



Review Article

A LITERARY REVIEW ON THE HISTORICAL EVOLUTION AND THERAPEUTIC SIGNIFICANCES
OF *KARANJA* (*PONGAMIA PINNATA* LINN.)

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ABSTRACT

Karanja (*Pongamia pinnata* Linn.), an important medicinal plant in Ayurveda, is extensively documented in classical texts such as the *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya* and in various *Nighantu* for its diverse therapeutic applications. This review aims to systematically compile and analyze classical Ayurvedic literature along with contemporary scientific evidence to elucidate the pharmacological and clinical significance of *Karanja*. Literary data were collected from *Samhitas* and *Nighantus*, focusing on its classification (*Varga*), synonyms (*Paryaya*), *Rasa Panchaka*, *Karma* and therapeutic indications, followed by correlation with modern pharmacological studies. Classical descriptions highlight *Karanja* as a *Tikta-Katu* predominant drug with *Ushna Virya* and *Tikshna Guna*, exhibiting *Kaphavatahara*, *Krimighana*, *Kushtaghana* and *Vranashodhana* properties. It is widely indicated in conditions such as skin disorders (*Kushta*), wounds (*Vrana*), parasitic infections (*Krimi*) and inflammatory diseases, with versatile usage in formulations like *Taila*, *Kwatha*, *Churna* and *Lepa*. Modern investigations further validate these claims, demonstrating significant antimicrobial, anti-inflammatory, antioxidant, analgesic, anti-ulcer, and antihyperglycemic activities. These effects are attributed to bioactive constituents such as flavonoids, *Karanjin* and *pongamol*. The integrative analysis reveals a strong concordance between classical Ayurvedic concepts and modern pharmacological findings, reinforcing the therapeutic potential of *Karanja*.

INTRODUCTION

Ayurveda, the ancient system of medicine, extensively documents medicinal plants with detailed descriptions of their properties and therapeutic uses. *Karanja*, botanically identified as *Pongamia pinnata* Linn., is one such important drug mentioned in classical texts like *Charaka Samhita*, *Sushruta Samhita* and *Bhavaprakasha Nighantu*. *Pongamia pinnata* is also referred to as Indian beech and *Karanja*. One of India's most well-known and brilliant plants is the *Pongamia pinnata*, also known as the "Pongam Tree". South Indians, specifically Tamils, gave the *pongamia* its name, and the word "pinnata" alludes to the pinnate leaves.

Karanja is a medium sized glabrous tree with a spreading crown upto 18m high or sometimes even more and 1.5m in girth, found almost throughout India.

It is widely recognized for its role in managing skin disorders (*Kushta*), wounds (*Vrana*), and parasitic infections (*Krimi*). The plant's pharmacological versatility is attributed to its unique *Rasa Panchaka*. This review aims to systematically present the classical knowledge of *Karanja* to support its evidence-based application. Modern scientific studies have further validated these traditional claims, identifying bioactive compounds responsible for antimicrobial and antioxidant activities. Thus, integrating classical Ayurvedic knowledge with contemporary research enhances its therapeutic applicability.

MATERIALS AND METHOD

Literary Review

The literature of the drug has been compiled from various classical sources:

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1. Pre Vedic

Plants in the Pre-Vedic period were integral to spiritual, medicinal and everyday practices, reflecting their multifaceted roles in ancient Indian culture. Healing with medicinal plants is as old as mankind itself. *Karanja* (*Pongamia pinnata* Linn.) is not mentioned in the pre-vedic period as no written data is available.

2. Vedic Period (2500 BC. - 600 BC)

In *Rigveda* the term *Karanja* is used as a name of *Rakshasa* and it is mentioned in *Atharvaveda*.

In *Koushikagrihasutra* it is mentioned that this is useful in *Dantadhavana*.

3. Samhita /Sangraha Period (2000 BC-1300 BC)

Charaka Samhita (1000 B.C.-400 A.D.)

