



PHYTOCHEMICAL CONSTITUENTS AND PHARMACOLOGICAL ACTION OF SHIGRU (MORINGA OLEIFERA LAM.) : A MIRACLE TREE

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ABSTRACT Various traditional medicinal plants have been used to cure various diseases in health care system, shigru is one of them. It is commonly called as Drum-stick plant. Shigru is one among those few plants where its various parts have been utilized through out history as food and medicine, hence it is also called "miracle tree". It is fast growing perennial, medium sized deciduous tree. Shigru having various bioactive compounds like moringin and pterigospermin due to which it shows antibiotic, antiseptic, cardiotoxic, antihelmenthic and antihistaminic properties. Shigru is well described in Charak Samhita, Sushrut Samhita, Ashtang Hridaya, Chikitsa granthas and Nighantus. Its having laghu, ruksha, teekshna guna, katu, tikta rasa, ushna virya and katu vipaka, due to which it shows kaphavatashamaka property. It is traditionally used in the treatment of various ailment i.e. krimi, kushtha, kandu, vatavyadhi, ashmari, shopha etc.

KEYWORDS : Shigru, ashmari, miracle tree, moringine, drum-stick etc.

INTRODUCTION

Shigru is commonly known as Drum-stick plant or Horse-raddish tree. It is commonly cultivated throughout the country. It is large tree that grows in subtropical areas in north India it can be grow in any kind of soil and required very less water. It is a perennial tree, the bark is thick, soft, corky and deeply fissured. The leaves are usually tripinnate, the leaflet elliptical in shape. The flowers are large white pedicels the pods pendulous greenish triangular, winged seeds. Flowering begins within the first six month after planting. In seasonally cool regions flowering only occurs once a year between April and June. In more constant seasonal temperatures and with constant rainfall, flowering can happen twice or even all year around. The fruit is a hanging, three sided brown capsule of 24-45 cm size which hold dark brown globular seeds with a diameter around 1 cm. An antibiotic substance pterigospermin has been isolated from the roots, it exhibits high activity against gram-positive and gram-negative bacteria including mycobacterium tuberculi, var. hominis, pathogenic moulds and fungi.

Synonyms

Shobhanjan, Sweta marich, murangi, Tikshnagandha, Mulakparni, Haritshak, Vidradhighna, Mochaka, Ghanacchada, Krishnagandha etc.

Vernacular name

Classical Name- *Shigru*, Sanskrit name- *Shigru, Shobhanjana, Tikshnagandha, Mochaka*, Hindi- *Sahijan, Mumaga*, English- Horse-raddish tree, Drum-stick plant, Bengali- *Shajina*, Punjabi- *Sohanjana*, Gujarat- *Saragavo, Sekato*, Marathi- *Shevaga, Shegata*, Maharashtra- *Shegata*, Telugu- *Mumaga*, Malayalam- *Sahajano*, Tamil- *Murungai*.

Latin name : *Moringa oleifera* lam.
Family : Moringaceae
Habitat : Sub Himalayan region, cultivated in India

Types

On the basis of flowers

- Shweta
- Rakta

Properties

Guna : Laghu, ruksha, tikshna
 Rasa : Katu, tikta
 Virya : Ushna
 Vipaka : Katu
 Karma : Kapha vata shamak

Uses- It is useful in mutrakrichchra, mutraghat, vrikkavikara, shotha, aruchi, agnimandhya.

Useful part : Bark, Root, seeds.

External applications: In vidradhi and shotha.

Systemic uses

•Effect on digestive system : Deepana, pachana, vidahi, grahi, krimighna

- Haemopoietic system : Hridaya uttejak, shothahar
- Respiratory system : Kaphaghna
- Urinary system : Mutrala
- Shigru* is antispasmodic, stimulant, expectorant and diuretic, Bark is abortifacient.
- Juice of root with milk is useful in diuresis and urolithiasis.
- Decoction of root bark is useful in urolithiasis and as diuretics.

Phytochemical constituents

Root : Contain an active antibiotic pterigospermin.
 Root bark: Moringine identical with benzylamine, Moringinine-sympathomimetic, Pungent essential oils, Phytosterols, waxes, resins, saponins.
 The root contain an alkaloid – spiraclin in small amount
 Fresh leaves contains – hypotensive principle
 -Niazinin – A
 -Niazinin – B
 -Niazinin – A & B
 -Niazimicin

Pharmacological actions

Aqueous extract of the root bark prevent implantation in rats.
 Aqueous extracts of stem bark – hypotensive in dogs.
 Methanol extract - useful in gastric ulcer.

Pterigospermin: It is an antibiotic principle active against both gram positive and negative organism.
 It can be used as antifungal in high doses.

Toxicity

In low concentration it has positive inotropic and in high concentration negative inotropic action.

Seeds: Antibacterial, antiviral.

CONCLUSION

It is a traditional Ayurvedic medicine, has been used for centuries as *kaphavatashamaka, svedopaga, pleehahara, krimighna, shirovirechana and shothahara*. Specific formulations are *Shobhanjanadi lepa, Shyamadi churna*. Shigru possess large spectrum of pharmacological activities, most of the parts of plant like seeds, leaves, flowers and roots used for treatment of different diseases. In future bioactive substances will isolated and formulated in appropriate doses for treatment of many diseases.

Doses of root bark juice is 10-20 ml., Seeds powder is 1- 3gm.

Part used is root, bark, seeds.

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