

Review Article

A Review on Pharmacological activities and important health benefits of *Bauhinia variegata*



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Abstract:

Bauhinia variegata is found throughout the India. Its various part like leaves, stem, seeds, flowers, root, and bark contains various phytoconstituents like terpenoids, tannins, saponins, and flavonoids like quercetin which showed an important role in health of human thus the herbal medicine extracted from *Bauhinia variegata* has being used for treating different disorders. The pharmacological properties of Kachnar are antioxidant, immunomodulatory, nephroprotective, antiurolithiatic, diabetic, antiulcer, hepatoprotective, and antimicrobial. Kachnar is also utilized usually as a nutraceuticals purposes. In terms of nutritional values its flower petals and flower buds are used for food preparations like curry and pakoda recipes. Traditionally, *Bauhinia variegata* is being used as a drug for treating the following conditions like infammation, diarrhoea, obesity and menorrhagia, dropping the gastric discharge level, headache during fever, treatment of stomachache and dyspepsia,. Ayurveda preparations are also available in market for example Kanchnara Varuna Kwatha, Vidangarishta, Ushirasava, Kanchanara Guggulu, Chandanasava, Kanchan gutika, Gulkand Kanchanara, Gandamala kundana rasa, and Kanchanaradi Kwatha, Kanchanara drava,. But now a days the scientists trying to manufacturing its utilization in pharmaceutical industry. The present review showed the literature of the traditional uses, phytochemical properties and therapeutic uses of kachnar plant and in promoting human health. There is also a requirement for additional revision to establish scientific data to scope of profits of *Bauhinia variegata* on human health. Thus this plant has most popularity as curing different diseases relating to human health.

Keywords: Kachnar, *Bauhinia variegata*, Phytochemicals, medicinal tree, human health

Introduction:

Bauhinia variegata tree is a average-sized, tree grows up to 11-14 meters in height, it is distributed in allover India. In Ayurveda, this tree is also called as Gandhari

and Kachnar. The buds and bark of the kachnar tree are very valuable to treating ulcers, leprosy and other upper epidermal diseases and for this purpose bark decoction is given¹.

Kachnar Traditional Benefits

Treatment of skin diseases: The leaves extract of kachnar enhances the health of the skin. Soak the seeds and the roots in 3-4 cups of water overnight. Apply this water to your skin in the morning and watch the skin revive its health. It gets the smooth appearance².

An antidote for snake bites: The leaves extract of *Bauhinia variegata* mixed with honey is very effective to treat snake bite³.

Treatment of frequent urination

If anybody showing frequent urination illness, they can utilize root extract of kachnar for curing the difficulty⁴.

Purify the liver

The leaf extract of *Bauhinia variegata* indicated hepato-protective activity in rats. *Bauhinia variegata* leaf extract is very useful to maintain proteins and lipids levels with treatment of the inflammation of the liver⁵.

Cures mouth cavity problems

The bark powder is used to treat infections in the mouth cavity effectively. The phytoconstituents of bark of *Bauhinia variegata* are very effective to kill the microbes and maintain the pH in the mouth cavity⁶.

Constipation Treatment

The bark powder extract is also very effective to cure constipation due to upset of stomach. A extract of bark powder is very powerful before

dinner to clear your g.i.t. and improve your hunger⁷.

Treatment of burning sensation in urination

The extract of bark powder is very effective to cure burning sensation during urination.

Treatment of Goiter:

The extract of bark powder is very effective to treat goiter⁸.

Treatment of Jaundice:

The leaves extract is very effective to treat Jaundice when it is taken two times a day. The liver enlargement is also treated with leaves extract of this plant⁹.

Loss of appetite: leaves extract of kachnar is very effective for increasing hungry¹⁰.

Pharmacological Activities of *Bauhinia variegata* Anthelmintic activity

- Bairagi, *et al.* (2012) investigated “In vitro anthelmintic activity of *Bauhinia variegata* bark (Leguminosae)”¹¹.
- Mali RG, *et al.* (2008) investigated Evaluation of *Bauhinia variegata* Linn stem bark for anthelmintic and antimicrobial properties¹².

Hepatoprotective activity:

- Bodake, *et al.* (2007) investigated “Hepatoprotective properties of *Bauhinia variegata* bark extract”¹³.

Haematinic activity

- Dhonde SM, *et al.* (2007) investigated Haematinic activity of ethanolic extract of stem bark of *Bauhinia variegata* Linn.¹⁴

Wound Healing Activity

- Neto LGN, *et al.* (2007) investigated Effect of the Lectin of *Bauhinia variegata* and Its Recombinant Isoform on Surgically Induced Skin Wounds in a Murine Model.¹⁵

Anti-inflammatory activity:

This may indicate that kachnar may have some anti-inflammatory effect.

- Koteswara RY, *et al.* (2008) investigated that *Bauhinia variegata* is very effective to treat inflammation¹⁶.
- Rao YK, *et al.* (2008) investigated Antiinflammatory activities of flavonoids and a triterpene caffeate isolated from *Bauhinia variegata*.¹⁷
- Mohamed MA, *et al.* (2007) investigated *Bauhinia variegata* leaves showing anti-inflammatory and antinociceptive¹⁸.
- Yadava RN and Reddy VM (2003) investigated Anti-inflammatory activity of a novel flavonol glycoside from the *Bauhinia variegata* Linn.¹⁹

Antioxidant activity:

- Rajani P.G. and Ashok P (2009) investigated “In vitro antioxidant and

antihyperlipidemic activities of *Bauhinia variegata* Linn.”²⁰.

Nephroprotective activity:

- Panda P.K., *et al.* (2011) investigated “Nephroprotective effect of *Bauhinia variegata* (Linn.) whole stem extract against cisplatin-induced nephropathy in rats”²¹.
- Sharma RK, *et al.* (2011) investigated Effect of ethanolic and aqueous extracts of *Bauhinia variegata* Linn. on gentamicin-induced nephrotoxicity in rats²².

Immunomodulatory activity:

- Patil J.K., *et al.* (2010) investigated The stem bark extract showing immunomodulatory activity on human neutrophils”²³.

Antitumour activity:

- Raj Kapoor B., *et al.* (2011) investigated “Antitumour activity of *Bauhinia variegata* on Dalton’s ascetic lymphoma”²⁴.
- Kanak S and Verma Anita K (2012) investigated Evaluation of antimicrobial and anticancer activities of methanol extract of *in vivo* and *in vitro* grown *Bauhinia variegata* L²⁵.
- Raj Kapoor B, *et al.* (2006) investigated Chemoprevention and cytotoxic effect of *Bauhinia variegata* against N-nitrosodiethylamine induced liver tumors and human cancer cell lines²⁶.
- Sonam P, *et al.* (2009) investigated Effects of *Bauhinia variegata* bark extract on

DMBA induced mouse skin carcinogenesis.²⁷

Antihyperlipidemic activity:

- Kumar D, *et al.* (2011) investigated Effect and evaluation of antihyperlipidemic activity of fractions of total methanol extract of *Bauhinia variegata* (Linn.) leaves on Triton WR-1339 (Tyloxapol) induced hyperlipidemic rats²⁸.

Antimicrobial activity:

- Dhale AD *et al.* (2011) investigated Phytochemical screening and antimicrobial activity of *Bauhinia variegata* Linn²⁹.
- Sharma RN and Saxena VK (1996) investigated In vitro antimicrobial efficacy of leaves extracts of *Bauhinia variegata* Linn³⁰.
- Parekh J, *et al.* (2006) investigated Evaluation of antibacterial activity and phytochemical analysis of *Bauhinia variegata* Linn. Bark³¹.

Antiobesity activity:

- Balamurugan G and Muralidharan P (2010) investigated Antiobesity effect of *Bauhinia variegata* bark extract on female rats fed on hypercaloric diet³².

Antiulcer activity:

- Rajkapoor B, *et al.* (2003) investigated Antiulcer effect of *Bauhinia variegata* Linn. in rats³³.

Antidiabetic activity:

- Koti BC, *et al.* (2009) investigated Effect of *Bauhinia variegata* bark extract on

blood glucose level in normal and alloxanised diabetic rats³⁴.

- Frankish N, *et al.* (2010) investigated that *Bauhinia variegata* leaf extract showing to increase the Insulin Release from the β -Cell of pancreases and Its Major Constituent is Roseoside³⁵.

Nephroprotective Activity:

- The extract of stem of *Bauhinia variegata* was very useful to treat cisplatin induced nephrotoxicity. this study showed decreased creatinine and urea level in serum and increased urine output and body weight³⁶.

Anti-ulcer Activity:

- The ethanolic extract of stem of *Bauhinia variegata* showed anti-ulcer property. It also decreased the acidity, the volume of gastric secretion, and ulcer index in the rat model³⁷.

Toxicity Study:

- Singh KL, *et al.* (2012) investigated Toxicity of *Bauhinia variegata* and *Mimusops elengi* with plant molluscicides against *Lymnaea acuminata*³⁸.
- Rasika Kolhe *et al.* (2014) investigated Chronic toxicity study of stem bark powder of Kanchanara (*Bauhinia variegata* L.) in albino rats³⁹.

Nutrition Values of Kachnar:

Kachnar is loaded in essential component of nutrients like B vitamins, C-vitamin, minerals like

magnesium, iron, calcium, zinc, phosphorous. This plant also having proteins, dietary fibers, fats and carbohydrates due to this reason this plant is also used for prepare the curries, pakoda and pickles in some part of India. Kachnar buds are also used for cooking and frying with onions and spices, as a customary food, which is then eaten as vegetables or side dishes as part of the regular diet⁴⁰.

Miscellaneous uses of *Bauhinia variegata*

- The anticancer activity is also showing by methanolic extract of the stem bark of kachnar in the mice model.
- This plant seeds also showing haemagglutinating activity that is used for detecting the presence of viral particles.
- The increases the haemoglobin content of blood is increased by use of hydroethanolic extract of the stem bark of kachnar in rats.⁴¹

Conclusions

Bauhinia variegata showed a number of phytoconstituents which are responsible for the treatment of various diseases. Kachnar also having some quantities of important nutrients like proteins, vitamins, fats, carbohydrates, minerals and potent antioxidants which can be consumed as food into diet as Indian dishes of pakoda, curry and achaar. Besides these traditional uses kachnar also showing an important role to treat thyroid complications, antimicrobial activity, anticancer

activity, constipation, antidiabetic activity, irregular menstrual cycles and anti-inflammatory activity. In this review study on the phytochemicals and different pharmacology properties provide the information about the uses of this plant in various medicines. Thus, *Bauhinia variegata* can be used in food and pharmaceutical industry.

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