



Butea monosperma (Lam.) Taubert: A Review

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ABSTRACT

The traditional systems of medicine together with homoeopathy and folklore medicine continue to play a significant role largely in the health care system of the population. *Butea monosperma* (Palas) belonging to the family leguminaceae grown wildly in many parts of India. The plant is highly uses by the rural and tribal people in curing various disorders. The present paper enumerates various traditional and medicinal utility of the plant and Attempt was made to gather information about the chemical composition and pharmacological aspects of the plant.

Keywords: *Butea mosperma*, palas, medicinal uses

INTRODUCTION

Butea monosperma (Palas), is a medium-sized deciduous tree belongs to family Leguminosae-Papilionaceae. This tree is also called 'Flame of the Forest' and Bastard Teak. It grows throughout the Indian sub-continent, especially in Indo-Gangetic plains. It is said that the tree is a form of Agnidev, God of Fire. It was a punishment given to Him by Goddess Parvati for disturbing her and Lord Shiva's privacy. This tree gets up to 50 ft high, with stunning flower clusters. It loses its leaves as the flowers develop, January - March. The trunk becomes twisted and gnarled by the wind, making it a conversation piece. Use it as a specimen, or as a background component of the canopy. The plant is widely distributed in the country and called by various local names viz., Bastard Teak, Parrot Tree (Eng.), Chichra tesu, desuka jhad, dhak, palas, chalcha, kankrei (Hindi), Palashpapra (Urdu), Muthuga (Can.), Palas, Polashi (Beng.), Porasum, Parasu (Tam.), Muriku, Shamata (Mal.), Modugu (Tel.), Khakda (Guj.), Kela (Sinh.). It is a useful plant in many ways. Its leaves are essential for various religious rituals in Hindu homes. These are also used as cheap leaf plates and cups for rural feasts. In some parts of the country these are used for wrapping tobacco to make biddies. These are further used as packing material for parcels. The cattle also eat the palas foliage quite eagerly. The bark yields a kind of coarse and brown colored fiber, which is used for rough cordage. *Butea* gum is a dried astringent juice obtained from incisions in the stem of the tree. The juice exuded by the bark hardens in to brittle ruby colored gum beads. This gum is sanctioned to be used as a substitute for the kino gum. It finds use for caulking boats as well. The flowers yield an orange dye. A preparation of the same is used as an insecticide. The seeds are used in Ayurvedic and Unani medicine for treating a number of human mala-

dies. The tree acts as a host for lac insect and is, therefore, useful in producing natural lac.^{1,2}

It is a sacred tree, referred to as a treasurer of the gods, and used in sacrifice related rituals. From its wood, sacred utensils are made. The flowers are offered as in place of blood in sacrifice rituals to goddess Kali. The dry stem pieces are used to make sacred fire. It is an anthropogenic tree of several castes. 'Chakradatta' mentions the use of its gum in external astringent application. The leaves are believed to have astringent, depurate, diuretic and aphrodisiac properties. It promotes diuresis and menstrual flow. The seed is anthelmintic. When seeds are pounded with lemon juice and applied to the skin the act as a rubefacient.^{3,4}

MORPHOLOGY

It is an erect, medium sized tree of 12-15 m high, with a crooked trunk and irregular branches. The shoots are clothed with gray or brown silky pubescence. The bark is ash coloured. The leaves 3 foliate, large and stipulate. Petiole is 10-15 cm long. Leaflets are obtuse, glabrous above, finely silky and conspicuously reticulately veined beneath with cunrate or deltoid base. From January to March the plant is bald. Flowers in rigid racemes of 15 cm long, densely brown velVety on bare branches. Calyx is dark, olive green to brown in colour and densely velVety outside. The corolla is long with silky silvery hairs outside and bright orange red. Stamens are diadelphes, anthers uniform. Ovary 2 ovule, style filiform, curved and stigma capitate. Pods argenteo-canesent, narrowed, thickened at the sutures, splitting round the single apical seed, lowest part indehiscent. The seeds are flat, reniform, curved.

The bole is twisted and gnarled and the branching too follows no particular pattern. It is slow growing and attains a height of about 5 to 8 m and diameter of about 20 to 40 cm when mature at the age of about 50 years or so. The bark of palas is fibrous and bluish gray to light brown in color. It exudes a kind of red juice when injured. The leaves are compound. Each has three leaflets. The texture of the

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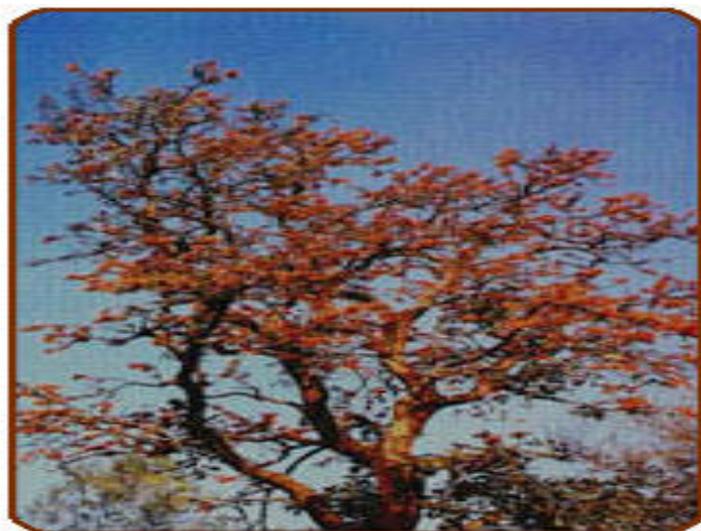


