

REVIEW ARTICLE

A Comprehensive Review of *Bhringraj* (Eclipta alba L.) from Ayurveda Perspective

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ABSTRACT

Background: Eclipta alba L. is commonly known as *Bhringraj*, a plant well known in Ayurveda for its varied medicinal uses. Plant extracts of *Bhringraj* have been used for a variety of cures, among which the commonly known properties of its extract are anti-hepatotoxic, anti-diabetic, anti-inflammatory, and hair rejuvenator. The present review of *Bhringraj* aims to explore its literature in Ayurveda texts as well as its current research.

Materials and Methods: Exploration of Ayurveda literature was done from Ayurveda classical texts as well as information from internet research databases was collected and presented in an organized manner.

Result: Bhringraj has been widely described in various *samhitas* and *nighantus* with various clinical indications such as Kasa, *Krimi, Swasa, Kushta, Dantya, Keshya, Pandu,* and *Shiroroga*.

Conclusion: *Bhringraj* holds a wide potential as per the references obtained in the present review and more studies should be conducted to tap its potential in clinical trials for human benefit.

1. INTRODUCTION

Therapeutic management of diseases using medicinal plants has traditionally been a very part of Indian History. Since historic times, people looked for the treatment of diseases in their near surroundings and natural habitat. Plants have always been the primary source of food, shelter, and various remedial approaches. They have been used for the treatment of different kinds of human ailments across the world since time immemorial. The use of medicinal plants also finds its traces in the habits of animals. Bhringraj has been used traditionally in by and large all the disciplines, i.e., Siddha, Ayurvedic, and also in allopathic nowadays. Eclipta alba L. is commonly known as Bhringraj and False daisy. This plant is very well known for its multiple therapeutic properties. This medicinal plant also contains many phytochemical constituents which play a significant role in increasing health care worldwide. It brings calming and rejuvenating benefits to the mind and nervous system and is also known to support liver metabolism and body circulation and promote healthy skin. Eclipta Alba has been

Corresponding Author: Nikhil Ravindra Yadav, MD Scholar, Department of Dravyaguna, SSRAMCH, Inchal - 591 102, Karnataka, India. Email: vaidya.nikhilyadav92@gmail.com widely used as antioxidant, analgesic, anticancer, antihyperglycemic, anti-myotoxic, and immunomodulatory properties. Keeping in view the present information about this wonder drug, the present paper aims to explore the drug *Bhringraj* for its conceptual evidence with regard to its therapeutic potential.

2. MATERIALS AND METHODS

Ayurveda classical texts, lexicons, and treatises were explored for the references of the present drug. Internet sources such as PubMed, Google Scholar, and similar databases were also explored for the present drug in view of the latest research on this Eclipta alba L.

3. RESULTS OF REVIEW

Caraka has said that the successful management of the disease is essential to select proper medicine and examine it in all aspects. However, it is possible only after proper identification of the drug. In other words, correct identification of the drug becomes the main prerequisite for its use as medicine. Studying the history of any drug gives insight into its, morphology, properties as well as therapeutic or dietary utility as also conceived by various authors at different stages of the history.

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3.1. Vedic Period

Bhringaraj is a well-known drug from the ancient period. Atharvaveda Maharshi Sayana has mentioned it in the treatment of *Kustha* and *Palitya*. This indicates that the *Keshya* property of *Bhringaraj* is well known from this period.

3.2. Samhita Kala (1000 B.C-700 A.D)

3.2.1. Charaka Samhita^[1] (1000 B.C)

In this text of Ayurveda, Acarya Caraka mentioned this drug in various places. In *Kaphaja Kasa, Chikitsa Bhrungraja* is mentioned as one of the ingredients of *Kashmaryadi yoga*.

He also stated that *Markav* is useful in the treatment of *Raktapitta* as one of the ingredients of *Raktapittanashaka yoga* and *Krimihar dravya* in the form of *Prkritivighat* chikitsa. Acarya Charak has clearly indicated *Bhrungraja* for the treatment of *Khalitya* and *Palitya*.

