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A review on ethnomedicinal, phytoconstituents and phytopharmacology of *Bombax ceiba* L

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Abstract

Medicinal plant is the basic and most significant part of traditional medicinal system. Different plant contains medicinal properties also known as herbal plant. *Bombax ceiba* L plant of Bombacaceae family shows many Pharmacological activity. It is also called as Kate Savar and Semal. It is native plant of western Africa. It is naturally obtained in Pakistan, India and Myanmar. *Bombax ceiba* L is big and tall tree with height approximately 30m and having diameter of 58 to 78 cm.

It grows in straight direction with having cylindrical stem and wide base. *Bombax ceiba* L contain principal constituent are tannin and glycosides which is present in part of leaf and stem. The part of stem shows presence of some lupeol and b-sitosterol. and the leaf shows the presence of alkaloid. the root bark contains the 3 naphthalene derivatives. *Bombax ceiba* L shows many pharmacological properties. Stem bark of plant used for wound. Thorn of plant used in different formulation to treat acne problem. Androecium used for food purpose.

Leaf shows Antidiarrheal property. Root used for treatment of Piles. Bark contain lupeol, saponins, tannins, gums and 4,5,7- trihydroxyflavone-3-O-β-D-glucopyranosyl (1-4)-α-L-rhamnopyranoside, nhexacosanol. Root bark contain lactone and ether. Seed contain palmitic acid and flower contain polysaccharide. Leaves contain Shamimin. This review paper provides an overview on Pharmacological, Phytomedicinal properties of the plant.

Keywords: Semar, semul, semal, ethnomedicinal and phytopharmacology

Introduction

Medicinal plant is the most basic and significant part of our medication system. Most of the medicine are made up of herbal plant. It is also named as medicinal plant. Herbal plant was used in our traditional medicine system for long ago. Countries in Asia and Africa 80% user used traditional medicinal system which include herbal or medicinal plant. There are many uses and less or negligible side effect of traditional (medicinal plant) over any other system. For their healthy life style. many plants having medicinal properties. *Bombax ceiba* L is one of them.

Bombax ceiba L is also known as *Salmalia malabarica*. generally, it is called as *Bombax ceiba*. It is having no. of common names. In Hindi it is called as Semar, Semul, Semal and in English it is called as Red silk cotton tree, *Bombax ceiba* and in Marathi it is commonly called as Kate savar, Semul. *Bombax ceiba* L belongs to the family Bombacaceae Indian silk cotton (Karole *et al.*). it is naturally obtained in Pakistan, India and Myanmar. But it is native or belongs to the western Africa (Sint *et al.*).

Bombax ceiba L is big and tall tree with height approximately 30 m and having diameter of 58 to 78 cm. It grows in straight direction with having cylindrical stem and wide base. Tree contain a very beautiful and large flower which is pollinated mainly by birds because flower contain nectar which is used by birds. Also, plant contain a green leaf which is having entire margin with alternat spiral arrangement of leaves. *Bombax ceiba* L flowering period is in January to February and fruiting period is generally from March to May. Pollination is generally done by birds and bats. Germination through seed mainly (Sint *et al.*).

Bombax ceiba L contain principal constituent are tannin and glycosides which is present in part of leaf and stem. The part of stem shows presence of some lupeol and b-sitosterol and the leaf shows the presence of alkaloid. The root bark contains 3 naphthalene derivatives related to gossypol it is called as semi gossypol. Flower contain b-sitosterol and some traces of essential oil and some natural dyes (Faizi *et al.*; Meena *et al.*). (Refaat *et al.*)

Fig 1: *Bombax ceiba* L. treeFig 2: *Bombax ceiba* L. barkTable 1: Ethno medicinal Activity of *Bombax ceiba* L

Sr. No.	Plant Part	Traditional Medicinal uses
1.	Thorn	Used in different formulation to treat Acne(Jain and Verma)
2.	Androecium	Used for Food purpose
3.	Petals	For Skin and Cosmetics
4.	Leaf	For treatment of Diarrhoea, Larvicidal Activity.
5.	Root	For treatment of Piles
6.	Bark	Used for Wound

There are different medicinal uses of the plant *Bombax ceiba*. The part of plant used for medicinal uses are given in following chart (Depani *et al.*).