The classical Ayurvedic text *Charaka Samhita* provides extensive references to *Karanja* (*Pongamia pinnata* Linn.) across its various sections, highlighting its diverse therapeutic applications. In *Sutra Sthana*, *Karanja* is described under different synonyms such as *Udakirya*, *Chirbilwa* and *Naktamala* and is utilized in multiple forms including *Churna*, *Lepa*, *Kwatha* and *Taila*. It is primarily indicated for skin disorders such as *Kushta*, *Kilasa*, *Pama* and *Kandu*. *Karanja* is described in *Kandughana Mahakashaya*^[1]. References in *Nidana Sthana* indicate its potential to aggravate *Raktapitta* when improperly used. In *Vimana Sthana*, *Karanja* is employed in *Panchakarma* procedures such as *Vamana*, *Virechana* and *Basti* demonstrating its role in detoxification therapies.

Further, in *Shareera Sthana*, it is mentioned in obstetric care, including management of obstructed labor and *Dhatri Ksheera Dosha Nashaka*. *Chikitsa Sthana* contains the maximum references, where *Karanja* is extensively used in formulations like *Agaruvadi Taila*, *Mahakhadira Ghrita*, *Siddharthaka Snana* and various *Agadas* for treating a wide range of conditions including *Kushta*, *Krimi*, *Shotha*, *Apasmara*, *Unmada*, *Vishavikara*, *Jwara* and *Netra Roga*. It is also indicated in *Arsha*, *Grahani*, *Pratishaya*, *Urustambha* and *Granthi* disorders, showing broad-spectrum pharmacological utility. In *Kalpa Sthana* and *Siddhi Sthana*, *Karanja* is utilized in *Virechana* and *Basti* preparations, reinforcing its importance in *Shodhana* therapies.

Sushruta Samhita (1000 BC-200 AD)

In *Sushruta Samhita*, the therapeutic utility of *Karanja* is elaborated systematically across different *Sthana*. In *Sutra Sthana*, it is mainly classified under various *Gana* (*Varunadi Gana*^[2], *Aragvadhadi Gana*^[3], *Salsaradi Gana*^[4], *Arkadi Gana*^[5], *Shymadi Gana*^[6]) and emphasizing its *Kaphahara*, *Krimighana*, *Vishaghana*, and *Vrana Shodhaka* properties along with its use in *Kshara* preparations and *Vamaka/Virechaka* actions. In *Chikitsa Sthana*, its applications are more clinically

oriented, where *Karanja* is widely used in *Lepa*, *Taila*, *Ghritha*, *Kwatha* and *Arishta* forms for managing *Kushta*, *Prameha*, *Vrana*, *Arsha*, *Gulma* and *Vataroga* showing prominent roles in wound healing and skin disorders. In *Kalpa Sthana*, it is described as an important component in *Vishaghna Yogas* such as *Agada* and *Kwatha*, indicating its efficacy against various types of poisoning and toxic conditions. In *Uttara Tantra*, *Karanja* finds specialized use in *Netra*, *Nasa* and *Karna Chikitsa* through formulations like *Anjana*, *Nasya* and *Kavala* as well as in conditions like *Shiroroga*, *Indralupta* and *Kaphaja* disorders.

Ashtanga Hridayam

In *Sutra Sthana*, *Karanja* is classified under multiple *Ganas* such as *Aragvadhadi*^[7], *Varunadi*^[8], *Arkadi*^[9] and *Shyamadi Gana*^[10]. It is described as *Vamanakaraka*, *Kaphamedahara*, *Vishaghana*, *Krimighana*, *Kushtaghana* and *Vrana-Shodhaka*. It is also utilized in *Swedana* (*Dravsveda*), *Kshara Karma* and in external therapies like *Lepa* and *Prasheka* for wound cleansing and healing, indicating its broad utility in detoxification, *Kapha-Meda* disorders and skin diseases.

In *Chikitsa Sthana*, *Karanja* is extensively used in various formulations such as *Kwatha*, *Churna*, *Taila*, *Ghritha*, *Lepa* and *Kshara* for managing a wide spectrum of diseases. It shows efficacy in *Jwara* (especially *Sheeta Jwara*), *Arsha*, *Gulma*, *Prameha*, *Mutrakriccha*, *Kushta*, *Shotha*, *Visarpa*, *Vatarakta* and *Krimi*. It is also indicated in digestive disorders (*Ajeerna*), skin diseases, and metabolic conditions with both internal and external applications. Its role as *Shothahara*, *Kushtaghana*, *Vishaghana* and *Kaphahara* is prominently highlighted.

