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## ***ECLIPTA ALBA - AN IMMUNITY BOOSTER PLANT- AN OVERVIEW***

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### **Abstract**

*Eclipta alba* belongs to family Asteraceae usually known as Bhoringraj. It was found in highlands, low land and damp places. It was native to Asia widely spread in Tropics, subtropics and temperate region. The whole plant was medicinally important. It was used for rejuvenating, improve strength, immunity, fertility, headache. So proper scientific cultivation, management, extraction and utilization was the need of the hours for the conservation of this important medicinal plant for sustainable fulfilling the need.

**Keywords:** Bhoringraj, headache, rejuvenating, tropics.

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#General Article

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## Introduction

*Eclipta alba* is usually known as False Daisy, Trailing *Eclipta*. The Sanskrit name is Bhringraja and Tekarajah. It is one of the ten auspicious flowers, mentioned in the Ayurveda which has been used for ages for hair and skin problems. It forms one of the ingredients used in black hair dye. In Java, the leaves of the plant are used as a food item. In China and Brazil, the plant is used as anti-venom for snake bites. It is a common weed that grows all through India on waste grounds. It is also grown in Thailand, Brazil and China (Rao, 2000).

**Table.1. Plant Description**

Botanical Name(s)	<i>Eclipta alba</i>
Kingdom	Plantae
Division	Magnoliophyta
Class	Magnoliopsida
Order	Asterales
Family	Asteraceae/Compositae
Genus	<i>Eclipta</i>
Species	<i>alba</i>
Common name	False daisy, Bhringraj

## Habitat/Occurrence

It grows under each upland and lowland conditions. It is widespread in damp places (heavy soils with consistent and considerable water supply are preferred), in ditches, and close to rivers and swamps. It is a not common weed of rice. However, its prevalence in lowland rice fields may be decided totally by water management. In many parts of India, it's far grown commercially as a medicinal crop.

## Distribution

It is a local of Asia, now extensively distributed with inside the tropics, subtropics and warm temperate regions. It is abundantly found in India, China, Brazil, and United states and sparsely in Africa, Europe, and Oceania etc. It is found in many nations of Asia like Afghanistan, Bangladesh, Bhutan, Indonesia, Iraq, Japan, Korea, Malaysia, Pakistan, Philippines, Saudi Arabia, Sri Lanka, and Thailand.

Four species have been reported to this point in warmer parts of America, Africa, Asia and Australia. Roots, seeds, seed oil and the whole plant are used for medicinal purposes. Propagation via seeds 3 Kg/ha . In India, Bhringraj is grown organically. No chemical inputs are used, only 15–20 tones farmyard manure/ha on the time of sowing are applied. Maturity obtained in 3–3.5 months after sowing. Average yield 5 tonnes dry herbage/ha.

## Botany of the Plant

Botany of the Plant Bhringraj is a slender, diffuse or sub-erect herb. A much-branched, variable, prostrate, ascending or erect, tough-bushy annual herb, as much as 90 cm tall with slender, reddish stems covered with short, stiff hairs, rooting at

the lower nodes. It is a quantitative short-day plant. The plant grows commonly in moist places everywhere in the world, as a weed.

**Leaves:** Opposite, simple, rough, dull green, ovate to oblong-lanceolate, 2-10 cm long, 1-3 cm wide, apex acute or blunt, base attenuate, margin entire or barely serrate, pubescent, commonly sessile, the decrease leaves sometimes quick petioled, basally swollen hairs on every surface, veins prominent (Sharma *et al.* 2001).

**Inflorescence:** Flower heads up to 1 cm in diameter, a cluster of sessile white flowers, in higher axils or terminal, solitary or heads together. Peduncle, thickened at the top, variable in length, 0.5-7 cm long, hairy. Involucral bracts 5-6, green, ovate, in rows, outer ones 4 -6 mm long, internal ones typically shorter, prominent, and hairy. Ray flowers marginal, pistillate, fertile, corolla white, ligulate, 2-3 mm long. Disk flowers numerous, central, perfect, fertile, corolla whitish, tubular, minute, 1.5-2 mm long. Stamens five, separated filaments, anthers coalesced to form a tube around the style.

**Flowering Time:** October to December in Indian situations is the flowering time

**Fruit:** Achene.

**Seed:** light-brown to black, laterally-flattened achenes, wedge-shaped, 2-3 mm long, 0.9 mm wide. Apex with short, normally white hairs which might be easily broken off however horns like projections often stay pappus absent. The rest of the achene is glabrous and covered with many small warts.

**Seedling:** Stems are pale green, rarely purple, with fine, small hairs. Primary or cotyledonary leaves appear spongy and are opposite, elliptical to egg shaped, with a smooth margin and often with short, pointed, randomly dispersed hairs on the lower side (Rout *et al.* 2020). True leaves are up to 6 mm prolonged, 3 mm huge and opposite. Later leaves seem like the number one actual leaves and feature fine, translucent marginal hairs. They are as much as 12 mm lengthy and 5 mm huge, sessile, lanceolate or linear lanceolate and complete or shallowly toothed, and each surface is tough with scattered, stiff hairs (Annon).

