

## FICUS RELIGIOSA BENEFICIAL FOR HUMAN HEALTH

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### ABSTRACT

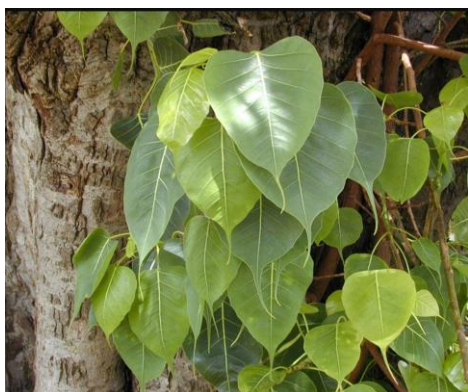
Medicinal plants play a vital role in improving health of people. Hundreds of medicinal plants have been used to cure various diseases since ancient times. *Ficus religiosa* (Peepal) has an important place among herbal plants. Almost every part of this tree i.e. leaves, bark, seeds and fruits are used in the preparation of herbal medicine and its antimicrobial, anti-diabetic, anticonvulsant, wound healing, anti-inflammatory and analgesic properties have made it a popular herbal tree and its parts are placed as important ingredient in modern pharmacological industry.

### INTRODUCTION

*Ficus religiosa* (L.) is a large perennial tree, glabrous when young, found throughout the plains of India upto 170m altitude in the Himalayas, largely planted as an avenue and roadside tree especially near temples.<sup>[1]</sup>

The plants have been used in traditional Indian medicine for various range of ailments. Traditionally the bark is used as an antibacterial, antiprotozoal, antiviral, astringent, antidiarrhoeal, in the treatment of gonorrhoea, ulcers, and the leaves used for skin diseases. The leaves reported antivenom activity and regulates the menstrual cycle.<sup>[2,3]</sup>

In case of high fever, its tender branches are used as a toothbrush. Fruits are used as laxatives,<sup>[4]</sup> latex is used as a tonic, and fruit powder is used to treat asthma.<sup>[5,6]</sup>



### Synonyms

- *Ficus caudata* Stokes
- *Ficus peepul* Griff

- *Ficus superstitiosa* Link
- Bodhi tree
- Pimple tree

### Morphological characteristics

“This big and old tree is of 30m long. They shatter bark and are of white or brown in color. The leaves are shiny, thin, and bear 5–7 veins. Fruits are small, about ½ inch in diameter, similar to that of eye pupil. It is circular in shape and compressed. When it is raw, it is of green color and turns black when it is ripe. The tree fruits in summer and the fruits get ripened by rainy season.”<sup>[7]</sup>

### Scientific Classification

**Kingdom:** Plantae

**Family:** Moraceae

**Order:** Rosales

**Genus:** *Ficus*

**Subgenus:** *F* subg. *Urostigma*

**Species:** *F. religiosa*

### Geographical Source

*Ficus religiosa* is native to most of the Indian subcontinent – Bangladesh, Bhutan, Nepal, Pakistan and India including the Assam region, Eastern Himalaya and the Nicobar Islands, as well as part of Indochina – the Andaman Islands, Thailand, Myanmar and Peninsular Malaysia.

### Chemical constituents

The stem bark of *F. religiosa* are reported phytoconstituents of phenols, tannins, steroids, alkaloids and flavonoids,  $\beta$ -sitosteroyl-D-glucoside, vitamin K, n-octacosanol, methyl oleanolate, lanosterol, stigmasterol, lupen-3-one. The active constituent from the root bark *F.*

religiosa was found to be  $\beta$ -sitosteryl-D-glucoside, which showed a peroral hypoglycemic effect in fasting and alloxan-diabetic rabbits and in pituitary-diabetic rats.<sup>[8]</sup>

### Pharmacology

#### 1) Antibacterial activity

Aqueous and ethanolic extracts of *F. religiosa* leaves showed antibacterial effect against *Staphylococcus aureus*, *Salmonella paratyphi*, *Shigella dysenteriae*, *S. typhimurium*, *Pseudomonas aeruginosa*, *Bacillus subtilis*, *S. aureus*, *Escherichia coli*, *S. typhi*.<sup>[9]</sup>

**2) Wound healing activity** The effect of hydroalcoholic extract of *F. religiosa* leaves on experimentally induced wounds in rats using different wound models results in dose-dependent wound-healing activity in excision wound, incision wound, and burn wound. A formulation of leaves extract was prepared in emulsifying ointment at a concentration of 5% and 10% and applied to the wounds. In excision wound and burn wound models, the extract showed significant decrease in the period of epithelization and in wound contraction (50%). A significant increase in the breaking strength was observed in an incision wound model when compared to the control. The result suggests that leaf extract of *F. religiosa* (both 5% and 10%) applied topically possess dose-dependent wound-healing activity.<sup>[10]</sup>

#### 3) Antioxidant activity

The oxidative stress and oxidative damage to tissues are common end points of chronic diseases such as diabetes, atherosclerosis, and rheumatoid arthritis. Oxidative stress in diabetes coexists with a reduction in the antioxidant status, which can further increase the deleterious effects of free radicals. The aqueous extract of *F. religiosa* reduces oxidative stress in experimentally induced type 2 diabetes rats. Type 2 diabetic rats gained relatively less weight during the course of development as compared to normal rats. Decrease in uptake of glucose, free fatty acids from circulation, and accelerated  $\beta$ -oxidation in adipose tissue lead to weight loss in diabetes. The aqueous extract of *F. religiosa* improved the body weight of diabetic rats.<sup>[11]</sup>

### CONCLUSION

Medicinal plants are the local heritage with the global importance. World is endowed with a rich wealth of medicinal plants. Medicinal plants also play an important role in the lives of rural people, particularly in remote parts of developing countries with few health facilities. The present review reveals that *F. religiosa* contains several phytoconstituents like  $\beta$ -sitosteryl-D-glucoside, vitamin K, n-octacosanol, kaempferol, quercetin, and myricetin. The plant has been studied for their various pharmacological activities like antibacterial, antifungal, anticonvulsant, immunomodulatory, antioxidant, hypoglycemic, hypolipidemic, anthelmintics, and wound healing activities.

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