



REVIEW ARTICLE

# Gandhaprasarini (Paederia foetida) – A Potent Medicinal Herb of North-East India

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## ABSTRACT

Stink vine or *Gandhaprasarini* may be an uncommon name to many but this herb is very potent medicine in many diseases like that of Gastrointestinal tract, Arthritis, Asthma, Cough to name a few. *Gandhaprasarini* is a key ingredient in many ayurvedic formulations. The northeastern region of India is the abode to this magical herb. Natives of that area have been using this herb as food and also as medicine. A very unique foul smell from the parts is the identification of this herb. In this article we will review about the properties of this medicinal herb found in Ayurveda and Modern science.

## Key Words

Stink vine, *Gandhaprasarini*, Foul smell, Ayurveda, Northeastern region

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## INTRODUCTION

*Gandhaprasarini* is one among the less studied herbs found in the Northeast region. It has long been used by the ethnic groups of this area in cooking and as medicine. The modernization of society aids the people to be a prey to various kinds of diseases though the synthetic medicines aids in reliving the diseases but there is no denial that they also have some adverse effects to the body. Herbal medicines where as shows promising results in the management of diseases with less or no side effects. Ayurveda the oldest science of life has references about the *guna-karmas* of this herb. The herb has an unique foul smell coming from the parts and thus it got its name which means it spreads bad smell. It is a Glabrous or puberous plant with lanceolate and cuspidate leaves, violet

colored flowers in panicles and orbicular fruits. Previous studies done on the plant shows the importance of this plant and hence further evaluation of the properties is a must.

**Table1** Taxonomy of *Gandhaprasarini* (*Paederiafoetida*)<sup>3</sup>

<b>Kingdom</b>	<b>Plantae</b>
<b>Order</b>	Gentianales
<b>Family</b>	Rubiaceae
<b>Genus</b>	Paederia
<b>Species</b>	Foetida

## Vernacular names<sup>3,8</sup>

1. Hindi- Gandhaprasarini or prasaran
2. English-Chinese fever vine, skunkvine, stink vine
3. Telegu-takkeda
4. Bengali- Gandhabhaduliya
5. Marathi- Hiran-vel
6. Gujrati-Gandhan
7. Tamil-Pinarisangai

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8. Assamese-Bhedailota, Padurilota.
9. Khasi-Mei iwtung
10. Mizo-Vawih-uih-hrui
11. Manipuri-Oinam



Figure 1. *Paederia foetida* plant with fruits



Figure 2 *Paederia foetida* plant with flowers



Figure 3 *Paederia foetida* plant leaves

**Synonyms-** *Gandhadhya, Balya, Rajabala, Sarani, Bhadrabala*<sup>3</sup>

### Phytochemical studies<sup>6</sup>

Phytochemical investigations reported that *Paederia foetida* contains paderolone, paderone,  $\beta$ -sitosterol, paderoside, asperuloside and their related

glucosides. The leaves of the plant are also rich in carotene, vitamin C, keto-alcohol and alkaloid. Asperuloside, beta-sitosterol and lupeol are also found in leaves. The aerial parts of the plant contain iridoid glucosides. *Paederia foetida* also contains friedelin, campesterol, ursolic acid, hentriacontane, hentriacontanol, cerylalcohol, palmitic acid and methyl mercaptan. Ellagic acids, Epifriedelinol, Terpenoids, alkaloids paderine (a-paderine and b-paderine), volatile and essential oil.

### Raspanchak<sup>3</sup>

- *Ras-Tikta*
- *Guna- Guru, Sara*
- *Virya-Usna*
- *Vipak-Katu*
- *Karma- Vata , Pitta hara*

Table 2 Gunas according to other classics<sup>1</sup>

<b>Dhanvantari Nighanthu</b>	<b>guru, tikta, sara, sandhana, tridosha shaman, vrushya, tejapradakanti and balapada</b>
<b>Raj Nighanthu</b>	Guru, ushna, tikta, vatnashan, arsha – shotha hanta, malvishtambaharini
<b>Bhavaprakash Nighanthu</b>	Guru, vrushya, balya, ushnvirya, tikta, vatrakta hanta
<b>Charak Samhita</b>	Balya, vatvyadhihanta
<b>Chakradatt</b>	Useful in aamvat
<b>Vaidyamanorama</b>	Useful in mutrakrucha, hikka, balya
<b>Rajvallabh</b>	Vata-pittahara, ushna, balya, vrushya
<b>Acharya Priyavrat Sharma<sup>2</sup></b>	Tikta, sara, ushna, vathara, useful in arsha, shotha, malavishthambha.



