

## **BHRINGARAJA – A BEACON FOR REJUVENATION**

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### **ABSTRACT**

*Bhringaraja (Eclipta prostrate (L.) L.)* belongs to Astaraceae family and is generally found across the world. It is a familiar drug mentioned in *Ayurveda*. *Bhringaraja* is in practice since vedic period. It is commonly used to treat premature graying of hair and premature aging as it has *Rasayana* property also indicated in *Pandu, Kamala, Charmavikara, Kasa* etc. Whole plant is considered as useful part. To appreciate the diversified action of *Bhringaraja*, the current article reviews on details mentioned in *Ayurvedic* classical texts, Botanical description, Pharmacognasy, and Powder microscopy Pharmacological activities.

**KEY WORDS:** *Bhringaraja, Eclipta prostrata, Ayurveda*

### **INTRODUCTION**

*Bhringaraja (Eclipta prostrate (L.) L.)* is a commonly used drug for the purpose of cosmetics as well as therapeutics and is easily available. The genus name is derived from the Greek word means to be deficient, prostrate is derived from Latin word refers to the prostrate growth habit. *Bhringaraja* is considered as best *keshya dravya* Whole plant has been used in many formulations from the time of *puranas* to till date. In *Samhitasand Nighantus, Twachya* and *Rasayana karmas* have been attributed to *Bhringaraja*. It finds its reference in the treatment of *Charmavikara, Pandu, Palitya, Kushta, Vrana* etc.<sup>1</sup> Sharangadhara while explaining *rasayana* according to age, mentions *Bhringaraja* as *rasayana* to prevent skin aging.<sup>2</sup> It has been screened for many pharmacological activities. In the current article an attempt has been made to review multifold activities of *Bhringaraja*

### **AYURVEDA LITERARY REVIEW**

1. Use of *Bhringaraja* flowers are mentioned in *Garuda purana* during tenth day ceremony performed after the death of an individual.<sup>3</sup>
2. *Charaka* has quoted *Bhringaraja* in the treatment of *Kalitya, Palitya, Raktapitta* and *Kaphaja Kasa*.<sup>4</sup>
3. *Sushruta* has explained *Vishahara* property of *Bhringaraja* and its uses in the diseases like *Kalitya, Palitya, Nadivrana, Ashmari Roga, Shwasa, Kasa, Vataja Swarabeda*.<sup>5</sup>
4. *Vagbhata* advocated its consumption for one month to have the *rasayana* effect. The use of *Bhringaraja ghritha* in the management of *Kaphaja Kasa* and for local application in *Kusta Roga* is also mentioned.<sup>6</sup>
5. In *Bhavaprakasha nighantu* *Bhringaraja* is cited as one of the ingredients of *Shadbindu Taila* which is used in

management of *Shiroroga* and *Urdwajatru roga*. *Bhringaraja swarasa* with *ajadugdha* given in the form of *Nasyain Suryavarta*.<sup>1</sup>

6. In *Astanaga Sangraha*, *Bhringaraja Lepa* is indicated in *Shirorogaadhikara* to manage *Kalityaand Palitya*.<sup>7</sup>

7. In *Bhaishajya Ratnavali*, *Bhringaraja* is recommended as a *Rasayana Dravya* in *Rasayanaadhikara*. It is quoted in *Kshudraroga chikitsa* in the treatment of *Palitya* and *Kalitya*. *Bhringaraja* has been mentioned as one of the *patya* in *Shirashoola*. There is also explanation regarding the preparation of *Maha Bhringaraja Taila* and one must go for *shiroabyanga* and *nasya* with the same in cases of *Kesha-pata*, *Shiroroga*, *Manayastamba*, *Gala-graha*.<sup>8</sup>

8. In *Chakradatta*, *Bhringaraja* has been noted as one of the ingredients in seven different *Taila Kalpana* in *Kshudraroga chikitsa*. It is also mentioned in the form of *Lepa* and *Nasyato* treat *Kesharoga*. *Bhringaraja Swarasa* is used in *Shodhana*, *Marana* and *Bhasmavidhi* of *Abraka*. *Kesharaja* is the synonym quoted first time in *Chakradatta*.<sup>9</sup>

