



Phytochemical Analysis and Pharmacological Action of Gopureesha Chinchā Malahara in Agnidagdha Vrana; An Overview

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ABSTRACT:

Burns are one of the most commonly seen trauma incidents and burn wounds need a meticulous care, which causes a lot of medical and economic costs. Burns may result from heat, chemical or radiation exposure. Burn wound healing is a complex process which require utmost care and attention to prevent sepsis.

In *Ayurvedic* classics *Acharya Susrutha* has explained in detail about the types, clinical features, treatment principles and complications of *Dagdha Vrana*. *Gopureesha Chinchā Lepa* is a folklore medication which is explained in *Keraliya Oushadha Vijnana*. It consists of three ingredients *Gopureesha*, *Chinchā Patra*, *Tila taila* and *Siktha*. Making of *Lepa* every time is a strenuous work and shelf life is also less, so here *Lepa* is modified in to *Malahara*.

The current overview emphasizes the phytochemical investigation and pharmacological actions, of *Gopureesha Chinchā Lepa*. By using this overview, we can interpret the action of *Gopureesha Chinchā Lepa* in *Agni Dagdha Vrana* and finds future scope of current research work.

Key words: Gopureesha Chinchā Lepa, Agni Dagdha Vrana

INTRODUCTION:

Plants have been a significant source of both nutrition and medicine since the beginning of human civilization. According to religious and cultural traditions, medicinal herbs have long been thought of as a source of therapeutic cures. Due to the numerous adverse effects of synthetic medications, plant substances are now used as drug sources. Because of this the researchers became more interested in herbal treatments. In contrast to synthetic alternatives, compounds produced from plants are more widely accepted by the general public and are less restricted in international trade. Despite the fact that herbs had been valued for their therapeutic, flavouring, and aromatic properties for ages, their significance was briefly eclipsed by modern synthetic products. But people are now turning back to natural products in the expectations of finding safety and security because their blind dependence on synthetics had ended. As scientists examine plants for a full range of biological activities, from antibiotics to antitumor agents, the search for plants with therapeutic characteristics continues to receive attention. As herbs are natural products, they are free from adverse effects, relatively safe, environmentally friendly, and locally accessible. ¹

Gopureesha Chinch Lepa is a folklore medicine mentioned in Keralaiya Oushadha Vijnaniya indicated in Agni Dagdha Vrana. The main ingredients of the formulation are *Gopureesha*, *Chincha Patra* and *Tila Taila*.

PLANT DESCRIPTION:

CHINCHA PATRA (*Tamarindus Indica*) ³

Tamarindus indica is of moderate to large in size, evergreen tree, up to 24 m in height and 7m in girth. The latest morphologic and molecular analyses and continued study will clarify the exact positioning of *Tamarindus* in relation to its putatively related genera. It is a large evergreen tree with an exceptionally beautiful spreading crown, and is cultivated throughout almost the whole country, except in the Himalayas and western dry regions.

Vernacular Names:

Sanskrit: Amlika

English: Tamarind

Hindi: Imli, Titar

Marati: Chinch

Kannada: Hunase mara

Malayalam: Valampuli, Kolpuli

Taxonomical Classification:

Kingdom: Plantae

Class: Magnoliopsida

Order: Fabales

Family: Fabaceae

TILA TAILA (SESEME OIL): ⁴

Sesame is a plant in the genus *Sesamum*, also called benne. Numerous wild relatives occur in Africa and a smaller number in India. It is widely naturalized in tropical regions around the world and is cultivated for its edible seeds, which grow in pod.

Vernacular Names:

Sanskrit: Tila Taila

Hindi: Karishna Taila

Tamil: Yellu enne

Kannada: Ellenne

Malayalam: ellenna

Taxonomical Classification: Sesame

Kingdom: Plantae

Phylum: Spermatophyte

Class: Dicotyledonae

Order: Scrophulariales

Family: Pedaliaceae

Species: *Sesamum indicus*

PHYTOCHEMICAL STUDY:

TEST FOR TANNINS:

To 1 ml aliquot of each of the extracts, 10 ml of water and 5 drops of 1% lead acetate solution was added. The formation of white precipitate indicated the presence of tannins.

TEST FOR PHENOL:

To the material add the Folin-Ciocalteu reagent, sodium carbonate (7–35% or 0.1 N), and distilled water. The solution prepared in this way is allowed to react for 15–120 min.

TEST FOR SAPONINS:

1ml solution of extract was diluted with distilled water to 20 ml and shaken in a graduated cylinder for 15 minutes. Development of stable foam suggests the presence of saponins.

TEST FOT GLYCOSIDE:

Add 1mL of the above reagent to 1mL of the test solution followed by 0.5 mL of 10% Sod. Carbonate solution. Heat the test tube in a boiling water bath. Observe the colour of the solution. Positive result in the picric acid reaction is the appearance of a mahogany red colour in the solution.

TEST FOR CARBOHYDRATE:

One ml of the analyte sample must be mixed with 2 ml of Benedict's reagent and heated in a bath of boiling water for 3 to 5 minutes. The development of a brick-red coloured precipitate of cuprous oxide confirms the presence.

