



## Pelagia Research Library

Der Pharmacia Sinica, 2010, 1 (3): 40-45



Der Pharmacia Sinica

ISSN: 0976-8688  
CODEN (USA): PSHIBD

### Ethanobotanical and Ethanopharmacological profile of *Abutilon indicum* Linn: A Review

Yogesh Shivhare<sup>1\*</sup>, Priya Singh<sup>2</sup>, Sunita Singh<sup>1</sup>, Rambabu Tiwari<sup>1</sup>, Pramod K Bharti<sup>1</sup>,  
Neeraj Upmanyu<sup>1</sup>

<sup>1</sup>Department of Pharmacognosy, RKDF College of Pharmacy, Bhopal (M.P.)

<sup>2</sup>Department of Pharmacognosy, Lakshmi Narain College of Pharmacy, Bhopal (M.P.)

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#### ABSTRACT

*The use of plants to promote health care and treatment of various diseases has become accepted rapidly. Currently plant based drugs are researched and formulated in modern framework in new ways of medicine. Thousands of plant species growing throughout the world have medicinal uses, containing active constituents that have a direct pharmacological action on the body. Abutilon indicum (Synonym- Sida indica) is a small shrub which is being medicinally used since ancient times and was a part of therapeutic regimen for a range of maladies. This article provides an overview of key concepts regarding the pharmacognostical and pharmacological profile of Abutilon indicum.*

**Key-words:** *Abutilon indicum*, Kakahi, Diuretic activity,

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#### INTRODUCTION

Plants have been a source of therapeutic agents for more than 5000 years. Approximately 25% of the modern medications are developed from plants [1]. Since the time immemorial, our traditional system of medicine and folklore claiming that medicinal plants as a whole or their parts are being used in all types of diseases successfully. In the developing countries like India, the native systems of medicine mutually with folklore medicine continue to play a noteworthy role in the health care system of the population. During the past few decades, there has been renewed awareness and interest in the use of traditional medicine worldwide [2]. In the series of medicinal plants, *Abutilon indicum* has been known and used for centuries for its health and

medicinal care properties. The plant is found in the sub-Himalayan tract and hills up to 1200 m and in hotter parts of India. It is a fairly common roadside weed. The present attempt is to review and compile updated information on various aspects of the *Abutilon indicum*.



**Fig. 1 Flower of *Abutilon indicum***



**Fig. 2 *Abutilon indicum* Plant**

**Table 1. Vernacular names of *Abutilon indicum***

Hindi	Kanghi, Kakahi
English	Country mallow, Indian mallow
Bengali	Petari
Malayalam	Dabi, Uram
Guajarati	Khapat, Kanshi, Dabli
Marathi	Mudra, Petari
Tamil	Tutti, Paniara, Hutti
Telugu	Tutturubenda

**Table 2. Taxonomic account of *Abutilon indicum***

Kingdom	Plantae
Order	Malvales
Family	Malvaceae
Genus	Abutilon
Species	A. Indicum

### **Botanical Version of Plant [3]**

#### **Leaves**

Leaves up to 9 by 5 cm cordate, ovate, acuminate, toothed, rarely subtrilobate, petioles 3.8-7.5 cm long, stipules 9 mm long, linear, acute, and deflexed.

#### **Flowers**

Pedicels often 2.5-5 long, axillary solitary, jointed very near the top. Calyx 12.8 mm long, divided to the middle; lobes ovate, apiculate. Corolla 2.5 cm diameter, yellow, opening in the evening. Staminal tube hairy at the base, filament long. Carpels usually 15-20, longer than calyx, with a distinct small acute point, hairy, ultimately shining and dark brown.

#### **Seeds**

Seeds are in brown-black colour having densely and minutely scrobiculate.

