



# **Bramhavriksha: Plash (*Butea monosperma*)**

## **A gift of nature**

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### **Abstract**

Throughout history, plants have been utilized for their healing properties and visual appeal. Traditional herbal medicine is extensively recorded and utilized in India. The aim of this review is to deliver up-to-date insights on botany, morphology, ecological diversity, medicinal applications, phytochemistry, and pharmacological effects of different parts of *Butea monosperma* (Lam.). Taub due to the limited number of studies conducted on it (*B. monosperma*). *B. monosperma*, part of the Fabaceae family, is distributed across the Indian Subcontinent and Southeast Asia, including Bangladesh, Nepal, Sri Lanka, Myanmar, Thailand, Laos, Cambodia, Vietnam, Malaysia, and western Indonesia. It is referred to as Flame of the Forest, Dhak, Palash, or Bastard teak. It is a plant that has been widely utilized in traditional Asian therapies for a long time. It has been employed in the treatment of numerous diseases, such as diabetes, cancer, diarrhoea, dysentery, fever, and jaundice. Recent in vivo and in vitro studies have demonstrated that it possesses hepatoprotective, anti-cancer, anti-diabetic, anti-inflammatory, anti-asthmatic, anti-oxidant, anti-convulsant, and anti-microbial properties. The plant's aerial part contains numerous phytochemicals, mainly flavonoids, lactones, diterpenoids, diterpene glycosides, and phytosterols. Bark generates a red substance known as "Butea gum" or "Bengal kino" that is created. This alternative medical method is gaining popularity globally. It is essential to isolate the active components, conduct biological tests on them, comprehend their molecular mechanisms, build an experimental defense, and secure approval for *B. monosperma's* medicinal use. The collected information will be essential for establishing a study protocol for contemporary medications and Ayurvedic formulation expansion in treating various illnesses luxuriously and remedially.

**Keywords:** *Butea monosperma*, Fabaceae, Phytochemistry, Pharmacological properties, Ethnomedical applications

### **Introduction**

Prior to the emergence of contemporary medicine, herbal treatments addressed every facet of disease control. It is estimated that approximately 70-80% of the world's population living in vast rural regions of developing and underdeveloped

countries continues to rely primarily on medicinal plants.[1] Medicinal plants provide an affordable and accessible means of basic health care for them, especially when contemporary medical facilities are unavailable. Research reveals that there are more traditional medicine practitioners than allopathic providers, especially in rural

regions. Substances derived from plants have recently garnered significant attention due to their diverse applications. Medicinal plants represent the most abundant biological resource for drugs in traditional medicine systems, modern medicines, dietary supplements, herbal remedies, pharmaceutical intermediates, and synthetic drug compounds[3]. Medicinal plants constitute a large category of economically important species that offer vital raw materials for traditional medicines.[3] Plant-based products continue to be the primary source of pharmaceutical compounds utilized in traditional medicine.[4] The WHO states that the initial step for identifying and isolating herbal medicines involves pharmacognostic studies (both macroscopic and microscopic), which are essential for any phytopharmaceutical products utilized in standard formulations.[5] Initial phytochemical investigations are essential for identifying chemical components in plant material that may subsequently facilitate their quantitative assessment.[6,7] Recently, there has been considerable focus on extracts and bioactive compounds derived from recognized plant species. In today's era of drug development and the discovery of new drug compounds, numerous plant products are evaluated according to their traditional applications. The therapeutic effects of medicinal herbs largely arise from the presence of various complex chemical compounds with different compositions that function as secondary metabolites[8]

The most important bioactive components of plants include steroids, tannins, alkaloids, flavonoids, and phenolic compounds. Hence, it is crucial to understand the phytochemical makeup of the plant material prior to evaluating its efficacy for medicinal use.[9] Plants are significant natural sources of medicinal substances in current pharmacopoeias. Indian Materia Medica includes approximately 2000 natural origin substances, with the majority derived from various traditional systems and mythological practices[10]The palash tree, scientifically referred to as *Butea monosperma* is a type of deciduous tree categorized under the Fabaceae family and is indigenous to China, Southeast Asia, and the South Asian region. It is referred to as the Flame of the Forest or Bastard Teak due to its stunning orange-red hue. flowers that blossom from April to May. The Palash tree is primarily distribution to tropical and subtropical areas of globe. It occurs naturally in India, Nepal, and Sri in the world. Lanka, Bangladesh, Myanmar, Thailand, Cambodia, Vietnam and Indonesia. In India, it exists in the wild. habitat in the central and eastern areas, especially Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, Bihar, West Bengal, Odisha, and regions of Uttar Pradesh, Maharashtra and Andhra Pradesh. Besides that, it is cultivate in gardens, parks, and boulevard as a decorative tree indifferent regions of the globe, including India.



**Fig NO.1**

## Habit and Habitat

A moderately sized tree found growing naturally in many regions of India, Burma, and Sri Lanka. *B. monosperma* can thrive in black cotton soils, saline or alkaline areas, poorly drained swampy

soils in mountainous locales, and on arid land, as well as in waterlogged conditions, but not in dry regions. The tree possesses a distinctive survival instinct, thriving abundantly even during scorching summers when numerous trees endure sun-strokes.

