature: 20-27°C

Mean annual rainfall: 650-4000 mm

Soil type: It grows well in well-drained light soils with pH 4.5-8, preferring fertile sandy loam and rich volcanic soils

DOCUMENTED SPECIES DISTRIBUTION

Native: Cambodia, Indonesia, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Solomon Islands, Thailand, Vietnam

Exotic: Cameroon, China, Comoros, Cote d'Ivoire, India, Jamaica, Madagascar, Reunion, Seychelles, Sri Lanka



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

Food: The oil is sometimes used in food and beverages.

Fuel: The wood is occasionally used for fuelwood

Fibre: In Indonesia, they make ropes out of beaten bark.

Timber: The timber is used for local construction, building canoes and matches.

Essential oil: *Cananga odorata* flowers (also leaves and fruits) yield an important essential oil (contain 1-2% volatile oil) widely used in perfume manufacture. Subsequent extracts are used in soap, cosmetics and other hygienic by-products.

Medicine: The essential oil from the flowers contains caryophyllene, used to treat hepatitis and has a wide range of medicinal applications. The seeds may be used to treat fever. In Indonesia, the flowers are used against malaria and leaves are rubbed on skin to treat itchiness. Dried flowers and bark are also used medicinally. The oil has a euphoric and sedative effect on the nervous system; it can help with anxiety, tension, shock, fear and panic. Its aphrodisiac qualities may be of use in impotence and frigidity. The oil could have a soothing effect on the skin and its stimulating effect on the scalp could promote more luxurious hair growth

Other products: The scented flowers are soaked in coconut oil to make a pleasantly perfumed body lotion that is sometimes thought to ward off malevolent spirits to cure spirit-caused illnesses

SERVICES

Shade or shelter: Ylang-ylang is mainly planted as a roadside shade tree.

Ornamental: It is widely planted in home gardens and roadsides as an ornamental.

Intercropping: It is usually cultivated in backyards and gardens together with other crops.

Other services: In Indonesia, Ylang ylang flower petals are strewn upon the bed on wedding nights. During town festivities, it is popularly given as leis to guests and offered in religious ceremonies

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TREE MANAGEMENT

Direct sowing is common. Seeds are placed 5 cm deep in well-cultivated and fertilized planting pits of at least 50 cm depth. Plant spacing is at least 6 m by 6 m. Young plantations are often intercropped with food crops. Ring weeding and slashing of the inter-rows are important for optimal growth. For ylang-ylang production, trees are usually topped at about 3 m after 2-3 years. Topping promotes the growth of low, drooping branches, which are also tied down to pegs to keep the flowers within easy reach. A well managed plantation may remain productive for 50 years

GERMPLASM MANAGEMENT

Seed storage behaviour is orthodox

PESTS AND DISEASES

Stem borers, flower-eating beetles and insects that cause the leaves to wilt have been reported.

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FURTHER READING

Chalchat JC, Garry RP, Menut C, Lamaty G, Malhuret R, Chopineau J. 1997. Correlation between chemical composition and antimicrobial activity. VI. Activity of some African essential oils. *Journal of Essential Oil Research*. 9(1): 67-75.

Denq YJ, Hsu ST, Tzeng KC. 1996. Reaction of some annonaceous plants to the bacterial wilt pathogen, *Pseudomonas solanacearum*. *Plant Pathology Bulletin*. 5(3): 129-136

Ginoga B, Hadjib N and Karnasudirdja S. 1982. Sifat Fisis dan Mekanis Beberapa Jenis Kayu Indonesia Bagian 10. Laporan BPHH No. 162. Bogor p:7-21

Lawrence BM. 1995. Progress in essential oils. *Perfumer and Flavorist*. 20(2): 49-59.

Maturbongs L, Schneider MH. 1996. Treatability and CCA preservative distribution within ten Indonesian hardwoods. *Wood and Fiber Science*. 28(2): 259-267.

Nadel H, Pena J. 1991. Hosts of *Bephratelloides cubensis* (Hymenoptera: Eurytomidae) in Florida. *Florida Entomologist*. 74(3): 476-479.

Negi SS, 1992. *Minor Forest Products*. Delhi, India; PEBA (Periodical Experts Book Agency).

Stashenko EE, Quiroz Prada N, Martínez JR, 1996. HRGC/FID/NPD and HRGC/MSD study of Colombian ylang-ylang (*Cananga odorata*) oils obtained by different extraction techniques. *HRC, Journal of High Resolution Chromatography*. 19(6): 353-358.

Tian-Jye Hsieh, Fang-Rong Chang & Yang-Chang Wu. 1999. The constituents of odorata *Cananga*. *J. Chin. Chem. Soc.*, Vol. 46, No. 4.

Welsh, S. L. 1998. *Flora Societensis: A summary revision of the flowering plants of the Society Islands*. E.P.S. Inc., Orem, Utah. p. 31.

Whistler WA. 1988. A revision of *Syzygium* (Myrtaceae) in Samoa (Pacific Ocean). *Journal Of The Arnold Arboretum Harvard University*. 69(2): 167-192.

Yao CE, 1993. Species trial of some indigenous species in Siquijor. *Canopy-International*. 1993, publ. 1995, 19: 6, 7-10.

SUGGESTED CITATION

Orwa C, Mutua A, Kindt R, Jamnadass R, Simons A. 2009. *Agroforestry Database: a tree reference and selection guide version 4.0* (<http://www.worldagroforestry.org/af/treedb/>)