

A CRITICAL LITERATURE REVIEW OF PALASH (BUTEA MONOSPERMA)

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ABSTRACT

In *Rigveda* 'Kinshuk' was the synonym given for *Palash*. 'Kinshuk' means who shines brightly. This synonym is given because of its bright attractive colour of the flower. *Palash* (*Butea monosperma* Lam.) is belonging to the family *Fabaceae*. *Palash* was commonly known as the 'flame of the forest'. It is a traditional medicinal plant which has been used for thousands of years in Ayurvedic system of medicine for the treatment of *prameha*. Maximum 11 synonyms are described in *kaidev Nighantu* and Common synonyms of *Palash* are *Kinshuk*, *Yadneya*, *Samidvar* and *Raktpushpak*. *Palash Pushpa* (Flower) and *Palash Twak* (bark) both possess same *Tikta*, *Katu* and *Kashaya Rasa*

but Flower having *Madhur Vipaka* and *Sheet Virya* and bark having *Katu Vipaka*, *Ushna Virya*. The detailed review was studied from ancient as well as modern texts and various researches on its pharmaceutical action were considered. *Bhavprakash Nighantu*, *Raj Nighantu* mentioned *pramehghna* (Anti- diabetic), *medohar* (Anti- obesity), *varnaropak* (Wound healing) and *shopahar* (Anti- inflammatory) activities. *Acharya Vagbhat*, *Sushruta*, *Charaka*, *Yogratnakar* and *Bhaishjyarnavali* had used *palash* as an important ingredient in many Ayurveda formulations.

KEYWORDS: *Butea monosperma*, *Karma*. Palash, Pharmacology, Properties.

INTRODUCTION

Butea monosperma (*Palash*) is medium sized deciduous tree growing from 20-40 feet high. Trunk is usually crooked and twisted with irregular branches and rough, grey bark. The leaves are Pinnate with an 8-16 cm and three leaflets. 'Kinshuk' synonym is given because of

its bright attractive colour of the flower. It's also called as 'Flame of Forest'. Palash was explained in detailed in various *Samhitas* and *Nighantus*. So this article for detailed review of Palash was considered for study.

A] Veda kala^[1]

- In *Rigveda* 'Kinshuk' was the synonym given for *Palash*. 'Kinshuk' means who shines brightly. This synonym is given because of its bright attractive colour of the flower. In *Navgraha Stotra* written by *Vyasa* the Character of *Ketu* has been compared with *Palash* flower.
- In Vedic kala *palash* tree was known as *Shant Vruksha* and 'Bramha Varchass', *Samidha* of this plant were used at the time of different *Homa* and *Yadgnyas*.
- According to 'Koushiksutra' *Palash* is 'medhajanan' and *lepa* of *palash* these leaves were applied in 'Jalodar' (Ascitis). *Keshav* told it was 'Sarvaroga Bheshja' and also it was used in *Krimi-roga*.

B] Samhita Kala

1. **Charak samhita-** *Palash* is not described in *mahakashaya*^[2] but it is mentioned in *Chikitsa sthana* for treating the diseases like *prameha*, *Aarsha*, *Atisar* etc.
2. **Sushrut samhita-** in *Sushrut samhita*, *palash* is described in *Rodhradi*, *Mushkakadi*, *Ambasthadi* and *Nyagrodhadigana*. *Kinshuk* is used as synonym for *Palash* in various explanations in *Sushrut Samhita*. Utility of *Palash* in *Kushta*, *Prameha*, *Gulma*, *Aarsh* and *Udarroga*.^[3]
3. **Ashtang Hridaya-** in *Ashtang Hridaya* *palash* is described in *Rodhradi*, *Mushkakadi*, *Ambasthadi* and *Nyagrodhadigana*.^[4]
4. **Ashtang sangraha-** *Palash* is described in *Rodhradi*, *Mushkakadi*, *Ambasthadi* and *Nyagrodhadigana*.^[5]
5. **Chakradutta-** He has told utility of *palash* same as *Aacharya Charak* but he used *Kinshuk* as its synonym.^[6]
6. **Kashyapa Samhita -** In this *Samhita* *Kwath* of *Palash* is used to give *mukti* from 'Sheetaputanagrah' for kids.^[7]
7. **Bharat Bhaishajya Ratnakar-** In this *Samhita* mentioned the antidiabetic action of 'Palashpushpasav' by saying the word *Pramehanihanti*.^[8]