### Microscopic Depiction & Phytochemistry of Plant

Transverse Section of root shows outermost tissue the cork, which is thin and composed of 4 to 7 or more rows of rectangular or slightly tangentially elongated cells. Occasionally, lenticels may be seen. Inner to the cork is the phellogen single row of narrow, thin walled, elongated cells. This is followed by the cortex made up of 3 or 4 layers; some cortical cells contain starch. Bast is present in the form of linear conical bands. In between these conical bands are present, the phloem elements formed mostly of phloem parenchyma. Some of these contain small calcium oxalate crystals while others have starch grains. Inner to the phloem, a cambium consisting of 5 to 7 rows of narrow thin-walled rectangular cells is present. Wood is composed of many vessel elements, wood fibres, wood parenchyma and medullary rays. Wood parenchyma cells are thick-walled. Medullary rays are long, 1 or 2 seriate radiating from centre of the wood extending up to the cortex. All the rays widen towards periphery. Medullary rays also have calcium oxalate crystals and starch grains [4].



### Ethanobotanical Uses

The bark is used as febrifuge, anthelmintic, alexeteric. The bark is valued as a diuretic and in urinary complaints. The leaves are prescribed for toothache, lumbago, piles and in all kinds of inflammation. The leaves are also beneficial in bleeding piles. The leaves can also be used to treat ulcers, headaches, and bladder infection. The root cures uterine haemorrhagic discharges. The infusion of the root is prescribed in fevers as a cooling medicine and is useful in strangury, haematuria, and in leprosy. The seeds are reckoned aphrodisiac and are used as a laxative in piles and in treatment of cough. According to the Chinese in Hong Kong, the seeds are employed as an emollient and demulcent. The flowers are used to increase semen in men [5].

### Pharmacological Potentials

#### Antibacterial activity

Anjana Sharma and co-workers reported that acetone and ethanol extracts of *Abutilon indicum* exhibited significant antibacterial activity [6].

**Diuretic activity**

Diuretic activity of *Abutilon indicum* Linn (Sweet) seed extract was reported by Gunasekaran Balamurugan and co-workers. The results stated that extract at 200 and 400 mg/kg, produced significant diuretic and natriuretic effect but not a potassium sparing effect [7].

**Antimycotic activity**

Antimycotic activity of the components of *Abutilon indicum* (Malvaceae) is reported by Rajalakshmi Padma Vairavasundaram and co-workers. The screening for the antimycotic activity was performed by testing minimum inhibitory concentration and disc diffusion method. The results of present work reported that methanolic extract of leaves of *Abutilon indicum* shows remarkable antifungal activity against *Trichophyton Rubrum* [8].

**Anti-arthritic activity**

Anti-arthritic activity of *Abutilon indicum* was reported by Vallabh despandey and co-workers. Various *in-vitro* anti-arthritic pharmacological models were studied and the results conclude that herbal extract of *Abutilon indicum* showed dose dependent activity which was found to be better than that of acetyl salicylic acid [9].

**Anti-inflammatory and Anti-asthmatic activity**

Anti-inflammatory and Anti-asthmatic activity was reported by Archana N. Paranjape and co-workers by carrying out various experimental studies. *Abutilon indicum* showed significant anti-inflammatory activity when estimated using carageenan induced rat paw edema model. The results of this study indicated that possible mechanism of action of *Abutilon indicum* in the treatment of bronchial asthma is its mast cell stabilizing and anti-inflammatory activity [10].

**Hypoglycemic activity**

Hypoglycemic activity of *Abutilon indicum* was assessed by S. Adisakwattana and co-workers. In this study, methanolic leaf extract of *Abutilon indicum* was investigated for hypoglycemic effect in normal and streptozotocin-induced diabetic rats. The results suggested that the extract of *Abutilon indicum* would be effective for lowering and suppressing elevation of blood glucose level [11].

**Anticonvulsant activity**

Dharmesh K. Golwala and co-workers have evaluated *Abutilon indicum* leaves for Anticonvulsant activity. The results of present study revealed that 100 mg/kg and 400 mg/kg of *Abutilon indicum* extract exhibited a significant anti-convulsant effect by increasing latency, onset of clonic convulsion and decreases onset of tonic seizures [12].

**Wound healing activity**

S. Roshan and co-workers have evaluated *Abutilon indicum* for wound healing activity. They reported that ethanolic extract of *A. indicum* at a dose of 400 mg/kg shows exhibited significant wound healing activity [13].

**Anti-diarrhoeal activity**

Anti-diarrhoeal activity of *Abutilon indicum* was assessed by VM Chandrasekhar and co-workers. They reported that methanolic and aqueous extract possessed significant anti-diarrhoeal activity in castor oil induced diarrhea and prostaglandin E2-induced diarrhea [14].