#### VERNACULAR NAMES<sup>10, 11</sup>

English	Trailing Eclipta
Gujurati	Bhangra, Dodhak, Kalobhangaro, Kalaganthi
Hindi	Babri, Bhangra, Mochkand
Kannada	Garugadasoppu
Marathi	Bangra, Maka
Punjabi	Bhangra
Sanskrit	Bhringaraj
Tamil	Kaikeshi, Kayanthakoru
Telugu	Gentagalijeru
Urdu	Bhangra

#### GANA VARGA<sup>1,12,13,14,15,16,17,18</sup>

*Bhringaraja* has been classified under various *vargas*.

Sl. No	NIGANTU	VARGA
1.	Dhanwantari Nigantu	Karaviradi Varga
2.	Shodala Nigantu	Karaviradi Varga
3.	Madanapala Nigantu	Abayadi Varga
4.	Kaiyyadeva Nigantu	Aushadi Varga
5.	Raja Nigantu	Shatahavadi Varga
6.	Bhavaprakasha Nigantu	Guduchyadi Varga
7.	Nigantu Adarsha	Sahadevyadi Varga
8.	Priya Nigantu	Shatapushpadi Varga

#### VARIETIES OF

#### BHRINGARAJA,<sup>1,3,12,13,14,15</sup>

*Shwetha* (White variety) – *Eclipta alba* (L) *Hassk*

*Peeta* (Yellow variety) – *Wedelia calendulaceae* Less

*Neela /Krishna* (Black variety)

*Raktha* (Red variety)

#### RASA PANCHAKA<sup>1,12,13,14,15,16,17,18</sup>

*Bhringaraja* is having *katu - tikta rasa*, *laghu - rukshaguna*, *ushnaviryia*, *katuvipaka*.

#### DOSHAGNATHA<sup>1,12,13,14,15,16,17,18</sup>

*Bhringaraja* is having *vatakapahara* property.

#### KARMA<sup>1,12,13,14,15,16,17,18</sup>

*Bhringaraja* is having *Rasayana*, *twachya*, *balya*, *keshya*, *dantahita*, *chakshushya*, *kesharanjana*, *vishagna*, *medhya karmas*.

#### ROGAGHNATHA<sup>1,12,13,14,15,16,17,18</sup>

*Bhringaraja* is mainly indicated in *pandu*, *palitya*, *vali*, *kushta*, *ckarmavikara*, *shwasa*,

kasa.

## YOGAS

Sl.No	Yoga	Phalashruthi	Reference
1.	Kaphakasagnalehya	Kasa	A.S.U 4/32
2.	Svasagni rasa	Kasa	S.S.M 12/156
3.	Sahacharaditaila	Palitya	Ca.Chi.26/264
4.	Markavadiyoga	Upadamsha	Su.Chi 19/47
5.	Patolyadigritha	Jwara	Su.U.39/227
6.	Panchanimbadi yoga	Twakroga	A.S.U21/35
7.	Mahatriphala gritha	Netrabhishyanda	A.H.U13/13
8.	Bhringaraja taila	Netra roga, Karna roga, Siroroga, Keshapathana.	B.R. Kshodrarogaadhikara 91-93
9.	KasiasBhasma	Pandu, Pleeharoga, Hikka, Vrana, Visarpa, Shwitra	Rasamruta 3\158
10.	Pathya punarnavadi choorna	Pandu	Sahasrayoga Kashayaprakarana p-134
11.	Neelakadya taila	Kalithya, Indraluptha, Kandu, Vali, Paalithya	Sharangadaramad. Kanda 9\157
12.	Neela bhringadhi taila	Keshapatana, Paalithya	Sahasrayogatailaprakarana 56
13.	Bhringarajasava	Dhatukshaya, Kasa, Krusha	Sahasrayogaasavarishta prakarana p-174

## TAXONOMY<sup>19</sup>

Kingdom	Plantae
Order	Asterales
Family	Asteraceae
Genus	Eclipta
Species	Prostrate
Synonym	Eclipta alba

## ETYMOLOGY<sup>19</sup>:

1. Eclipta- derived from Greek word “ekleipo” means “to be deficient” referring to the absence of pappus on the achenes.
2. Prostrata- derived from Latin word “protratus” refers to the prostrate growth habit.

