Chapter 7

Hemigraphis latebrosa (B.Heyne ex Roth) Nees: a medico – food of tribals of India

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ABSTRACT

Hemigraphis latebrosa, synonym *Strobilanthes pavala*, is a widespread or erect herbaceous plant. It is typically located in arid to humid regions. It is extensively accessible in certain areas of India. It is regarded as a vital food source for tribal cultures. This work underscores the scientific validation deficiency of *H. latebrosa*, along with its phytochemical and pharmacological investigations.

Keywords: *Hemigraphis,* traditional knowledge, food source

INTRODUCTION

India is very rich in traditional knowledge, especially medicinal knowledge. It plays a significant role in the health of large populations. The earliest records of Indian traditional medicine date back to before 5000 years ago, specifically from the Charaka and Sushruta Samhitas, which recorded approximately 341 and 395 herbal medicines separately around 1000 BCE. The "Rigveda" (1700-1100 BCE), "Yajurveda" (1400-1000 BCE), and "Atharva Veda" (1200 BCE) are examples of ancient literature. Subsequently, manuscripts like "Charaka Samhita" (990 BCE),

"Sushruta Samhita" (660 BCE), and "Dhanwantari Nighantu" (1800 CE) emerged. According to the manuscript, Ayurveda is considered the most ancient, widely accepted, practiced, and flourishing indigenous traditional medicine. Ayurveda combines the Sanskrit words “ayur," meaning life, and “veda," meaning science or knowledge. As per ancestors, the human body is a network of seven fundamental elements (Rasa, Rakta, Mansa, Meda, Asthi, Majja, and Shukra). The five fundamental components—fire, water, air, ether, and earth—and the three dynamic energies or functional philosophies, "vata, pitta, and kapha" (Tridosha), generate the waste products of the body, such as excretion, urine, and sweat. Diseases are caused by any unevenness or unsettling influence in these fundamental states of the body. The genus *Hemigraphis* has about 60 to 90 species, mostly distributed in tropical regions of the world (**Sunil and Kumar 2016**). *Hemigraphis* is found throughout peninsular India, Southeast Asia, Malesia, Australia, and New Caledonia. There has been a debate between the *Strobilanthes* and *Hemigraphis* species. Traditionally, we have distinguished the genus from the morphologically similar Strobilanthes Blume, Aechmanthera Nees, and Stenosiphonium Nees within the subtribe Strobilanthinae by its weedy habit, a small non-resupinate corolla, and more than four ovules per ovary or seeds per capsule (**Moylan et al. 2022**). *Hemigraphis latebrosa* synonyms are *Hemigraphis crenata* (Benth.) Bremek.; *Hemigraphis crossandra* (Steud.) Bremek.; *Hemigraphis elegans* (Hook.) T. Anders.; *Hemigraphis elegans* var. crenata C. B. Cl.; *Hemigraphis pavala* (Roxb.) Kurz; *Hygrophila pavala* (Roxb.) Kurz; *Ruellia crenata* Benth. ex Hohen.; *Ruellia crossandra* Steud.; *Ruellia diffusa* Wall.; *Ruellia elegans* Hook.; *Ruellia erecta* Buch. -Ham. ex Wall.; *Ruellia fasciculata* Herb. Madr. ex Wall.; *Ruellia latebrosa* Roth; *Ruellia obscura* Russ. ex Wall.; *Ruellia parviflora* Hort. Tonell. ex Nees; *Ruellia pavala* Roxb.; *Ruellia satpoorensis; Strobilanthes pavala* (Roxb.) J.R.I.Wood. *Hemigraphis latebrosa* is well known as the Acanthaceae family. In India, it is reported in Maharashtra, Gujarat, Chhattisgarh, Madhya Pradesh, and Odisha (**Meena 2012; Lekhak and Yadav 2012; Nayak et al. 2022; Kumar et al. 2022**). It is a diffuse or erect and hairy herb. It grows quietly in a wide variety of dry to moist areas. The flowering and fruiting period is November to April. It is widely found in the Himalayas, Bihar, Rajasthan,

and the Deccan Peninsula (Saxenna and Brahmam 1995). As per IUCN status, it is of least concern (Lekhak and Yadav 2012). Tribal communities use *H. latebrosa* as a leafy vegetable. Traditional knowledge of this plant is quite widespread in some parts of India, but there are few scientific studies available to support it. The literature survey indicates that there is a lack of documentation on the bioactive compounds, pharmacological activities, and other aspects of *Hemigraphis latebrosa*.



