

COMPREHENSIVE LITERARY REVIEW ON *SIRISA* – *ALBIZZIA LEBBECK* BENTH

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ABSTRACT

Ayurveda is one of the Indian Systems of Medicine, wherein the concepts of ‘holism’ are logically and intelligently used to understand the wellness and illness of living organisms. Medicinal plants are the treasure of our earth and it depends on how we utilise them. *Dravyaguna* is an integral part of *Ayurveda*, which deals comprehensively about *rasapanchaka* of herbs and their varied application in different conditions. *Sirisa* (*Albizzia lebeck* Benth.) commonly called as Bagemara in Kannada is one such tree commonly used in *Visha vikaras*. It is the considered as the best *Vishagna dravya*. Bark, Leaf, Flower and Seeds are the useful parts. The present work aims to compile various references on *Sirisa* from classical texts and online sources, highlighting its extensive use in treating a range of pathological conditions.

KEYWORDS: *Ayurveda*, *Dravyaguna*, *Sirisa*, *Albizzia lebeck* Benth, *Bagemara*, *Vishagna*.

INTRODUCTION

Medicinal plants have long held significant importance in the healthcare sector, meeting the needs of individuals and contributing to overall well-being. *Dravyaguna shastra* specifically deals with pharmacognosy, pharmacology, therapeutic utility and relation between actions and properties of *Ayurveda* drugs. *Sirisa* (*Albizzia lebeck* Benth.) is a widely available herbal drug found throughout India, commonly used in the treatment of *Visha vikaras*, both externally and internally. Due to its abundance, it is frequently utilized by pharmacists in medicinal formulations. *Acharya Charaka* and *Vagbhata* have considered *Sirisa* as the best *Vishagna* (Anti-poisonous) *dravya*.^[1,2] This review aims to compile all available literature on *Sirisa* from the *Vedic* era to the present day.

HISTORICAL REVIEW

Vedic literature – Extensively quoted *Sirisa* among the *Shanta vrksas*. It is considered as one of the best plants for *Danta Kashtas* (tooth brushes).^[3]

Samhita literature – Almost all the *Samhitas* have mentioned it in numerous contexts including single drug therapy and the formulations.

Nighantu literature- *Nighantus* have explained it in detail with its synonyms, varieties, *rasapanchaka* and along with different indications.

NIRUKTI^[4]

It destroys *doshas* like *kapha* and diseases like *shotha* etc. OR

Its flowers are very delicate and even simple touch may spoil them. Hence the name *Sirisa*.

Table 1: List of *Nirukti* of synonyms used for *Sirisa*.

कपीतन	शास्त्रिनः ईतनः । कपीनां कपेर्वर्णस्य वा ईतनः । (भा.टी.) तनोति इति, 'तनु विस्तारे' । (भा.टी.)	Its flowers are yellowish brown in colour (i.e., monkeys colour). This tree spreads over a large area.
भण्डीरः	भण्डति । 'भाडे कल्याणे' । (भा.टी.) भण्ड्यते इति । 'भण्ड' आमण्डने । (वाचः)	Its flowers bear very good colour.

मण्डलः	मण्डति इति, 'मडि कल्याणे' । (नि.आ.)	It will provide good health to the people suffering from diseases like <i>kasa</i> , <i>vra</i> etc.
शुकपुष्पा	शुकवर्णं पुष्पमस्याः । (नि.आ.)	Its flowers are greenish yellow coloured. Hence simile to parrot.
शुकप्रियः	शुकानां प्रियत्वात् । (स्व.)	This tree is lovable to parrots.
शिरीषः	शृणाति शीर्यते वा इति, 'शृ हिंसायाम्' । (भा.टी.) शिरसि इष्यते इति, शीर्यते वा सौकुमार्यात् इति । (नि.आ.)	It destroys <i>doshas</i> like <i>kapha</i> and diseases like <i>shotha</i> etc. OR Its flowers are very delicate and even simple touch may spoil them. Hence the name <i>Sirisa</i> .

Table 2: *Paryaya* (Synonyms) by different authors.

