

A LITERATURE REVIEW OF CHITRAKA**Dr. Prabir Naskar***

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Article Received on 15 August 2026,
Article Revised on 05 September 2026,
Article Published on 16 Sept. 2026,
<https://doi.org/10.5281/zenodo.22784388>

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How to cite this Article: Dr. Prabir Naskar*. (2026). A Literature Review of Chitraka. World Journal of Pharmaceutical Research, 15(18), 511-518.

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ABSTRACT

Plants are the exclusive source of the drugs for the treatment of the diseases; many peoples are dependent upon medicinal. Chitraka is one of the most important plant. Chitraka belongs to family Plumbaginaceae and Scientific name is *Plumbago zeylanica* Linn. one of the medicinal plants used in the Indian traditional system of medicine. The present review deals with morphological distribution, chemical constituent, medicinal properties, biological activities and pharmacological effects of Chitraka. Traditionally the present work aims to describe Chitraka in various Nighantus as manuscripts or just as evidence in a chronological order. The action of Chitraka is Agnimandya, Ajirna, Grahani, Arsa, Shulahara, Kandughna.

KEYWORDS: Citraka, *Plumbago zeylanica* Linn., Agnimandya, Nighantu.

INTRODUCTION

Citraka is being used in the Indian ayurvedic science since the ancient times. Now-a-days, the use of Citraka is increased to prevent and cure the various diseases due to its medicinal benefits and its efficacy on the human beings. As Citraka has a soothing effect, it can eliminate the excessive heat from the body. Citraka balances the three doshas (vata, pitta and kapha) of the body, which can produce disease while get vitiated. It is beneficial especially in disorder of digestive system. It is found to have various chemicals named Plumbagin, 3-chloroplumbagin, elliptinone, chitranone, Zeylinone etc. which acts as a appetizer and digestive enzyme.

AIMS AND OBJECTIVE

This study is done to evaluate the information available regarding Citraka in various literature. The main objective of this study is to keep the comprehension of Citraka under one title.

A. Scientific name^[1]: *Plumbago zeylanica* Linn.

B. Family^[1]: Plumbaginaceae

C. Taxonomical Classification according to Bentham and Hooker (1862-1883)

Kingdom	:	Plantae
Subkingdom	:	Viridiplantae
Infrakingdom	:	Streptophyta
Superdivision	:	Embryophyta
Division	:	Tracheophyta
Subdivision	:	Spermatophytina
Class	:	Magnoliopsida
Superorder	:	Caryophyllanae
Order	:	Caryophyllales
Family	:	Plumbaginaceae
Genus	:	Plumbago
Species	:	zeylanica Linn.

D. Vernacular names^{[1][2]}

Sanskrit	:	Agni, Vahni, Jvalanakhya, Krisanu, Hausaa, Dahana, Sikhi
Hindi	:	Chira, Chitra
Bengali	:	Chita
English	:	Lead wort
Gujrati	:	Chitrakmula
Kannada	:	Chitramula, Vahni, Bilichitramoola
Kashmiri	:	Chitra, Shatranja
Malayalam	:	Vellakeduveli, Thumpokkoduveli
Marathi	:	Chitraka
Oriya	:	Chitamula, Chitoparu
Punjabi	:	Chitra
Tamil	:	Chitramoolam, Kodiveli

Telugu : Chitramulam

Urdu : Sheetraj Hindi, Cheetah

Table No 1: Showing synonyms of Chitrak in different Nighantu.

S.N.	SYNONYMS	DN	SN	MPN	KN	RN	BPN	SGN	PN	MdN
1	Chitraka	+	-	+	-	+	+	-	+	+
2	Anala	-	-	-	-	+	+	-	-	-
3	Pathi	+	-	-	-	+	+	-	-	-
4	Vyala	+	-	-	-	+	+	-	-	+
5	Usana	-	-	-	-	-	+	-	-	-
6	Hutabuka	-	-	-	-	-	-	-	-	+
7	Daruna		-	-	-	+	-	-	-	+
8	Dahana	+	-	-	-	-	+	-	-	+
9	Aruna	-	-	-	-	-	-	-	-	+
10	Havipachi	-	-	-	-	-	-	-	-	+
11	Vahninama	-	-	-	-	-	-	-	-	+
12	Kaal	-	-	-	-	-	+	-	-	-
13	Kalmula	-	-	-	-	-	+	-	-	-
14	Marjara	-	-	-	-	-	+	-	-	-
15	Dahaka	-	-	-	-	-	+	-	-	-
16	Chitranga	-	-	-	-	-	+	-	-	-
17	Mahanga	-	-	-	-	-	+	-	-	-
18	Vyala	-	-	-	-	-	+	-	-	-
19	Atidipya	-	-	-	-	-	+	-	-	-
20	Pavaka	-	-	-	-	+	+	-	-	-
21	Raktachitraka	-	-	-	-	+	+	-	-	-
22	Agni	-	-	-	-	+	+	-	+	-
23	Agnika	+	-	-	-	+	-	-	-	-
24	Shardula	-	-	-	-	+	-	-	-	-
25	Krishanu	-	-	-	-	+	-	-	-	-
26	Palaka	-	-	-	-	+	-	-	-	-
27	Citrapali	-	-	-	-	+	-	-	-	-
28	Sikhi	+	+	-	+	+	+	-	-	-
29	Jyotsikka	+	-	-	-	+	-	-	-	-
30	Vanhi	+	+	+	+	+	+	+	+	+
31	Dwip	-	-	-	-	+	-	-	-	-
32	Havi	-	-	+	+	-	+	-	-	-