## BOTANICAL DISCRIPTION<sup>20</sup>:

**Habit-:** An erect or prostrate herb, often rooting at the nodes and flowering throughout the year.

**Root:** Branched, tap root.

**Stem:** Herbaceous, aerial, erect, cylindrical, branched, solid, glabrous, hairy.

**Leaf:** Simple, opposite, sessile, elliptic-lanceolate, subentire, acute at apex, narrow at base, sparsely strigose with appressed hairs on both surfaces.

**Inflorescence:** Ray florets are ligulate, and disc florets are tubular; involucre of bracts present. Ray floret- ligulate, ligule small spreading scarcely as long as the bracts, not toothed and white. Disc florets are tubular, the corollas often 4 toothed. Pappus 0, except

occasionally very minute teeth on the top of the achene.

**Fruit:** Cypsela

## PHARMACOGNOSY<sup>21</sup>

### Macroscopic features

**Root:** Well developed, a number of secondary branches arise from main root, up to about 7 mm in dia, cylindrical, greyish.

**Stem:** Herbaceous, branched, occasionally rooting at nodes, cylindrical or flat, rough due to oppressed white hairs, node distinct, greenish, occasionally brownish.

**Leaf:** Opposite, sessile to subsessile, 2.2 – 8.5 cm long, 1.2 – 2.3 cm wide, usually oblong, lanceolate, sub-entire, sub-acute or acute, strigose with appressed hairs on both surfaces.

**Flower:** Solitary or 2, together on unequal axillary peduncles; involucre bracts about 8, ovate, obtuse or acute, herbaceous, strigose with appressed hairs; ray flowers lingulate, ligule small, spreading, scarcely as long as bract, not toothed, white; disc flowers tubular, corolla often 4 toothed; stamen 5, filaments epipetalous, free, anthers united into a tube with base obtuse; pistil bicarpellary; ovary inferior, unilocular with one basal ovule.

**Fruit:** Achenial cypsela, one seeded, cuneate, with a narrow wing, covered with warty excrescences, brown.

**Seed:** 0.2-0.25 cm long, 0.1cm wide, dark brown, hairy and non-endospermic.

### Microscopic features<sup>21</sup>

**Root:** Secondary cortex consists of outer one or two rows of tangentially elongated or rounded cells with air cavities. Inner secondary cortex consists of tangentially elongated to irregular shaped. Stone cells found scattered in secondary cortex and

cork. Phloem rays broader towards the periphery cells are rounded. Xylem ray distinct, run straight in tangential section, very rarely uniseriate and biseriate rays also found, ray cells pitted.

**Leaf:** Trichomes are of two types, non-glandular, uniseriate, 1-5celled, warty, and with pointed apical cell. Epidermis followed by wide cortex consisting of thin-walled cells with intercellular spaces. Five vascular bundles are present at the central one largest while four others small flanking to either side of central bundle. Xylem is present on dorsal side and phloem on ventral side.

**Stem:** Few epidermal cells elongated to form characteristic non-glandular trichomes. Secondary cortex composed of large, rounded or irregular shaped parenchymatous cells having wide air spaces. Vascular bundles in a ring are collateral, of varying sizes. Phloem composed of sieve elements and phloem parenchyma. Xylem consists of xylem fibers and xylem parenchyma, xylem rays normally biseriate and uniseriate,

### POWDER MICROSCOPIC FEATURES<sup>21,22</sup>

Powder shows epidermis with sinuous walls and stomata that are anomocytic at some places and anisocytic at others; abundant trichomes uniseriate, multicellular, with large basal cell, and a pointed small apical cell, walls thick and watery; abundant fibres from pericule and xylem of both stem and root, several showing peg-like growth or nearly bifurcating at the tips; lumen broad; fibre-tracheids also present; xylem elements broad, barrel shaped, along with pitted walls, associated with xylem parenchyma also pitted.