He also stated that *Bhrungraja* is the ingredient of "*Sahacharadi Taila*" and "*Mahanila Taila*" which have been mostly used in form of *Nasya* in the management of *Palitya*. In *Kalpasthana, Bhrungraja* is also used in *Vamana* and Virechana yoga (Ca. K.7).^[2]

3.2.2. Sushruta Samhita^[3] (800-1000 B.C)

Acharya Sushruta has been mentioned in *Chikitsa* and *Kalpasthana*. *Bhrungraja* is used in the treatment of *Khalitya* and *Palitya* and he proved its *Keshya* activity. Sushruta also stated its *Vishahar* property and it is used in the diseases such as *Nadivrana*, *Ashmari Roga*, *Swasa*, *Kasa*, and *Vataj Swarabheda*.

Likewise, Sushruta Samhita description of drug *Bhrungraja* is available in 9 references. Susrutha has mentioned *Bhringraj* by the term *Markava*.

3.2.3. Kashyapa Samhita

Kashyapa has described the drug *Bhrungraja* for *Netraroga* in the form of *Aschyotana* and *Pralepa*.

3.2.4. Harita Samhita

In this Samhita, Acharya Harita has mentioned the drug *Bhrungraja* by synonyms such as *Markava*, *Bhringarak*, and *Bhring* in 14 various *Kalpanas* as one of the ingredients. He also mentioned the use of *Bhrungraja* in the form of *Lepa* in *Indralupta* and *Kustha Roga*. He again mentioned *Bhrungraja* as one of the ingredients of *Shadbindu Taila*.

3.2.5. Sarangadhara Samhita^[4] (13th Cent AD)

Bhrungraja is used for the management of *Khalitya* and *Palitya* in different forms such as *Nilikadya Taila*, *Brhingaraa Taila*, *Ayashchurnadi lepa*, *Triphaladi lepa*, and *Nimba bija Taila*. It is also used for the *Shodhana* of *Shilajatu*. *Bruhat manjisthadi Kwatha* is used for the treatment of *Kustha*, *Vata Rakta*, *Upadamsha*, etc. and *Brungaraja* is one of the ingredients in *Kwatha*. It is also used for the *Netraroga* in the form of *Triphla Ghrita* (Sh.M.9/66-70).^[5] There is a total of 10 references found in *Sharangadhara Samhita*. Synonyms used for *Bhringraj* are *Bhring*, *Markav*, etc.

3.2.6. Bhavaprakasha Samhita^[6]

In *Kshudra roga* treatment, *Bhringraj* has been mentioned for the treatment of *Palitya* and *Khalitya* in the form of *Triphaladi Lepa*, *Kasamaryadi Tail*, and *GunjadiTail*.^[7]

Bhrungraja is one of the ingredients of Shad Bindu Taila for the treatment of *Shiro roga* and *Urdhva jatru gata roga*.^[8] In *Arsha roga*,

Chikitsa Bhrungraja is mentioned in the form of *Shankar Loha*. He also says that *Bhrungraja Swarasa* is useful in *Suryavarta roga* with *Aja dugha* in the form of *Nasya*.

3.3. Samgraha Kala (7th A.D)

3.3.1. Astanga Sangraha^[9]

In *Uttara tantra* 28 *Shiro roga Chikitsa*, the *Bhrungraja* is mentioned for the treatment of *Khalitya* and *Palitya* in the form of *Lepa*. He has also stated that *Bhringraj* is one of the ingredients of *Mahanil Tail* and *Bhringraj Tail*.

3.3.2. Astanga Hridaya^[10]

Ashtanga Hridaya has told a synonym Markav at two places and he has mentioned that it is one of the ingredients of Rasayana Kalpa for Rasayana Karma, Bhringraj Ghrita for Kaphaja Kasa,^[11] and Kushtaroga for local application. It is also used in the treatment of Palitya in the form of Swarasa.

3.4. Rasa Granthas

Many references to the drug "Bhringraj" can be traced in Rasa Granthas.

3.4.1. Rasaratna Samuchchaya

In this *Rasa Grantha, Bhringraj* is mentioned as an ingredient of *Snuhyadi Taila* and *Mahanila Tail* which find its use in *Khalitya* and *Palitya*, respectively. It is also used in *Kasa, Swara Bheda, Kustha, Netra roga*, etc.

