Review Article

Critical Review Of *Shigru* (*Moringa Oleifera Lam)*: An Antiobesity Drug

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Abstract:

Introduction*:* *Shigru* is a medicinal plant from the family Moringaceae. Based on its *Tikta Rasa* (bitter taste), *Ushna Veerya* (hot in potency), *Laghu* and *Ruksha Guna* (light and dry qualities), along with its *Katu Vipaka,* and its actions in balancing *Vata* and *Kapha Dosha* it is assumed to have a role in obesity management.

Purpose – To study the properties and action of *Shigru* from various classical textbooks with respect to its anti-obesity properties.

Method - *Shigru* is highly esteemed for its edible fruits, leaves, flowers, roots, and seed oil, it holds great significance in traditional medicine across both its native habitat and areas where it has been introduced.

The rise in obesity, often linked to lifestyle choices, is a growing concern. It falls under *Santarpanottha Vikara*, indicating diseases stemming from excessive nutrition. Disorders in fat metabolism, known as *Medodushti*, play a significant role in obesity. Various studies in animals as well as in humans have proven its hypolipidemic and antidiabetic activities.

Thus *Shigru* is analysed for its actions against *Medodushti* with special reference to Obesity.

Result – Based on the collected data *Shigru* is proved to have significant role against obesity.

Conclusion - Due to its *Laghu* and *Ruksha Gunas*, *Shigru* acts against *Medodushti* and its *Ushna Veerya* is acknowledged for its potential to enhance the *Dhatvagni* of all *Dhatus* so that all the *Dhatus* gets well-nourished instead of *Medo dhatu* alone. So, *Shigru* can be used in obesity, dyslipidemic conditions and also in Diabetes.

Keywords: *Shigru*, *Moringa oleifera*, Obesity, *Sthaulya*.

Introduction:

Growing prevalence of obesity worldwide is an increasing concern surrounding the rising rates of Diabetes, Coronary artery disease and cerebrovascular disease with the consequent health and financial implications for the population. Due to sedentary lifestyle and food habits the ratio of obesity in India is increasing day by day. *Medodushti* (fat metabolism disorders) serves as one of the important etiological factors in most of these disorders. Ayurvedic classics are the wealth of herbal drugs. The drugs having *Medohar*, *Lekhana*, *Karshana Guna* in Ayurveda have Antiobesity activity. Drugs having *Laghu, Ruksha Guna* (light and dry qualities), *Ushna Veerya*, (hot potency), *Katu Vipaka* and *Vatakaphahara* actions are useful in obesity.

Consumption of heavy-to-digest (*Guru*), cold (*Sheeta*), unctuous (*Snigdha*), and sweet (*Madhuradi Kaphavardhaka*) substances, combined with a lack of physical activity and a sedentary lifestyle, leads to excessive nourishment of fat tissue (*Medas*) at the expense of other bodily elements (*Dhatus*). Factors such as low activity levels (*Mandotsaham*), excessive intake of fatty substances (*Atisnigdham*), gross obesity (*Atisthaulyam*), and overeating (*Mahashanam*) contribute to this imbalance and constitute for causation of *Prameha*[1] and these etiological factors may also initiate dyslipidimia. Here, our endeavor is to evaluate *Shigru* (*Moringa oleifera*) as a *Medohara dravya*, focusing on its potential in addressing lipid-related disorders.

Materials and methods:

Materials:

1. Charaka Samhita an Ayurvedic classical text.
2. Bhavprakash nighantu by Krishna Chandra Chunekar.
3. Materia Medica by K.M. Nadkarni.
4. Glossary of Indian medicinal plants by R.N. Chopra
5. Dravyagun vigyan textbook by V.M. Gogate.
6. Google scholar, PubMed, Research gate, Wikipedia was searched regarding Moringa oleifera.

Methodology:

1. The review was conducted by referencing texts such as Charaka Samhita, Bhavprakash Nighantu, Materia Medica, and Glossary of Indian Medicinal Plants to explore the medicinal properties of *Shigru*.

2. *Moringa oleifera* was thoroughly researched, and a comprehensive review was conducted using databases such as PubMed, Google Scholar, ResearchGate, and others.

Result And Observation:

Common names[(2)]:

- Sanskrit - Sobhanjana; Dvishigru; Murungi; 'Sweta-maricha' (white pepper-seeds); Sigru.
- English - horse-radish; Drum- stick.
- Hindi - Sahinjan; Soanjna shevga; Shajnah; Segve.
- Punjabi - Sanjna; Sohanjna.
- Bengali - Sojna.
- Gujarati - Suragavo; Sekto.
- Marathi - Shegat; Munagacha-jhad; Shevga.
- Bombay -Sujna; Sanga.
- U.P. - Sahajna.
- Tamil - Murungai.
- Malayalam - Murina; Murunna.
- Telugu - Munaga; Mulaga.
- Kanada - Nugge.

Habitat[(2)]:

A beautiful tree (plant) wild in the sub-Himalayan range and commonly cultivated in India and Burma.

Morphology[(3)]:

Tree 7 - 8 meter. high, with soft bark and wood. Leaves compound, 14 to 24 cm. in length. Leaflets 6 to 9 in number. 1.25 to 1.5 cm. in length and slightly turned to inferior surface. Flowers bloom in clusters. Fruits - legumes 15 to 25 cm. long, have 6 striations longitudinally, green – grey in color. Seed – have 3 striations and are winged. Flower – white in color, come in February.