Figure 1: Habit and habitat of *H. latebrosa*

MORPHOLOGY

It is a diffuse herb or undershrub branch procumbent; its stem is densely white and hairy. Leaves opposite, ovate, crenate- serrate, apex acute or acuminate, base cuneate, bulbous based hairs on both sides; petiole long. Flowers in axillary or terminal, shortly peduncled, few-flowered, capitate spikes; bracts, elliptic-oblong, 1 – nerved, long–hairy, ciliate; hairs sometimes gland-tipped. Calyx 5 – lobed, free near the base; lobes unequal, ciliate, sparsely glandular hair. Corolla blue, funnel-shaped; tube broad above; lobes unequal, rounded. Stamens 4, didynamous; longer filaments bearded in the upper part; another cell oblong. Ovary is 2-loculed, hairy; style thickened below the blunt stigma. Capsule linear-oblong, minutely

pubescent; seed yellowish-white, compressed, hairy (Saxenna and Brahmam 1995; Figure 1).

ETHANOMEDICINAL USES

Plant decoction treats blood purifiers (Bhogaonkar and Devarkar 2002). Root juice is used as a nasal drop for an anti-alcoholic agent (Reddy et al. 2007).

BIOACTIVE COMPOUNDS

As per the literature review, less work is carried out on *H. latebrosa* on bioactive compounds. However other species of *H. colorata* and *H. alternata* are reported by researchers they contain saponins, flavonoids, terpenoids, tannins, alkaloids, triterpenes, phenols, amino acids, proteins, carbohydrates, carboxylic acids, and xanthoproteins (Koshy and Sangeetha 2022).

PHARMACOLOGICAL ACTIVITES

According to the literature review, there isn't much information about the pharmacological activities of *H. latebrosa*.

OTHER USES

In Odisha, the leaves of *H. latebrosa* are used as a leafy vegetable (Present study).

CONCLUSION

Hemigraphis latebrosa is an herb and it is widely distributed across India. In tribal communities it is used as a leafy vegetable in the literature survey it concludes that it also has some valuable medicinal properties. But less or no documentation carried out on phytochemical and pharmacological activities till now. The

literature survey, concludes that the maximum work was carried out on these species *H. colorata* and *H. alternata*. However, it is one of the gaps that can be filled by working on this particular species and evaluating its bioactive compounds for further pharmacological studies (Figure 2).

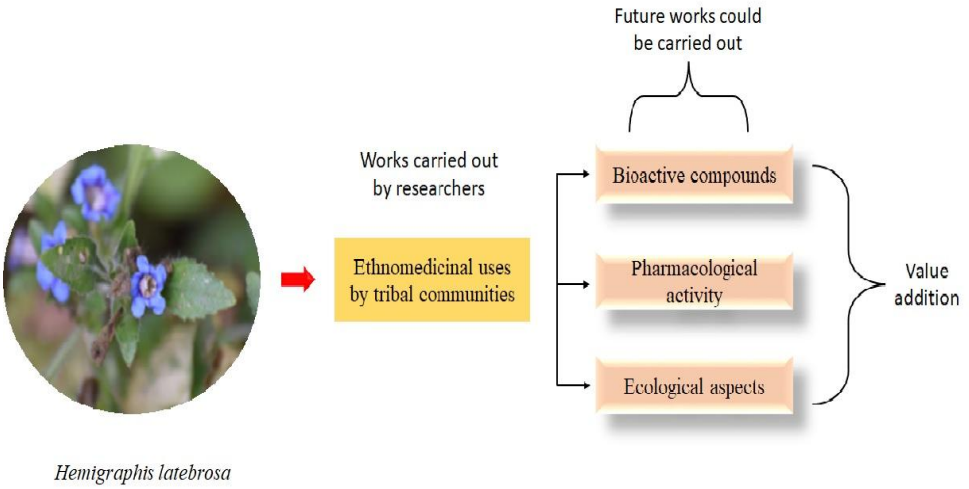


Figure 2: Future aspects of *Hemigraphis latebrosa*

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