In *Kalpa Sthana*, *Karanja* (as *Chirbilva*) is mentioned in *Taila Basti*, indicating its therapeutic application in *Vata* disorders, emphasizing its role in *Panchakarma* procedures.

In *Uttara Sthana*, *Karanja* is widely employed in *Nasya*, *Anjana*, *Lepa*, *Dhupa*, *Snana* and *Agada* preparations. It is particularly useful in *Graha Roga*, *Unmada*, *Apasmara*, *Netra Roga*, *Twak roga*, *Visha* and *Gandamala*. It exhibits *Vishaghna*, *Krimighana*, *Kushtaghana*, *Shothahara*, and *Grahanashaka* properties with significant applications in toxicology, neuro-psychiatric conditions, ophthalmic disorders and infectious diseases.

Nighantu Period (500 AD-2000 AD)

During the *Nighantu* period classical Ayurvedic lexicons consistently described *Karanja* (*Pongamia pinnata* Linn.) with extensive nomenclature, pharmacological attributes, and therapeutic applications. Across major texts such as *Saushruta Nighantu*^[11], *Ashtanga Nighantu*^[12], *Dhanvantari Nighantu*^[13], *Bhavaprakasha Nighantu*^[14], *Raja Nighantu*^[15], *Kaiydev Nighantu*^[16], *Madanpal*

Nighantu^[17], *Priya Nighantu*^[18]. *Karanja* is repeatedly grouped under various *Gana* and *Varga* like *Aragvadhadi Gana*, *Aushadhi Varga*, *Vatadi Varga* etc. and is identified by numerous synonyms including *Naktamala*, *Putika*, *Chirabilva*, *Prakirya* and *Udakirya*. These texts also recognize different varieties such as *Dvi-Karanja*, *Mahakaranja*, *Putikaranja*, *Ghrதாகaranja* and *Latakaranja*. Pharmacodynamically, *Karanja* is predominantly described as *Tikta-Katu Rasa*, *Ushna Virya* and *Tikshna Guna*, with actions such as *Kaphavatahara*, *Krimighana*, *Kusthaghana*, *Vranashodhana* and *Yonirogahara*. Various parts including seeds, oil (*Taila*), leaves and bark are highlighted for therapeutic use, particularly in skin

disorders, wounds, parasites, metabolic disorders and dental care (*Dantadhavana*). Later *Nighantus* like *Priya Nighantu* further consolidate its clinical importance by emphasizing its efficacy in *Kustha*, *Vrana*, *Krimi* and *Kaphaja Vikara*, thus demonstrating a continuous and evolving recognition of *Karanja* as a significant medicinal plant in *Ayurvedic* lexicons.

Modern Period (1900 AD-2100 AD)

Relevant information on classification (*Varga*), synonyms (*Paryaya*), *Rasa Panchaka*, pharmacological actions (*Karma*) and therapeutic indications was collected, compiled and analyzed.

Karanja is classified under different groups in various *Samhita & Nighantus*

S.No.	Name of Granth	Mahakashaya /Gana / Varga/ Skandha
1.	Charaka Samhita	Kandughana Mahakashaya, Katu Skandha
2.	Sushruta Samhita	Varunadi Gana, Aragvadhadi Gana, Salsaradi Gana, Arkadi Gana, Shymadi Gana
3.	Ashtanga Hridayam	Tikta Gana, Vamana Gana, Aragvadhadi Gana, Varunadi Gana, Arkadi Gana, Shymadi Gana
4.	Saushruta Nighantu	Aragvadhadi Gana
5.	Ashtanga Nighantu	Aragvadhadi Gana
6.	Dhanvantari Nighantu	Amaradi Varga
7.	Shabadchandrika	Vrikshadi Varga
8.	Nighantushesha	Vrikshakanda
9.	Sodhala Nighantu	Amaradi Varga
10.	Hridyadeepak Nighantu	Chatuspada Varga
11.	Madanpal Nighantu	Vatadi Varga
12.	Kaiydeva Nighantu	Aushadhi Varga
13.	Bhavparkasha Nighantu	Guduchyadi Varga
14.	Sarasvati Nighantu	Mahavriksha Varga
15.	Raja Nighantu	Prabhadradi Varga
16.	Nighantu Adarsha	Palashadi Varga
17.	Priya Nighantu	Haritkyadi Varga
18.	Amarkosha	Vanaushadhi Varga
19.	Abhidhanmanjari	Madanadi Gana