C] Nighantu Kala

It has been explained that *Palash* is one of the *Pramehghna dravya* by different *Nighantus* and it has been included under different *Varga* as follows:

Table number: 1

NIGHANTU	VARGA
1. Bhavprakash Nighntu ^[9]	Vatadi Varga
2. Kaiyadev Nighntu ^[10]	Ayushadhi varga
3. Dhanwantari Nighantu ^[11]	Amradi varga
4. Raj Nighantu ^[12]	Karviriyadi varga
5. Priya Nighantu ^[13]	Haritkyadi varga
6. Shodal Nighantu ^[14]	Aamradi varga
7. Madanpal Nighantu ^[15]	Vatadi varga
8. Shaligram Nighantu ^[16]	Phala Varga

1. SANSKRIT NAME: PALASH^[17]

पलाश- प्रशस्तानिपलाशनिसन्त्यस्यइतिपलाश।

निघण्टुआदर्श (पलाशादिवर्ग)

2. BOTANICAL NAME: *Butea monosperma* Lam.

Etymological Derivation of Botanical Name^[18]

Butea- John Earl of Bute

Monosperma- One Seed

3. SYSTEMATIC POSITION^[19]**Table number: 2**

Botanical name	<i>Butea Monosperma</i>
Kingdom	Plantae
Sub-kingdom	Tracheobionta
Division	Magnoliophyta
Order	<i>Fabaceae</i>
Genus	<i>Butea</i>
Species	<i>Monosperma</i>

4. CLASSIFICATION ACCORDING TO AYURVEDIC TEXT^[20]

1. According to *Karya-Karana Bheda* – *Karya Dravya*
2. According to *Chetanachetana Bheda* – *Chetana Dravya*
3. According to *Yoni Bheda* – *Audbhida Dravya*
4. According to *Aushadha* – *Aushadhi Dravya*

5. According to *Rasa* – *Kashaya, Katu, Tikta*
6. According to *Vipaka* – *Katu Vipaki Dravya*
7. According to *Veerya* – *Ushna Veerya Dravya*
8. According to *Guna* – *Laghu, Ruksha*
9. According to *Doshakarma* – *Kapha vata - shamaka*
10. According to *Roghagnata* - *Prameha, Arsha, Krimihar, Kushta, Gulma, Udar roga, Kandu, Shoola.*

5. VERNACULAR NAMES^[21]

Table number: 3

Marathi	<i>Palas</i>
Sanskrit	<i>Palash</i>
Hindi	<i>Dhak</i>
English	The forest Flame
Gujarati	<i>Khakhro</i>
Bengali	<i>Palash</i>
Tamil	<i>Palashu</i>
Telugu	<i>Modugo</i>
Kannada	<i>Mutag</i>
Maleyali	<i>Palashin Samatha</i>

6. ETYMOLOGY OF SYNONYMS^[22]

1. *Palash* - पलाशप्रशस्तानिपलाशान्यस्य।

leaves are beautiful

2. *Kimshuk* - 'किंशुकोऽयम्' इति भ्रान्तिजनकः, शुक-तुण्डसदृशपुष्पत्वात्।

flower looks like beak of parrot

3. *Triparna* - त्रीणिपत्रकाण्यस्यपर्णे।

Three foliate leaves

4. *Raktapushpa* - रक्तानिपुष्पाण्यस्य।

flowers are of red colour

5. *Yadnyik* - यज्ञेप्रयुज्यमानः।

used in yadnya since vedic period

6. *Beejsneha* - बीजस्नेहयुक्तमस्य।

seeds are oily

7. *Samidvara* - यज्ञेषुप्रयुक्तानांसमिधांश्रेष्ठः ।

describing its usefulness in rituals as *samidha*

8. *Samidvara* - कृमीन्हन्ति, पलाशबीजस्यकृमिरोगेप्रयोगात्।

pacifies *krimi*

9. *Ksarasrestha* - क्षारवृक्षेषुश्रेष्ठः ।

The plant is one of the best among the sources of alkali.