Synonym	D.N. ^[5]	B.P. ^[6]	R.N. ^[7]	M.N. ^[8]	K.N. ^[9]	Sho.N. ^[10]	A.M. ^[11]	A.K. ^[12]
<i>Kapitana</i>	+	+	+	+	+	+	+	+
<i>Bhandira</i>		+		+	+			
<i>Mandila</i>								
<i>Shukapushpa</i>		+			+			
<i>Shukapriya</i>	+	+		+	+	+		
<i>Sirisa</i>	+	+	+	+	+	+		
<i>Mrudupushpa</i>	+	+	+	+	+	+	+	
<i>Bhandika</i>	+		+					
<i>Shankiniphala</i>	+		+	+		+		
<i>Shukataru</i>	+	+	+		+	+		
<i>Shyamavarna</i>	+			+	+	+	+	
<i>Bhandila</i>		+			+	+		+
<i>Bhandi</i>		+			+	+	+	
<i>Vishaghati</i>						+		
<i>Pravarahva</i>						+		
<i>Bhaanditika</i>						+		
<i>Sitapushpa</i>			+					
<i>Shukeshta</i>			+					
<i>Varhipushpa</i>			+					
<i>Vishahanta</i>			+					
<i>Supushpaka</i>			+					
<i>Uddanaka</i>			+					
<i>Lomasha pushpaka</i>			+					
<i>Kalinga</i>			+					
<i>Shyamala</i>			+					
<i>Madhupushpa</i>			+					
<i>Vruttapushpa</i>			+					
<i>Kalima</i>					+			
<i>Vipra</i>				+	+			
<i>Plavanga</i>				+	+			
<i>Shikiniphala</i>					+			
<i>Shukhavruksha</i>							+	
<i>Sramsaniphala</i>							+	
<i>Shukhahva</i>							+	
<i>Hemapushpa</i>								+

VERNACULAR NAMES^[13]

Sanskrit – Sirisa; Hindi – Siris, Siras, Garso; English- Siris tree, parrot tree; Kannada- Bagemara; Malayalam –

Vaga, Marathi- Chichola; Bengali- Sirish; Gujarathi – Pilo sarasio; Tamil- Vagei; Telugu- Dirasana.

Table 3: *Gana Vargeekarana*.

<i>Charaka Samhita</i>	<i>Shirovirechana</i> ^[14] , <i>Vedanasthapana</i> ^[15] , <i>Vishaghna</i> ^[16,17]
<i>Sushruta Samhita</i>	<i>Shirovirechana</i> ^[17] , <i>Vishahara</i> ^[18]

<i>Ashtanga hrudaya</i>	<i>Kashaya skandha</i> ^[19]
<i>Dhanvantari Nighantu</i>	<i>Amradi varga</i> ^[5]
<i>Bhavaprakasha Nighantu</i>	<i>Vatadi varga</i> ^[6]
<i>Raja Nighantu</i>	<i>Prabhadradi varga</i> ^[7]
<i>Madanapala Nighantu</i>	<i>Vatadi varga</i> ^[8]
<i>Kaiyadeva Nighantu</i>	<i>Oshadi varga</i> ^[9]
<i>Shodala Nighantu</i>	<i>Amradi varga</i> ^[10]

BHEDA (VARIETIES)

According to *Raja Nighantu* - Krishna Sirisa, Shweta or Kinai Sirisa and Rakta Sirisa.

HABITAT:^[20] This species is widely distributed throughout India, up to 900m in moist teak bearing forests, also cultivated.

MORPHOLOGY of *Albizia lebbek* Benth^[21]

Habit - An unarmed deciduous tree 12-21m high.

- **Bark** – pale, young shoots glabrous.
- **Leaves** - abruptly 2-pinnate; main rhachis pubescent or glabrous, furnished with a large gland on the petiole above the base and one below the uppermost pair of pinnae; petioles swollen and hairy at the base

- **Leaflets** - 5.9 pairs, 2.5-4.5 by 1.6-2 cm., with glands between their bases, the lateral leaflets elliptic-oblong, the 2-terminal obovate-oblong, all pale green, unequal-sided, very obtuse, glabrous above, pubescent and reticulately veined beneath, base obliquely rounded or truncate; petiolules very short, hairy.
- **Flowers** - white, fragrant, in globose umbellate heads, more or less pubescent, solitary or 2-4 together from the axils of the upper leaves.
- **Pods** -10-30 by 2-4.5 cm., linear-oblong, bluntly pointed, pale yellow, reticulately veined above the seeds, smooth, shining.
- **Seeds** - 4-12, ellipsoid-oblong, compressed, foveolate on the faces, pale brown.