**Chromosome Number:**  $2n = 22$ .

### Plant Chemicals

Major chemical constituents of Bringraj are Ecliptic, Wedelolactone, Des-methyl wedelolactone, stigmasterol, polyacetylenes, polypeptides, steroids, thiophene derivatives, and flavonoids. The extract obtained from Bhringaraj plant contains an alkaloid called ecliptine. This extract is resinous. The leaves of the plant contain a rich amount of protein. The chief constituents of Bhringaraj are coumestan derivatives like wedolol actone [1.6%], demethyl wedelol actone, desmethyl-wedelolactone-7glucoside and other constituents are ecliptal,  $\beta$ -amyrin, luteolin-7-O-glucoside, hentriacontanol, heptacosanol, stigmasterol

(Khare, 2004). It is known for its anticancer, anti-leprotic, analgesic, antioxidant, anti-myotoxic, anti-haemorrhagic, anti-hepatotoxic, antiviral, antibacterial, spasmogenic, hypotensive and ovidal properties (Sharma *et al.* 2008).

### **Bhringraj Juice**

It is administered for rejuvenation, for a long period time. During its administration, the patient is made to eat only cooked rice with milk. This helps to improve strength, immunity, fertility and life expectancy.

### **Dosage**

Fresh Juice- 5-10 ml

Powder – 250 mg to 2 g in divided per day, or as advised via way of means of Ayurveda doctor.

### **Uses**

#### **Therapeutic use of *Eclipta Alba***

Medicines made out from *Eclipta alba* are used for relieving ringworm, alopecia, spleen and liver enlargement, jaundice and hepatitis and additionally as a preferred tonic. It is likewise effective in controlling cough, cataract, indigestion, haemorrhage, vertigo, toothache and giddiness. It has antiseptic properties and works as a wound relieving agent. The root of the plant is used as a purgative and emetic and the paste of the leaves is strong to relieve scorpion sting.

It has alexipharmic, anthelmintic and sour properties. Bhringraj is the principle herb for hair care and cirrhosis in Ayurveda (Khare, 2004). It is idea to preserve and rejuvenate hair, teeth, bones, memory, sight, and hearing. It works to rejuvenate kidneys and liver. Like oil, it treats greying and balding, makes the hair darker, and promotes deep sleep. It additionally improves complexion. In Ayurveda, the root powder is used for treating hepatitis, enlarged spleen and pores and skin disorders. Mixed with salt, it relieves burning urine sensation.

Mixed with a little oil and implemented to the head, the herb relieves headache. Bhringraj is also applied to prevent repeated miscarriage and abortion. It is likewise used to relieve post-delivery uterine pain. The leaves of this herb are used to reduce uterine bleeding. The extract taken of its leaves is blended with honey and given to infants, for the expulsion of worms. Bhringraj is also given to children in case of urinary tract infections. Fumigation with Bhringraj is considered to result in relief in piles. Bhringraj oil has anti-ageing residences, as it has a rejuvenating impact at the body. It is also given as a favoured tonic in instances of debility. Bhringraj is used extensively through Ayurvedic practitioners, for treating pores and skin illnesses and eye infections. Due to its anti-inflammatory properties, the herb is likewise used for treating hyperacidity (Jadhav *et al.* 2009).

## Other Uses

### Antimicrobial Effects

Extracts of *Eclipta alba* is used for relieving infections. It fights against all micro organisms which cause boils, infections and inflammations.

### Anticancer Properties

Extraction of *Eclipta alba* is useful in inhibiting the growth of cancer cells.

### Insecticide Properties

The extracts of *Eclipta alba* are effective as an insecticide and provide an opportunity to chemical pesticides. Pest control can be performed in an eco-friendly way.

*Eclipta alba* juice is used to make hair oil which is powerful in controlling several problems related to hair like dandruff, hair falling and hair thinning etc. The juice of the leaves is used to make Kajal which is useful in relieving ailments related to eyes. In Siddha medicine it is used to relieve several diseases. Popular liver tonic with the name Liv.52 contains this herb. A black dye that is obtained from the plant is used for tattooing and hair dyeing.

### Side Effects in using *Eclipta alba*

There are no or limited known facet effects with the use of *Eclipta alba*. But any herb or medicinal formulation should be used as per the given dosage. Over indulgence may cause complications. It is better to consult a practitioner earlier than consuming any herb or formulation. It may cause genital itching and dryness. *Eclipta alba* has allelopathic effects on seed germination and seedling growth of other weed plants and crop plants. Competitive effects of it on the growth of container grown plants.

### Conclusion

*Eclipta alba* is a popular miraculous herb. It is a traditionally important medicinal plant, but unscientific management was a threaten to the plant. So it was recommended the proper conservation and cultivation by farmers. More training can be imparted by the KVK and Department of Agriculture for its scientific cultivation

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