

## A TRADITIONAL MEDICINAL PLANT “BUTEA MONOSPERMA”: A REVIEW

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Article Received on 04/01/2020

Article Revised on 25/01/2019

Article Accepted on 16/02/2020

**ABSTRACT**

In recent era of modernization we are well aware about herbal medicines although we are unaware of medicinal plants which we have being seeing in day to day life. The plant which are surrounded by us are being ignored by us consciously. *Butea monosperma* (palas) belonging to the family leguminosae grown wildy in many parts of India. The plant parts are used in the form of extract, juice, infusion, powder and gum. The plant is highly uses by the rural and tribal people in curing various purposes. Flowers are used as drug in many ailments like eye disease, chronic fever, enlargement of spleen, leucorrhoea, epilepsy, leprosy, anti-fungal activity, anti-inflammatory activity, liver disorders, anti-fertility activity and gout etc.

**KEYWORDS:** Traditional drug, Butea Monosperma, Anti-diabetic, Anti-cancer, anti-convulsant.**INTRODUCTION**

*Butea monosperma*(palash) belonging to family leguminosae-papilionae. It is a medium-sized deciduous tree. The *Butea Monosperma* tree is also known as ‘flame of the forest’ and bastard teak. It grows throughout all over the India and Asian countries. It is extensively used in Ayurveda for its various medicinal values. Acharya Charak and Shushruth used flowers and bark of this tree to prepare various medicines. Previously the flowers were used to prepare Holi color in older days. Normally it grows in open grasslands and scattered in mixed forest. The plantations of *Butea Monosperma* can be cultivated both on irrigated and dry lands. The leaves of *Butea Monosperma* are also used for preparation of disposable leaf plates (patrawali) and cups (dronas) for rural feasts. In some parts of the India these are used for biddies manufacturing by wrapping tobacco leaf.

Charcoal is obtained from good quality of *butea*. The cattle eagerly eats the palas leaves. The bark of *Butea Monosperma* yielding a kind of coarse and brown colored fiber and these are used for rough cordage. The gum of tree (BM) is a dried juice obtained from incisions in the stem of the tree and it posses astringent effect. The gum from the tree, called *kamarkas* in Hindi, is used in certain food dishes. The gum is also known as Bengal Kino, and is considered valuable by druggists because of its astringent qualities, and by leather workers because of its tannin. The flowers of *Butea monosperma* yielded an red or orange dye which is used as an insecticide and as coloring agent. The tree is a good host for the lac insect and therefore, it is useful in production of natural lac.

**Synonyms**

Sanskrit	Bijasneha, Kamalāsana, Karaka, Kimsuka, Palasha.
Hindi	Dhak, Palas, Tesu, Chichra, Kakria, Kankeri.
English	Bastard teak, Bengal kino tree, Flame of Forest.
Marathi	Palas.
Bengali	Palas, Nim.
Telugu	Palasamu, Moduga, Chettu, Tella Moduga, Kimsukamu, Togarumo-duga.
Gujrati	Khakra, Khadka, Khakhra, Kesoodo, Khakhra, Plassoo.
Punjab	Dhak, Palas, Tesu, Chichra.
Urdu	Dhak, Palaspada.

**Botanical Classification**

Kingdom: plantae  
 Division: magnoliophyta  
 Class: magnoliopsida  
 Order: fabales  
 Family: fabaceae  
 Genus: butea  
 Species: monosperma

**Morphology of Plant**

Bastard teak is a small to medium-sized plant, It is slow growing plant. Butea Monosperma tree gets up to 50 ft height, with stunning flower bunches. The leaves of tree loses with the flowers develop, in month of January - March.

Hight: 12-15m with irregular branching and rough bark having ash color. Young parts are downy. Leaves are three leaflets. Petiole, the stalk that attaches the leaf blade to the stem are 10-15 cm long linear lanceolate. The Calyx of flower is 13 mm long, dark rachis, pedicels about twice as long as the calyx, densely brown-velvety bracts and flowers are large, in a rigid racemes 15 cm long, deciduous, olive-green, densely velvety outside, clothed with silky hairs within teeth short, the 2 upper connate, the 3 lower equal, deltoid and the corolla is 3.8-5 cm long, clothed with silky, silvery hairs at outside.