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**Gana:-**Nighanthu Adarsh<sup>1</sup> –Manjisthadi. No other classics mentioned any *gana*.

### Pharmacological properties<sup>4,6</sup>

Many studies were done on this species and the properties found in this plant is quite impressive. A study showed that this herb has anti-nociceptive, anti-inflammatory, antibacterial and antiviral, antitussive, antioxidant, anti-tumor and also cures digestive disorders. Another study reveals its hepatoprotective, antihelminthic, anti-ulcer, antihyperglycemic, anti-diarrhoeal properties.

### Folkloric uses in food and medicine<sup>5</sup>

Traditionally the tribal people of NE administer the plant in different form according to their need/ailments, for medicinal purpose, decoction of the whole plant, leaf, stem, stem bark, or leaf juice is prepared. Tender leaves are boiled and eaten with chili and salt as food. As per a study the tribes of Tripura state prepare 'Bermabatui or Gudak' using dry fish and leaves of *P. foetida*<sup>9</sup>. Tribal people of Chittagong hill tracts of Bangladesh and the Aka tribe of Arunachal Pradesh consume the leaf juice to treat diarrhoea, dysentery and burns or scalding. Some studies shows that the powder form of the whole plant is taken by certain tribal communities in other parts of India for weakness and rheumatic joint pains. Certain ethnic communities of Orissa state of India cook the leaves with rice to cure different joint diseases like rheumatism and gout based on a study done<sup>10</sup>. Fresh leaves are available in the local markets of Calcutta and the patients, specifically suffering from unhealthy bowel use

the leaves in soups. It is also used by invalids and convalescents as per the study done by National Institute of Science Communications<sup>11</sup>. Adi and Memba tribes of Arunachal Pradesh use leaves and twigs as vegetables<sup>12</sup>. *P. foetida* is a wild food for the tribal people of Andhra Pradesh, who use the leaves as vegetables<sup>13</sup>. Presence of high amounts of protein (5%), fat (1%), carbohydrate (3%), dietary fiber, minerals (nitrogen, phosphorus, potassium, sodium, iron, magnesium, calcium, zinc, copper, and manganese), vitamin C, and phenolic content increase its nutritional and medicinal values. A study reveals the presence of Vitamin C (271 mg per 100 g) and phenolics in leaves, which acts as an anti-oxidant. *P. foetida* is also used as a vegetable drug in Basavarajeeyam<sup>15</sup>.

**Table 3** Folkloric / Traditional uses of *P.foetida*<sup>5</sup>

Assam	Gastritis, allergic reactions, post natal pain and bleeding, diarrhoea, pain abdomen, as a vegetable
Tripura	As vegetable, diuretic, diarrhoea, infections
Arunachal Pradesh	Urinary disorders, renal calculi, gastritis, pain abdomen,
Sikkim	Anti diabetic
Darjeeling	Anti diabetic
Meghalaya	Antidote for snake bite

## CONCLUSION

Research shows that *Paederia foetida* is an important medicinal plant used in various ethnomedical treatments like stomachache, dysentery, fractured bones to name a few. No toxic effect has been recorded for this plant and thus it can be used for a long duration without harm. *P.foetida* I used widely as a food by the tribal population. There are many scientific studies



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which shows the therapeutical properties of this plant as documented .As shown in table 2 the gunas of this drug as per Ayurvedic classics, it has tikta ras which helps in alleviating pitta dosha, ushna guna helps in pacifying vata dosha. Some acharyas state that this is tridoshashamak. In ayurveda this herb is used in formulations like *Prasarini taila*<sup>7</sup>, *Marma gulika*<sup>7</sup>, *Mahanarayan taila*<sup>7</sup> .On the basis of detailed information from literature and research studies it can be concluded that the plant has high potency for health care. There should be controlled exploitation of this herb to refrain from losing its existence from nature. More and more studies are required to ensure the proper field of utilization of it.



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