Synonyms (*Paryaya*)^[19]

Important Synonyms with Their Etymology (*Nirukti*) & Interpretation as Described in Various *Nighantu*

Karanja is known by multiple names reflecting its properties and morphology:

१. करञ्जः (भा०) - कं जलं रञ्जयति, नीलाभत्वात्;

यथा प्रिय- निघण्टौ - 'नीलत्विषा रञ्जयति प्रवाहं त्वपां नदीनां विकचः करञ्जः' इति ।

Karanja (*Pongamia pinnata* Linn.) is a tree when growing on the banks of stream impart bluish colour to water (*Karanja*).

२. उदकीर्यः (अ०) - उदके कीर्यन्ते पुष्पाण्यस्य ।

३. करजः (भा०) - नखः, तदाकृतिपुष्पत्वात् ।

Flowers shaped like a nail (*Karanja*)

४. गुच्छपुष्पकः (कै०) - गुच्छे पुष्पाण्यस्य ।

Flowers are in bunches (*Gucchapushpaka*)

५. घृतपर्णकः (नि०) - घृतवत् स्निग्धानि पर्णान्यस्य ।

Leaves are glossy (*Snigdhapatra, Ghritaparnaka*)

६. घृतपूर्णः (भा०) - घृतवत् स्नेहेन पूर्णानि बीजान्यस्य ।

Seeds yield oil like ghee (*Ghritapurna*).

७. नक्तमालः (भा०) - नक्तं रात्रौ आ समन्तात् अलति भूषयति यथा

Flowers blooming in night (*Naktamala*)

प्रियनिघण्टौ - 'नक्तं सुनीलैर्मृदुपुष्पभारैः संशोभते प्राक् पतितैः प्रभाते' इति ।

८. पूतिपत्रकः (सो०) - पूतीनि दुर्गन्धीनि पत्राण्यस्य ।

Flowers are foetid (*Putipatraka*).

९. लाजपुष्पकः (अ०) - लाजाकृतीनि पुष्पाण्यस्य ।

Flower shape like a parched paddy (*Lajapushpaka*)

१०. श्लीपदारिः (नि०) - श्लीपदहर्तृत्वात् ।

It is an effective drug for filaria (*Slipadari*).

११. स्निग्धपत्रः (कै०) - स्निग्धानि पत्राण्यस्य ।

Leaves are glossy.

S.N.	Synonyms	K. N.	D. N.	R. N.	Mp. N.	A. M.	Am. K.	As. N	N. S.	P.R. M.	Bp. N.	Ma. N.	Sar. N.	Sid. N.	Sh. N.	Su. N.	Hd. N.
1.	Karanja	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-
2.	Naktamala	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
3.	Naktahava	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+
4.	Guchapusha	+	-	-	-	+	-	+	-	-	-	+	-	-	-	-	-
5.	Ghritapura	+	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-
6.	Snigdhapatra	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.	Prakirya	+	+	+	-	+	+	-	-	-	+	+	-	-	-	+	+
8.	Pushpa manjari	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
9.	Udakirya	+	+	-	-	+	-	+	+	+	-	-	-	-	-	+	+
10.	Putikarna	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.	Prakirana	+	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-
12.	Matra nandan	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
13.	Putikaranja	+	-	-	-	-	+	-	+	-	+	-	-	-	+	-	+
14.	Putika	+	+	+	+	-	+	-	+	-	+	-	-	+	+	+	+
15.	Chirbilva	+	+	+	+	-	+	-	+	+	+	-	+	+	-	+	+
16.	Kaidarya	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+
17.	Ghritaparna	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
18.	Gaura	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-
19.	Shadgrantha	-	+	-	-	-	+	-	+	-	-	-	-	-	-	-	-
20.	Hasticharini	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-
21.	Madhastinika	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-
22.	Rohi	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-
23.	Hastirohnak	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-
24.	Priye	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-
25.	Vridhphala	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-