10. *Kharaparna* - परुषपर्णान्यस्य।

With three rough leaflets.

11. *Brahmavrksa* - ब्रह्मणोवृक्षः, वैदिकसंस्कारेषुप्रयोज्यत्वात्।

Used in religious rites and scarifices.

12. *Vakrapuspaka* - वक्रपुष्पमस्य।

Flowers are curved.

13. *Vatahara* - वातस्यहरः शामकः।

It also pacifies *vata*.

14. *Vanaprastha* - वनेप्रस्थोवासोऽस्य।

It grows wild

15. *putadru* - पूतः पवित्रोद्गमः ।

Is a sacred tree.

7. Habitat^[23]

Mountainous districts extending in the Northwest Himalayas as far as the Jhelum and Common all over the Bengal and Southern India.

8. TYPES OF PALASH

There are four types of *palash*^[12]

Table number: 4.

SR.NO.	Nighantu	TYPES
1.	Raj Nighantu	<i>Rakta</i> (red) <i>Pita</i> (yellow) <i>Shweta</i> (white) <i>Nila</i> (blue)

9. PROPERTIES (RASAPANCHAKA OF PALASH TWAK)

Table number: 5

Sr. No.	Name of the texts	RASA	VIPAKA	VEERYA	GUNA	MAHABHUTA ADHIKYA
1.	Dhanwantari Nighantu ^[11]	Tikta Kashaya	Katu	Ushna	-----	Yayu + Pruthvi + Aakash
2.	Raj Nighantu ^[12]	Kashaya	Katu	Ushna	-----	Yayu + Pruthvi
3.	Kaiyyadeva Nighantu ^[10]	Kashaya	Katu	Ushna	Laghu, Ruksh	Yayu + Pruthvi
4.	BhavPrakasha Nighantu ^[9]	Kashaya Tikta, Kayu	Katu	Ushna	Laghu, Ruksh, Snigdha	Yayu + Pruthvi + Aakash + Aagni
5.	Nighantu Adarsha ^[17]	Katu, Tikta, Kashaya	Katu	Ushna	-----	Yayu + Pruthvi + Aakash + Aagni
6.	Madanapal Nighantu ^[15]	Katu, Kashaya	Katu	Ushna	Laghu, Ruksh,	Yayu + Aagni + Pruthvi

10. RASAPANCHAK of Palash Pushpa

Table number: 6

Sr.No.	Name of the texts	RASA	VIPAKA	VEERYA	MAHABHUTA ADHIKYA
1.	BhavPrakasha Nighantu ^[9]	Kashaya Katu, Tikta	Madhur	Sheet	Yayu + Pruthvi + Aakash + Aagni
2.	Dhanwantari Nighantu ^[11]	-	Madhur	-	-
3.	Raj Nighantu ^[12]	Kashaya	-	Ushna	Yayu + Pruthvi
4.	Priyavat ^[24] Sharma	Katu, Tikta, Kashaya	Madhur	Sheet	Yayu + Pruthvi + Aakash + Aagni

11. PRAYOJYANGA

Table number: 7

Sr.no	Nighantu	Part
1	Nighantu Adarsha ^[17]	Root, leaves, flower, seed.
2	Raj Nighantu ^[12]	Flower, leaves, Gum.
3	BhavPrakasha Nighantu ^[9]	Seed, flower, Gum.
4	Priyavrat Sharma ^[24]	Bark, Flower, leaves, Gum.
5	API ^[25]	Stem Bark

12. KARMA

A] Therapeutic Utilization of Palash as per Samhita

1. Acharaya Charaka used Palash beeja in Udarroga.
2. Acharya Charaka used Palash choorna in Kasa.^[2]
3. Acharya Sushrut mentioned Palash beej choorna in prameha.

