## Vitex negundo

L.

Verbenaceae

LOCAL NAMES
English (five-leaved chaste tree); Hindi (sambhalu,nisinda)

BOTANIC DESCRIPTION
Vitex negundo is a much branched shrub with quadrangular tomentose, densely whitish tomentose branchlets, up to 5 m tall or sometimes a small, slender tree. Bark thin, grey.

Leaves palmately compound, 3-5 foliolate; leaflets lanceolate, entire or rarely crenate, terminal leaflets 5-10 cm x 1-3 cm, lateral leaflets smaller, all nearly glabrous above, whitish tomentose beneath.

Flowers bluish-purple, small, in peduncled cymes, forming large, terminal, often compound, pyramidal panicles.

Fruit a succulent drupe, black when ripe, 5-6 mm in diameter.

Seed 5-6 mm in diameter invested at the base with enlarged calyx.

BIOLOGY
The shrub seeds throughout the year.

Flowers (Carl Dennis, Auburn University, www.forestryimages.org)

Flowers and foliage (Carl Dennis, Auburn University, www.forestryimages.org)

ECOLOGY
Found throughout the greater part of India, often occurring gregariously; it is abundant along river banks, in moist situations, open wastelands and near deciduous forests. Ascending to an altitude of 1 500 m in the outer Himalayas.

BIOPHYSICAL LIMITS
Altitude: 0-2 000 m
Mean annual rainfall: 600-2 000 mm
Soil type: The shrub tolerates alkaline and saline soils.

## DOCUMENTED SPECIES DISTRIBUTION

Native: India, Philippines
Exotic: United Kingdom


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.

PRODUCTS
Food: Seeds are reported to be eaten after boiling, for instance in the Philippines.

Fuel: Stems are used as firewood.

Fibre: Branches and twigs are used in basket making.

Essential oil: Leaves yield an essential oil.

Poison: Leaves have insecticidal properties and are laid over stored grain to ward off insects.

Medicine: All parts of the plant are commonly used in Indian medicine. Leaves possess discutient properties and are applied to rheumatic swellings of the joints and in sprains. They are aromatic and are smoked for relief of headache and catarrh and a decoction is employed in smoke baths for the treatment of febrile, catarrhal and rheumatic affections. The juice of the leaves is used for the treatment of foetid discharges. They show anti-inflammatory, antibacterial and anti-fungal activity. Roots are used in local medicine for dysentery and are anthelmintic, flowers are astringent and fruits are considered vermifuge.

Other products: Active ingredients that have been isolated from the leaves include Casticin, isoorientin, chrysophenol D, luteolin, p –hydroxybenzoic acid, D-fructose and the alkaloids nishindine and hydrocotylene. Leaf extract has shown anticancer activity against Ehrlich ascites tumour cells.

SERVICES
Erosion control: V. negundo roots are strong and deep and suckers profusely. It can be used as a contour hedge in sandy arid areas for soil retention and moisture conservation.

Shade or shelter: It has been found suitable for shelterbelts and windbreaks.

Reclamation: The shrub can be used for afforestation, especially for reclamation of forestlands which are affected by floods, and in arid areas.

Ornamental: Some forms are ornamental.

Boundary or barrier or support: It is used as a live fence.

TREE MANAGEMENT
Sambhalu grows moderately to fairly fast and can be managed by coppicing with a rotation of 2 years. It yields about 0.3 tons/ha of air-dry fuelwood when planted on contours 5 m apart.

GERMPLASM MANAGEMENT
Seeds are recalcitrant and lose viability in about 3 weeks.

PESTS AND DISEASES
The fungus Cercospora agarwalli has been recorded on the leaves and larvae of a number of insect pests defoliate, mine (Labdia callistrepta and Stagmatophora acanthodes) and fold (Pycnarmon caberalis) leaves. The locust Schistocerca gregaria also defoliates, the parasite Cuscuta reflexa attacks the plant.

## FURTHER READNG

Banerjee AK. 1989. Shrubs in tropical forest ecosystems: examples from India. World Bank technical paper No. 103. The World Bank, Washington, D.C.

CSIR. 1976. The Wealth of India: Raw materials. Vol X Sp-W. CSIR.

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## SUGGESTED CITATION

Orwa C, A Mutua, Kindt R , Jamnadass R, S Anthony. 2009 Agroforestree Database:a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp)