

Phytopharmacological and ethnomedicinal significance of *Delonix regia* (Boj. ex Hook.) Raf. leaves

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Abstract

Delonix regia (Boj. ex Hook.) Raf. Family Fabaceae is a species characterized by its fern-like leaves and flamboyant display of orange-red flowers. In many tropical parts of the world it is grown as an ornamental tree. The plant is used in the treatment of various disorders such as fever, microbial infection, in reducing pain. The plant possess several phytochemicals, viz. saponins, alkaloids, carotene, hydrocarbons, phytotoxins, flavonoids, tannins, steroids, carotenoids, galactomannon, lupeol, β -sitosterol, terpenoids, glycosides and carbohydrates, in leaves, flowers, bark and roots. The present review highlighted the phytopharmacological and ethnomediicnal significance of leaves of the plant.

Keywords: *Delonix regia*, leaves, phytochemistry, pharmacology, ethnomedicine

Introduction

The flamboyant (*Delonix regia* (Bojer) Raf.) is a perennial legume tree, grown in tropical and subtropical regions as an ornamental species because of its showy flowers. *Delonix regia* is a conspicuous, fast growing almost evergreen legume tree that can be 10-30 m in height and is shallow-rooted. Tree can shed its leaves in areas with a marked dry season. The bole is sometimes relatively short. The trunk may reach 2 m in girth and it can be buttressed towards the base. The bark is smooth, sometimes slightly cracked, with lenticels. The crown is umbrella-shaped, broadly spreading its long horizontal branches. The overall tree is thus larger in diameter than in height. The twigs are stout, greenish, finely hairy when young becoming brown. The leaves are bipinnate, alternate, feathery, 20-60 cm long, bearing 10-25 pairs of pinnae, each with 30-60 opposite leaflets. The leaflets are 0.5-1 cm long, stalkless, minutely hairy on both sides. The inflorescences are slightly fragrant corymbs borne laterally at the end of the twigs. The inflorescence bears large (5-13 cm), magnificent flowers, orange-red in colour, loosely arranged on 5-7.5 cm long stalks. The 4 clawed-petals are spoon-like in shape and the 5 sepals are thick, green in color, finely hairy. The fruit is a 30-75 cm long pod, It is green and flaccid when young, turning to brown and woody at maturity. The pods remain on the tree after it has shed its leaves. The 30-45 seeds contained in the pods are hard, greyish, mottled, oblong in shape, looking like date pits^[1-2].

Phytochemicals

The leaves contain wide phytochemicals such as saponins, alkaloids, carotene, hydrocarbons, phytotoxins and flavonoids. The functional phytoconstituents exist in leaves includes flavonoids, alkaloids, saponins, sterols, β -sitosterol, lupeol, tannins, carotenoids, and phenolic acids^[3-8].

Pharmacological Significance

Delonix regia (Boj.) Raf. Leaves shows diverse therapeutic prospective such as antifungal, antibacterial, antioxidant, antiemetic, larvicidal, hepatoprotective, anti-diarrhoeal,

anti-inflammatory, antimalarial, anthelmintic, antiarthritic, wound healing and anticarcinogenic potential^[10-12].

Ethnomedicinal Significance

Traditionally the leaves of the plant used for the treatment of several disorders by the tribals of India.

- The leaves of *Delonix regia* were crushed and applied on wounds^[12].
- The leaves of *Delonix regia* (Boj. Ex. Hook) RAF. Have been used to treat constipation, inflammation, arthritis and hemiplegia; in Koothanoallur and Marakkadai, Thiruvarur district of Tamil Nadu, India^[13].
- The leaves and fruits were used in piles and helminthiasis in the areas of Pirojpur district, Bangladesh^[14].
- The investigation conducted on Sylhet district, Bangladesh revealed the use of leaves and fruits in piles and boils.
- The different parts of *Delonix regia* were used by the tribes of Chhatarpur district, Madhya Pradesh, India^[15] for the treatment of diseases.
- The leaves were also used in rheumatism and as purgatives.

Conclusion

The leaves of *Delonix regia* (Boj.) Raf. Has been used extensively by tribals of India for the treatment of several disease and disorders such as inflammation, microbial infection, wound healing and so on and that's due to presence of various active phyto-constituents. However, there are still many areas that need further research to avail the health benefits of phyto-constituents of *Delonix regia* (Boj.) RAF. Still studies need to be done to explore the potential phyto-constituents from the leaves and to explore many other pharmacological significance of the plant which will be used for the prevention of various other diseases.

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