International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 5 Sep-Oct 2022, pp: 1246-1251 www.ijprajournal.com ISSN: 2456-4494

Ayurvedicand Pharmacological Information Onshigru (Moringaoleifera Lam.): A Review Article

Dr.Shankar P. Vyavahare[1], Dr.Dnyaneshwar B. More[2], Dr.Manu Kushwaha[3]
[1,3]*PG Scholar, Dravyaguna Department, GAC Osmanabad, Maharashtra*
[2]*Asst. Professor Dravyaguna Department, GAC Osmanabad, Maharashtra*

Submitted: 10-10-2022 Accepted: 21-10-2022

ABSTRACT –
Shigru (Moringa oleifera Lam.) is a medicinally important plant and is used for the treatment of different diseases. In Ayurveda Samhita, Shigru is mentioned nearly by all Aachrayas for nutritional as well as medicinal purpose. Different parts of the plants like bark leaves, seeds, flowers, roots, and immature pods contains abundance of important phyto-constituents like terpenoids, alkaloids, tannins, steroidal aglycones and reducing sugars. Various preparations of Moringa oleifera are used for their anti-inflammatory, anti-hypertensive, diuretic, anti-microbial, anti-oxidant, anti-diabetic, anti-hyperlipidemic, anti-neoplastic, antipyretics, anti-ulcer, cardio-protectant and Hepato-protectant activities. The present study aims to collect nearly all available information about Ayurvedic as well as pharmacological properties.

KEYWORDS- Shigru ,Moringaoleifera Lam. ,Ayurvedic&Pharmacological aspect.

I. INTRODUCTION-

Shigru (Moringa oleifera Lam) is one of the most important medications, containing alkaloids, protein, quinine, saponins, anthraquinones, flavonoids, sitosterol, tannins, and glycosides, all of which have anti-cancer properties. Shigru is beneficial in the treatment of Apachi, Gulma, and Ganda, according to Bhavprakasha. Shigru (Moringa oleifera Lam.) is a Moringaceae-based Ayurvedic medicine. Katu, Tikta Rasa with Katu Vipaka, and Ushna virya are included. Shigrumul (Roots) is utilised in Arbudchikitsa and Shigrubeej (seeds) is used in Granthichikitsa for Granthi and gandvimlapan, according to AacharyaVagabhata'suttarsthan. Shigru is also stated in chikitsasthan by AacharyaSushruta for pralepa (LA) in VatajGranthi[1]. Because the efficacy of any drug is directly proportional to its identity, purity, and quality, pharmacognostic and phytochemical research is a time-consuming requirement for drug quality assurance. So, in order to demonstrate the efficiency of Ayurvedic herbs as an alternative and cost-effective source of cancer treatment, this study on breast cancer was conducted in vitro and in vivo.

Shigru has been proven to have a wide range of activities, including anti-inflammatory, anti-microbial, cardiovascular, anti-cancer, antipyretic, anti-oxidant, and anti-ulcer activity, which inhibits cancer cell development and oxidative stress, all of which lead to pathology.

(A)

(B)

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 5 Sep-Oct 2022, pp: 1246-1251 www.ijprajournal.com ISSN: 2456-4494

(C)

(D)

Figure 1:Moringaoleifera Lam.

Sanskrit name:Shigru
Latin name: Moringaoleifera Lam.
Family: Moringaceae
Gana: Charaka–grahi, dipaniy,shukrala

VERNACULAR NAME [7] –
Languages
Vernacular names
Sanskrit: Shobhanjana
Hindi: Saguna, Sahijhana
English: Drumstick tree, Horseradish tree, Ben tree
Marathi: Shevaga
Gujarati: Suragavo
Malayalam: Murinna, Sigru
Tamil : Moringki
Telugu: Mulaga, Munaga

Synonyms of Shigru[2,3,4,5,6]

Synonyms	Bhavprakash Nighantu	Kaiyyadeva Nighantu	**Dhanavantari Nighantu**	**Raj Nighantu**	Madanpal Nighantu	Nighantu Aadarsh
Shobhanjana	+	+	+	+	+	+
Shobhanjana						
Shigru	+	+	+	+	+	+
Teekshnagandhaka	+	+	+	+	-	-
Akshiva	+	+	-	-	-	+
Mochaka	+	+	-	-	-	-
Haritshaka	-	-	+	+	-	-
Shakapatra	-	-	-	+	-	-
Supatraka	-	-	-	+	-	-
Upadamsha	-	-	-	+	-	-
Kshamadamsha	-	-	-	+	-	-
Damshamoola	-	-	-	+	-	-
Laghupatraka	-	-	+	-	-	-
Mookhbhanga	-	+	+	-	-	-
Moolakaparni	-	+	+	-	-	-
Avadanshama	-	+	+	-	-	-
Krushnagandha	-	+	-	-	+	+

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 5 Sep-Oct 2022, pp: 1246-1251 www.ijprajournal.com ISSN: 2456-4494

Shalanakshama	-	+	-	-	-	-
Ghanachhada	-	+	-	-	-	-
Vidradighna	-	+	-	-	-	-
Moolakachhada	-	+	-	-	-	-
Moorangi	-	+	-	-	-	-
Bahulchhada	-	+	-	-	+	-
Sahijana	-	-	-	-	-	+

KARMA[1,3,4,8] :- it acts as kaphavatashamaka (mitigates vataand kapha), vataghna, kaphaghna, shothaghna, avrishya,saranulomana, krimighna, raktashodhaka, shwashara, garbhashayashothahar, kushthaghna, shothahara (anti-inflammatory), deepana (appetizer), paachana (digestant), vatanulomana (carminative), vrunaropana (wound healing).

