

Toona sureni

(Blume) Merr.

toon, surian, red cedar, limpaga

Meliaceae

LOCAL NAMES

Burmese (ye tama); English (suren toona, red cedar); Filipino (danupra); Indonesian (suren); Malay (surian wangi); Thai (surian); Trade name (toon, surian, red cedar, limpaga)

BOTANIC DESCRIPTION

Toona sureni is a medium-sized to fairly large tree, up to 40 (60) m tall and diameter up to 100 cm (300 cm in mountainous areas) with dark brown young branches. The bole is branchless for up to 25 m and buttressed up to 2 m. Bark is usually fissured and flaky, whitish, greyish-brown or pale brown, scented when cut.

Leaves large, 10-15 cm long, 2.5-7 cm wide, arranged spirally, often clustered at the end of the twigs. There are 8-30 pairs of leaflets. Leaflets entire, nearly opposite, elliptic, apex mucronate, base unequal, margin entire or crenulate, glabrous, usually hairy on veins on upper side.

Inflorescence racemose, at the end of branches, forked and hanging. Flowers small, bisexual but functionally unisexual, yellowish white with strong smell. Corolla margins with fine hairs. Stamens 5, free, nearly as long as petal, sometimes with staminodes. Disk (receptacle) stout, rounded lobed and stigma cup shaped. Ovary tomentose, 5-locular, each locule with 8-10 ovules.

Fruit an oval capsule, in terminal panicles, each containing more than 100 fruits. Each fruit dark brown, elliptic, 3-3.5 cm long and 1 cm diameter, fruit coat with many white spots, has a central axis (columella), divided in 5 sections (from top to bottom, opening as a star), each section containing 6-9 seeds.

Seed flat, brilliantly brown, 3-6 mm long and 2-4 mm wide, irregular, winged at one or both ends.

BIOLOGY

The tree is deciduous, the leaves being shed during the dry season (February-March or September-October) in its native range. Flowering and fruiting normally occur twice annually (December-February and April-September) synchronized with the shedding of leaves. In Indonesia, fruits are harvested in either March or October. The fruits are shed after the leaves. A wide range of insects pollinate the flowers. Fruits are normally produced in large quantities.

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ECOLOGY

It is common in primary forests, often found on riparian hillsides and slopes but also in secondary semi-evergreen forests

BIOPHYSICAL LIMITS

Altitude: 1 200-2 700 m

Mean annual temperature: 20-30°C

Mean annual rainfall: 1 120-4 000 mm

Soil type: It requires fertile loamy soil.

DOCUMENTED SPECIES DISTRIBUTION

Native: Bhutan, China, India, Indonesia, Malaysia, Myanmar, Nepal, Papua New Guinea, Thailand

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.

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PRODUCTS

Timber: The sapwood is pink and heartwood light red or brown. It has a density of 270-670 kg/m³ at 15% moisture content. It is used for high-class cabinet wood, furniture, interior finishing, decorative paneling, crafts, musical instruments, cigar boxes and veneers.

Essential oil: The bark and fruits produce essential oils.

Medicine: The bark and roots are astringent and tonic, used against diarrhoea while the leaf extracts have antibiotic effects.

SERVICES

Shade or shelter: *T. sureni* is often planted in tea estates as a windbreak.

Ornamental: It is used for shade and as roadside tree.

Intercropping: It is intercropped with other species hence an agroforestry species.

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TREE MANAGEMENT

T. sureni is a fast-growing and light-demanding species. In sheltered valleys with well drained areas and free from weed competition, natural regeneration is adequate. In a plantation in Vietnam, this species has high productivity with a height increment of 0.9 m/yr and a diameter increment of 1.4 cm/yr. Usually the spacing of 1.5 m by 1.5 m is used in plantations.

GERMPLASM MANAGEMENT

Seeds are collected when the fruits turn brown, but before they open by shaking or cutting the branches. Late seed collection results in heavy seed losses due to the opened fruits. Fruits are dried in the sun for 1-2 days until they open. After de-winging the seeds are separated by winnowing.

Seed storage behaviour is orthodox. There are about 64000/kg.

PESTS AND DISEASES

The most significant pest of *T. sureni* is a Lepidopteran stem borer or tip moth (*Hypsipyla robusta*), which attacks the new shoots, flowers, fruits and seeds. The larvae tunnel out leading shoots causing multiple leaders to develop with subsequent loss of tree form.

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FURTHER READNG

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SUGGESTED CITATION

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