**Chemical Constituents**

Flower	Triterpene, Flavonoides, Butein, Butin, coreopsin, isobutrin, sulphurein, monospermoside, isomonospermoside, chlcones, auroanaes, isobutyne, palasitrin, myricyl alcohol, stearic, palmitic, arachidic and lignoceric acids, Glucose, Fructose, histidine, aspartic acid and alaine and phenyalanine.
Seed	Oil, Proteolytic and lypolytic enzyme, protein, proteinase and polypeptidase.
Root	Glucose, Glycine, aglycon and aromatic hydorxy compound.
Bark	Kino-tanic acid,, Galic acid, pyrocatechin, palastrin, Glycosides like butrin, alanind, allophanic acid, butolic acid, cyaniding, histidine, lupenone, lupeol, medicarpin, palasimide and shelloic acid.
Leaves	Glucoside, kino oil containing oleic and lenoleic, palmetic and lignoseriic acid.
Stem	Stigmasterol-e-D-glucopyranoside,nonacosanoic acid.
Resin	Jalaric esters, laccijalaric esters, Z-amyrin, E-sitosterone and its glucoside, sucrose, lactone-nhenicoosanoic acid, mehrotra.

**Ayurvedic Properties****Table: Ayurvedic properties of B. monosperma.**

Hindi/ Sanskrit		English	
Rasa	Tikta, Katu, Kashaya	Taste	Bitter Pungent, Astringent.
Guna	Laghu, Ruksha	Physical Property	Light, Dry.
Virya	Ushna	Potency	Heat.
Vipaka	Katu	Metabolic Potency	Pungent.

**Pharmacological properties of B. monosperma**

Different part of and extract of *Butea monosperma* shows various biological and pharmacological activities such as antimicrobial, antifertility, anticonvulsive, antihelminthic, antidiarrhoeal, antimicrobial, wound healing, anti-giardiasis and hepatoprotective, antihypertensive, antitumor, antidiabetic, anti-inflammatory, free radical scavenging activity.

**Table: Pharmacological action of different parts of *B. monosperma*.**

Plants part	Extract	Pharmacological action
Leaves	Aqueous	Anti-filarial
	Ethanollic	Antidiabetic, antioxidant
	Petroleum ether, chloroform	Anti-inflammatory, anti-oxidant
Flowers	Aqueous	Anticancer, Hepatoprotective effect
	Petroleum	Anticonvulsant
	Ethanollic	Antihyperglycemic, antioxidant potential
	Methanolic	Anti-inflammatory, antioxidant effects, Anti- dopaminergic activity, Free radical scavenging effect
Seed	Alcoholic	Hormone balancing effect
	Methanolic	Antifertility effect, Anthelmintic effect
	Ethanollic	Anti-hyperglycemic and Anti-hyperlipidemic
Barks	Ethanollic	Anti-diarrhoeal, Wound healing activity, Anti- stress
	Methanolic	Osteogenic and Osteoprotective activity, Anti-inflammatory, Effects on hormone level, Anti-ulcer
Fruits	Methanolic	Hypoglycemic effect
	Pippali rasayana	Antihelminthic effect

**Flowers**

- Anti-cancer: Aqueous extract of BM showed anticancer activities by accumulation of cells in G1 phase and inhibiting cell proliferation with significant induction of apoptotic cell death suggesting anticancer properties of BM
- Anticonvulsant: Petroleum ether extract of BM has been fractionated with varying polarity such as ethyl acetate, n-hexane and methanol by column chromatography. Fractionated part of petroleum extract of BM exhibited anticonvulsant activity against seizures induced by maximum electroshock (MES), Pentylentetrazole (PTZ) and lithiumsulfate-pilocarpine nitrate. Additionally, triterpene present in BM exhibited anti-depressant effect.

**CONCLUSION**

Various uses and pharmacological activities of *butea monosperma* is listed in this review article. Which are inducing to large scope to formulate an dosage form and other research work on *butea monosperma*. Which is widely available in Indian continental region. It can be a cheap source of anti-cancerous drug and other many more drugs.

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