



BHRINGORAJ (*ECLIPTA PROSTRATA* L): BOTANICAL NOMENCLATURE, CHARACTERISTICS, MEDICINAL AND HERBAL ACTIVITIES

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ABSTRACT

The review describes one of the innumerable herbal medicinal plants named *Eclipta alba*. Sixty medicinal usefulness are enlisted here. Those are very important to our life. This can be used for healthy teeth, eye and hair. It has anti cancer, ulcer, diabetic and anti-headache, anti-venom properties. Furthermore, this herb can be used as liver tonic. It is concluded that the use of *Eclipta alba* should be increased for healthy life.

INTRODUCTION

As per WHO estimates, 80% of people around the world use medicinal plants for the cure and prevention of various diseases including cancer owing to their easy availability and cost effectiveness. *Eclipta alba* has long been used in Ayurveda to treat liver diseases, eye ailments, and hair related disorders (Yadav *et al.*, 2017). The herb Bhringraj is native of India and Southwest America. It's scientific name is *Eclipta prostrata* which is a plant belonging to the Asteraceae family. It's another name is *Eclipta alba*. It has four varieties. These are based on its colour of flower. These are yellow, white, blue and red. The white and yellow variety used as a medicinal plant. The white variety is more commonly available, as it grows wildly in moist places, as a weed. Another name of yellow variety is *Wedelia chinensis* and it's a rare variety. It spreads rapidly. The most beneficial effects if anyone eats it as a fresh form (Chauhan, 2019; Pareek and Kumar, 2015). Furthermore, these herbs can be used as ruminants (sheep, goat, cattle etc.) forages and it has some beneficial effects on their growth and production (Dhuria *et al.*).

Taxonomic hierarchy of *Eclipta alba*

Kingdom: Plantae

Subkingdom: Viridiplantae

Infrakingdom: Streptophyta

Division: Tracheophyta

Subdivision: Spermatophytina

Infradivision: Angiospermae

Class: Magnoliopsida

Superorder: Asterales

Order: Asterales

Family: Asteraceae

Genus: *Eclipta* L.

Species: *Eclipta alba* (L.) Hassk.

Morphological Characteristics

It is an erect or prostrate, branched (occasionally rooting at nodes) annual herb up to 30-40 cm high.

Stem is cylindrical or flat, rough due to appressed white hairs, nodes distinct and greenish occasionally brownish.

Another name of *Eclipta alba* is as follows

Latin Name- *Eclipta alba*

Common Name-False daisy

English Name- False daisy

Kannada Name- Garagada soppu, Garga

Sanskrit – Keshraj, Brhingraj, Bhringraja, Tekarajah,

Markav, Keshranjan

Hindi-Bhangra, Bhangaara, Bhangraya

Gujarati – Bhangro, Bhangara, Bhangaro

Telugu – Galagara, Kayanthakara, Kaikeshi

Marathi – Maakaa, Maka

Punjabi – Bhangra

Bengali – Kesuriya

Yerba de tago – Minnesota

Assamese – Kehraj

Tamil - Karisalankanni

Malayalam Name- Jala Bhangara, Tekaraja

Arabic Name-Kadimulabit

Chemical Composition: Nadeeshani *et al.* (2018), Gogoi and Kalita (2014) found that *Eclipta alba* has the following chemical composition-

% Dry Matter (DM): 89.1

% Total Carbohydrates (TC): 4.41-10.76

% Crude Protein (CP): 19.68

% Ether Extract (EE): 9.4- 23.52

% Ash: 1.28-3.86

Potassium (K) mg/Kg: 6240.0-14570.0

Iron (Fe) mg/Kg: 252.8-712.9

Part Used

1. Roots
2. Seeds
3. Seed Oil
4. Whole plant

Dosage

1. Oil: 3-5 drops
2. Fresh Juice: 5-10 ml
3. Powder: 2-3 gm in divided doses (Chauhan, 2019).

Toxicological effect: Yadav *et al.* (2017) revealed that *in vitro* cytotoxic and antioxidant effect of the alcoholic extract of *Eclipta alba* in multiple cancer cell lines along with control and their effect on different *in vivo* toxicity parameters. They found that control group significantly induced angiogenesis in human breast cancer cell lines by disrupting mitochondrial membrane and DNA damage. But, *Eclipta alba* treatment obstruct the cancer cell. Thus it is identified that *Eclipta alba* has no toxicological effect on life (Nelson *et al.*, 2020).