TEST FOR FLAVONOIDS:

The test solution of the extracts was dissolved in 95% ethanol. To this, a small piece of magnesium foil metal was added; this was followed by 3-5 drops of the concentrated HCl. The intense cherry red colour indicated the presence of flavonoids.

TEST FOR TERPENOIDS:

Extract (5 ml) was mixed with chloroform (2 ml), and concentrated sulphuric acid (3 ml) was carefully added to form a layer. A reddish-brown coloration of the inter face was formed to show positive results for the presence of terpenoids.

TEST FOR ALKALOIDS:

By adding 1 mL of Dragendorff's reagent to 2 mL of extract, an orange red precipitate was formed, indicating the presence of alkaloid

Sl No	Parameters	Unit	Result	Test method
1	Tannins	-	Negative	Lead acetate test
2	Phenol	-	Negative	Folin ciocalteau test
3	Saponins	-	Negative	Foam test
4	Glycosides	-	Negative	Picric acid test
5	Carbohydrates	-	Negative	Benedict test
6	Flavonoids	-	Present	Shinoda test
7	Terpenoids	-	Negative	Salkowski reaction test
8	Alkaloids	-	Present	Dragendroff's reagent test

PHARMACOLOGICAL ACTION:

- Gopureesha: ⁵

According to *AH, CH, BR* Gopureesha has *Kashaya Tiktha Rasa, Laghu Ruksha Guna, Sheetha Veerya, Katu Vipaka*.

In *Ashtanga Hridaya Sutra Stana* 10th chapter it is mentioned that *Kashaya Rasa* pacifies *Pitta* and *Vata* and helps in *Ropana*, reduces *Kledana*. It also acts as *Twak Prasadana*, Whereas *Tiktha Rasa* helps in pacifying *Kapha* and *Pitta Dosha*. It reduces *Kledana* and helps in *Upashoshana*. *Tiktha Rasa* is indicated in all *Twak vikaras*. *Katu Rasa* act as *Sophahara* and *Vrana avasadana*. *Sheetha Veerya* present in the *Gomaya* helps to reduce the burning sensation as well as the inflammatory changes happened in the tissue. Research works shows that *Gomaya* has an anti-bacterial effect and anti-fungal effect.

- Tila Taila: ⁶

According to *Bhavaprakasha Nighantu*, it has *Kashaya rasa, Tikta Anurasa, Ushna veerya* and *Sheetha Sparsha*. It is indicated in *Agni Dagdha Vrana*. Based on studies conducted previously it is noted that the compounds present in *Tila taila* extract has a potential of antioxidant activity which helps to prevent oxidative damage and promote the healing process. In experimental studies it has been observed that *Tila Taila* is the most stable vegetable oil against anti-oxidant. The stability is due to the lignans such as Sesamol, Sesaminol, Phynoresinol providing better results in tissue injury. Presence of Alkaloids, Saponins, Flavonoids, Tannin, phenol, Terpenoid gives anti-bacterial effect.

- Chincha Patra:

Tamirindus indica Linn. belongs to the family of *Caesalpiniaceae* was taken for this study. It is found under the *Phala Varga* in *Brihat Trayi*'s. *Rasa – Madhura, Amla, Guna – Guru, Ruksha Virya – Ushna, Vipaka – Amla*.

In *Charaka Sutra Stana* 30th chapter it is mentioned that *Madhura Rasa* has a property to pacifies *Vata* and *pitta dosha* and helps to reduce burning sensation.

According to *Asthanga Hridaya*, *Madhura Rasa* has an ability to strengthening the *Dhatus* as well as has *Ropana* action. It also contributes in *Twak prasadana*. It is also beneficial for the skin and helps for tissue reunion, whereas *Amla Rasa* helps in promoting the strength of the body.

Research works suggests that it has anti-inflammatory and analgesic properties. The anti-inflammatory effects of *T. indica* may be due to its ability to inhibit a number of biological pathways including NF-κB activation pathways, and leukotriene biosynthesis while its analgesic activity may be via the activation of the opioidergic mechanism at both the peripheral and central mechanisms of pain generation.

The phytochemical constituents detected, including flavonoids, alkaloids, tannins, cyanogenic glycosides and anthraquinones. These may have accounted for antibacterial activity.

• SIKTHA:⁷

Beeswax is containing fatty acids like 10-hydroxy-trans-2-decenoic acid, esters of fatty acids (mainly palmitic and cerotinic acids). Moreover, it contains flavonoids such as chrysin, Pinocembrin, Pinobanksin, galangin, and tectochrysin.

Ayurveda mentions some particular qualities for bees wax, the qualities are *Mridu* (soft), *Snigdha* (Unctuous) and having the properties *Vrana Shodhana* (cleansing the wound), *Vrana Ropana* (healing the wound).

In *Bhavaprakasha Nighantu*, it is mentioned that *Siktha* is *Visarpahara*, hence it may correlate to subside all the inflammatory reactions.

DISCUSSION & CONCLUSION:

In accordance with the phytochemical analysis, the drug *Gopureesha Chinch Malahara* have Flavonoids and Alkaloids composition. In a burn injury the most important complication is infection. Both alkaloids and flavonoids are having the capacity to control infection rate. According to the pharmacological action all the ingredients in the *Lepa* are having the property of *Vrana Ropana* and *Krimighna*.

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