26.	<i>Rochana</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
27.	<i>Tapasavi</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.	<i>Vishari</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.	<i>Virochak</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.	<i>Klimar</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-
31.	<i>Guchakantak</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32.	<i>Manjari pushpa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33.	<i>Sumana</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34.	<i>Madhumakshi Priye</i>	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
35.	<i>Lajapushpa</i>	-	-	-	-	+	-	+	-	-	-	-	+	-	-	-	-
36.	<i>Shalipadari</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
37.	<i>Kalinashaka</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
38.	<i>Putiparni</i>	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
39.	<i>Ghrita varnaka</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
40.	<i>Putivarna</i>	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
41.	<i>Shayapriya</i>	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
42.	<i>Markata</i>	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-
43.	<i>Angarvalli</i>	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
44.	<i>Saptachad</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
45.	<i>Yugampatra</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
46.	<i>Saptahav</i>	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
47.	<i>Sumna</i>	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-
48.	<i>Somvalka</i>	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
49.	<i>Snigdha Karanja</i>	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+	-
50.	<i>Manjaripushpaka</i>	-	-	-	-	+	-	-	-	-	-	+	-	-	-	+	-
51.	<i>Putipatrak</i>	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
52.	<i>Guchak Kantaka</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-

K.N. –Kaiydeva Nighantu, D.N.-Dhanvantari Nighantu, R.N. – Raja Nighantu, Mp.N.-Madanpala Nighantu, A.M.-Abhidhanmanjari, Am.K.- Amarkosha, As.N.-Ashtanga Nighantu, N.S.- Nighantu Shesha, P.R.M.- Prayaratnamala, Bp.N.- Bhavpraksha Nighantu, Ma.N.- Madanadi Nighantu, Sar.N.-Saraswati Nighantu, Sid.N.- Siddhasara Nighantu, Sh.N.- Sodhala Nighantu, Su.N.-Sushruta Nighantu, Hd.N.-Hridyadeepaka Nighantu

Botanical Classification of Karanja (*Pongamia pinnata* Linn.)

Taxonomical Rank	Taxon
Kingdom	Plantae
Subkingdom	Tracheobionta
Division	Magnoliophyta
Class	Magnoliopsida
Subclass	Rosidae
Order	Fabales
Family	Fabaceae
Genus	Pongamia
Species	Pinnata

Morphology of *Karanja* (*Pongamia pinnata* Linn.)

Karanja is a medium sized, fast-growing tree that exhibits semi-evergreen to deciduous behavior depending on environmental conditions. In moist-regions, it remains evergreen, while in dry areas it sheds leaves briefly during March–April. The tree typically begins flowering at 4–7 years of age, with flowering occurring from April to June and fruiting from March to May of the following year.

The leaves are alternate, imparipinnate, and composed of 5–9 ovate to elliptic leaflets. Young leaves appear pinkish-red, turning glossy dark green above and pale green beneath at maturity. The trunk is straight or slightly crooked, with grey-brown bark that is smooth or faintly fissured, supporting a broad, spreading crown. Flowers are arranged in axillary, raceme-like inflorescences and are fragrant, pea-shaped, and white to pink with purple markings. The fruits are thick, indehiscent pods, usually containing one seed. Seeds are ovoid, brown and oil-rich, enclosed within a hard leathery coat.

Rasa Panchaka (Pharmacological Properties)**Table: Rasa Panchaka of *Karanja* as per API**

Rasa	<i>Katu</i> , <i>Tikta</i> (seed) ^[20] <i>Katu</i> , <i>Tikta</i> , <i>Kashaya</i> (leaf, stem bark root, root bark) ^[21]
Guna	<i>Tikshna</i>
Virya	<i>Ushna</i>
Vipaka	<i>Katu</i>
Karma	<i>Kaphavataghana</i> , <i>Kushtaghana</i> , <i>Krimighana</i> , <i>Vranashodhana</i> , <i>Kandughana</i>

Panchbhautika Sanghatana of *Karanja* on the basis of its Rasa Panchaka

S.No.	Rasapanchaka		Akasha	Vayu	Agni	Jala	Prithavi
1.	<i>Rasa</i>	<i>Katu</i>	-	+	+	-	-
		<i>Tikta</i>	+	+	-	-	-
		<i>Kashaya</i>	-	+	-	-	+
2.	<i>Guna</i>	<i>Laghu</i>	+	+	+	-	-
		<i>Tikshna</i>	-	-	+	-	-
3.	<i>Virya</i>	<i>Ushna</i>	-	-	+	-	-
4.	<i>Vipaka</i>	<i>Katu</i>	-	+	+	-	-
Total			2	5	5	-	1