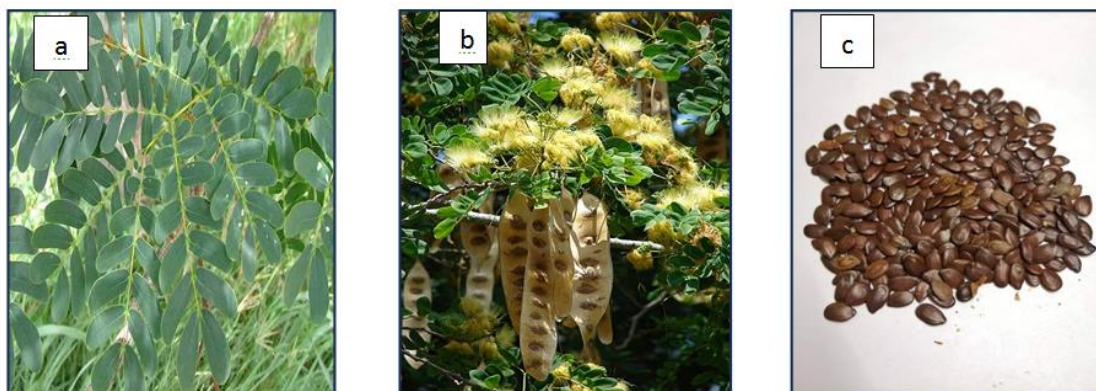


Fig. 1: *Sirisa* a) Leaves b) Inflorescence with fruits c) Seeds.

USEFUL PARTS^[13]: Bark, Flower, Seed, Leaf.

CHEMICAL CONSTITUENTS^[22]

Leaf- Saponins, tanins and Two new tri-O-glycoside flavonols, kaempferol.

Pod- 7 dimethoxy flavone, 3',5 dihydroxy4' and N-benzoyl L Phenyl alaninol.

Beeja- albigenic acid- its a triterpenoid sapogenin.

Bark- two saponin known as libbekenin A&B, Three Saponin albiziasaponins A, B and C; Condensed tannins (7-11%) & d catechin, libbecacidin, isomers of leucocyanidin, friedellin-3-one, acetic acid; β-sitosterol.

Table 4: *Rasapanchaka*.^[23]

<i>Rasa</i>	<i>Kashaya, Tikta, Madhura</i>
<i>Guna</i>	<i>Laghu, Ruksha, Tikshna</i>
<i>Veerya</i>	<i>Katu</i>
<i>Vipaka</i>	<i>Ushna (Anushna)</i>
<i>Prabhava</i>	<i>Vishaghna</i>
<i>Doshaghna</i>	<i>Tridosha shamaka</i>

AGRYA KARMA^[1,2]

“Siriso vishagnanam”, “Vishe shukataru” - Acharya Charaka and Vagbhata has considered Sirisa as the best anti-poisonous drug.

KARMA^[23]

- *Bahya* – Shothahara, Vedanasthapana, Varnya, Vishagna, Shirovirechana, Chakshushya.
- *Abhyantara*

- *Pachana samsthana- Sthambhaka, Vamaka (in adhika matra)*
- *Raktavaha samsthana- Raktashodhaka, Shothahara*
- *Shwasana samsthana- Shirovirechana, Kaphagna*
- *Prajanana samsthana- Vrushya, Twacha, Kushtagna*
- *Satmeekarana- Vishaghna*

PHARMACOLOGICAL ACTIVITIES^[13]

Antiprotozoal, Hypoglycaemic, Anticancer, Spermicidal, Abortifacient, Antiasthmatic, Antiallergic, Analgesic, Antifertility, Antifungal, Antiovaratory, Antianaphylactic, Antibacterial, Hypotensive, CNS Depressant, Bronchodilator.

ETHNOPHARMACOLOGY^[24]

The bark has acrid taste. It is recommended for bronchitis, leprosy, paralysis, helminth infections,

gonorrhea/ venereal diseases, snake bite and scorpion sting. Both bark and seeds are astringent, useful in piles and diarrhea, and act as tonic and restorative. The root bark and gum are used as dental powder for strengthening the gums. The stem is used as contraceptive. The leaves are used in night blindness, piles and diarrhea.

POSODOLOGY^[13] Dosage of *Sirisa*

- Bark powder : 3-6 gm
- Seed powder : 1-2 gm
- Leaf juice : 10-20 ml
- Decoction : 50-100 ml.

AMAYIKA PRAYOGA OF SIRISA

Table 5: Disease based application of *Sirisa* plant.

