

***Acacia nilotica* (L.) Del.**
Fabaceae (Leguminosae)



Compiled by: Prof. F. M. Hammouda, Prof. S. I. Ismail,
Dr. N. S. Abdel-Azim and Dr. K. A. Shams
Edited by: Prof. K. H. Batanouny

■ Morphological Description

Small tree, 2.5-14 m tall with glabrous or tomentose branches, quite variable in many aspects; bark thin, rough, fissured, deep red brown; branchlets purple-brown, shortly or densely gray-pubescent, with lenticels; spines gray-pubescent, slightly recurved, up to 3 cm long; leaves often with 1-2 petiolar glands and other glands between all or only the uppermost pinnae; pinnae 2-11 (-17) pairs; leaflets 7-25 (-30) pairs, 1.5-7 mm long, 0.5-1.5 mm wide, glabrous or pubescent, apex obtuse; peduncles clustered at nodes of leafy and leafless branchlets; flowers bright yellow, in axillary heads 6-15 mm in diam.; involucrel from near the base to about half-way up the peduncle, rarely higher; calyx 1-2 mm long, subglabrous to pubescent; corolla 2.5-3.5 mm long, glabrous or pubescent outside; pods especially variable, linear, indehiscent, 8-17 (-24) cm long, 1.3-2.2 cm broad, straight or curved, glabrous or gray-velvety, turgid, blackish, about 12-seeded; seeds deep blackish brown, smooth, subcircular, compressed, areole 6-7 mm long, 4.5-5 mm wide. Fl. Oct.-Dec.; fr. Mar.- June.

■ Geographical Distribution

Local: The Nile Delta, Nile Valley, Oases, Sinai and Western Desert.

Acacia nilotica (L.)

Del., Descr. Egypte, Hist. Nat. 79 (1814)
Mimosa nilotica, *Acacia arabica* (Lam.) Willd.,
Acacia adansonii Guill. & Perr., *Acacia adstringens*
(Schumach.) Berhaut

Names

Arabic: Sant سنط

English: Prickly acacia, black thorn, Egyptian thorn, Nile acacia, gum arabic tree.

French: Acacia à gomme, Acacia d'Égypte.

Regional: Egypt.

Global: Egypt, Sudan and some Nile basin countries. South of Mozambique and Natal; apparently introduced to Zanzibar, Pemba and India; Arabia

■ Ecology

The plant grows on the banks of canals crossing the Delta and the Nile Valley. It was cultivated in the past, though cultivation has stopped. The relicts of this species are occasionally seen along the canals near the Nile River.

■ Status

Acacia groves growing in the Nile region in Egypt were replaced centuries ago by the date palm groves. Despite this, the tree was reputed for its value as a source for agricultural tools such as the hoe, plough, etc. With the mechanisation of agriculture, the plant was neglected. Additionally, the need of the land occupied by the trees, caused them to be removed. Nowadays, the tree is not as common as before. It could be considered as endangered, especially due to its geographical scarcity.

■ Part(s) Used

The fruit, the bark and the leaves.

■ Collection

In flowering and fruiting stages.

■ Preparations

Infusion, decoction and powder.

■ Use

Oral.

■ Constituents

The fruit: contains a high percentage of phenolic constituents consisting of m-digallic acid, gallic acid, its methyl and ethyl esters, protocatechuic and ellagic acids, leucocyanidin, m-digallic dimer 3,4,5,7-tetrahydroxy flavan-3-ol, oligomer 3,4,7-trihydroxy flavan 3,4-diol and 3,4,5,7-tetrahydroxy flavan-3-ol and (-) epicatechol. Fruit also contains mucilage and saponins.

The bark: is rich in phenolics consisting of condensed tannins and phlobetannin, gallic acid, protocatechuic acid pyrocatechol, (+) – catechin, (-) epigallocatechin-5,7-digallate.

The leaf: contains apigenin, 6-8-bis-D-glucoside, and rutin.

■ Pharmacological Action and Toxicity

Fruit and bark extracts showed molluscicidal activity against the two snail hosts of *Schistosoma*. Also, antihyperglycemic activity was observed. The plant extract showed stimulation of a rat's uterus at different stages of sex cycle, antimicrobial activity, blocking platelet aggregation in a dose-dependent manner using different agents mainly due to blockage of Ca²⁺ channels, and an inhibitory effect on carrageenan induced paw edema and yeast-induced pyrexia. It also produced a significant increase in the hot plate reaction time in mice. Analgesic and antipyretic activities may be attributed to the phenolic constituents present.

■ Pharmacopoeia

Not available

■ Phytopharmaceutical Products

Not available

■ Traditional Medicine and Indigenous Knowledge

History: The pods were used by the ancient Egyptians. Young pods produce a very pale tint in leather, notably goat hides. The fruit was given to combat diarrhoea, haemorrhage, as a sedative in labour, and as a cure for sore gums and loose teeth. Egyptian Nubians believe that diabetics may eat

unlimited carbohydrates as long as they also take a teaspoonful of powdered pods before breakfast. The leaves were chewed to stop nausea.

■ Traditional Medicinal Uses

- Anti-cancer and anti tumours
- Antiscorbutic
- Astringent
- Diuretic
- Intestinal pains and diarrhoea
- Nerve stimulant
- The plant is also known to be used for colds, congestion, coughs, dysentery, fever, gallbladders, hemorrhages, leucorrhoea, ophthalmia, sclerosis, smallpox and tuberculosis.

Other uses of the plant: The plant has an economic importance due to its high content of polyphenolics. The plant is used for tanning and dyeing leather black, tooth brushes (chewsticks), trees tapped for arabic gum. Because of its resins, it repels insects and water.

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