Pharmacological Actions (*Karma*)

S.N.	<i>Karma</i>	K.N.	D.N.	R.N.	P.N.	Mp. N.	N. R.	Bp.N.	Rb. N.	N.S.
1.	<i>Kushtanashaka</i>	+	+	-	+	+	+	+	+	-
2.	<i>Kitibh</i>	-	-	-	-	-	-	-	+	-
3.	<i>Kandunashaka</i>	-	+	-	-	-	+	-	+	-
4.	<i>Raktavikara</i>	+	-	-	-	-	-	-	-	-
5.	<i>Vranahara</i>	+	+	-	+	+	+	+	-	-
6.	<i>Medohara</i>	+	-	-	-	-	-	-	-	-
7.	<i>Udararoga</i>	+	-	-	-	-	-	-	-	-
8.	<i>Krimihara</i>	+	+	-	+	+	-	+	+	-
9.	<i>Pittavardhaka</i>	+	-	-	-	-	-	-	-	-
10.	<i>Bhedana</i>	+	-	-	-	-	-	+	-	-
11.	<i>Arsha Nashaka</i>	+	-	-	-	+	+	+	-	-
12.	<i>Shophahara</i>	+	-	-	-	-	-	+	-	-
13.	<i>Pliharogahara</i>	-	+	-	-	-	-	-	-	-

14.	<i>Yonirogahara</i>	-	+	-	-	+	+	+	-	-
15.	<i>Bhootbadha Nashaka</i>	-	+	-	-	-	-	-	-	-
16.	<i>Vishaghana</i>	-	+	-	-	-	-	-	-	-
17.	<i>Vicharchika</i>	-	+	-	-	-	+	-	-	-
18.	<i>Charmaroga</i>	-	+	-	+	-	-	-	-	-
19.	<i>Jwarahara</i>	-	-	-	-	-	-	-	-	-
20.	<i>Dantdridhkara</i>	-	-	-	-	-	-	-	-	-
21.	<i>Nayanpushpahrit</i>	-	-	-	-	-	-	-	-	-
22.	<i>Vibandhnashaka</i>	-	-	-	-	-	-	-	-	-
23.	<i>Chakshuya</i>	-	-	+	-	-	-	-	-	-
24.	<i>Nayanarti Nashaka</i>	-	-	-	-	-	-	-	-	-
25.	<i>Udavarta</i>	-	-	-	-	+	+	+	-	-
26.	<i>Gulma</i>	-	-	-	-	+	+	+	-	-
27.	<i>Raktapitta Pradushaka</i>	-	-	-	-	-	-	-	-	-
28.	<i>Vata Nashaka</i>	-	-	+	-	+	+	+	-	-
29.	<i>Dantdhawan</i>	-	-	-	+	-	-	-	-	-
30.	<i>Kapha Nashaka</i>	-	-	-	-	+	-	+	-	-
31.	<i>Pramehahara</i>	-	-	-	-	+	-	+	+	-
32.	<i>Shothahara</i>	-	-	-	-	+	-	-	-	-
33.	<i>Netra Roga</i>	-	-	-	-	-	+	-	-	-
34.	<i>Raktapitta Pradushnama</i>	-	-	-	-	-	-	-	+	-
35.	<i>Shalipada Nashaka</i>	-	-	-	-	-	-	-	-	+
36.	<i>Kali Nashaka</i>	-	-	-	-	-	-	-	-	+

K.N. –Kaiydeva Nighantu, D.N.-Dhanvantari Nighantu, R.N. – Raja Nighantu, P.N.- Priya Nighantu, Mp.N.-Madanpala Nighantu, N.R.-Nighantu Ratnakara, Bp.N.-Bhavprakash Nighantu, Rb.N.-Rajavallabha Nighantu, N.S.-Nighantushesha

Therapeutic Indications (*Rogaghnata*) as Described in Various *Samhitas* & *Nighantu*^[22]