**Antimalarial activity**

A. A. Rahuman and co-workers stated that  $\beta$ -sitosterol isolated from the petroleum ether extract of leaf of *A. indicum* showed mosquito larvicidal activity [15].

**Hepatoprotective activity**

*Abutilon indicum* showed significant hepatoprotective activity against carbon tetrachloride and paracetamol induced hepatotoxicity. This study was performed by GK Dash and co-workers [16].

**CONCLUSION**

The pharmacological studies conducted on *Abutilon indicum* indicate the immense potential of this plant in the treatment of conditions such as asthma and inflammation etc. However, the diverse pharmacological activities of *Abutilon indicum* have only been assayed in laboratory animals and the results obtained may not necessarily be transferable to the situation in humans. On the basis of these results, it is very clear that *Abutilon indicum* is a plant with fabulous extensive use now and also with amazing potential for the future.

**Acknowledgement**

Yogesh Shivhare and Priya Singh, the authors, would like to express their sincere thanks to Dr. A.K. Singhai Principal, Lakshmi Narain College of Pharmacy, Bhopal and Mr. Rakesh Punekar, Vice-principal, RKDF College of Pharmacy, Bhopal (M.P.) for constant support during this work.

**REFERENCES**

- [1] Liu Yixuan, Wang Ming-Wei, *Life Sciences.*, **2008**, 82, 445–449.
- [2] Jain S.P, Singh J, *Indian Journal of Natural Products and Resources.*, **2010**, 1 (1), 109-115.
- [3] Kirtikar K.R, Basu B.D; *Indian Medicinal Plants*. Allahabad, India. **1956**, p. 314-316.
- [4] *Quality Standards of Indian medicinal plants*. Indian council of medical research. New Delhi, **2003**, Vol. 1, p. 1-6.
- [5] Prajapati Narayan Das, Purohit S.S, Sharma Arun K, Kumar Tarun; *A Handbook of medicinal plants: A complete source book*. Agrobios, India, **2003**, p. 3-4.
- [6] Sharma Anjana, Verma Rani, Padmini Ramteke, *World Applied Sciences Journal.*, **2009**, 7 (3), 332-339.
- [7] Balamurugan Gunasekaran, Shinnaraj Selvarajan, Dhanapal Balakrishnan, Palayan Muralidharan, *Journal of Herbal Medicine and Toxicology.*, **2010**, 4 (1), 49-52.
- [8] Padma Rajalakshmi, Vairavasundaram, Senthil Kalaiselvi, *Drug Invention Today.*, **2009**, 1(2), 137-139.

- [9] Deshpande Vallabh, Jadhav Varsha M, Kadam V.J, *Journal of Pharmacy Research.*, **2009**, 2(4), 644-645.
- [10] Paranjape Archana N, Mehta Anita A, *Global Journal of Pharmacology.*, **2008**, 2 (2), 23-30.
- [11] Adisakwattana S, Pudhom K, Yibchok-anun S, *African Journal of Biotechnology.*, **2009**, Vol. 8 (10), 2011-2015.
- [12] Golwala Dharmesh K, Patel Laxman D, Vaidya Santosh K, Bothara Sunil B, Mani Munesh, Patel Piyush, *International Journal of Pharmacy and Pharmaceutical Sciences.*, **2010**, Vol 2, Issue 1, 66-71.
- [13] Roshan S, Ali S; Khan A, Tazneem B, Purohit MG, *Pharmacognosy magazine.*, **2008**, 4(15), 85-88.
- [14] Chandrashekhar V.M, Nagappa AN, Channes T.S, Habbu P.V, Rao K.P, *Journal of natural remedies.*, **2000**, 4(1): 12-16.
- [15] Rahuman A.A, Gopalakrishnan G, Venkatesan P, Kannappan G, *Parasitol Research.*, **2008**, 102, 981-988.
- [16] Dash G.K, Samanta A, Kanungo S.K, Shau S.K, Suresh P, Ganpathy S, *Indian journal of natural products.*, **2000**, 16 (2), 25-27.