

Acacia seyal

shittimwood, gum talha

LOCAL NAMES

Amharic (wachu); Arabic (saffar abiad,soffa,suffar abyad,talh,suffer abiad,suffar ahmer); English (shittim wood,white-galled acacia,whistling thorn,white thorn,white whistling thorn); French (epineux,mimosa,seyal); Fula (bulki); Hausa (dushe kerafi); Luganda (kasana); Somali (larai,fullai,jikh); Swahili (mgunga); Tigrigna (Tseada-chea,qeyeh-chea,keih chea); Trade name (gum talha,shittimwood)

BOTANIC DESCRIPTION

Acacia seyal is a small to medium-sized tree, growing to 17 m tall and 60 cm in diameter at breast height; crown is umbrella shaped, resembling that of *A. tortilis*. A characteristic feature of the tree is its rust-coloured powdery bark; *A. seyal* var. *fistula* has whitish bark. Large, straight spines occur on the branches, and smaller, curved thorns are present near the tips of the branches.

Leaves bipinnate, dark green, 4-12 pairs of pinnae, 10-12 pairs of leaflets each 1-2 x 4-12 mm.

Flowers clustered in shining, yellow, globose heads, 1.5 cm diameter, on stems 3 cm long.

Pods 10-15 x 1 cm, slightly curved, light brown when mature and indehiscent, containing 6-10 seeds. Seeds are elliptic (5-6 x 2.5-3.5 mm), olive-brown branches.

The generic name 'acacia' comes from the Greek word 'akis', meaning 'point' or 'barb'.

BIOLOGY

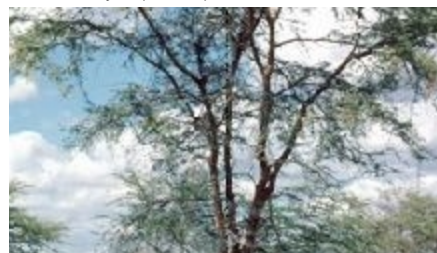
Bees are the likely pollinators. Flowers are borne in profusion and are spicy scented or sweet smelling. The seeds of *A. s. var. seyal* are locally dispersed in large amounts and have been found deposited in animal feces along transhumance routes. No dispersal mechanism has been located for *A. seyal* var. *fistula*. Flowering is concentrated in the middle of the dry season, with ripe fruits appearing 4 months later.

Del.

Fabaceae - Mimosoideae



Acacia seyal (Lovett)



Mature tree: Mature flowering tree of *A. seyal* var. *fistula* on the heavy clay plains at Chantulo, Malawi. (Chris Fagg)



Lopped tree: Lopped tree of *A. seyal* var. *seyal*; branches lopped for fodder and fencing. Nr Lake Baringo, Kenya. (Chris Fagg)

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ECOLOGY

A. seyal occurs from Senegal to the Red Sea and in Arabia. It is common in many other parts of Africa, especially north of the equator, from 10 to 12 degrees. It also occurs in east and southern Africa. In the southern and western Sudan, it is one of the most common trees in the savannah and often occurs as a pure forest over quite large areas of country. Frequently, it grows in groups or patches, sometimes of considerable size, in areas inhabited by *A. senegal*. This species is characteristic of the Nile region. It is tolerant to high pH (6-8), salts and periodic flooding. *Acacia seyal* var. *fistula* is more tolerant to waterlogging than *A. seyal* var. *seyal*.

BIOPHYSICAL LIMITS

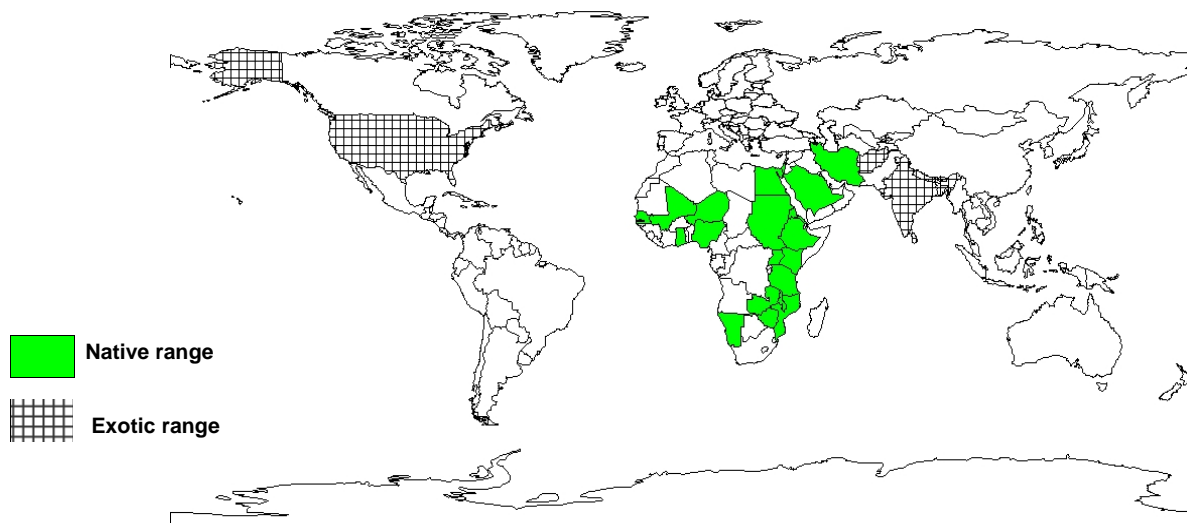
Altitude: 1700-2000 m, Mean annual temperature: 18-28 deg. C, Mean annual rainfall: 250-1000 mm

Soil type: It normally prefers heavy, clayey soils, stony gravely alluvial soils or humic soils.

