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A review on *Ulat Kambal* (*Abroma augusta* Linn.)

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ABSTRACT

Plants are boon to mankind. They have been used to support life in all ways. Many drugs are also of plant origin. Research and exploration are ever going to unlock their potential benefits. The plant *Ulat Kambal* (*Abroma augusta* L.) or Devil's cotton belonging to family Malvaceae, is generally found in hotter parts globally. Not much mentioned in Ayurveda text, fresh juice from its root bark is reported to be useful in congestive and neuralgic forms of dysmenorrhea, amenorrhea in recent times only. The broad range of therapeutic potential of this plant includes gonorrhoea, bronchitis, bronchopneumonia, abscess, sores etc. Also, the leaves are found to be beneficial in diabetes, rheumatic pain and sinusitis. General overview along with pharmacological and pharmacognostical aspect of *Ulat Kambal* (*Abroma augusta* L.) are tried to be explored through this review article.

Key words: *Ulat Kambal*, *Abroma Augusta*, *Dysmenorrhea*, *Emmenagogue*, *Uterine tonic*.

INTRODUCTION

Ulat Kambal, *Abroma augusta* (Family -*Malvaceae*) is one of the lesser known drug in Ayurveda with a big canvas yet to be explored. Despite its explicit not mentioned in classical Ayurvedic texts, it has been recognised and utilized in Ayurvedic practice for its therapeutic properties. *Ulat Kambal*, *Abroma augusta* belongs to Malvaceae family. In earlier classifications, it was placed in the Sterculiaceae family, but taxonomic revisions have led to its reclassification in Malvaceae family. Ancient Ayurveda classics have not described *Ulat Kambal*. *Ulat Kambal* is termed as *Pishach Karpas* or Devil's cotton due to the morphological appearance

of the fruit which are very much hairy on inner side, resembling the devil's hair (*Pishach*). The term "*Karpas*" refers to the cotton like fibres produced by the plant. So, the name "*Pishach Karpas*" essentially means the "devil's cotton" or "devil's hair cotton," describing its hairy and fibrous texture. This plant is used by various traditional medicines across the globe primarily as emmenagogue and in menstrual disorders like dysmenorrhea, amenorrhea, anovulation, infertility. It is a large spreading bushy shrub with fibrous bark and irritable hairs, majorly distributed in Bangladesh, India, Pakistan, China and many other parts of the world. The shrub has long been known as a valuable fibre yielding plant. It's only around 1872, that attention was given first time to its emmenagogue activity and used in the treatment of dysmenorrhea. It is reported that the plant *Ulat Kambal* has a broad range of therapeutic potential. Fresh juice from root bark is reported to be useful in congestive and neuralgic forms of dysmenorrhea, amenorrhea. The broad range of therapeutic potential of this plant includes gonorrhoea, bronchitis, bronchopneumonia, abscess, sores etc. Also, the leaves are beneficial in diabetes, rheumatic pain and sinusitis.

Botanical Name : *Abroma augusta* Linn.

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Family : Malvaceae

Vernacular Names

Sanskrit : *Pisacha Karpasa, Pivari, Yoshini*

Hindi : *Ulatkambala, Sanukapas*

Bengali : *Olatkombol*

Unani : *Ulat Kambal*

Gujrati : *Ulak tambool*

Siddha/Tamil : *Sivapputtuti*

English : Devil's Cotton

Taxonomical Classification

Kingdom - Plantae

Division - Tracheophyta

Class - Magnoleopsida

Order - Malvales

Family - Malvaceae

Genus - *Abroma*

Species - *augusta*

Historical background

Abroma augusta was first brought to light by Dr. Roxburgh in 1801 for its usefulness in dysmenorrhea. In the Indian Medical Gazette of 1872, Bhuvanmohan Sarkar drew attention towards the emmenagogue activity with thirty grain dose of its fresh root juice.^[1]

In Ayurveda *Ulat kambal* is not described in the classical text of *Brihatrayi* but finds mention in 20th Century texts including *Adarsha Nighantu, Brihad Adarsha Nighantu, Parishishta part of Bhavprakash Nighantu, Vanaushadhi Chandrodya, Vanaushadhi Nirdeshika, Dravya Guna Vijnana* books of P.V Sharma, JLN Shastri, D.S. Lucas etc.

Description^[2]

It is a large shrub or tree, about 10 feet tall, branches hairy; Stem bark composed of silky fibres. Stem has strong and white fibres like flax (*Crotolaria juncea*)

Leaves - 10-15 by 10-12 cm., repand-denticulate, base 3-7-nerved, upper smaller, narrower, entire,

glabrescent above, tomentose below; petiole 12-25mm. Stipules linear, deciduous, as long as the petiole. Leaves are similar to that of *Sthala Padama* (*Hibiscus mutabilis*) but the internodes of *Ulat kambal* are reddish.^[3]

Flowers - Axillary 5 cm. diam., dark red. Sepals 2.5 cm, lanceolate, free nearly to the base. Petals scarcely exceeding the sepals, imbricate in bud, deciduous. Peduncle about 4 cm. long.

Fruit - Capsule, pentagynous, 5-valved, truncate, 5cm long, dehiscent in inverted umbrella shape with numerous black seeds, (similar to radish seeds) enveloped in stout, silky but irritating hair, conforming to its names *Ulat Kambal* and *Pishach Karpas*

Flowering and Fruiting - Plant flowers in August-September and fruit in October- January.

During winter, red colored flowers appear on the plant and in summer it produces umbrella shaped fruits.