Figure1: *Butea monosperma* (Whole Plant and Flowers)

leaflets is fairly tough. These are coriaceous with the surface glabrescent above and hairy silken beneath. The size varies from 15 cm to 20 cm by 10 cm x 15 cm. The shape is obliquely ovate and broadly elliptic. The leaves fall off by December and reappear during spring. When the tree is leafless, it bears flaming orange to red-colored flower. These flowers start appearing in February and stay on nearly up to the end of April. The size is nearly 2 to 4 cm in diameter. These tend to be densely crowded on leafless branches. The calyx i.e. the lower whorl of the flower tends to be darkish gray like the supporting branch itself. The upper parts are brick red. These give the plant so handsome a look despite it is leafless during spring season when entire terrain having palas trees wears a kind of exquisite orange and red hue. The flowers form a gorgeous canopy on the upper portion of the tree, giving the appearance of a flame from a distance. The fruit of palas is a flat legume; a pod, nearly 15 cm long and 3 to 5 cm wide. Young pods have a lot of hair — a velvety cover. The mature pods hang down like peculiar legumes. The seeds are flat, from 25 to 40 mm long, 15 to 25 mm wide, and 1.5 to 2 mm thick. The seed-coat is reddish-brown in color, glossy, and wrinkled, and encloses two large, leafy, yellowish cotyledons. The hilum is conspicuous, and situated near the middle of the concave edge of the seed.

The odor is faint, and the taste slightly acrid and bitter.

The wood is greenish white in color. It is porous and soft in texture and has annual rings though not very distinct. The wood is soft and weighs about 14 to 15 km per cubic foot. It generally perishes fast when used at sites open to vagaries of weather, but lasts much longer when used under water. It is therefore used for making well curbs and piles.⁵⁻⁸

PRINCIPAL CONSTITUENTS

The main constituent of the flower is butrin (1.5%) besides butein (0.37%) and butin (0.04%). Also contains flavonoids and steroids. Other than these in flowers, coreopsin, isocoreopsin, sulphurein (glycoside) and other two with monospermoside and isomonospermoside structures are also identified. Roots contain glucose, glycine, glucosides and aromatic compounds. Tetramers of leucocynidin are isolated from gum and stem bark. Seed contains oil. The bright colour of

the flower is attributed to the presence of chakones and aurones.⁹⁻¹²

PHARMACOLOGY:

A fraction containing sodium salt of phenolic constituent isolated from the bark has shown potential as an anti-asthmatic agent and estrogenic activity in mice. Aqueous extract of the flowers show significant anti-implantation activity. Hot alcoholic extract of the seeds showed significant anti-implantation and anti-ovulatory activity in rats and rabbits. It also showed abortive effect in mice. Butrin and isobutrin has proven to have antihepatotoxic activity. The fresh juice is applied to ulcers and for congested and septic sore throats. The gum is a powerful astringent given internally for diarrhea and dysentery, phthisis and hemorrhage from stomach and the bladder, in leucorrhoea, ringworm and as a substitute for gum Kino. The bark is reported to possess astringent bitter, pungent, alliterative, aphrodisiac and anthelmintic properties. Bark is also useful in tumors, bleeding piles and ulcers. The decoction of bark is useful in cold, cough, fever and menstrual disorders. Roots are useful in elephantiasis and in curing night blindness and other eyesight defects. Also cause temporary sterility in women. Also applied in sprue, piles, ulcers, tumors and dropsy. Leaves have astringent, tonic, diuretic and aphrodisiac properties. They are also used to cure boils, pimples and tumors hemorrhoids and piles. Also used as beedi wrappers. Flowers are reported to possess astringent, diuretic, depurative, aphrodisiac and tonic properties. They are used as emmenagogue and to reduce swellings both in human and veterinary applications.^{13,14,15,16,17,18,19}

MEDICINAL USES

Butea monosperma as astringent antidiarrheal antidysenteric febrifuge aphrodisiac purgative anthelmintic properties. It is used for timber, resin, fodder, medicine, and dye. The bark and the flowers and the leaves and the gum and even the seeds are used to prepare herbal remedies. 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.^{20,21,22,23}

CONCLUSION

Herbs are the natural drugs used to regain the alterations made in

normal physiological system by foreign organisms or by any malfunctioning of the body. In every ethnic group there exists a traditional health care system, which is culturally patterned. In rural communities, health care seems to be the first and foremost line of defense. The WHO has already recognized the contribution of traditional health care in tribal communities. It is very essential to have a proper documentation of medicinal plants and to know their potential for the improvement of health and hygiene through an eco friendly system. Thus importance should be given to the potentiality of ethnomedicinal studies as these can provide a very effective strategy for the discovery of useful medicinally active identity. A detailed and systematic study is required for identification, cataloguing and documentation of plants, which may provide a meaningful way for the promotion of the traditional knowledge of the herbal medicinal plants. The present review reveals that the plant *Butea monosperma* is used in treating various ailments. It elicits on all the aspects of the herb and throws the attention to set the mind of the researchers to carry out the work for developing its various formulations, which can ultimately be beneficial for the human beings as well as animals.

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