(+ denotes presence, - denotes absence)

(DN-Dhanwantari Nighantu, SN- Shodala Nighantu, MPN-Madanapala Nighantu, RN-Raja Nighantu, KN-Kaiyadeva Nighantu, BPN-Bhavprakash Nighantu, SGN-Saligrama Nighantu, MdN-Madhava dravya Nighantu, PN-Priya Nighantu)

E. Varieties^{[3][7]}

- According to Astanga Hridaya, Uttara tantra, Chitraka is of 3 varieties:

a) Sweta (white variety) b) Pita (yellow variety) c) Asita.

- Usually chitraka is of 3 varieties based on the colour of their flowers:

a) White variety (*P. zeylanica*) b) Red variety (*P. rosea*) c) Blue variety (*P. capensis*/ *P. auriculata*).

- According to Raja Nighantu 2 varieties: a) Sweta chitraka b) Rakta chitraka.

F. Literary Reviews of Chitraka: In Vaikhanasa Dharma Sutra chitraka has been mentioned as a forbidden saka (leafy vegetable). In 'Sabdakalpadruma' and 'Amarakosha', chitraka has been used to denote the masculine gender. 'Pathin' and 'Banhisangak' have been mentioned as synonyms of chitraka by 'Amarakosha'.

G. Botanical Description^[1]

A perennial sub-scandant shrubs with 0.6-1.5m long stems, somewhat woody, spreading, glabrous. **Leaves:** thin, 3.8- 7.5 x 2.2- 3.8cm, alternate ovate, sub acute, entire, glabrous, reticulate veined, petiole short, amplexical at the base. **Flowers:** inbracteate, elongate spikes, rachis glandular, striate, Calyx- 1-1.3cm long, narrowly tubular, densely covered with stalked glands, Corolla- white, slender, tube 2-2.5cm long. **Fruit-** capsule, oblong, pointed, pericarp thin below, thick, and hardened above. **Seeds-** oblong.



Fig. a: Chitraka plant and Root.

H. DISTRIBUTION^[1]

Found throughout India and sometimes cultivated.

I. Ayurvedic Properties^[1]

Rasa- Katu

Guna- Laghu, Ruksha, Tikshna

Virya- Usna

Vipaka- Katu

Table 2: Rasapanchaka as per various Nighantu.

RASAPANCHAK		TEXTS							
		DN	SN	MPN	KN	RN	BN	SGN	PN
RASA	KATU	+	+	+	+	+	+	+	+
	TIKTA	+	-	-	+	-	+	+	+
GUNA	LAGHU	-	-	+	-	-	-	-	-
	RUKSHA	-	-	+	+	-	-	-	-
	TIKSHNA	+	-	-	+	-	+	-	-
	USNA	+	-	-	-	-	-	-	-
VIPAKA	KATU	+	-	+	+	+	+	+	+
VIRYA	USNA	+	-	+	+	-	+	+	+

(+ denotes presence, - denotes absence)

Summarising the Rasapanchak mentioned by the various Nighantukaras it can be concluded that Chitraka has Katu rasa, Laghu, Ruksha, Tikshna gunas, Usna virya and Katu Vipaka.

J. Karma^[2]

- **Dosa karma-** Vatakapha samaka, Pitta vardhaka
- **Sharira karma-** Lekhana, Visphotajanana, Uttejaka, Madaka, Deepana, Pacana, Pittasaraka, Grahi, Krimighna, Raktapittakopaka, Sothahara, Kaphaghna, Kanthya, Garbhasaya sankochaka, Garbhasravakara, Vajikarana, Swedajanana, Jwaraghna, Rasayana.
- **Vyadhi karma-** Sotha, Switra, Sleepada, Amavata, Nadidourbalya, Vatavyadhi, Agnimandya, Ajirna, Udarasula, Yakridvikara, Arsha, Grahani, Gudasotha, Jeerna pratisyaya, Kasa, rajorodha, Prasutivikata, Makkalashula, Kushtha, Visamajwara, Jirnajwara.