Distribution

This is cultivated as an ornamental tree throughout the hotter parts of India, Java, Philippines, China. It occurs wild or cultivated in U.P, Sikkim (3000ft), Khasia hills (4000ft), Meghalaya, Tripura, Punjab, Arunachal Pradesh and Assam.

Chemical composition^[4,5]

Root bark contains gum- resin (exudate), mucilaginous matter, non- crystalline substance and ash 11 percent

Root contains resin, fixed oil, an alkaloid in lesser percentage (0.01%) and also magnesium. Also contain friedelin, abromasterol, choline, betaine.

Leaves contain Taraxerol, and its acetate, beta sitosterol, acetate.

Stem bark contain beta sitosterol, friedelin

Heart wood contain Beta sitosterol

Pharmacodynamics^[6]

Rasa - *Katu, Tikta*

Guna - *Laghu, Ruksha, Tikshna*

Virya - *Ushna*

Vipaka - Katu**Doshakarma - Kaphavatasamaka, Pitta Vardhak**

Pischach Karpasa allays provocation of *Kapha* and *Vata* *Dosha* and it increases *Pitta Dosha*. It is useful in *Kapha* and *Vata Rogas*.

Pharmacological action

Artavajanana (Emmenagogue), *Garbhashaya Balya*, (Uterine tonic), *Garbhashayottejaka* (Uterinestimulant), *Vedanasthapana* (Stomachic), *Aartavdoshahar* (Purifies and detoxifies menstrual flow)

Indications

Rajorodha (Amenorrhoea), *Kasta Artava* (Dysmenorrhoea), *Aniyamita Ritusrava* (Irregular Menses) *Alpartava* (Oligomenorrhoea)

Therapeutic Uses

- The famous *Kaviraj Dwarkanath Vidyaratna* of Calcutta opines that one dram (about four *Masha*) powder of root bark of *Ulat Kambal* along with powder of twenty one black peppers to be consumed for seven days during menstruation for two to four months, works well to relieve all Uterine ailments. It helps to alleviate leucorrhoea and infertility also. Milk and rice are advised in diet during its usage avoiding other *Ushna*, *Tikshna* dietary articles.^[7]
- The fresh viscid juice of the root bark is useful in Congestive and Neuralgic varieties of Primary dysmenorrhoea and Secondary amenorrhoea.^[8]
- It regulates the menstrual flow and acts as a uterine tonic and emmenagogue. For that it is started three days before menstruation period and further continued for 2-3 days afterwards the menses.^[9]
- The root bark juice has long been used in Bengal as emmenagogue and uterine tonic to treat oligomenorrhoea and infertility. An attempt was made to administer the drug in a more acceptable form of tincture, pill or powder, but none proved so efficacious as the fresh viscid juice.^[10]
- The active principle of this drug is totally destroyed if mixed with alcohol of any other preservative;

either the fresh root bark or dried root bark should be used.^[11]

- The paste of root bark is used internally and externally to cure abscess and sores.^[12]
- Infusion of fresh leaves and branches in cold water is very efficacious in Gonorrhoea.^[13]
- Leaves used for diabetes, rheumatic pain, sinusitis and the associated headache, have shown good results.^[14] Leaves and bark have demulcent action.

Extra Pharmacological Usage - The bark of this tree yields a tough, fibrous tissue from which cordage is manufactured. Dr. Roxburgh drew special attention to the plant as a substitute of Sunn (hemp) as it is easier to cultivate it than Sunn (*Crotalaria juncea*) and the average produce is almost three times greater than Sunn.^[15]

Part Used - Root, Root- bark

Dose - Root bark powder 1-3 gms, Root - 4-8 gms, Root juice - 5-10 ml

Its *Swarasa* (Root juice) more potent than any other formulation.

Recent researches: Also researches give evidence of its Thrombolytic activity, Antidiabetic, Hypolipidemic, Wound healing, Antimicrobial activity, Anti-oxidant, Analgesic, Antipyretic, Anti-inflammatory actions.

DISCUSSION**Regarding its Ayurvedic Pharmacological Aspect**

Ulat Kambal has *Deepan*, *Pachana* action by virtue of its *Tikta*, *Katu Rasa*. This ensures good digestion, metabolism and biotransformation by supporting different kinds of *Agnis* in the body. By proper metabolism it keeps a control on the *Dhatu* formation, especially *Artava* formation, as female reproductive system is its main site of action.

In conditions, like amenorrhoea, oligomenorrhoea and dysmenorrhoea there is hindrance in flow or stagnation of *Artava* due to its viscid and thick nature. Apart from uterine stimulant and emmenagogue action *Ulat Kambal* by virtue of its *Ushna* and *Tikshna* properties

clears the channels thus helps to relieve these conditions.

Future scope: *Abroma augusta* L. as a multi-purpose medicinal agent, several limitations exist in the current literature. *Abroma augusta* L. has been used successfully in traditional systems of medicine for centuries, but it is needed to explore its medicinal values at molecular level with the help of biotechnological tools and techniques and also more clinical trials should be conducted to support its therapeutic use.

CONCLUSION

Ulat Kambal, Abroma Augusta belonging to Malvaceae family, also known as *Pishach Karpas*, is an ethnomedicinal plant found mainly in Punjab, Uttar Pradesh, Assam, Meghalaya, Arunachal Pradesh, Tripura in India. *Abroma Augusta* is an important plant for the treatment of many Gynecological disorders in folk Indian systems of medicine, for treating various conditions like dysmenorrhea, amenorrhea, infertility etc. It is also famous in Unani and Homeopath medicine. But not many people know much about the amazing health benefits of *Ulat kambal*. So, it is time to appreciate this plant and use it to its full potential.

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