Faria *et al.* (2021), Sidh and Sharma (2019), Chauhan (2019), Saraswat *et al.* (2015), Pareek and Kumar (2015), Jahan *et al.* (2014), Jadhav *et al.* (2009) discovered that *Eclipta alba* has several medicinal, herbal and therapeutic activities. These are given below-

Medicinal Uses

1. Alopecia (promotes hair growth)
2. Varnya (skin disease controller)
3. Accelerate Ophthalmic activity
4. Neuropsychiatric
5. Reduce Constipation
6. Carminative
7. Digestive stimulant
8. Diarrhoea and Dysentery
9. Distress
10. Hepatic stimulant
11. Purifier
12. Stomachic
13. Hyperlipidemia
14. Appetizer
15. Anthelmintic
16. Anti-asthmatic
17. Anti-bronchitis
18. Anti-pneumoniatic
19. Anti-flatulant
20. Anti-coagulant
21. Anti-venom
22. Anti-ulcer
23. Anti-cancer
24. Anti-epileptic
25. Anti-jaundice

26. Anti-aging
27. Anti-headache
28. Anti-diabetic
29. Anti-diuretic
30. Anti-fever
31. Anti-anemic
32. Anti-blindness
33. Anti-gingivitis
34. Anti-convulsant
35. Anti-hypertensive
36. Anti-mitochondrial antibodies
37. Anti-dropsychoylogy
38. Anti-pulsation
39. Anti-infective
40. Anti-acne
41. Anti-microbial
42. Anti-anxiety
43. Anti-malice
44. Anti-cystitis
45. Anti-fracture
46. Anti-wrinkle
47. Anti-piles
48. Analgesic and Anti-inflammatory
49. Decrease Cardiovascular Diseases
50. Immunostimulatory
51. Improve the strength of teeth
52. Muscle relaxant
53. Osteoblast differentiation (Bone Cell formation)
54. Check alzheimer's disease (Brain Damage)
55. Prohibit fatty liver disease (Hepatic steatosis)
56. Control folliculitis (Inflammation of a hair follicle)
57. Regulate hypertension (High blood pressure)
58. Restraint seborrheic dermatitis (Eczema)
59. Manage scalp psoriasis (Itchiness)
60. Decrease scalp ringworm (Tinea capitis)

Therapeutic Symptoms

1. Hairfall (Alopecia)
2. Hair thinning
3. Silvery hair
4. Scalp stinging
5. Itching
6. Erythema
7. Dermatitis
8. Anorexia
9. Malnutrition
10. Jaundice
11. Piles
12. Stomach ache
13. Abdominal Pain
14. Indigestion
15. Dyspepsia
16. Bloating
17. Constipation
18. Anemia
19. Listlessness
20. Sleepiness

Other usefulness

1. Enhance Beautification of gardening
2. Prevent soil erosion
3. Increasing green vegetation
4. Other aesthetic aspects
5. Used in pasture land as forage, where small ruminant (sheep and goat) and large ruminant can be grazed.

Ayurvedic Formulations of *Eclipta alba*

1. Bhringraja oil - Bhringraj oil is a natural remedy used in Ayurveda to balance the doshas.
 - It contains vitamin-E, D, Calcium, Magnesium and Iron.
 - Often used to promote hair growth, luster, softness, and strength.
 - It is believed to prevent premature graying and hair loss.
 - Ayurvedic practitioners also endorse the oral consumption of bhringraj oil to treat everything from heart and respiratory diseases to neurological and liver disorders.
 - To treat imbalances in pitta.
 - To govern all physical and mental processes.
 - May promote relaxation and sleep.
 - Helps to urinary tract infection.
 - Liverdetoxification.
 - Helps soothe inflamed skin.
 - Treat headaches.
 - Neutralizes rattlesnake venom.
 - May improve alzheimer's related memory loss.

Pack size- Himalayan Organics 200 ml; Agadir Argan Oil Hair Treatment

Pack size - 4 Fl Oz, Price – 34.99 Dollar.

2. Bhringraja ghrit – Beneficial for complexion of hair, eye and teeth.

Pack size- Patanjali Divya Phal Ghrit 200 gm.

3. Bhringraj churna/churana - Helps to increase hair growth
 - Density and makes hair black
 - Controls hair fall
 - Gives lustre to hairs
 - Used to treat greying and balding
 - Promotes deep sleep and
 - Improves complexion

Directions For Use: Take Vyas Bhringaraj Churna 1-1 teaspoon full twice a day with water.

Pack size- Bringraj 100 vegicaps, Price- 19 Dollar.

