Abstract---Plants are referred as the primary source of food, shelter and various remedial approaches. Plants are thoroughly used in treatment of various human illness across the globe traditionally. Among those therapeutic herbs Eclipta Alba/ Eclipta Prostrata is renowned for high therapeutic significance in medicinal world. Eclipta Alba or Eclipta Prostrata, commonly referred to as Bhringraj, belonging to the family of Sunflower (Asteraceae). It’s found in all over the map specially in subtropical and tropical region. Standardization of the herbs was performed based on different physiochemical parameters and revealed the values were within the prescribed limits. The entire plant together with flowers, leaves, stems, seeds are large used for the treatment of assorted diseases. Eclipta alba is widely used as antioxidant, analgesic, anticancer, anti hyperglycaemic, anti-myotoxic and immuno modulatory. It also emphasizes the compounds or chemicals extracted from the plant parts and their properties with a short pharmacological profile. Though some of the properties of Bhringraj have been explored for pharmacological benefits, there is still a long way to go for its full potential to be exploited for human welfare. A wide range of chemical components are extracted. They are:- Alkaloid, Flavonoids, Polyacetylenes, Thiopenes, Triterpines, Cumentans, β-terthienylmethanol, Wedelolactone, Sterols, Ecliptalbine, Amyrin, Luteolin-7-o-glucoside.

Keywords---bhringraj, antimyotoxic, antitymotoxic, antihyperglycemic.
Introduction

Treatment of diseases with the utilization of medicinal plant has been followed by the traditional times. Since earlier times, people looked for the rescue of diseases they searched for drugs in nature and their surrounding. Use of medicinal plants began from the utilization in animals. This plant has been used traditionally in prehistoric medicine together with Siddha, Ayurvedic and also in allopathic now a days. Herbal medicines play a significant role in increasing the global healthcare where it helps in expanding the market by providing health foods and preventive medicines. Berengaria is renowned as one of the most supportive medicinal herbs for hair growth, shine and luster in Ayurvedic Pharmacopoeia. It brings its cooling, rejuvenating benefits to the mind and nervous system when it also supports the liver, circulation and even healthy skin. Eclipta Alba is widely used as antioxidant, analgesic, anticancer, antihyperglycemic, antmyotoxic and immuno modulatory properties. A wide range of chemicals components like Alkaloids, Flavonoids, Polycetylenes, Triepenes, Cumentans, Thiophenes, Eclipta, Hentriacintanol, Eclabatin, Stigmasterol, β-terthienylmethanol , Wedelolactone, Sterols, Ecliptalbine, Amyrin, Luteolin-7-o-glucoside.

Table 1
Taxonomical Classification

| 1. | Kingdom | Plantae |
| 2. | Subkingdom | Viridaeplantae |
| 3. | Division | Tracheophyta |
| 4. | Sub division | Sermatophytina |
| 5. | Class | Magnoliopsida |
| 6. | Order | Asteranae |
| 7. | Family | Asteraceae |
| 8. | Genus | Eclipta |
| 9. | Species | Alba |
| 10. | Common name | Bhringraj |

Table 2
Vernacular Names

| 1. | Latin name | Eclipta alba |
| 2. | Common name | False daisy |
| 3. | Hindi name | Bhangra, Bhangraiya |
| 4. | Marathi name | Maka |
| 5. | Gujarati name | Bhangaro |
| 6. | Arabic name | Kadim-ul-bint, Radim-el-bint |
| 7. | Punjabi | Bhangra, dodhak, Babri |
| 8. | Bengali | Kesuriya, kesuti |
| 9. | Tamil | Kakehsi |
| 10. | Telugu | Galagara, Gunta, Galijaeru |
| 11. | Malyalam | Cajenneam, Kanni |
| 12. | Asamese | Kehraj |
| 13. | Konkani | Mako, Kajalamavu |
Habitat

Eclipta Alba is found to grow wild in a very of soils viz. sandy to clay soil and vary common on damp wastelands, low waterlogged areas, roadsides, paddy and other crop fields, probably in warm climate. It is a shade loving plant prefers damp to wet soil. The crop is sufficiently hardy and comes up well in tropical, subtropical and temperature regions. Moreover requires quite hot temperature ranging 25$^\circ$ c to 35$^\circ$ c for better productivity. These herb generally grows in moist regions of India, China, Nepal, Thailand and Brazil.