4. Acharya Sushrut described *Palash beej lepain Kushta*.^[3]
5. Ashtang Sangraha also described *Palash Choorna* in *Arsha*.^[5]
6. Ashtang Hirudaya used *Palash beeja* in *Krumi*.^[4]
7. Acharya Sharangdhar also mentioned *Palash beeja choorna Krumihar*.^[28]
8. Bhaishajya ratnavali also mentioned *Palash Pushpa Kwath* in *Prameha*.^[8]
9. Bhavprakash Nighantu also said that *Palash* fruit is useful in *prameha*.^[9]

B] Therapeutic Utilization of *Palash* as per *Nighantu*

1. Dhanvantari Nighantu also said that *Palash Navpatra* is useful in *Gulma and Pliharog*.^[11]
2. Raj Nighantu described *Palash flower* in *Prameha*.^[12]
3. Priya Nighantu also said that *Palash beej* useful in *krimiog*.^[13]
4. Madanpal Nighantu described *Palash flower* in *Krimihar*.^[15]
5. Shodhal Nighantu also mentioned *Palash Kand* as *Rasayana*.^[14]
6. Shaligram Nighantu described *Palash Fruit* as *Pramehagna*.^[16]

C] Amaykiya Prayoga^[29]

1. **Fever**– In case of burning sensation in fever, the tender leaves of *palash*, should be pounded with sour gruel and this cold paste should be applied on the body to alleviate burning sensation.
2. **Diarrhoea**- Decoction of *palash* fruit (seeds) mixed with milk should be given followed by intake of warm milk according to strength. By this, impurity is eliminated and thus diarrhea is checked.
3. **Intrinsic haemorrhage**- Flowers of *palash* 160 gm. Mixed with double sugar should be taken with milk. It checks intrinsic hemorrhage and also preserves the beauty of woman.
4. **Worms**– Decoction of *palash* seed or paste of the same with rice-water should be taken.
5. **Colic**- Soup prepared with *palash* mixed with sugar should be taken.
6. **Cough**- *Palash* seeds, *Udumbara* fruits and *Marich* taken together alleviates cough within three days.
7. **Filaria**- Juice of *Palash* roots mixed with oil of yellow mustard in equal quantity should be taken.
8. **Scorpion-sting**- *Palash* seeds impregnated with *arka* latex should be made in to a paste and applied locally. It removes pain.
9. **Pumsavana**- One leaf of *Palash* pounded with milk should be taken by the pregnant woman. Thus she achieves powerful son.

10. Raktagulma- *Palash kshara taila* and *ghruta*.

11. As Contraceptive- *Palash* seeds pounded finely and mixed with *Ghruta* (Ghee) and *Madhu* (Honey) should be applied locally in vagina during season. It acts as contraceptive.

13. Chemical Composition^[30]

- **Seed-** Fatty acid (linoleic acid), oleic acid, linolenic acid, palmitic acid, stearic acid, arachidic acid, behenic acid and linoceric acid, palasonin, monospermoside, glycoside.
- **Flower-** Butrin, butein, flavonoids, steroids, coreopsin, isocoreopsin, sulphurein, monospermoside and chakones.
- **Root-** Glycine, Glycoside and aromatic compound.
- **Gum-** Mucilaginous material, pyrocatechin and tannin.
- **Bark-** Butolic acid, Gallic acid, Kino-tannic acid, palasitrin, cynidin, butrin, pyrocatechin, lupenone, lupeol.

14. Phytochemistry^[25]

API Standards for Phytochemistry of *Palash*.

Table no: 8

Physicochemical character	Standard Value	Appendix
Foreign matter:	Not more than 2 per cent,	Appendix 2.2.2.
Total Ash:	Not more than 12 per cent,	Appendix 2.2.3.
Acid- insoluble Ash:	Not more than 1.5 per cent,	Appendix 2.2.4.
Alcohol-Soluble extractive	Not less than 10 per cent,	Appendix 2.2.6.
Water-soluble extractive	Not less than 14 per cent,	Appendix 2.2.7.

Macroscopic characteristic

Mature stem bark, 0.5-1cm thick, greyish to pale brown, curved, rough due to presence of rhytidome, and scattered dark brown spots of exudate; rhytidome 0.2 cm. thick usually peels off, exposing light brown surface, exfoliation of cork and presence of shallow longitudinal and transverse fissures; fracture, laminated in outer part and fibrous in inner part; internal surface rough, pale brown; taste, slightly astringent.