4. Bhringrajadi churana- Prevents premature graying and hair falling. Pack size- 60 gm, Price 50 Rupies. Churna ayurvedic classic medicine.
5. Bhringrajasasv- It's an Ayurvedic tonic. Pack size- Baidyanath Bhringrajasasv 450 ml, Price 170 Rupies.
6. Narasimha Rasayanam - Narasimha Rasayanam is also known as medicated butter that helps in the treatment of physical weakness and degenerative diseases. Pack size- Arya vaidya narasimha

- rasayanam 500 ml, Price 195 Rupies; AVS KOTTAKKAL narasimha rasayanam 200 gm. Price 149 Rupies.
7. Gunjadi oil – It's very effective to stop hair fall. Pack size- HSP Gunjadi oil 100 ml, Price 300 Rupies; Dhanvantari Gunjadi Taila 100 ml, Price 175 Rupies.
 8. Mahabhringraj oil – Ayurvedic hair massaging oil. Pack size- Mahabhringraj Ramakrishna Pharma Scalp Massaging Oil 200 ml, Price 14.88 Dollar. RVAP Mahabhringraj Oil 500 ml, Price 15.99 Dollar.
 9. Suthsekhar ras - Sutshekhar Ras pacifies the disruption of pitta and vata dosha. Baidyanath Suthsekhar Ras tablet is formulated to treat hyperacidity. It acts as a detoxifier. Pack size- Baidyanath Sutshekhar Ras Tablet 1mg. 40 Tablets per pack. Price 395 Rupies per pack.
 10. Neelibhringadi oil - Kerala Ayurveda provides Neelibhringadi hair oil that offers complete nourishment to hair and scalp. Regular usage can help prevent breakage, dandruff, hair fall etc. Pack size- Neelibhringadi Keram Hair Oil 200 ml, Price- 250 Rupies.
 11. Shadbindu oil - It gives benefit to eyes as it improves vision and immunity. It also strengthens shoulder, joints and arms; Quantity- 1 Bottle 10 ml; Dosages 3-6 drops. Baidyanath Jhansi Shadbindu Tail 50 ml 130 Rupies.
- pharmacological activities of *Eclipta alba*, Journal of Pharmacy Research, 2009; 8(2).
6. Jahan, R., Nahain, A. A., Majumder, S. and Rahmatullah, M. Ethnopharmacological Significance of *Eclipta alba* (L.) Hassk. (Asteraceae), International Scholarly Research Notices, Hindawi Publishing Corporation, 2014; 22.
 7. Nadeeshani, H., Wimalasiri, S., Samarasinghe, G. and Silva, R. Evaluation of the nutritional value of selected leafy vegetables grown in Sri Lanka, Tropical Agricultural Research, 2018; 29(3): 255.
 8. Nelson VK, Sahoo NK, Sahu M, Sudhan HH, Pullaiah CP, Muralikrishna KS. In vitro anticancer activity of *Eclipta alba* whole plant extract on colon cancer cell HCT-116., BMC Complement Med Ther., 23; 20(1): 355.
 9. Pareek, A. and Kumar, A. Bhringraj (*Eclipta Prostrata* L.) for mental improving ability, World Journal of Pharmaceutical Sciences, Atom and Cell Publishers, 2015; 3(8): 1569-1571.
 10. Saraswat, V. K., Verma, S., Musale, S. V. and Jaiswal, M. L. A Review on Traditional and Folklore Uses, Phytochemistry and Pharmacology of *Eclipta Alba* (L) Hassk, International Ayurvedic Medical Journal, 2015; 3(8).
 11. Yadav, N. K., Arya, R. K., Dev, K. et al. Alcoholic Extract of *Eclipta alba* Shows In Vitro Antioxidant and Anticancer Activity without Exhibiting Toxicological Effects, National Library of Medicine, National Centre for Biotechnology and Information, 2017; 2017: 909464.

CONCLUSION

The herb has a multi-medicinal criteria for human and animals, and also available in the surrounding environment. Therefore, anyone can use it for human and animals as medicinal purpose. However, further intensive research on this herb is needed for confirmation of medical use in human and animal health.

REFERENCES

1. Chauhan, D. M. Bhringraj (*Eclipta alba*) – Properties, Benefits, Usages and Dosage, Planet Ayurveda, Planet Ayurveda Ancient Wisdom School, Mohali, Punjab, India, 2019.
2. Dhuria, R. K., Sharma, T., Karnani, M., Rai, K. and Singh, S., Effect of herbs as feed additives on nutrient utilization in rams, Indian Journal of Animal Nutrition, 2013; 30(3): 281-284.
3. Faria, L. A., Alam, M. F. and Rahman, A. H. M. M. Medicinal Herbs used by the local peoples in Rajshahi metropolitan area of Bangladesh, GSC Biological and Pharmaceutical Sciences, 2021; 16(02): 062–077.
4. Gogoi, P. and Kalita, J. C. Proximate analysis and mineral components of some edible medicinally important leafy vegetables of Kamrup District of Assam, India; International Journal of Pharma and Bio Sciences, 2014; 5(4): 451-457.
5. Jadhav, V. M., Thorat, R. M., Kadam, V. J. and Salaskar, K. P. Chemical composition,