



Comprehensive review: *Abutilon indicum* Linn

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ABSTRACT

*There is an increase interest in medicinal plants for various uses throughout the world which leads to a manifold increase of medicinal plant based industries and India is perhaps the largest producer of medicinal herbs and is rightly called the “Botanical garden of the World”. *Abutilon indicum* (L.), sweet, belong to the family is extensively used in traditional system of medicine for various ailments such as fever, dysentery, mouth wash and it is used in the treatment of ulcer. According to the bark is slightly bitter in taste and used as febrifuge, anthelmintic, alexeteric, removes “Vatta and tridosha” and roots used in uterine haemorrhagic discharges. The leaves are prescribed for toothache, Lumbago, piles, and all kinds of inflammation. The mucilaginous seeds are tonic, they are good for chest troubles bronchitis, plies and gonorrhoea. The leaves are cooked and eaten for bleeding plies and decoction is used in bronchitis, gonorrhoea and of the bladder and in fevers.*

KEY WORDS – *Abutilon indicum* (L.), Malvaceae, Ayurveda, inflammation

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INTRODUCTION

The *Abutilon indicum* (L.,) sweet belong to the family Malvaceae is a group of about 120 species of aromatic herbs, under shrubs.

Kingdom : Plantae
 Order : Malvales
 Family : Malvaceae
 Genus : *Abutilon*
 Species : *Abutilon indicum*

VERNACULAR NAME

English : Country mallow
 Hindi : Kanghi, Kakahi
 Kannada : Tuhi, Mudragida
 Gujrathi : Khapat, kanski
 Marathi : Mudra
 Telgu : Tutturubenda.

The plant is an annual or more often perennial erect, wood, branched herb and shrubs, distributed mainly in tropical and sub tropical region of the world. Out of about 120 species known only five species recorded in India they are *Abutilon indicum*, *Abutilon hirtum*, *Abutilon theophrasti*, *Abutilon glaucoma*, and *Abutilon asiaticum*.

Leaves of *Abutilon indicum* are up to 12 cm long, cordate, ovate, acuminate, toothed rarely subtrilobate, petioles 3.8-7.5 cm long. Stipules 9 mm long linear acute, deflexed pedicels often 2.5-5 cm long auxiliary solitary jointed very near the top.

Calyx 12.8 mm long divided to the middle lobes ovate, apiculate. Corolla 2.5 cm in diameter, yellow, opening in the evening. Staminal tube hairy at the base filaments long carpals usually 15-20, longer than the calyx with a distinct small acute point hairy ultimately shining dark brown seeds brown-black densely and minutely scrobiculate. It is a fairly

common road side weed, which is grown in hotter parts of India as a weed.

PHYTOCHEMICAL REVIEW

The *Abutilon indicum* leaves contain a large amount of mucilage, organic acid, flavonoids, sterols triterpenoids, and glycosides. Flower contains Flavonoids. So far seven flavonoids reported in flowers i.e., luteolin, chrysoeriol, 7-O-beta-glucopyranoside, chrysoeriol 7-O-beta-glucopyranoside, apigenin 7-O-beta-glucopyranoside, were isolated and identified from the flower of *Abutilon indicum* and root contain. Asparagine as major others are non-drying oil consisting of various fatty acid besides β -sitosterol and β -amyrin from unsaponifiable matter and alkaloid is also present. Flavonoids of four malvaceous plants including *Abutilon indicum* flavonoids are quercetin, gossypetin and kaempferol has reported phytochemical investigation of *Abutilon indicum* (Sankara et. al, 1972) (Gand et. al, 1976).

Two sesquiterpene lactones from *Abutilon indicum* afforded two sesquiterpene lactones identified as alantolactone and isoalantolactone. This is the first report of the occurrence of these compounds in the genus *Abutilon* and in the family Malvaceae (Prem Vrata Sharma et. al 1989). Galactomannose isolated from the seeds of *Abutilon indicum* containing D-galactose and D-mannose in 2:3 molar ratio (Vandana Singh et. al. 1997).

Flowers of *Abutilon indicum* contain Luteolin, chrysoeriol, luteolin 7-O-beta-glucopyranoside, chrysoeriol 7-O-beta-glucopyranoside, apigenin 7-O-beta-glucopyranoside, quercetin 3-O-beta-glucopyranoside, quercetin 3-O-alpha-rhamnopyranosyl(1-6)-beta-glucopyranoside, were isolated and identified from flowers of *Abutilon indicum* (Matlawska, et. al, 2002). Two new compounds identified as abutlin and (R)-N-(1-methoxycarbonyl-2-phenylethyl)-4-hydroxy benzamide along with 28 known compounds. The

structure of two new compounds established by the spectroscopic analysis (Kou *et. al*, 2008).

Larvicidal activity showed by the different extracts such as crude hexane, ethyl acetate, petroleum ether, acetone and methanol extracts of *Abutilon indicum*, *Aegle marmelos*, *Euphorbia thymifolia*, *Jatropha gossypifolia* and *Solanum torvum*, petroleum ether extract shows the highest larval mortality in *A. indicum*.

TRADITIONAL REVIEW

According to Ayurveda the bark is slightly bitter in taste and used as febrifuge, anthelmintic, alexeteric, removes “Vatta and tridosha” and roots used in uterine haemorrhagic discharges. According Unani system bark is used in urinary complaints. The leaves are prescribed for toothache, Lumbago, piles, and all kinds of inflammation. The mucilaginous seeds are tonic; they are good for chest troubles bronchitis, plies and gonorrhoea. The leaves are cooked and eaten for bleeding plies and decoction is used in bronchitis, gonorrhoea and inflammation of the bladder and in fevers (Kirtikar KR, Basu BD, 1991).

According to Chinese in Hong Kong seeds are employed as an emollient and demulcent, the root is used as diuretic and pulmonary sedative and flowers and leaves are used in ulcers. Entire plant of *Abutilon indicum* is used as demulcent, diuretic, laxative urinary disorder, chronic, dysentery and fever (Rajasab AHS, Isaq M, 2004).

PHARMACOLOGICAL REVIEW

Three compounds (clomiphene citrate, centchroman, embelin) and plant-derived methanolic extracts (*Abutilon indicum* and *Butea monosperma*) on uterotrophic and uterine peroxidase activities in ovariectomized rats were estrogenic/antiestrogenic potential of antifertility substances (Johri *et. al*, 1991).

Eugenol which was found to possess significant analgesic activity on doses of 10, 30 and 50 mg/kg body weight eugenol exhibited 21, 30, 92,30 and 92.96% inhibition of acetic acid induced writhing in mice (Ahmed *et. al*, 2000). The liquid extract from fresh leaves of *Abutilon indicum* and *Allium cepa* bulbs effective against on Paracetamol and carbon tetrachloride induced hepatotoxicity (Porchezian, *et. al*, 2000). *Abutilon indicum* leaf extract having hypoglycemic action in rats. Alcohol and aqueous extract has shown significant reduction in blood glucose level. Flavonoids are known to regenerate the damaged pancreatic B-cells glycosides stimulant the secretion of insulin in B-cells of pancreas (Seetharam, *et. al*, 2002).

The leaf aqueous extracts of *Abutilon indicum* in rats against carbon tetrachloride and paracetamol induced hepatotoxicities, showed interference with free radical formation which may be concluded in hepatoprotective action (Porchezian, *et. al*, 2005). The plant extract was effective in the wound healing activity (Roshan *et. al*, 2008).

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