



Therapeutic utility of *Chionanthus virginicus*—An overview

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Abstract

Chionanthus virginicus is a deciduous, large shrub or small tree, which belongs to native of eastern USA. The phytochemical compound includes Pinoresinol-4',4"-diO-β-D-glucoside, Pinoresinol-4"-O- β-D-glucoside, Acetoxypinoresinol4"-O-β-D-glucoside, Phillyrin-2-O- β-D-glucoside, Phillyrin-6-O- β-D-glucoside, Excelside B, Oleuropein, Phillyrin and Ligustroside. *Chionanthus* has various therapeutic value in diseases like Rheumatism, Diseases of Liver and Gall Bladder especially Gall stone, Jaundice, Constipation, wounds, Nephritis, Glandular Congestion and venous congestion. This article analyzes the various properties and its medicinal values.

Keywords: *Chionanthus virginicus*, homoeopathy, fringe tree, botany, herb

Introduction

Common Name: Fringe Tree,^[1] American Fringe Tree, Old Man's Beard, Sweetheart Tree, Grancy Grey Beard,^[2] Snowflower Tree, Flowering Ash^[3]

Family: Oleaceae

Native: Eastern United States^[1]

Description

Chionanthus comes from the greek word, "*chion*" means snow and "*anthos*" means flower^[4].

Chionanthus virginicus is a deciduous, large shrub or small tree, which grows 12 to 20 feet tall. The nature of the leaves are simple, opposite, sub opposite, narrow – elliptic to oblong or obviate – oblong, acute to acuminate, margin entire, glossy green on the top, underside paler and pubescent, at least on veins. It is dioecious plant, but also may have perfect flowers on each plant. White flowers showy, in fleecy, soft clusters in late spring. Fertilized flowers give rise to clusters of olive like fruits. Fruits are about 13 mm long, with characteristic egg-shaped, dark bluish black in color that grows in late summer. It grows well in moist, fertile, acid rich soil. It is a slow-growing plant. Surprisingly male trees have showier flowers. It belongs to nativity of USA, seen to grow from New Jersey to Florida and Texas.

Historical Use

1. Bark of *Chionanthus* used to make tincture to use in relieving congestion of glandular organs and venous system. It was also used as a diuretic, alterative, cholagogue, and laxative, hypertrophy of liver, wounds, rheumatism and nephritis.
2. In 19th century by eclectic physician it was used in the name of *Chionia* – as an effective hepatic processes.
3. American Indians utilized root bark to make it as tea to clean wounds and sores and associated inflammations and infections.

Overdose: leads to vomiting, frontal headache and slowness of pulse.^[8]

Anti-Oxidant Property of *Chionanthus*

Antioxidant property of sercoiriods and ligans were evident in invitro studies like Metal chelating action on ferrous ion, Hydrogen peroxide scavenging activity, ABTS scavenging, superoxide anion radical scavenging, and hydrogen peroxide scavenging activity. These antioxidants help by preventing DNA damage, Mutagenesis, Carcinogenesis, Bacteria growth, Free Radical scavenging^[9].

Chionanthus in Homoeopathy

In Homoeopathy root barks are used for the preparation of the drug. The phytochemical composition of *Chionanthusvirginicus* includes totally Pinoresinol-4',4"-diO-β-D-glucoside, Pinoresinol-4"-O- β-D-glucoside,

Acetoxypinoresinol-4"-O-β-D-glucoside, Phillyrin-2-O- β-D-glucoside, Phillyrin-6-O- β-D-glucoside, Excelside B, Oleuropein, Phillyrin and Ligustroside. While preparing drug to check for its genuinity, the phytochemical analysis can be done ^[5].

Phytochemical Components of *Chionanthus virginicus*

Table 1

Sl. No	Lignans	Sercoiridoids
1.	Pinoresinol-4"-β-D-glucoside	Oleuropein,
2.	Pinoresinol-4"-O-β-D- diglucoside, ,	Ligustroside
3.	Phillyrin-2-O-β-D-glucoside	Excelside B
4.	Phillyrin-6-O-β-D-glucoside	-
5.	Phillyrin	-
6.	Acetoxypinoresinol-4-Oβ-D-glucoside	-

Clinical Conditions

The clinical conditions where we can use *ChionanthusVirginicus* in Homoeopathy includes Constipation, Debility, Emaciation with liver-disorder, Gall-stone colic, Headache, Jaundice, Liver Diseases, Hepatomegaly, Malaria, Neurasthenia and complaints of Nursing women ^[6].

When *Chionanthus* is prepared according to principles of Homoeopathy and on proving it was able to produce various symptoms. Neurasthenic Headache, periodical headache, bilious and menstrual headache. Pain is felt in forehead over eyes. Painful eyeballs with pressure felt at the root of the nose. Jaundice and liver derangements with enlarged spleen. Diabetes mellitus. Paroxysmal abdominal pain, Gall stone ^[7].

Discussion

In Vitro study from extracts of *Chionanthus* root bark revealed that it has antioxidant property. Ligustroside and oleuropein are the secoiridoids responsible for its antioxidant property ^[9].

To support the gall stone dissolving therapeutic value of *Chionanthus* in Homoeopathy, there are documentary evidences where gall stone cases were cured when *Chionanthus* is administered according to principles of homoeopathy ^[10, 11].

In order to prepare the *Chionanthus* homoeo pathically, we have to sacrifice the plant since root bark is used for the preparation of the drug. So a research was conducted to compare the phytochemical compounds of root bark with stem bark. Since there was mild difference in composition between root and stem bark, it was concluded that stem bark can considered as a substitute for preparation of drug. But since Homoeopathic medicines prepared dynamically the slightest composition variation can make a difference in drug proving. So drug proving has to conducted from preparation of *chionanthus* using stem bark and the results has to be compared with that of previous symptomatology. In spite of using stem bark if the drug has same efficacy in proving then it can be safely substituted for the preparation ^[12].

Conclusion

Chionanthus has medicinal property in treating various conditions like Rheumatism, Diseases of Liver and Gall Bladder especially Gall stone, Jaundice, Constipation, wounds, Nephritis, Glandular Congestion and venous congestion. Since it has anti-oxidant properties it can be thought of using in treatment of Cancer also.

Acknowledgments

All the authors are thankful to Sri Sai Ram Homoeopathy Medical College and Research Centre, for providing support to us.

Conflicts of Interests

The author declared no potential conflicts of interest concerning the authorship and publication of this article.

Funding

The author received no financial support for the authorship and publication of this article.

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