## Botanical classification<sup>[11]</sup>

Kingdom: - Plantae (plants)  
Subkingdom–Angiosperms  
Superdivision - Eudicots  
Division – Rosids  
Order – Fabales  
Family–Fabaceae  
Genus – *Butea*  
Species- *B.monosperma*

## Vernacular names of Palash<sup>[12]</sup>

Sanskrit	Palash
Hindi	Dhak
English	The flame of forest
Gujarati	Khakharo
Marathi	Palas
Sanskrit Palash	Sanskrit Palash
Tamil	Palashu

Palash (*Butea monosperma* Lamk.Taub)<sup>[13]</sup>, is medium- sized deciduous tree, 10-15 meters high belonging to the family Fabaceae, is found through- out India.

There are four kinds of Palash, namely. Rakta (red), Pita (yellow), Shweta (white), and Nila (blue) as noted by Narahari in Raj Nighantu.[14] Among these varieties, Shweta and Nila are infrequently found, while Pita is uncommon. With the Pita variety facing endangerment, the widely available Rakta variety is often used in medicinal practices and is referred to as the flame of the forest. According to Vedic literature, it is the most significant plant for Yajna (ritual). In India, it is predominantly used for the worship of God in many areas. It is utilized differently in various festivals. Based on the ancient science of life known as Ayurveda, every festival celebration is rooted in scientific theory, and the Aacharyas

adopt a scientific perspective on the use of any substance as medicine.

The application of Rakta Palash blossoms utilized for 'Holi', or the festival of colors in India. The idea was that the hue derived from flowers is natural, beneficial for the skin, and has no negative effects. Although there is evidence of the applications of Palash from ancient times, its review was selected for analysis [15]

## Historical Aspects:

Mentions of the Palash tree appear in Vedic texts. Vedic literature states that the Palash tree represents 'Agnidevta.' for example, the deity of flames. The dry stem of Palash was utilized to create sacred fire.[16]This plant has been employed for ritual practices in various ways since ancient times. In Telangana, these blossoms

are particularly utilized in the worship of Lord Shiva during the celebration of Shivratri. In Kerala, it is referred to as Plasu and Chamata. Chamata is the local term derived from the Sanskrit word Samidha, referring to small wood fragments used in Agnihotra or fire ceremonies. In Theravada Buddhism, it is believed that the second Lord Buddha attained enlightenment or Bodhi under this tree. Historically, Palash forests, particularly dhak forests, occupied much of the doab region between the Ganges and Yamuna; however, these were deforested for farming in the early 19th century due to rising tax demands from the English East Company.

the farmers.[17] Nirukti-पलाशः ।[10] Palash, 'the tree with attractive and beneficial foliage'. Vyutpatti- कर्मणः ।[11] The Sanskrit term 'Palash' literally translates to resembling flesh or blood.[18]

**Vedic Era:-** The reference of Palash is found in Vedic literature. The utilization of Palash was prevalent during the Vedic period for not just curing ailments but also in daily life and in sacred ceremonies as well. The Samidha of this plant was utilized then for various Homas and Yajnas.[19] As per the 'Kaushik Sutra', Palasha is Medhajanana. Keshav mentioned that it was called 'SarvarogaBheshaja' and it was utilized for KrimiRoga [20] as well. In the Rigveda, Palash is referred to by its synonym Kimshuk, which can be found in sukta 85 of adhyaya 7 of mandal 10. This synonym is provided for Palash due to the appealing hue of its flowers[21]. In Athervaveda, the mention of Palash appears in relation to healing wounds. Here the synonym Parna is utilized for it.[22] In the Upanishad, the significance and depiction of Palash are elaborated. In this ancient writing, the Palash flower is depicted beautifully

### Traditional uses:

#### Gum

The gum appears in tiny, fragile shimmering fragments, dark red-black in hue. Lacks odor and

has a highly astringent flavor that clings to teeth when bitten, causing the saliva to turn vivid red. It is nearly fully soluble in alcohol, completely soluble in ether, and partially soluble in water.

- Its gum is beneficial in stomach and bladder bleeding and is utilized as an anthelmintic.[23]
- It is taken orally for diarrhea, dysentery, and used as a gargle in throat infections.
- Known locally as Kamarkas, which refers to the fortification of back muscles, the gum is utilized to enhance these muscles that are fragile and more flexible. Given that women often suffer from fatigue and back pain during menstruation, pregnancy, and after delivery, the gum taken orally serves as a tonic for pelvic and back muscles in these situations. Nearly all women in India use it to overcome issues of weakness, improve supple soft muscles and loose skin, reshape their bodies post-delivery, and alleviate menstrual problems

#### Flowers

The flowers of *B. monosperma* have tonic, astringent, aphrodisiac, and diuretic properties and exhibit anti-inflammatory effects. The decoction of flowers is beneficial for diarrhea and demonstrates anti-implantation effects, while the alcohol concentrate displays antiestrogenic properties [24-26.] They are utilized for burning sensations and are beneficial in skin conditions [27] and the treatment of liver ailments. [28] · Butea Flowers have butin, butein and butrin, isobutrin, palasitrin, coreopsin and isocoreopsin, chalcones, and auronones [29]

#### Fruits:

Fruits serve as aphrodisiacs and anthelmintics and also treat ailments associated with urine, piles, worms, abdomen, etc[30-34].