S.No.	Indication / Disease	Formulation / Preparation	Mode of Use
1	Intrinsic haemorrhage	<i>Karanja</i> seed with honey and ghee warm salt and <i>Karnja</i> seed with curd water	Oral
2	Piles	Tender leaves fried in oil and ghee with parched flour	Oral
3	Anorexia	Toothbrush (<i>Dantadhavana</i>) made from <i>Karanja</i>	Local (oral hygiene)
4	Splenomegaly	Alkali of <i>Karanja</i> with sour gruel + <i>Pippali</i>	Oral
5	Vomiting	Gruel cooked with <i>Karanja</i> leaves	Oral
6	Minor skin diseases (<i>Ksudraroga</i>)	<i>Karanja</i> oil with <i>Vacha</i> , <i>Daruharidra</i> , <i>Sarşapa</i>	External application
7	Sinus	Decoction of <i>Karanja</i> , <i>Nimba</i> , <i>Jati</i> , <i>Bibhitaka</i> , <i>Pilu</i>	Wash
8	Wounds	<i>Karanjadya Ghrita</i> decoction of <i>Karanja</i> + <i>Nimba</i> + <i>Nirgundi</i>	Internal & external
9	Abscess	Seed powder processed with <i>Snuhi</i> juice; oil extract. Intake of <i>Karanja</i> seed, <i>Sunthi</i> & <i>Vacha</i> pounded with decoction of <i>Karanja</i>	Internal & external
10	Eruptive boils	<i>Karanja</i> seeds mixed with sesame & mustard	External
11	Loss of hair	Tender leaves of <i>Karanja</i> + <i>Kasisa</i> + <i>Kapittha</i> juice	External

12	Kushta & worms	Kushta + Karanja seed+ Chakaramarda paste, Vasa, Kutaja, Saptaparna, Karvira, Karanja, Nimba, Khadira with cow urine, Karanja oil or mustard oil	Bath, intake & paste, external
13	Vata with Medas	Karanja seed paste with mustard + cow's urine	External
14	Eye diseases	Pterygium- Milk processed with Karanja seed Corneal opacity –Karanja seed powder impregnated with Palasha flower juice (collyrium)	Local application
15	Scorpion sting	Flowers of Karanja, Arjuna, Sleshmataka, Kutaja, Sirisha mixed with curd (paste)	External
16	Ahiputana (pediatric condition)	Ghee processed with Karanja + Triphala	Internal
17	Urustambha	Decoction or paste of Karanja + Agnimantha	External
18	Granthi-Visarpa	Paste of Karanja bark or radish	External

Classical Karma vs Modern Pharmacology

Classical Karma	Ayurvedic Meaning	Modern Correlation
Kushtaghana	Treats skin diseases	Antimicrobial, antifungal
Krimighana	Anti-parasitic	Antibacterial, antibiofilm
Kandughana	Anti-itching	Anti-inflammatory
Vranaropaka	Wound healing	Tissue regeneration
Kapha-Vata Shamaka	Dosha balancing	Anti-inflammatory, metabolic effects

Pharmacological Activity

Analgesic Activity

Karanja seed *Kwatha* exhibited moderate peripheral analgesic activity in the acetic acid-induced writhing test in mice. It showed 34.06% inhibition at 2.5g/kg and 30.31% at 5.0g/kg. The activity is likely associated with suppression of prostaglandin-mediated pain and elevation of pain threshold^[23].

Anti-plasmodial activity

Pongamia pinnata Linn. exhibits anti-plasmodial effects against *Plasmodium falciparum* (Simonse et al., 2001)^[24]

Anti-inflammatory activity

Karanja seed *Churna* showed moderate to significant anti-inflammatory effects in carrageenan-induced paw edema in rats, a standard model of acute inflammation. It produced 11.81% inhibition at 800mg/kg and 40.39% at 1600mg/kg, indicating a dose-dependent response. The effect may be due to modulation of inflammatory mediators involved in the exudative phase.^[25]

The 70% ethanolic extract of *P. pinnata* leaves demonstrates significant anti-inflammatory activity across acute, sub-acute and chronic phases of inflammation (Srinivasan et al., 2001).^[26]

Antimicrobial activity

Crude leaf extracts of *P. pinnata* show antimicrobial properties, including antibacterial, anti-giardial and anti-rotaviral activities. The extract also reduces cholera toxin production and inhibits bacterial

invasion of epithelial cells, indicating selective anti-diarrheal potential (Brijesh et al., 2006).^[27]

