

LOCAL NAMES

Bengali (tejpat,tamala); English (Indian cassia lignea); Gujarati (tejpat,tamalapatra); Tamil (talishapattiri)

BOTANIC DESCRIPTION

Cinnamomum tamala is a moderate sized evergreen tree attaining a height of 8 m, and a girth of 150 cm. Its bark produces mucilage.

Leaves lanceolate, glabrous; alternately placed, opposite and short stalked. 3-nerved from the base.

The genus Cinnamomum has about 250 tropical tree and shrub species. The etymology is derived from the Greek word 'kinnamomon' (meaning spice). The Greeks borrowed the word from the Phoenicians, indicating that they traded with the East from early times. The specific epithet 'tamala' is after a local name of the plant in India.

BIOLOGY

Talishapattiri flowers from May and fruits between June and July.

ECOLOGY

C. tamala is found in tropical and sub-tropical Himalayas, Khasi and Jaintia hills and in eastern Bengal, India.

BIOPHYSICAL LIMITS

Altitude: 300-2 400 m

DOCUMENTED SPECIES DISTRIBUTION

Native: India

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.

PRODUCTS

Food: The leaves are used extensively in northern India as a spice - Tejpat. In Kashmir they are used as a substitute for paan (betel leaves).

Essential oil: Leaves yield an essential oil with a specific gravity of 1.025, it is soluble in 1.2 volume of 70% alcohol. The oil resembles cinnamon leaf oil and contains phellandrene and 78% eugenol. The essential oil from the bark is pale yellow, and contains 70-85% cinnamic aldehyde. The oil is used in perfuming soap and in medicine. However, trade in cassia oil has declined appreciably with the advent of synthetic cinnamic aldehyde.

Poison: Four essential oils of *C. tamala* screened for fungicidal activity against *F. moniliforme* [*Gibberella fujikuroi*], a postharvest fungal pathogen of cereal crops were effective in inhibiting fungal growth. Activity of the four oils increased with concentration. *C. tamala* essential oil exhibited fungitoxicity against *A. flavus* and *A. parasiticus* at 3000 ppm and 1000 ppm, respectively. The fungitoxic property of the oil was not affected by temperature, autoclaving or storage.

Medicine: Leaves of *C. tamala* are used in colic and diarrhoeal preparations. *C. tamala* leaf extracts produce a hypoglycaemic effect in experimental rats. Hydrodistilled essential oils of *C. tamala* screened for their anti-fungal activity against *Trichophyton mentagrophytes* and *Microsporum microsporum audouinii* causing ring worm diseases in animals and humans exhibited fungicidal or fungistatic toxicity and were more effective than the synthetic antifungal agents, clotrimazole, griseofulvin or nystatin. Plant parts are used in many ayurvedic preparations e.g. sudarshan, choorna and chanderprabhavati.

Other products: The leaf extracts are used as clarifiers in dyeing procedures with myrobalans or kamala.

SERVICES

Erosion control: Protects surrounding soil from erosion.

Shade or shelter: With an evergreen canopy tejpat is an important shade provider in its native range.

TREE MANAGEMENT

Transplanted in the field 2 m apart with a recommended spacing of 3-4 m. Sufficient shade is provided in the early stages of growth, and shade trees are cleared after 8-9 years. The fields are not usually manured or otherwise cared for but undergrowth is occasionally removed. The ease with which essential oils can be obtained from this plant's material makes it ideal for cash crop farming. Leaves are ready for harvesting when trees are 10 years. Tree longevity is up to 100 years, and they continue bearing in old age. Leaves are collected every year from vigorous plants and in alternate years from old and weak ones. Collections are made in dry weather from October-March. Continuous rain diminishes the aroma of the leaves. Small branches with leaves are dried in the sun for 3 or 4 days and tied up into bundles for marketing. The average annual yield per tree is 40-100 kg/tree.

GERMPLASM MANAGEMENT

Seedlings appear 30-45 days after sowing and should be transplanted 4-5 years later.

PESTS AND DISEASES

Glomerella cingulata causes leaf blight and *Colletotrichum gloeosporioides* a fungus, causes leaf-spot diseases on *C. tamala*.

FURTHER READING

Gutteridge RC and Shelton HM (eds.). 1994. Forage Tree Legumes in Tropical Agriculture. CAB International, Wallingford, UK.

Khan AR and Hossain M. 1985. Leaf blight of bay-leaf plants, caused by *Glomerella cingulata*, in Bangladesh. *Bangladesh Journal of Botany*. 14(2): 181-182.

Paran Baruah et al. 1994. Fungicidal activity of some naturally occurring essential oils against *Fusarium moniliforme*. *Journal of Essential Oil Research*. 8(4): 411-412.

Roy AK, Jamaluddin and Prasad MM. 1976. Some new leaf spot diseases. *Current Science*. 45(16): 604.

Sharma SR, Dwivedi SK and Swarup D. 1996. Hypoglycaemic effect of some indigenous medicinal plants in normoglycaemic rats. *Indian Journal of Animal Sciences*. 66(10): 1017-1020.

Yadav P and Dubey NK. 1994. Screening of some essential oils against ringworm fungi. *Indian Journal of Pharmaceutical Sciences*. 56(6): 227-230.

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/>)