DOCUMENTED SPECIES DISTRIBUTION

Native: Egypt, Eritrea, Ethiopia, Ghana, Iran, Israel, Kenya, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Saudi Arabia, Senegal, Sudan, Syrian Arab Republic, Tanzania, Uganda, Yemen, Republic of, Zambia, Zimbabwe

Exotic: Afghanistan, Bangladesh, Bhutan, India, Nepal, Portugal, Sri Lanka, US



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

Food: Gum talha from *A. seyal* is eaten when fresh, although it has slightly acid taste. It is also mixed with pulp from the fruit of *Balanites aegyptiaca* to make a syrup.

Fodder: The bark is extensively used for feeding cattle, sheep and goats during the dry season. When fresh, it is smooth and relatively soft. In February to March (the dry season in Kenya) thick branches are lopped and animals browse the bark and eat the leaves, which are relatively few at that time. The pods and leaves are nutritious and palatable to livestock. The feed value crude protein content is 11-15 % in leaves and 15-24 % in fruits. Digestible protein is 8-12 % in leaves and 13-15 % in fruits, which have a high digestibility. Leaves, pods and flowers are a major source of early dry-season fodder for sheep and goats over much of Africa. *A. seyal* is considered the best fodder plant in northern Nigeria and the Sahelian savannah. In the dry season in western Sudan, the Fulani drive their cattle to the districts where it grows. Branches (sometimes even the entire crown) are lopped in times of fodder scarcity.

Apiculture: Its yellow fragrant flowers yield a white-coloured honey with mild aroma.

Fuel: *A. seyal* produces good, dense firewood that is used widely throughout its range. The smoke is pleasantly fragrant and the wood burns rather quickly. In Chad the tree is considered to provide the best fuelwood. In Sudan it is used to make a fragrant fire over which women perfume themselves. *A. seyal* var. *seyal* is an important source of rural energy as both firewood and charcoal. Trees managed on a 10-15 years rotation yield 10-35 cubic m/ha of fuelwood a year.

Fibre: Roots are used for making staves. The bark of *A. seyal* is used for making rope. The fibre has promising technological characteristics for use as particleboard.

Timber: The wood is pale yellow to medium brown, with localized pinkish-brown patches and some dark mahogany-red heartwood in larger or older individuals. *A. seyal* wood has potential in rural areas as timber. If the tree is grown with few knots and straight grain, sprayed with insecticide after felling, and treated with preservatives, the timber works well and is hard and tough. It produces a hard, dark wood, called shittim wood, with interlocked, irregular and coarse-textured grain. It takes good a polish but is susceptible to insect attack. Therefore, it must be properly treated by splitting it, putting it under water for a few weeks and then drying it thoroughly. Shittim wood was used by ancient Egyptians for pharaohs' coffins.

Gum or resin: *A. seyal* gum (talha gum) is darker and inferior in quality to that of *A. senegal* (gum arabic). However, it forms 10% of the Sudanese gum exported to India and Europe. The gum is edible when fresh, with a slightly acidic taste. Talha does not meet the requirements of the food industry because it has not been toxicologically evaluated and contains tannins. For technological use outside the food industry, talha gum is attractive because of its clarity and solubility.

Tannin or dyestuff: Pods and bark contain 20% tannin. Gum is mixed with soot and powdered Nubian sandstone for black and red ink. The bark contains 18-30 % tannins and is a source of red dye.

Poison: The smoke produced by burning the wood of *A. seyal* acts as a fumigant against insects and lice. Chemicals in the bark of *A. seyal* kill the freshwater snails that carry bilharzia parasites and algae growing in ponds. Methanolic extracts from the bark of *A. seyal* applied to ponds display agricial properties. Molluscidal properties have been demonstrated with spray-dried powder of ethyl extracts, which are effective against schistomiasis vectors *Biomphalaria pfeifferi* and *Bulinus truncatus*.

Medicine: The bark, leaves and gums are used for colds, diarrhoea, hemorrhage, jaundice, headache and burns. A bark decoction is used against leprosy and dysentery, is a stimulant and acts as a purgative for humans and animals. Exposure to smoke is believed to relieve rheumatic pains. A root decoction mixed with leaves of *Combretum glutinosum* and curdled milk causes strong diuresis.

SERVICES

Shade or shelter: Where it grows, *A. seyal* offers shade to livestock in the dry season.

Boundary or barrier or support: In many areas, farmers cut branches of *A. seyal* to make fences. The thorny branches are good for this purpose and last about 2 years.

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Fabaceae - Mimosoideae

TREE MANAGEMENT

The trees are cut at the age of 8-15 years, depending on population pressure and demand for wood. Sometimes the stem is cut at 1.5-2 m above the ground, and a new canopy develops. Pruning of small branches gives better forage yield than lopping of large branches. Evaluation of the response to lopping and cutting of *A. seyal* var. *seyal* indicates limited recovery capacity in mature trees. Beating branches to detach leaves and fruits without damaging the axially buds is therefore preferred over lopping to best use these trees as dry season resources.

GERMPLASM MANAGEMENT

Seed storage behaviour is orthodox. Viability can be maintained for several years in hermetic storage at 10 deg. C. with 4.5-9% mc. There are 20 000-22 000 seeds/kg.

PESTS AND DISEASES

Over 40 species of insects are reported associated with *A. seyal*. The bostrychid (*Sinoxylon senegalense*) is the most notorious in swiftly locating and infesting freshly cut wood especially if lying on the ground. Removal of the bark and stacking cut stems upright minimizes infestation. Treat wood using creosote to prolong durability.

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FURTHER READING

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SUGGESTED CITATION

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