3.4.2. Bhaishajaya Ratnavali^[12]

In Kshudra roga, Chikitsa Bhrungraja has been mentioned for the management of Indralupta, Palitya, and Khalitya as one of the ingredients of Bhrungraja Ghrita, Kesha Ranjan yoga, Bhrungraja Taila, Chandanadi Taila, Mahanila Taila, etc.

3.5. Nighantu Kala

After a great pause, Ayurveda was again revived to its past glory in the Nighantu Kala. A large number of drugs were studied and included in different Nighantus. The era of Nighantu is very important for the aspect of "Systematic understanding of the drugs" because the authors of Nighantu tried their level best to give detailed descriptions of the drugs by introducing synonyms and Guna-Karmas.

3.5.1. Dhanvantari Nighantu^[2]

In this Nighantu, 8 synonyms are available and its properties are also narrated under Karaveeradi Varga. It is used in Pandu, Hrudroga, etc.

3.5.2. Madanpal Nighantu^[13]

Madanpal has included it under the Prathama Bhaga, and Abhayadi varga synonyms are seven in number Kesh Ranjan, Markav, etc.

3.5.3. Kaidev Nighantu^[14]

In this Nighantu, various new indications are found, as it is stated most useful drug for the treatment of Kasa, Karimi, Swasa, Pandu, etc. and also includes newer synonyms such as Mahanil and Harivas.

3.5.4. Bhava prakash^[15]

Bhava Mishra has classified it under the Guduchyadi Varga with a total of 12 synonyms and advocates its use for the management of diseases such as Kustha, Kasa, Swasa, and Pandu.

3.5.5. Raj Nighantu^[16]

Pandit Narahari has described three varieties of *Bhringraj* in Shatahvadi Varga. 18 numbers of synonyms are given in this Nighantu. Regarding the therapeutic effect, it is stated as a Rasayana [Table 1].

3.6. Classification of Drug Bhringraj

In Ayurveda, drugs have been classified on the basis of their properties, morphological characters, Pharmacodynamic as well as therapeutic values etc. Although Bhrungraja has been used therapeutically in Brihattrayi, it has not been included in any of the classification of these texts. However, the later authors included it in their classification.

3.6.1. Acc. to Nighantus

	8		
1.	Dhanvantari Nighantu	-	Karaviradi Varga
2.	Shodhala Nighantu	_	Karaviradi Varga
3.	Madanpal Nighantu	—	Abhayadi Varga
4.	Kaidev Nighantu	_	Aushadhi Varga
5.	Raj Nighantu	-	Shatahavadi Varga
6.	Bhavaparakash Nighantu	—	Guduchyadi Varga

3.6.2. Acc. to Color of Flower [Table 2]

In Adarsh Nighantu and Bhavaprakash Nighantu, there is mention of Peet Bhringraj with the Botanical name Wedelia calendulacea. This plant morphological resembles in all the characters with Eclipta alba, expect the color of its flower, which is yellow and hence is known as "Peeta Bhringraj". In West Bangal, it is mainly used as a *Bhringraj*.

3.7. Uses^[16]

3.7.1. Acc. to Ayurveda

- Keshranjan
- Pitrupriya
- Nagmar
- Kuntal Vardhan
- Keshraj
- Shyamal
- Karanjak

3.7.2. Acc. to modern^[5]

The whole plant has been reported to be used as antiseptic, febrifuge, tonic, deobstruent in hepatic and spleen enlargement, and emetic. In combination with aromatic drugs, the juice is advised given in anemia, cataract, and cough. The plant is reported to be used as scalp tonic for hair growth.

Bhrungraja is reported to be used as deobstruent for the increased bile flow and to protect liver parenchymatous tissue in viral hepatitis and many other conditions involving hepatic enlargement as well.

The fresh juice of the leaves is advised in the management of edema, fevers, liver disorders, and rheumatic joint pains. It is also reported to be used to improve the appetite as well as to stimulate digestion.

