

KARNATAKA

State Tree: Agarugandha, Bavanna, Bhandrasri, Gandha, Srigandha (Kannada).

Botanical Name: *Santalum album* L.

Common Names: Indian Sandalwood, Sandalwood, White Sandalwood (English); Safed-chandan (Hindi); Ananditam, Chandana, Taliaparnam (Sanskrit); Sandanam (Tamil).

Family: Santalaceae.

Etymology: The generic name, '**Santalum**' is derived from the Greek 'santon' and from the Arabic 'sandal', and the specific epithet '**alba**' is from Latin meaning 'White'.

Description: A medium-sized, evergreen tree, up to 18 m tall; a semi root-parasitic at its



earlier growth stage. Leaves elliptic to elliptic-lanceolate, cuneate at base, entire at margins, acute at apex, 2 – 4 × 1 – 1.5 cm, glabrous. Flowers borne in terminal or axillary cymes, ca 5 mm across. Perianth-tube campanulate; tepals 4, reflexed, hairy inside, maroon-red. Fruits subglobose, ca 5 mm across, purplish to black when dry with hard, ribbed endocarp; seeds globose or obovoid.

Flowering: March – September; **Fruiting:** June – February.

Range of Distribution: Sandal wood tree is probably native to peninsular India. It is distributed in India, parts of Malesia, Australia, New Zealand and Polynesia, extending to the Hawaiian Archipelago and Juan Fernonduos Islands (Chile). In India it is found in the

peninsular region. The tree occurs mainly in the open scrub forests. The principal natural tracts of sandal trees are confined to parts of Mysore in Karnataka and Tamil Nadu.

Economic Importance: Sandal wood is the second most expensive wood in the world. The aromatic heartwood is one of the finest natural materials for carving. Sandal wood oil is used in perfumes, cosmetics, aromatherapy and pharmaceuticals. The wood is converted into chips and steam-distilled to produce oil containing santanol, a polyphenol that gives aroma. The sapwood which is also called “white wood” is used for producing ‘agarbattis’ (incense sticks). Seasoned sapwood may be carved into curios, toys, carom coins and lacquer ware. The perfumery preparations called attars are also prepared by hydro-distillation of the volatile essence into sandal oil. The oil is used as a flavouring substance in food products, such as frozen dairy desserts, candy, pan masala, baked food, gelatin, puddings and also in alcoholic and non-alcoholic beverages. The oil is approved for use by the U.S. Food and Drug Administration, Flavour and Extract Manufacturers Association, Council of Europe and Joint FAO/WHO Expert Committee on Food Additives.

Traditional Uses: Sandal wood is one of the oldest known perfumery materials and it has over 2,000 years back history. It is a valuable tree associated with Indian culture. There are references to sandalwood usage in the Indian mythology, folklore and scripture. Sandalwood is considered sacred and is used in religious ceremonies and is an important ingredient in ‘homa’ (consecrated fire). Among the Buddhists, sandalwood is burnt during prayers and meditation. Many Ayurvedic, as well as other natural products use sandalwood as a key beauty ingredient.

Medicinal Uses: Sandal wood and the oil have long been employed in medicine. The sandal wood paste is used in treating inflammation, boils, pimples, sun-burnt skin or a patchy tan and also applied on forehead in fever. Sandal wood decoction is given to cure defects of genitourinary tract. In migraine, sandal paste or oil (in dilute form) may be applied in nostrils for relief and cure. The oil is used in Ayurveda, Chinese and Tibetan medicinal systems, for its therapeutic effects. It is used in the treatment of common colds, bronchitis, fever, dysentery, piles, scabies and infection of the urinary tract, inflammation of the mouth and

pharynx, liver and gall-bladder complaints and as an expectorant, stimulant, carminative, digestive and as a muscle relaxant. Sandalwood oil also has anti-carcinogenic activity.

Conservation: This tree is threatened due to over-exploitation and degradation of habitat. On account of its intrinsic worth, money value and importance in the forest economy, sandal is governed and protected by special laws and regulations. **Santalum album** has been categorised as 'Vulnerable' by the IUCN.

Note: The plant reproduces plentifully from seeds and the favoured method of sandal regeneration is by the dibbling of seeds. Transplanting and vegetative propagation by cuttings have been tried but have proved more expensive with no corresponding advantages.

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