Fruit: Good for leprosy. used as cooling agent, digestible, shows diuretic property, antioxidant, tonic, aphrodisiac, expectorant, shows good action in the genital urinary organ. It also used for bladder, kidney, chronic inflammation and blood purifier. (Divya *et al.*)

Flower: The flowers shows bitter action and also shows acrid cooling, dry, astringent to the bowels, anti-inflammatory action. It removes bile and phlegm of body, and purify the blood, it is beneficial to the spleen and shows good response in leucorrhoea. It is also used topically to skin affections as cooling and astringent. (Depani *et al.*). It having phenolic compound (Zhang *et al.*) (Joshi *et al.*).

Seed: Seeds shows good action in chickenpox, smallpox, catarrhal affections, chronic cystitis and genitourinary diseases (Chauhan *et al.*).

Bark: Stem bark is used in the healing of wound. and as a paste in water to skin eruptions, boils, acne, pimples. Stem bark is also used as demulcent, styptic and used to removes phlegmatic. Aqueous extract with curd shows great action in treatment given for dysentery with blood.

Leaves: It is used in the treatment of diarrhoea. used in treatment for inflammation, larvicidal activity (Hossain *et al.*)

Root: Root bark is used for the treatment of piles. The root shows diuretic and astringent property. It is useful in biliousness, inflammations and excessive heat of the body.

Gum: The gum is acrid, astringent, demulcent, tonic, aphrodisiac and removes black bile. In powder form alone or with other herbs it is used internally to treat haemoptysis,

diarrhoea, dysentery, bleeding piles, menorrhagia, leucorrhoea, spermatorrhoea and blood disorders. Topically it is applied as styptic, astringent, demulcent in stomatitis, dermatological ailment and burn wound (Meena *et al.*)

Phytopharmacological Activity

Anti-microbial property: *Bombax ceiba* L shows anti-microbial activity. Different part of plant (root, bark, leaf, thorn) used for the medicinal purpose. *Bombax ceiba* L Contain antimicrobial activity. It's all part shows activity against microbial disease like diarrhoea and dysentery. in stomach problems. the *Bombax ceiba* L used in other cases like common cold and fever. Generally the leaf part of plant used for the treatment of diarrhoea and dysentery and the root part used for the treatment of piles. (Jain and Verma)

Analgesic activity: *Bombax ceiba* L shows the analgesic activity. Its different part used for the analgesic action. Root of plant shows analgesic activity and therefore it is used in the case of abdominal pain and waist pain. Other part used is its stem bark which is useful in case of colic pain. Thorn of the plant are used in the case of headache and the flower of the plant is used in stomach pain. Fruits are used in different formulation as a pain killer in different cases.in this way the almost all part of plant used as an analgesic.

Oxytocic effect: *Bombax ceiba* L shows oxytocic activity. The mainly stem bark is used for this purpose. Stem bark is used in the case to facilitate delivery in cattle. Seed part of plant used as an abortifacient. *Bombax ceiba* L Shows different property like anti- analgesic, cytotoxic and anti-hyperlipidaemic properties. It also shows the effect in various human and animal models studies.

Hepatic disorder: *Bombax ceiba* L are used in various treatment in hepatic disorder. Various part of plant like root, stem, bark, seed used in treatment of hepatic abnormalities or disorder.

Heart related disorder: *Bombax ceiba* L are used in the various heart problem. The stem bark is used in the heart disorder as a heart tonic. And not only the stem bark but also the root and flower part are used in the heart related problems. Flower part of *Bombax ceiba* L used in the case of the treatment of colitis and it is also used as tonic. The root of the plant *Bombax ceiba* L is used as a brain tonic also. It also shows antioxidant properties.

Acne: *Bombax ceiba* L are used in many cosmetics and skin preparation. It used in many skin products for the different problem related to skin like acne and pimples and other skin infection. The mainly part of plant used for the treatment of acne is the thorns of plant. It is used in different acne related skin preparation. It is the main ingredient in the anti-acne (cream) formulation of "Himalayas" (Jain and Verma).

Urolithiasis: The *Bombax ceiba* L plant part used in the case of urolithiasis. Its young fruit part of plant is effective against the chronic inflammation and also in the case of ulceration of the bladder and in kidneys. It shows activity in calculus affection also.

Diabetes mellitus: *Bombax ceiba* L Shows activity against diabetes mellites. It is used in the many cases of diabetes mellites. It almost all part is useful in the treatment of diabetes mellites. Various part of the plant like root, stem, leaf, bark is showing the property to effective against patient with polyurea and glycosuria. And also, it is used in case of asthenia. The root part of plant shows activity in patient with hypoglycaemic cases. Its other part (flower) is used in case for minimise blood sugar level.

Sexual problem: The part of plant of *Bombax ceiba* L (young root) are used in the case of sexual problems. Semal musli or Semar-kanda are the name of young root. It shows activity against many sexual problems. In the traditional medicinal system, it is used in the treatment of aphrodisiac, spermatorrhoea and impotence. The juice of the plant is used as a nutritive in the case of sexual stimulation. The other part of plant like its root powder is used in the case of oligospermia to increase the sperm count and its motility. *Bombax ceiba* L is used in other problem related to impotence and erectile dysfunction.

Wound: The stem bark part of plant *Bombax ceiba* l is used for the treatment of wound its paste forms help in healing of wound.

Other uses of the plant *Bombax ceiba* L

1. Mangiferin isolated from the plant *Bombax malabaricum* shows antifungal properties (Shahat *et al.*).
2. Stem bark of plant *Bombax ceiba* L Contain some natural dyes (Vadwala and Kola).
3. Antibacterial activity of aqueous bark extract of *Bombax ceiba* L against some gram positive and gram negative bacteria (Digge *et al.*).
4. Phenolic compound from the flower of *Bombax malabaricum* shows antioxidant and antiviral properties (Zhang *et al.*).
5. *Bombax ceiba* L leaf extract shows larvicidal activity against the filarial vector *Culex quinquefasciatus* (Hossain *et al.*).
6. Seed of *Bombax ceiba* L shows good nutritional property (Chauhan *et al.*).

Table 2: Phytoconstituents isolate from plant *Bombax ceiba* L (U. Aguoru)

1.	Bark	Lupeol, Saponins, Tannins, Gums and 4,5,7- trihydroxyflavone-3-O- β -D-glucopyranosyl (1-4)- α -L-rhamnopyranoside, Nhexacosanol
2.	Leaves	Shamimin
3.	Flower	Polysaccharide
4.	Root bark	Lactone, ether
5.	Seed	Palmitic acid

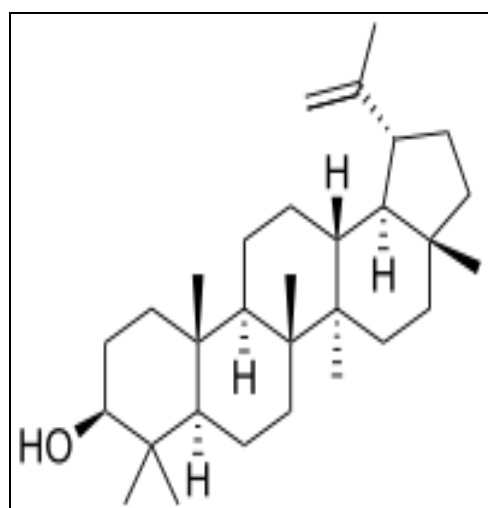


Fig 1: Lupeol

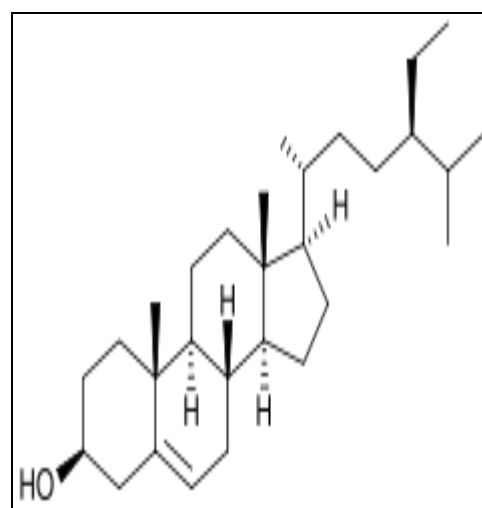


Fig 2: b-sitosterol

(Chauhan *et al.*)**Fig 3:** seed and powder form of plant part**Conclusion**

The above literature survey revealed that *Bombax ceiba* L contain so much medicinal properties. It is used in many herbal formulation and traditional medicinal system. It contains many phytoconstituent which shows great medicinal properties. *Bombax ceiba* L shows antioxidant, larvicidal, diuretic, tonic, anti-leprosy, expectorant properties. It also used in treatment in blood purifier, inflammation of bladder, kidney calcular affection, it shows antimicrobial, analgesic, oxytocic, urolithiasis property. It is also used in sexual disorder and acne problem. Its part also shows medicinal properties like thorn used in acne problem. Root used in piles. Stem bark used in wound and leaf part used in treatment of diarrhoea.

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