17. Vishesa yoga^[31]

- *Krimikuthar rasa*
- *Mahanarayantaila*
- *Janamghutti*
- *Palashbijadi churna*

➤ *Palashkshara ghrita*.

18. MATRA: (Dose)^[32]

- Decoction (bark) - 50-100ml
- Juice (leaf) - 10-20ml
- Flower powder - 3-6gm
- Seed powder - 3-6gm.

19. Research on Pharmacological Actions Of *Palash*

a. Anti-diabetic activity

The ethanolic extract of *Palash* causes the reduction in blood glucose level in the Alloxan induced diabetic rats. After repeated oral treatment of this herbal drug for 14 days, blood glucose get reduced, reduction in serum cholesterol and improved HDL (high density lipoprotein)- cholesterol were noted as compared to control diabetic group. Ethanolic extract of seed shows antidiabetic, hypolipidemic and antiperoxidative effect in type 2 diabetes mellitus rats.^[33]

b. Antioxidant activity

Antioxidant activity of *buteamonosperma* flowers was studied. It was done through some in vitro models such as the radical scavenging activity using 2,2- diphenyl-1-picryl hydrazyl (DPPH) assay, reducing power assay. Nitric oxide scavenging activity and antioxidant capacity was studied by phosphomolybdenum method. The n- butanolic fraction showed the highest scavenging activity.^[34]

c. Anti-Hyperglycemic activity

The ethanolic extract of *butea monosperma* (BMEE) was studied in glucose-loaded and alloxan-induced diabetic rats which showed the anti-hyperglycemic activity. Single dose treatment of BMEE (200mg/kg.p.o.) significantly improve glucose tolerance and caused reduction in blood glucose level in alloxan-induced diabetic rats. Repeated oral treatment with BMEE (200mg/kg/day) for 2 weeks significantly reduced blood glucose, serum cholesterol and improved HDL- cholesterol and albumin as compared to diabetic control group.^[35]

d. Wound healing activity

Experimental assessment of the wound healing activity of flavonoid fraction of *Butea Monosperma* stem bark showed increased rate of wound contraction and epithelization and increased granuloma tissue formation. Topical application of the flavonoid fraction on excision wounds accelerated wound contraction and reduced epithelization period in rats.^[36]

e. Anti-obese activity

The anti-obese effect of *Butea Monosperma* bark was studied using resulted in reduction in body weight in cafeteria and atherogenic diets fed rats indicating that *B. monosperma* possess weight reducing property.^[37]

f. Anti- microbial activity

Gum of *butea monosperma* is used to treat microbial infection. The in-vitro antimicrobial activity of alcoholic extract of Butea Monosperma gum was evaluated. It was done against various microbial strains such as Staphylococcus aureus, Bacillus subtilis, Pseudomonas aeruginosa, Candida albicans by using disc diffusion method.^[38]

DISCUSSION

Palash Pushpa and *Palash Twak* were reviewed from ancient as well as recent texts. Maximum 11 synonyms are described in *kaidev Nighantu* and Common synonyms of *Palash* are *Kinshuk*, *Yadneya*, *Samidvar* and *Raktpushpak*. *Palash* have dominance of *Kashaya rasa*, *Katu vipaka* and *Laghu*, *Ruksha guna* and *Kapha shoshan* (absorption of *Kapha*), *Pramehaghna* (Anti-diabetic), *medoghna* (Anti-obesity), *Shothagna* (anti-inflammatory), *Vranaropana* (wound healing) actions. Review consist of different formulations useful in *Prameha* as well pharmacological action like Anti-oxidant, Anti-diabetic, Anti-hyperlipidemic, Anti-obesity, wound healing, Analgesic, Antifungal, Anti-inflammation activities which are useful against diabetes.

CONCLUSION

The deailed review of *Palash (Butea Monosperma)* was compiled from ancient as well as recent texts and various researches on pharmacological actions of *palash*. So it was concluded that the *Palash (Butea Monosperma)* had many properties and it's very useful in many diseases as it reviewed in detailed in many researches.

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