The juice is advised to be supplemented with honey for the management of upper respiratory congestion in children. The hair oil prepared by boiling the fresh leaves of the drug with either coconut or sesame oil makes the hair black and lustrous.

3.8. Properties

Pharmacogenetic characters acc. To Ayurveda is explained below:

- Rasa [Table 3]
- Guna [Table 4]
- Veerya [Table 5]
- Vipaka [Table 6]
- Karma [Table 7].

Part used Panchangabeeja.[17]

Dosage:

- 1. Marsha nasya 10 drops.^[18]
- 2. Shiro abhyanga sufficient Qty.^[17]

3.9. Important Formulations

Amalakadi bhrungraja taila, khadi taila, shadbindu taila, bhrungraja churna, bhrungraja ghruta indications and action are explained below by different acharyas [Table 8].

3.10. Modern Period of Bhrungraj: Taxonomy^[1]

Taxonomy [Table 9].

3.11. Morphological Characteristics

It is an erect or prostrate branched (occasionally rooting at nodes) annual herb that ranges up to 30–40 cm in height. Its stem is cylindrical or flat, rough because of appressed white hair, nodes distinct, and greenish occasionally brownish. Leaves are opposite, sessile to subsessile to 6.2 cm long, 1-5-1.9 cm wide, oblong, lanceolate, sub-entire, acute to sub-acute, and strigose with appressed hair on both surfaces.

3.12. Floral Characteristics

Flower is white, solitary or two on unequal axillary peduncles involucral bracts are about 8 in number, ovate, obtuse, or acute, and strigose with oppressed hair. Disc flowers are tubular and the corolla is often 4 toothed. Stamens are 5, filament epipetalous. Free, another united into a tube with base obtuse. The pistil is bi-capillary. Ovary is inferior and unilocular with one basal ovule. Fruit is achenial cypsela, one seeded, cuneate, with a narrow wing and brown.

3.13. Distribution

The plant is reported to be distributed throughout India, ascending up to 2000 m in moist places.

3.14. Climate and Soil

The plant is found to be grown wild in a variety of soils like sandy to clay soil and vary common on damp wastelands, low waterlogged areas, roadsides, paddy, and other fields, mostly in warm climate.

3.15. Propagation Materials

Through seed and stem cuttings.

3.16. Therapeutic Uses

The whole plant is reported to be used as antiseptic, febrifuge, tonic, deobstruent in hepatic and spleen enlargement.

- In combination with aromatics, the juice is often given in anemia and cough.
- The plant is also reported to be used as scalp tonic for promoting hair growth.
- Bhrungraja is usually used by practitioners as deobstruent to promote bile flow and to protect liver parenchymatous tissue in viral hepatitis and also other conditions involving hepatic enlargement.
- The fresh juice of its leaves is given in the treatment of edema, fevers, liver disorders, and rheumatic joint pains; it can also be used to improve the appetite and stimulate digestion.
- The juice is given in combination with honey to treat upper respiratory congestion in children.

• The hair oil is prepared by boiling the fresh leaves with coconut or sesame oil makes the hair black and lustrous.

4. DISCUSSION

Bhringraj has been widely mentioned and explained in a variety of ayurveda texts with the indications on *Kasa, Krimi, Swasa, Kushtha, Dantya, Keshya, Pandu, Shiroroga,* etc. The review reinstates that *Bhringraj* is the herb that is most commonly used in traditional systems of medicine for treating various human ailments as per Ayurveda texts. It is majorly used for its extraordinary property of promoting the hair growth and provides strength to hair. It possesses wide range of phytochemical constituents such as coumestans, saponins, and alkaloids which have significant biological properties such as hepatoprotectivity, antibacterial, anti-viral, anti-stress, and immunomodulatory. It has also been used as leafy vegetable in some cultures for its nutritional properties. In Ayurveda, studies have suggested that *Bhringraj* can be used in diseases such as elephantiasis, anorexia, leprosy, eczema, psoriasis, jaundice, cough, and splenomegaly.