K. Chemical Constituents^[1]

Plumbagin, 3-chloroplumbagin, elliptinone, chitranone, Zeylinone, Isozeylinone, Droserone, Plumbagic acid, Plumbazeylanone, Napthalenone, Isoshinalonone, β -sitosterol, Dihydrosterone.

L. Pharmacological Activities^[4]

Antipyretic, appetizer, Uterotonic, Antibacterial, Antifungal, Antifertility, anticancer, Anticoagulant, Antitumour, Hepatoprotective, CNS depressant.

Some of the above mentioned pharmacological activities have been explained on the basis of various research works that has been conducted regarding chitraka.

Anti-inflammato^y activity^[5]: Plumbago species are one of the most important medicinal plants which are used for anti-inflammatory diseases. The root of *P. zeylanica* extracted with methanol was used for determining the anti inflammatory effects. The methanolic extracts at 300 and 500 mg/kg produced 31.03 and 60.3% inhibition of acute inflammation, respectively, in Carrageenin induced raw paw oedema confirming that *P. zeylanica* roots are effective against acute inflammation.

Memory-inducing activity^[5]: Mittal et al reported the effect of *P. zeylanica* roots on scopolamine induced amnesia for learning and memory of mice. The chloroform extract of plant at dose 200 mg/kg has shown promising memory enhancing effect in mice. The extract significantly reversed the amnesia induced by scopolamine (0.4 mg/kg i.p.).

Lipid metabolism activity^[5]: Plumbagin (2-methyl-5-hydroxy, 1:4naphthoquinone) isolated from the roots of *P. zeylanica* when administered to hyperlipidaemic rabbits, reduced serum cholesteroland. Plumbagin was reported to reduce serum cholesterol and LDL-cholesterol by 53% - 86% and 61%-91 % respectively; lower cholesterol/ phospholipid ratio by 45.8%; elevates decreased HDL-cholesterol significantly in rabbits.

Central nervous system activity^[5]: Bopaiah et al investigated the effects of a 50% ethanol extract of the root of *P. zeylanica* on locomotor behaviour and central dopaminergic activity in rats. The extract significantly increased the spontaneous motility in animals. The stereotypic behaviour which is characteristic of a dopamine agonist showed biphasic effects. They observed the extract of the root of *P. zeylanica* specifically enhanced the spontaneous ambulatory activity without inducing stereotypic behaviour.

Anti-oxidant activity^[5]: Antioxidant effects of the aqueous/alcoholic extracts of root, corresponding to medicinal preparations, and the active ingredient, plumbagin, were studied by Tilak et al. Methods used included: ferric reducing/antioxidant power (FRAP), radical scavenging of 1,1-diphenyl- 2-picryl hydrazyl (DPPH) and 2,2'-azobis-3-thylbenzthiazoline-6- sulfonic acid (ABTS), lipid peroxidation in rat liver mitochondria induced by different agents, and estimating phenolic and flavonoid content.

M. Part Used^[6]: Root, Root bark

N. Toxicity and Sodhana^[7]

Roots are the official parts of Rakta chitraka (*Plumbago rosea* Linn.) and Sweta chitraka (*Plumbago zeylanica* Linn.). It contains plumbagin as the chief chemical constituent, which is responsible for its corrosive effects. The red variety (Rakta chiktraka) is considered to be more corrosive than the sweta one. The corrosive effect can result in formation of peptic ulcers and prolonged use of unshodhita Chitraka can even lead to peptic perforation.

Though not included in any of the poisonous group of drugs but it has been advocated to use chitraka after shodhana only. Sweta and rakta chitraka roots should be cut into small pieces and soaked in lime water overnight (12 hours), then taken out, washed and dried. In another process, the crude drugs are dipped in lime water for three days consecutively and lime water should be changed every day.

O. Dose^[1]: Powder- 1-2gm.

P. Indications^[2]

Agnimandya, Ajirna, Grahani, Arsa, Udara, Krimi, Sula, Pandu, Kasa, Yakridroga, Plihavridhhi.

Q. Therapeutic Uses^[1]

Slipada- Externally application of Chitraka paste is useful.

Arsas- Chitraka and Sunthi are made as paste by mixing with kanjika and applied locally.

Sukrameha- Chitraka kasaya is useful.

Svitra- Chitraka and Trikatu are mixed with honey and cow urine should be kept in a jar coated with ghee for a fortnight and taken orally.

R. Important Formulations^[2]

Chitrakadi vati, Chitraka-haritaki, Dasamoolarishta, Yakridaplihari louha, Drakshasava, Lauhasava, Aswagandharista, Chitrakadi louha, Chitrakadi ghrita, Chitrakadi taila.

CONCLUSION

As we got detail information regarding Chitraka form various classical literatures, we can come into conclusion that Chitraka is one of the most effective drug use to treat various

diseases specially Agnimandya and Ajirna which is also supported by various modern literatures based on research.

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