## Seeds

The methanol extract from *B. monosperma* seeds demonstrated strong anthelmintic and laxative effects.[35]

## Palash/Butea Monosperma Benefits For Health:

### Eases Diabetes Symptoms

Individuals adhering to a strict diet plan for weight loss, particularly those managing diabetes, can regularly consume Palash formulations. High in dietary fibers that are easily digestible, Palash aids in prolonged satiety, curbing cravings and enhancing fat burning faster. It enhances insulin sensitivity by promoting glucose uptake in muscle cells, which subsequently reduces blood sugar levels in individuals with diabetes.

### Addresses High Blood Pressure

With minimal cholesterol levels and a high potassium content, Palash can be incorporated into a diet regularly to support heart health. The extracts of flowers and leaves can easily be incorporated into various traditional homemade Indian recipes, enhancing blood flow to and from the heart, reducing pressure on blood vessel walls, decreasing high blood pressure, and promoting the efficient functioning of heart muscles.

### Cleanses the Kidneys

Palash promotes the regular removal of bodily waste through the excretory system. It enhances fluid production in the kidneys, quickly eliminating built-up toxins while also ensuring adequate hydration of the body's internal organs. Juice from Palash leaves aids the normal functions of the kidneys and bladder.

### Improves Digestive System

Palash possesses high fiber levels and carminative attributes, aiding in the prevention of constipation, bloating, and stomach cramps after

consuming a substantial meal. Additionally, its laxative properties help manage bowel movements, thus relieving any discomfort felt in the abdomen.

### Enhances Breathing Functions

Palash possesses a natural expectorant property, meaning it can easily loosen any surplus phlegm or mucus secretions and expel them from the respiratory system. This greatly enhances lung performance and also helps avoid allergies and respiratory issues.

### Inherently Hydrates Skin

Palash naturally contains the soothing or emollient Vitamin E, which also possesses antioxidant properties. The extract from the leaves and flowers, when used on sunburns and rashes, soothes the irritated and parched areas of the skin, making it smooth and thoroughly hydrated.

### Fights Skin Infections

The leftover material from Palash leaves possesses astringent qualities. This aids in calming the intensely inflamed areas on the skin. It also effectively diminishes any boils, pus, or carbuncles on the skin areas impacted by allergies, fungal infections, environmental toxins, and sunlight.

### Encourages Hair Growth

Palash contains numerous phytonutrients that offer nourishment and strength to the hair strands. Furthermore, when used as a gel made from leaf or flower paste, it deeply penetrates the scalp layers and safeguards follicles, thus preserving the thickness and stability of hair. Palash is an excellent natural choice if you want to achieve long and strong hair. Also Explore: 7 Amazing Tips for Hair Growth for Healthy, Long, and Shiny Locks

### Addresses Severe Dandruff

Palash contains powerful substances that can lessen the severity of flakiness and dandruff on the hair's scalp. It can also protect the roots of the hair strands, called follicles, from dirt and fungal particles that cause dandruff. Applying Palash leaf paste or gel consistently to an itchy, peeling scalp and dry hair can remarkably improve the look of lackluster hair, providing it with a stunning shine.

### Addresses Alopecia

Extracts from palash flowers and leaves, when prepared and applied during cases of significant hair loss, enhanced blood circulation and nerve activity in the scalp, facilitating quick hair growth. Alopecia displays noticeable bald patches and significant hair loss, while the elevated carotene levels in palash extract combat these issues, helping to diminish ongoing hair fall and improve hair strength and smoothness.

### Combat Illnesses

The phytonutrients or botanical compounds in Palash possess a natural ability to lower temperature. When rubbed on someone with high fever, the leaves offer instant relief by lowering body temperature and alleviating fatigue symptoms. Additionally, because normal metabolism is influenced during fevers, palash leaves also eliminate excess water and salts from the body to aid in sustaining proper electrolyte balance.

### Conclusion

Each morphological aspect of *Butea monosperma* with traditional medicinal properties has been shown to exhibit activities that span from regulating fertility to influencing sexual behavior. It has proven beneficial for enhancing memory, aiding in wound healing, and decreasing stress and anxiety. The research conducted thus far has confirmed its conventional antibacterial properties, and the anthelmintic effect of its seeds has also been verified. Yet many of its additional

virtues remain concealed and unexamined. Every part of *B. monosperma* includes a range of significant phytoconstituents; being robust, it thrives in the Indian climate, making it a valuable plant with immense therapeutic potential to investigate.

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