Indication	Prayoga	Reference
<i>Shwasa</i> (Dyspnea), <i>Hikka</i> (Hiccoughs)	Intake of juice of <i>Sirisa</i> flower with <i>pippali</i> and honey	C.Chi.17.11
<i>Kushta</i> (Skin disorder)	Application of <i>Sirisa</i> bark, <i>Karpasa</i> flower, <i>Aragvadha</i> leaves, <i>Kakamachi</i>	C.Chi.7.96
<i>Krimi</i> (Worm infestation)	Intake of <i>Sirisa</i> , <i>Kinihi</i> with honey	S.U.54.24
<i>Sthoulya</i> (Obesity)	Rubbing with powder of <i>Sirisa</i> , <i>Lamajjaka</i> , <i>Nagakesara</i> , <i>Lodhra</i>	VM.36.37
<i>Shirashoola</i> (Headache)	Snuff with seeds of <i>Sirisa</i> and <i>Mulaka</i>	S.U.26.31
<i>Kashta prasava</i> (Difficult labour)	Intake of water processed with <i>Sirisa</i> and <i>Arjuna</i>	S.Chi.15.24
<i>Visha</i> (Poisoning)	Application of <i>Sirisa</i> and <i>Sindhuvara</i> paste	C.Su.3.28
Rat poisoning	Paste of <i>Sindhuvara</i> and <i>Ingudi</i> taken with honey	S.Ka.7.12
Insect bite	Intake of decoction of <i>Sirisa</i> mixed with <i>trikatu</i> , salt and honey.	S.Ka.5.81
<i>Netra roga</i> (eye disorders)	Juice of <i>Sirisa</i> mixed with honey used as collyrium	GN.3.3.150
<i>Chaturtaka jwara</i>	Paste of <i>Sirisa</i> flower mixed with honey, <i>Daruharidra</i> and ghee used as snuff	Y.R.P.98

YOGA (FORMULATIONS)^[13]

Maha Sirisa agada, *Sirisarishta*, *Sirisabijadi lepa*, *Sirisadya anjana*, *Brihatmarichadya taila*, *Dashanga lepa*, *PanchaSirisa agada*.

SUBSTITUTES AND ADULTERANTS^[25]

The stem bark of *A. lebbeck* can be adulterated with other species of *Albizzia* viz., *A. procera* (Roxb.) Benth., *A. odoratissima* (Linn.f.) Benth.

TOXICOLOGY^[13]

Clinical as well as experimental studies indicated the absence of any serious toxicity.

DISCUSSION

Sirisa botanically identified as *Albizzia lebbeck* Benth. is a large deciduous erect, spreading tree, growing up to 15.2-18.3m height belonging to family Mimosaceae (Fabaceae). Bark is rough, dark brown to greenish black

with transverse and longitudinal striations inside. Leaves bipinnate with 8-18 leaflets. Inflorescence is globose heads of greenish-yellow flowers. Fruits are pods, yellowish brown with 6-10 seeds. It possesses *Kashaya Tikta Madhura Rasa*, *Laghu Ruksha Tikshna Guna*, *Katu Vipaka*, *Anushna Veerya* and *Vishagna Prabhava*. It is *Tridosha shamaka*. Bark contains phytoconstituents like alpha and beta sitosterol, friedelin, acetic acid, catechin, and leucocyanidin. It is mentioned in *Vishagna*, *Vedanasthapana*, *Mutrasangrahaniya Varga* of *Charaka*, *Salasaradi gana* of *Sushruta*, and *Vatadi varga* of *Bhavaprakasha Nighantu*. Bark, Leaf, Flowers and Seed are the useful parts. It is considered as *Agrya* among *Vishagna dravyas*. The stem bark of the plant is used in *Visha*, *Pamakushta*, *Kandu*, *Visarpa*, *Sarpadamsha*, *Kasa*, *Swasa*, *Vrana*, *Shotha*, *Sheetapitta*, *Netrabhishyanda* and *Raktadushti*. It has pharmacological actions like antiallergic, analgesic, anti-inflammatory, antioxidant. As it has huge therapeutic

actions, it has been mentioned and used in India since ancient times.

CONCLUSION

Sirisa (*Albizzia lebbeck* Benth.) is widely regarded in various classical *Ayurvedic* texts as a commonly available plant, extensively used in both *Ayurveda* and traditional folklore medicine. It is the best *Vishagna dravya* and is also very much useful in *Kushta*, *Vrana*, *Shotha*, etc. Given its abundance and numerous medicinal properties, further studies on the diverse actions of this plant should be conducted.

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