Bhringraj has been widely explained in Samhita period, Sangraha period, and in Nighantu period. References of Bhringraj also revealed that Bhringraj has been divided into three varieties depending on the color of the flower, namely Shweta (white variety), Peeta (yellow variety), and Neela (Blue variety). The plant has been found to be indicated in many clinical conditions such as Kasa, Shas, Khalitya, Palitya, Krimi roga, Kushtha, Dantya, and Pandu. Accounting to its Tikta and Katu Rasa, Ruksha ushna guna, Ushna veerya, and Katu vipaka, it helps clear the channels throughout the body and hence can be used as deobstruent. Its various formulations both internally and externally help in various indications such as hair fall, graving of hair, cough, and respiratory disorders. Many references have been found with respect to Nasya and Abhyanga to be used locally in the conditions of Swara bheda, Kushtha, Netra roga, and Khalitya palitya. The formulations hence should be widely studied with respect to their clinical efficacy for further utilization of this wonder herb.

5. CONCLUSION

The present review justifies that the selected drug offers a variety of indications to be experimentally and clinically tested to establish the drug as a reliable source of a rich pharmacological entity.

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7. AUTHORS' CONTRIBUTIONS

All the authors contributed equally in design and execution of the article.

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This study is not required ethical clearance as it is review study.

10. CONFLICTS OF INTEREST

Nil.

11. DATA AVAIBALITY

This is an original manuscript and all data are available for only review purposes from principal investigators.

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Table No.	Synonyms	Ca s	Su s	A.H	BP	RN	DN	MN	KN
1	Bhrungraja	+	+	21,11	+	+	+	+	+
2	Bhringraj		+	+	+	+	+	+	+
3	Markav		+	+	+	+	+	+	+
4	Bhringha							+	
5	Bhring		+	+	+	+	+		
6	Keshranjan				+	+	+	+	+
7	Pitripriya					+			
8	Keshya					+			
9	Patang								
10	Marker								
11	Marker								
12	Mark								
13	Nagmar								
14	Bhringsodar								
15	Angarak				+			+	
16	Bhringar				+	+	+		
17	Kuntal Vardhan					+			
18	Bhringarak						+		+
19	Ekaraj								
20	Keshraj				+				+

+

+

+

+

+

+

+

BPN

 $^+$

+

+

 $^+$

+

KN

+

 $^+$

+

Guna	D.N	R. N	K. N	BP. N
Ruksha	+		+	+
Ushna	+	+	+	+
Tikshna				

Table 5: Veerya of Bhrungraja

Veerya	D.N	R. N	K. N	BP. N
Ushna	+	+	+	+
Sheeta				

Table 6: Vipaka of Bhrungraja

Vipaka	D.N	R. N	K. N	BP. N
Madhur				
Amla				
Katu				+

Table 7: Karma of Bhrungraja

Dosaghanta	D.N	R. N	K. N	BP. N
Vataghna	+	+	+	+
Kaphaghna	+	+	+	+
Pitaghna		+	+	+

Table 8: Indications and Actions of Bhringraj acc.to different authors

	BP. N	Ca. S	Su. S	A.H
Indications	Kasa Krimi	Kasa	Kasa Swasa	Kasakustha
	Swasa Kustha	Raktapitta	Kustha	
	Dantya Pandu	Shrirorog	Shirorog	
	Shirorog		Jwara	
			Nadivran	
Karma	Keshya	Keshya	Keshya	Keshya
	Rasayan	Dipana	Cakshushya	Rasayan
	Cakshushya		Vishahar	Cakshushya
	Shothahar			
	twachaya			

Table 9: Taxonomy

Kingdom Division Subdivision Class Subclass Group Family Genus Species Synonyms	Plantae Spermatophyta Angiosperma Dicotyledoneae Gamopetalae Inferae Compositae Eclipta alba
	Eclipta sp.
	Eclipta sp.

+ Peeta + + Neela +

RN

Table 2: Classification of Bhrungraja acc.to color of flower

Table 3: Rasa of Bhrungraja

21

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23

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Types

Sweta

Pankjat

Meshakha

Mahanli

Harivas

Haripriya

Devpriya

MahaBhring

Neelpushpa

Bhringrenu

Sunilak

Rasa	D.N.	R.N.	K.N.	BP. N
Tikta	+	+	+	+
Katu			+	+

SN

+