**IDENTITY, PURITY AND STRENGTH<sup>23</sup>**

Foreign matter not more than 2.0 per cent  
 Total ash not more than 22.0 per cent  
 Acid-insoluble ash not more than 11.0 per cent

Alcohol-soluble extractive not less than 5.0 per cent  
 Water-soluble extractive not less than 15.0 per cent

**CHEMICAL CONSTITUENTS<sup>24</sup>**

Sl.no	Parts	Chemical constituents
1	Leaves	Wedelolactone[1.6%], Desmethylwedelolactone, Desmethylwedelolactone-7-glucoside, Stigmasterol
2	Roots	Hentriacontanol, Heptacosanol & Stigmasterol, Ecliptal, Eclalbatin.
3	Aerial parts	$\beta$ -amyrin & luteolin-7-O-glucoside, Apigenin, Cinnaroside, Sulphur compounds, Eclabasaponins I-VI
4	Stem	Wedelolactone
5	Seeds	Sterols, Ecliptalbina (alkaloid)
6	Whole plant	Resin, Ecliptine, Reducing sugar, Nicotine, Stigmasterol, Triterpene saponin, Eclalbatin, Ursolic acid, Oleanolic acid

**PARTS USED<sup>23</sup>:** Whole plant, Seed

**DOSE<sup>23</sup>:** Juice: 3-6ml, Powder: 12-36g for decoction.

**RESEARCH ACTIVITY:**

*Bhringaraja* has been proved for Anti-oxidant activity, Immunomodulator activity, Hepatoprotective activity, Hypolipidemic activity, Anti-ulcer activity, Anti-cancer activity, Anti-Inflammatory, Anti-diabetic, Anthelmintic activity, Anti-Hyperlipidemic activity

**DISCUSSION & CONCLUSION**

*Bhringaraja* (*Eclipta prostrata* (L.) L.) *Bhringaraja* is a quick growing and popular plant, belongs to Astraceae family and a well-known drug since ages for its therapeutic and cosmetic uses. It has been mentioned in Vedic period, *Samhitas*, and *Nighantus*. It is attributed with *Katu*, *Tikta rasa*; *Lagu*, *Rukshaguna*; *Ushnavirya*; *Katuvipaka*. This multifaceted plant is endowed with phyto-constituents like Wedelolactone, Desmethylwedelolactone,

Ecliptalbina, Ecliptine, Triterpene, etc. It has got *Rasayana* property which encompasses *Keshya*, *Twachya*, *Balya karmas* this has been well substantiated by *Sharangadhara* while explaining *Rasayana* according to age. As told by *Vagbhata* it has to be consumed for one month to get *Rasayana* effect. *Bhringaraja* finds its reference in the treatment of *khalithya*, *vali* which are *Rasadushti vikaras* and *pandu*, *kamala* which are *Rasa-Raktadushti vikara*. Wedelolactone present in this is proved for Anti-oxidant activity and Immunomodulator activity. It can be inferred that *Bhringaraja* mainly acts on *Rasavaha srothas* and can be used as *Rasayana dravya* which means it helps to delay aging, prevent diseases and restoring energy. *Bhringaraja* is an ideal herb for rejuvenation. The detail clinical research of plant is required to prove its anti-ageing property also on formulation mentioned in classical texts to fulfil the need of today's health sector.

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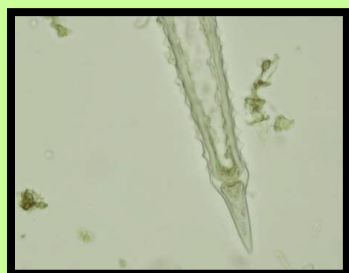
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Warty trichome



Basal cell of trichome



Lignified pitted parenchyma



Pitted and spiral vessels



**Eclipta prostrata (L.)**



**Leaves**



**Stem**



**Flower**



**Seeds**