Types[(3)]**:**

Depending on the types of flowers, it is classified into many types. Bhavprakash has categorized it into two main types: (1) those that are white and (2) those that are reddish-white. The white variety typically possesses a bitter taste, whereas the reddish-white variety tends to be sweeter. The one with a reddish-white variety of flowers is referred to as *Madhu Shigru*, whereas the white flowers are known as *Katu Shigru*. *Katu shigru* is widespread, while *Madhu Shigru* is more elusive, typically found in specific regions such as Bengal (Malda district), Rajputana, and Sindh. The Latin name of *Madhu Shigru* is *Moringa coneanensis nimmo*. In addition to these types, In Raja Nighantu, there is also a rare blue variety described. However, nowadays, the sweet and bitter varieties of *Shigru* are more commonly found. The legume of the Sweet *Shigru* variety carries a sweet taste, while that of the bitter type exhibits bitterness. Moreover, the bark of the bitter variety displays longitudinal striations, whereas the bark of the sweet type is rough.

Part used[(3,4)]**:**

Bark, legume, seed, oil, leaves, root bark.

Chemical Composition[(2)]**:**

Alkaloid, 2 resins (one soluble and the other insoluble in ammonia), an inorganic acid, mucilage (gum), and ash 8%. Moringa oil contains - Myristic acid 7.3%; Palmitic acid 4.2%; Oleic acid (9:10 type) 65.8%; Stearic acid 10.8%; Behenic acid 8.9%; and Lignoceric acid 3.0%. The unsaponifiable matter, occurring to the extent of 3.7% in the oil, consisted of 9% of phytosterol. The oil is found to be a good source of Behenic acid in nature.

Guna-Karma (Properties)[(5)]**:**

- *Rasa: Katu, Madhura*
- *Veerya: Ushna*
- *Vipaka: Katu*
- *Guna: Laghu, Ruksha*
- *Karma: Dipan, Pachan, Vidahakrut, Sangrahi, Hrudya, Medohara*
- *Doshaghnata: Kaphavatahara*

Uses according to different parts of plant[6]:

- Root - used as a stimulant. In paralytic and intermittent fever; used in epilepsy. In palsy and chronic Rheumatism; carmine; is a cardiac and circulatory tonic; in the form of a compound spirit useful in giddiness, nerve debility, spasm of the bowels, and flatulence.
- Root bark - used for fomentation to relieve spasms.
- Bark – as abortifacient
- Fruit - used in disorders of the liver and spleen, Articular pains, Tetanus, and Paralysis.
- Flowers- stimulant, aphrodisiac.
- Oil from seeds - used as an external application in Rheumatism.
- Gum - used in dental caries; for the relief of otalgia – it is mixed with sesame oil and poured into the ears.
- Seeds - used in venereal diseases.

Pharmacological actions[2]**:**

Antispasmodic, Stimulant, Expectorant and Diuretic. The fresh root and seeds are acrid and vesicant; (with the taste of horse-radish); internally it is stimulant, diuretic and antilithic. Gum is bland and mucilaginous; Bark is emmenagogue and even abortifacient. Flowers are stimulant, tonic and diuretic and also useful in increasing the flow of bile. Mahomedans describe the flowers as hot and dry. The plant a a whole, is a cardiac and circulatory tonic along with antiseptic property.

Formulations[7]:

Shobhanjanadi Lepa, Shyamadi Churna.

Dose[8]:

Root powder – 1 *Tola*

Bark powder – 1-2 *Tola*.

Discussion:

Sthaulya is considered to be one of the *Nindita Vishesha* and it results in various issues in the body. The causes for this may be *Atisampoorna, Guru, Madhura, Snigdha Ahara sevana, Avyayama, Diwaswapna* etc *Vihara*, few *Manasika Nidana* like *Achintana, Harsha nityata* and also *Beeja Swabhava* results in *Sthaulya*. Among these most of the causes can be avoided except *Beejaswabhava*.

Moreover, *Sthaulya* individual suffers with diseases more than *Krisha* individual and there exists the vitiation of *Kapha Dosha*. *Guru* and *Apatarpana* substances are indicated for *Sthaulya* where *Guru Ahara* delays the process of digestion and *Apatarpana Dravya* inhibits the nourishing action.

In case of *Sthaulya* where *Medodushti* exists, the treatment involves *Lekhana* and *Rukshana* therapies. Also, in *Charaka Samhita Sutra Sthana Lekhana* and *Rukshana Dravya* possess properties like *Laghu, Ruksha Gunas; Katu, Tikta Rasa; Katu Vipaka; Ushna Veerya. Shigru* possess all these properties like *Laghu, Ruksha, Ushna, Grahi, Dipana, Pachana* and most importantly *Medohara*. Since *Prameha* is one of the *Medodushti janya vikara*, *Shigru* may be also beneficial it.

Moreover, *Shigru* can be used in different forms including as a part of routine diet. Due to its *Laghu* and *Ruksha Gunas*, it acts against *Medodushti* and its *Ushna Veerya* is acknowledged for its potential to enhance the *Dhatvagni* of all *Dhatus* so that all the *Dhatus* gets well-nourished instead of *Medo dhatu* alone. So, *Shigru* can be used in obesity, dyslipidemic conditions and also in Diabetes.

Conclusion:

Based on the collected data, it can be concluded that *Shigru* possesses properties such as *Laghu, Ruksha, Katu, Tikta, Rasa, Ushna Veerya*, and *Katu Vipaka*. These properties are significant for *Lekhana* (scraping) and *Rukshana* (drying) effects. Research studies conducted on *Shigru* have confirmed its Hypolipidemic and Antidiabetic activities. These findings are valuable for formulating *Shigru*-based remedies aimed at treating obesity. By leveraging *Shigru's* properties, formulations can be developed to help regulate lipid levels and manage Diabetes, contributing to effective obesity treatment strategies.

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