Characteristics

It belongs to the family of sunflower, an annual plant that grows about 3 metres in height. It grows forlorn, white flower, having well developed and differentiated stem, leaves, flower and root. It is generally found within the fringe of garden, field where there is a presence of moisture, warmth like wetland. It has long stalk and white coloured flowers with are solitary, winged and about 6 to 8 mm in diameter. The leaves are sessile, lance shaped and arranged in opposite orientation. It has distinct cylindrical and gray coloured roots.

Sanskrit Synonyms

- Markava, Kesharanjana – Helps to alleviate grey hairs.
- Bhangaraja – Helps to form the hair silky and glossy like that of peacock.
- Bhanragaraha, Bhringa, Maheneela, Ravipriya, Angaraka, Suryavarta, Pitrupriya.

Table 3
Description as Per Ayurveda

<table>
<thead>
<tr>
<th></th>
<th>Rasa (taste)</th>
<th>Guna (qualities)</th>
<th>Veerya</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Katu, pungent,</td>
<td>Rooksha, dryness</td>
<td>Ushna</td>
</tr>
<tr>
<td></td>
<td>Tikta, biter</td>
<td>, Laghu, light to</td>
<td>(Hot potency)</td>
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<tr>
<td>2</td>
<td></td>
<td>digest</td>
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<tr>
<td>3</td>
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</tbody>
</table>
4. Vipaka | Katu – undergoes pungent taste conversion after digestion

**Parts Used**

Whole pant together with the flowers.

**Morphology**

- 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 because appressed white hairs, nodes distinct and greenish occasionally brownish.
- Leaves are opposite, sessile to sub-sessile 2.0 to 6.2 cm long, 1.5-1.9 cm wide, oblong, lanceolate, sub-entire, acute to sub-acute and strigose with appressed hairs on both surfaces.

**Table 4**

Phytochemical Constituents Found in Eclipta Alba

<p>| | | | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1.</td>
<td>Roots</td>
<td>Thiophenes, Eclipta, Henriacintanol, Eclabatin, Stigmasterol</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Stems</td>
<td>Wedelactione</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Leaves</td>
<td>Stigmasterol, β-terthienylmethanol, Wedelolactone [1.6%]</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Twigs of the plant</td>
<td>Sterols, Ecliptalbine</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Seeds</td>
<td>Alkaloids</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Aerial part</td>
<td>Amyrin, Luteolin-7-o-glucoside</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Bhringraj being a potent hair vitalizer has a host of bioactive constituents including flavonoids</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Root**

The part of plant which attaches it to the ground or to a support, typically underground, conveying water and nourishment to the rest of the plant via numerous branches and fibres. The chemicals found in roots are mentioned below:-
Thiophenes

Thiophene is a heterocyclic compound with the formula C\textsubscript{4}H\textsubscript{4}S. Consisting of a planar five-membered ring, it is aromatic as indicated by its extensive substitution reactions. Uses:- It is widely used as building blocks in many agrochemicals and pharmaceuticals. The benzene ring of a biologically active compound may often be replaced by a thiophene without loss of activity. This is seen in examples such as the NSAID lornoxicam, the thiophene analog of piroxicam.

Hentriacontanol

Hentriacontane, also called untriacontane, is a solid, long-chain alkane hydrocarbon with the structural formula CH\textsubscript{3}(CH\textsubscript{2})\textsubscript{29}CH\textsubscript{3}. It is found in a variety of plants, including peas (Pisum sativum), Acacia senegal, Gymnema sylvestre and others, and also comprises about 8–9% of beeswax. Uses:- It is used for treatment of various diseases such as skin diseases, ulcers, diabetes, piles, dysentery, asthma, gonorrhea, gleets, leucorrhea and urinary diseases.

Stigmasterol

Figure 3. Structure of Thiophenes

Figure 4. Structure of Hentriacontanol

Figure 5. Structure of Stigmastereol
Stigmasterol is an important plant sterol that can inhibit the development of various cancerous cells by inhibiting the promotion and growth of apoptosis of cancer cells. This inhibition could be due to the activation of caspase enzymes (enzymes involved in cell regulatory networks that control cell death). Uses:- used in reducing inflammation and cholesterol lowering ability.

