

## Albizia chinensis

siris

(Osbeck) Merrill

Fabaceae - Mimosoideae

### LOCAL NAMES

Bengali (tarli,chakua,amlukia); English (silk tree,Chinese albizia,sauce tree,the sau tree); Gujarati (kali siris); Hindi (seran,kala siris,samsundra,kanjujerla); Javanese (sengon); Lao (Sino-Tibetan) (kha:ng); Nepali (kalo siris,rato siris); Tamil (katturanii,silai-vagai,chilavagai,nirusil); Thai (kang luang,san-kham); Trade name (siris); Vietnamese (s[ooos]ng r[aws]n t[af]u)

### BOTANIC DESCRIPTION

*Albizia chinensis* is an unarmed, deciduous or evergreen tree with a flat, spreading crown, up to 30(-43) m tall and trunk up to 70(-140) cm in diameter; bark dark gray, rather smooth, densely hooped, lenticellate, thin; live bark 5 mm thick, pinkish-red. Branchlets slightly angular in the distal parts, terete, puberulous to tomentose, glabrescent.

Leaves bipinnate; stipules auriculate, very prominent, 1-1.5 cm x 0.6-3 cm, caducous, pinkish-orange, pubescent, with filiform tail, base much dilated at one side; rachis stout, 10-25 cm long, lenticellate, sparsely and minutely tomentellous, glabrescent, with an elliptical, raised gland near the base of 2-3 mm x 1-1.5 mm; pinnae 4-14(-20) pairs, 4-14 cm long, puberulous to tomentose, glabrescent, with glands at the junctions of the 1 or 2 distal pairs of leaflets, narrowly elliptical to slit-like, concave, 1 mm long, glands sometimes absent; leaflets (10-)20-30(-45) pairs per pinna, opposite, sessile, thinly chartaceous, asymmetrically subulate, 6-10 mm x 1.5-3 mm, apex sharply acute, base obtuse, oblique, midrib close to the upper margin, sparsely sericeous or glabrous on either side.

Inflorescence consisting of penduculate glomerules (heads) aggregated into terminal, yellow-green, tomentose to hirsute panicle; peduncle 1-3 cm long, up to 5 in clusters, often with auriculate stipules at base; glomerule composed of 10-20 flowers; flowers pentamerous, dimorphic; in a glomerule the central flower is male, the marginal flowers are bisexual; calyx tubular to narrowly funnel-shaped, 2.5-5 mm long, tomentose to hirsute, ending in small triangular teeth; corolla funnel-shaped, 6-10 mm long, puberulous to hirsute especially on the lobes, lobes triangular-ovate, acute; stamens numerous, 2 cm long, at the base united into a tube as long as or slightly longer than the corolla tube; ovary glabrous, sessile.

Pod thin, flat, strap-shaped, 6-20 cm x 2-3 cm, often with slightly sinuate margins, indehiscent or breaking irregularly, reddish or yellowish-brown, glossy, 8-12 seeded.

Seed flattened ellipsoid, 7(-10) mm x 4-6 mm x 0.5-1 mm, dull dark brown, areole nearly circular, 1 mm in diameter.

The genus was named after Filippo del Albizzi, a Florentine nobleman who in 1749 introduced *A. julibrissin* into cultivation.

### BIOLOGY

The tree is evergreen or leafless for a short period, flowering between September and June, Fruits ripen between October and August in Southeast Asia. In northern India, leaves fall in January-February, new ones appear in March-April, flowering takes place soon after the appearance of new leaves and pods attain full size in September and ripen during December-March. Pods remain on the tree for a long time and eventually dehisce, but are sometimes blown by the wind before they dehisce.



Cattle grazing *Albizia chinensis* in southeast Queensland (Gutteridge R.C.)



Flowers (Gutteridge R.C.)

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### ECOLOGY

*A. chinensis* occurs naturally in India, Myanmar, Thailand, Indo-China, China, Java and the Lesser Sunda Islands (Bali and Nusa Tenggara). It is a native of mixed deciduous forest in humid tropical and subtropical monsoon climates with annual rainfall varying from 1 000-5 000 mm. It occurs in secondary forest, along river banks, and in savannas up to 1 800 m altitude. Light frost is tolerated.

### BIOPHYSICAL LIMITS

Altitude: 0-1 800 m

Mean annual rainfall: 1 000-5 000 mm

Temperature: -1 to 43.3

Soil type: It is adapted to poor soils, high pH, is fairly salt-tolerant and thrives on lateritic alluvial soil and sandy mining areas.

### DOCUMENTED SPECIES DISTRIBUTION

Native: Cambodia, China, India, Indonesia, Laos, Myanmar, Thailand, Vietnam

Exotic: Australia



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**

**Fodder:** The tree has shown potential as a fodder. Leaves are readily eaten by goats but the bark of branchlets is hardly consumed, possibly because of its high tannin content. Foliage contains 21-28 % crude protein. In tests carried out in Queensland, it yielded over 400 g leaf DM/tree over 5 growing seasons and productivity increased with successive years.

**Fuel:** The tree produces low quality firewood.

**Timber:** The wood is lightweight, soft and not very durable. Sapwood is white, heartwood light to dark brown. Its use is limited to house building, light furniture, tea chests and veneers. In India, it is used for boat building. The wood is resistant to termite and other insects attack.

**Gum or resin:** A gum of low quality is extracted from the bark, which has been mixed with other gums and used as an extender.

**Poison:** The bark contains triterpenes which have spermicidal activity. An extract of the wood has repellent property to subterranean termites.

**SERVICES**

**Erosion control:** *A. chinensis* is planted for slope stabilization.

**Shade or shelter:** In tea and coffee plantations, it is used as a shade tree, often in a mixture with other trees.

**Reclamation:** As a fast growing tree legume, *A. chinensis* remains important in the reforestation of degraded land.

**Nitrogen fixing:** The tree is nitrogen fixing.

**Soil improver:** *A. chinensis* is planted for soil improvement.

**Ornamental:** The tree is grown as an ornamental in parks, gardens and along roads.

**Intercropping:** In China, shade tolerant herbs are sometimes planted under the tree. In Bangladesh, the Garo agroforestry system incorporates tree crops (primarily *A. chinensis*) for shade, weed growth suppression, and ecological sustainability, while incorporating agricultural crops and pineapple for economic return.

**TREE MANAGEMENT**

In tea plantations in India, the tree is planted at a spacing of about 7-15 m; for fodder production, the trees are grown at a spacing of 3 m x 1 m. At planting a small amount of a mixture of 60 % lime, 30 % superphosphate and 10 % urea is mixed with the soil in each planting hole, to promote early growth. Weeds have to be controlled regularly after transplanting until the plants reach a height of 1 m. Trees grown for shade are left to grow to 7 m tall and then cut back to 4 m. The trees can be harvested for fodder twice a year during the growing season by cutting the stem back to 1 m. It tolerates frequent pruning.

**GERMPLASM MANAGEMENT**

There are 50 000 seeds/kg. Seed storage behaviour is probably orthodox; viability is maintained for 12 months in open storage at room temperature.

**PESTS AND DISEASES**

No serious diseases have been reported, though the risk of canker reduces the tree life in north eastern India to about 20 years. Attack by thrips sometimes prevents flower opening and young pods can be damaged by beetles and larvae of various bruchids. *Ravenelia sessilis* is a destructive rust on *A. chinensis* in nurseries.

**FURTHER READING**

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**SUGGESTED CITATION**

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