Antioxidant activity

Leaf extracts of *P. pinnata* exhibit antioxidant effects by reducing lipid peroxidation and enhancing antioxidant enzyme levels such as catalase, glutathione, glutathione peroxidase, and superoxide dismutase in ammonium chloride-induced hyperammonemic rats (Essa and Subrahmanian, 2006).^[28]

Anti-ulcer activity

Methanolic root extract of *P. pinnata* provides significant protection against aspirin-induced and acetic acid-induced ulcers. This is achieved by enhancing mucosal defense mechanisms such as mucin secretion, cell proliferation, glycoprotein synthesis and inhibition of lipid peroxidation (Prabha et al., 2003).^[29]

Antihyperglycemic and anti-lipid peroxidative effects

Oral administration of the ethanolic extract of *Pongamia pinnata* flowers has demonstrated notable antihyperglycemic and anti-lipid peroxidative effects. It also improves the antioxidant defense mechanism in alloxan-induced diabetic rats. These results indicate that *P. pinnata* extract may serve as a safe and effective alternative for the management of hyperglycemia in diabetic patients (Punitha and Manoharan, 2006).^[30]

DISCUSSION

Karanja (*Pongamia pinnata* Linn.) has been extensively described in classical Ayurvedic literature with wide-ranging therapeutic applications. The present review highlights its historical evolution, pharmacological attributes and clinical relevance through a comprehensive analysis of *Samhitas* and *Nighantus*, along with correlation to modern scientific findings.

The classification of *Karanja* across multiple Ayurvedic texts under different *Vargas* such as *Kandughana Mahakashaya*, *Aragvadhadi Gana*, and *Tikta Gana* reflects its multifaceted therapeutic potential. Its placement in these groups indicates its predominant role in managing skin disorders, parasitic infections and inflammatory conditions. The abundance of synonyms like *Naktamala*, *Putikaranja*, *Ghratapura*, *Snigdhapatra* and *Slipadari* signifies not only its morphological characteristics but also its pharmacodynamic actions and traditional uses.

The *Rasa Panchaka* of *Karanja*- *Katu*, *Tikta* and *Kashaya Rasa*; *Tikshna Guna*; *Ushna Virya*; and *Katu Vipaka*- suggests its strong action on *Kapha* and *Vata Doshas*. These properties justify its indications in conditions like *Kushta* (skin diseases), *Krimi* (parasitic infections) and *Vrana* (wounds). The *Ushna Virya* and *Tikshna Guna* contribute to its penetrating and detoxifying actions, while *Tikta* and *Kashaya Rasa* support its role in purification and healing.

Classical *Karmas* such as *Kushtaghana*, *Krimighana*, *Kandughana*, and *Vranaropaka* are consistently supported by therapeutic indications described in the texts. These include its use in skin diseases, wounds, abscesses, piles and even ophthalmic conditions. Various formulations such as oils, decoctions, pastes and medicated ghee demonstrate its versatility in both internal and external applications.

Importantly, modern pharmacological studies validate many of these classical claims. The presence of bioactive compounds like flavonoids, *Karanjin* and *pongamol* has been associated with antimicrobial, antifungal, anti-inflammatory, antioxidant and wound-healing activities. These findings align closely with the Ayurvedic concepts of *Kushtaghana* (antimicrobial), *Krimighana* (antiparasitic) and *Vranaropaka* (healing).

CONCLUSION

Karanja (*Pongamia pinnata* Linn.) is a well-established medicinal plant in Ayurveda with extensive therapeutic relevance supported by both classical literature and modern scientific research. The present review systematically highlights its historical evolution, detailed pharmacological attributes and wide range of therapeutic applications described in *Samhitas* and *Nighantu*.

The classical concepts of *Rasa Panchaka* and *Karma* clearly indicate its efficacy in managing disorders such as *Kushta* (skin diseases), *Krimi* (parasitic infections) and *Vrana* (wounds), which are further substantiated by contemporary studies demonstrating antimicrobial, anti-inflammatory, antioxidant, analgesic, and antihyperglycemic activities. The presence of bioactive compounds like flavonoids, *karanjin* and *pongamol* plays a crucial role in these pharmacological effects.

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