- **Stem**: A stem is one of the two main structural axes of a vascular plant, the other being the root. It supports leaves, flowers and fruits, transports water and dissolved substances between the roots and the shoots in the xylem and phloem, stores nutrients and produces new living tissue.
- **Wedelolactone**: Wedelolactone a phenolic derivative of Coumestan is a natural furocoumarin having potent antioxidant properties Compound could efficiently protect Mesenchymal stem cells (MSCs) from hydroxyl radical-mediated oxidative damage.

![Figure 6. Structure of Wedelolactone](image)

Uses: Wedelolactone, a phenolic coumestan, extracted from Ecliptae herba, has been reported to possess anti-inflammatory, antioxidant, anticancer and recently for bone disease

**Leaves**

![Figure 7. Leaf of Bhringraj](image)

A flattened structure of a higher plant, typically green and blade like, that is attached to a stem directly or via stalk and also a main organ of photosynthesis and transpiration
**β-trithienylmethanol**

![Structure of β-trithienylmethanol](image)

Figure 8. Structure of β-trithienylmethanol

**Stigmasterol**

![Structure of Stigmasterol](image)

Figure 9. Structure of Stigmasterol

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Seed

Alkaloid

Alkaloids are a class of basic, naturally occurring organic compounds that contain at least one nitrogen atom. This group also includes some related compounds with neutral and even weakly acidic properties. Some synthetic compounds of similar structure may also be termed alkaloids. In addition to carbon, hydrogen and nitrogen, alkaloids may also contain oxygen, sulfur and, more rarely, other elements such as chlorine, bromine, and phosphorus.
Uses: Alkaloids are used in cancer treatment, cough remedy, migraine relief.

Pharmacological Activity

- **Anti-oxidant activity:**
  Methanolic extract from E. alba (leaves) showed antioxidant activity in hydrogen peroxide uptake tests, total antioxidant capacity and reduced test capacity. This was demonstrated by DPPH atom capture and therefore the 2,2'-azinobis-(3-ethylbenzthiazoline-6-sulfonic acid) (ABTS) assay.

- **Anti-diabetic activity:**
  The antidiabetic effect of E. abla ethanol extract was investigated for possible beneficial effects against hyperglycemia and diabetic nephropathy in diabetic STZ mice. Treatment with a single dose of the extract was found to cut back blood sugar levels by 17.6% after 5 hours of oral administration at a dose of 250 mg / kg.

- **Anti-venom potential of E. prostrata:**
  The butanol and pure butanol extracts (PBE) of Eclipta Prostrata were evaluated in terms of their potential against poisoning. Inhibition of lethal, hemorrhagic, proteolytic and phospholipase A2 activities in Calloselasma rhodosoma venom (Malayan pit viper (MPV)) resolve by these extracts. Butanol extract at a dose of 2.5 mg per mouse completely neutralized the lethal activity of 2LD50 in MVP venom, but increasing the dose reduced the effect. PBE at a dose of 1.5-4.5 mg per mouse can neutralize toxin mortality by approximately 50-58%.

- **Antibacterial and antifungal activity**
  The antibacterial activity of both the methanolic extract and also the isolated compound was found well (7-18 mm). antifungal activity is moderate (11-14 mm).

- **Skin disease:**
  E. alba leaves are used to remove ectoparasites in dogs in Trinidad and Tobago. The Ayurvedic formulation containing E. alba powder was shown to provide complete remission in 22.6% and diagnosis of disease recurrence in 89.5% of patients with eczema.

- **Cardiovascular effects:**
  Ethanol extract from E. alba leaves and leaf capsules was tested for heart inhibitory activity in isolated frog hearts. The extracts showed negative ionotrophic and negative chronotropic effects as well as reduced cardiac output. Callus extract showed a higher inhibitory effect on the heart than leaf extract at doses of 20 mg.
• **Anti-malarial activity:**
  The animal activity of *E. alba* leaf extract was tested against the *plasmodium berghei* ANKA strain in mice. Methanol leaf extract (250–750 mg / kg) induced dose-dependent chemosuppression as a schizontocidal effect during early and proven infection and long-term survival (m.s.t.), especially in the 750 ng / kg / day extract group.

• **Neuropharmacological activities:**
  Aqueous and hydroalcoholic extracts of *E.alba* were evaluated for sedative, muscle relaxation, anxiolytic, nootropic and antistress activity. activities at doses of 150 and 300 mg / kg, p.o.

