

LOCAL NAMES

English (tarwar, Matara tea, senna, tanner's cassia); French (avaram); Portuguese (avúl)

BOTANIC DESCRIPTION

Senna auriculata is an evergreen, fast-growing, much branched shrub or small tree up to 7 m tall, with trunk up to 20 cm in diameter with a thin, brown, lenticellate bark.

Leaves alternate, paripinnately compound; stipules large and leafy, broadly reniform, 7–22 mm wide, persistent.

Inflorescence an axillary raceme, yellow coloured, 2–8 flowered; flowers bisexual.

Fruit a flattened cylindrical pod 5–18 cm × 1–2 cm, transversely undulate between the 10–20 seeds, indehiscent

Seeds compressed ovoid-cylindrical, 7–9 mm × 4–5 mm, with a distinct areole on each face.

BIOLOGY

Within its natural range, flowering and fruiting is almost throughout the year, but in India there are usually two main flowering periods, one in the early monsoon and another in the late monsoon.

ECOLOGY

S. auriculata grows wild in woodland and wooded grassland, on stony hills and scrub forests in arid and semi-arid zones.

BIOPHYSICAL LIMITS

Altitude: 0-720 m

Temperature: 16-27°C (mean max. temps of hottest month 38-45 °C; mean min. temps of coldest month 0 - 5°C)

Rainfall: 250-400 mm, but can also tolerate wet climates with an annual precipitation of up to 4300 mm. with dry season duration of 7-9 months

Soil type: It tolerates many soil types, including saline soils, but prefers fairly rich, well-drained soils that are light to medium in texture.

DOCUMENTED SPECIES DISTRIBUTION

Native: India, Myanmar, Pakistan, Sri Lanka

Exotic: Nigeria, Tanzania



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: A fermented mixture of pounded bark and dissolved molasses serves as an alcoholic beverage in some parts of India. The leaves are sometimes used to make tea, dried flowers serve as a coffee substitute, and in times of food scarcity the young tender pods, young leaves and flowers are eaten as a vegetable but the quantity eaten is critical.

Tannin or dyestuff: The bark can be used for tanning heavy hides and goat and sheep skins, giving a buff-coloured leather of good quality, which tends to darken to black-red on exposure to light. It provides one of the best tanning materials.

In southern India the flowers are used as a fast yellow dye for leather. In Gujarat the flower buds are used in the galling process prior to dyeing cotton cloth and chintzes. Boiled seeds are an important ingredient in indigo vats, where specific bacterial fermentation ensures the reduction of insoluble indigo into the soluble leuco-indigo, allowing textile fibres to be impregnated by the dye solution. The seeds of *Senna auriculata* serve as a source of sugars to keep the fermentation process going.

Fodder: Pods, young leaves and flowers can be given to goats and cattle as fodder but the quantity taken is critical since the plant has poisonous substances.

Fuel: Also a useful source of fuelwood.

Fibre: The bark fibre can be made into rope.

Medicine: The roots and bark are astringent and are used for gargles, as an alterative, and to cure skin diseases, eye troubles and rheumatism. A decoction of the flowers and the seeds is recommended for diabetes, seeds are used to cure eye diseases, gonorrhoea and gout. In Tanzania the plant is used to treat impotence, which may be related to diabetes. Leaves and fruits serve as an anthelmintic and diuretic.

Other products: Branches are used as chewing sticks and toothbrushes.

SERVICES

Soil improver: It is used for revegetating erodible soils and as a green manure, is effective in reclaiming sodic soils which have been dressed with gypsum and is useful for the afforestation and reclamation of arid and semi-arid areas and as a soil binder for ravines, gullies and sand dunes. The leaves are used as a green manure for paddy soils, as a source of nitrogen and potash.

Ornamental: It is occasionally grown for ornamental and hedging purposes.

Other services: The stem bark is used in India to stupefy fish. Reportedly branches were used in the fabrication of steel. By adding them to the crucible and heating with the ore the chemical composition obtained gave the steel its beautiful patterning.

TREE MANAGEMENT

Stem cuttings should be planted 5–12.5 cm apart in rows. Seeds can be directly sown. Thinning is necessary one year after sowing. Weeding and cultivation stimulate growth but are not absolutely necessary. Limed soil is reported to increase the amount of tannin. Coppiced plants re-grow well.

Starting the third year after establishment, the twig bark of *Senna auriculata* can be stripped and used. Twigs that have not developed a corky bark are best. Coppiced plants can be harvested annually.

GERMPLASM MANAGEMENT

Seed storage is orthodox. For quick germination seeds should be scarified and held in running water. The seedlings are fairly resistant to desiccation.

PESTS AND DISEASES

S. auriculata is an alternate host for peanut chlorotic streak caulimovirus. Also, the toxigenic fungus *Aspergillus flavus* has been found on leaf surfaces and this may contaminate medicinal products made from the leaves.

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SUGGESTED CITATION

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