• **Immunomodulator activities:**
  It is stated that the protection of the neural network can be enhanced by the action of the *Eclipta Alba* immunomodulator. Thus, *Eclipta Alba* can act as a potential memory modulator. The aqueous extract of *Eclipta alba* leaves was applied to fish (tilapia, oreochromis mossambicus) in various concentrations as food for 3 weeks. Non-specific humoral (lysozyme, antiprotease and complement) and cellular (myeloperoxidase content, production of reactive oxygen species and nitrogenous substances) and disease resistance against aeromonas hydrophila were recorded after each week, resulting in increased air activity. specific immune parameters. The results showed that food intake E. The aqueous extract of album leaves increases the non-specific immune response and resistance of O.mossambicus to A. hydrophila.

• **Anti-ulcer and anti-colon cancer activity:**
  Ethanolic extract showed strong anti-ulcer activity in a dose-dependent manner and significantly reduced ulcerative lesions and alleviated lipid peroxidation in a single model. in rats. In another study, methanol extract from *Eclipta chinensis* showed a significant reduction in gastric ulcers and inflammation in mice with aspirin-induced ulcers. In the MTT assay, crude methanol extract *Eclipta chinensis* showed target anti-cancer activity against the colon cancer cell line HCT-116. *Eclipta chinensis* methanol extract contains compounds against colon cancer and deserves to be explored for possible future advances in treatment.

### Health Benefits of Eclipta Prostrata

• **Bhringraj controls hypertension**
  To standardize the pulse, give 2 teaspoon sap of Bhringeria leaves with 1 teaspoon of honey blended in it, double a day.

• **Bhringraj benefits for jaundice issue**
  Grind new and clean leaves of Bhringraj with 7 dark peppers in 2ml glue of leaves and give it to the patient each day, in a vacant stomach. One can give it with sharp curd or buttermilk, Within 5-6 days, it fixes jaundice.

• **Bhringraj helpful for ulcers**
  Apply juice of bhringraj on the irresistible ulcers. One can likewise tie the poultice on the ulcers. If there should arise an occurrence of ulcers and bubbles close by, thumb and fingers apply its thick glue on the ulcer. It recuperates the ulcer quick.

• **Bhringraj helpful during diabetes**
• Take powder of Bhringraj and powder of blossoms of babool in equivalent amounts. Add a sugar candy to it. Give this to the diabetes patient with 6 ml of goat’s milk. This is extremely helpful to treat all types of diabetes.

**Bhringraj helps for scorpion chomps**
Grind the leaves of Bhrinraj and apply the glue on the enlarged region. The aggravation gathers on the chomped region. It likewise eases the sting and toxin as well.

**Bhringraj accommodating in cholera**
2 teaspoon juice of Bhringraj plant assuming given with little measure of rock salt in it, to the patient threefold every day, alleviates Cholera.

**Bhringraj oil for eye issue**
We can in like manner use bhringraj while making kajal, we apply the keelanelli juice on the metal plate and spot it over somewhat light that is filled rough sesame oil. At the point when the debris is assembled, we take it in a plate and mix it in with ghee and use as kajal. Kajal made with keelanelli affects the eyes. May progress loosening up and rest. Magnesium is known for its relaxant properties and may propel muscle loosening up, rest, and it can in like manner further foster demeanor. May assist with forestalling urinary lot contaminations (UTIs),The antimicrobial properties of bhringraj may assist with treating UTIs, which are generally regularly brought about by bacterial contaminations.

**Liver detoxification**
The juice from the leaves of the bhringraj (bogus daisy) plant are utilized as a liver tonic in Ayurvedic medication. A few investigations show that the spice might assist with liver cell age.

**Mitigates aggravated skin**
Bhringraj oil is hydrating and can assist with extinguishing dry skin. Bhringraj is a calming, so when applied topically to skin it might assist with dealing with skin aggravation like psoriasis, dermatitis, and a few types of skin inflammation.

**Nutritional Value**
Calcium, Iron, Vitamin-D, Vitamin-E, Magnesium.

**Conclusion**
The presence of the different chemical constituents that makes more useful and leads to the vast medical benefits. It rehabilitate god health among human and has negligible side effects.

**References**
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