DOSE[8]-

Seed powder- 1 to 3 gm

PROPERTIES AND ACTION[1] –

Rasa: Katu,TiktainRasa

Guna: Laghu,Ruksha,Tikshna

Virya: UshnaVeeryaDravya

Vipaka: KatuVipakiDravya

Dosha: Kapha:Vata:shamaka

Karma:Vatakaphaghna, Hrudya, Grahi,,Shukrala

MORPHOLOGICAL DESCRIPTION-

Moringaoleifera tree is a small, fast:growing evergreen or deciduous tree that usually grows up to 10 or 12 m in height. It has a spreading, open crown of drooping, fragile branches, feathery foliage of tripinnate Roots, and thick, corky, whitish bark.

TAXONOMY-

Kingdom : Plantae

Division : Magnoliophyta

Subclass : Magnoliopsida

Order : Brassicales

Family : Moringaceae

Genus : Moringa

Species :M.oleifera

DISTRIBUTION-

Shigru(Moringaoleifera Lam.) belongs to family Moringaceae.Shigru is a small, fast-growing evergreen or deciduous tree with a soft, white wood and croky, sticky bark that can reach a height of 9cm. It is a fast-growing, drought-resistant tree that is native to the Himalayan foothills and the most commonly found species in India, and it is widely farmed near homes throughout the country.

Bheda-(varities)[7]-

There are two types of shigru

Types of Shigru Description

Latin name

MadhuShigru

Red flower

MoringaconcanensisNimmo

KatuShigru

White flower

Moringaoleifera Lam

THERAPEUTIC USES [7]:Shotha, coghrog, krumighna,dipan,Vataroga,, andVishaghna

Indications[9]-

External uses-

A paste of bark and leaves producesburning sensation, is anti-inflammatory and acts on abscesses. It is applied topically on inflammation and abscess. Seed powder is the best shirovirechannasya, seed powder is administered nasally in headache and heaviness of the head produced by kapha. Seed oil is analgesic hence utilized in rheumatoid arthritis and painful diseases.

Internal uses-

Nervous system – Because it is tikshna and ushna, it is a nerve stimulant. The non crystalline part of the bark is very strong and it acts through afferent nerves of the body. Because of this, it cause hypertention, increases heart rate and contracts the blood vessels. It towers the function of muscles in respiratory as well as gastrointestinal system. Dilatation of pupil occurs similar to the action of adrenaline and ephedrine. Tender plant root is beneficial in epilepsy.

Digestive system: As it is pungent and tikshna, it improves appetite, is digestive, vidahi, grahi, analgesic, antibacterial and deworming agent. MadhuShigru is viscous and sweet and so it's purgative. It is useful in loss of appetite, tastelessness, pain in abdomen, ascities, gulma and worms.

Circulatory system: Due to ushnaguna it acts as a stimulant to heart, creates hypertention and is anti-

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 5 Sep-Oct 2022, pp: 1246-1251 www.ijprajournal.com ISSN: 2456-4494

inflammatory. It is useful in weakness of heart and inflammation.
Respiratory system: Kaphaghna Useful in kaphajkasa.
Seed powder is useful for shodhannasya.

Urinary system: As it is Ushna, tikshna, it stimulates the kidneys and increases the quantity of urine. It is useful in dysuria. In calculi its decoction is useful. It is not used in hydronephrosis, as it irritates the kidneys and increases inflammation.
Digestive system- The bark powder is appetizer, carminative and anthelmintic and hence is used in abdominal pain, constipation and worms.
Circulatory system- It has an effect on the heart purifies the blood and reduces oedema so it is used for the weakness of heart, blood disorder and oedema its decoction is used in rheumatoid arthritis
FORMULATION[10]**-**
Shigrupushparasayan, Shigruvadilepa..

PHARMACOLOGICAL ACTIVITY-The plant Moringaoleiferaposses broadpharmacological activities. Some of them are discussed below.
Anthelmintic activity:[11,12]In:vitro study assessed the efficacy ofmacerated and infused aqueous extract as well ethanolic extract of Moringaoleifera against fresh eggs, embryonated eggs, L1 and L2 larvae of Haemonchuscontortus. Five different concentrations of extracts were prepared (0.625, 1.25, 2.5, 3.75 and 5 mg/mL)

Anti:microbial activity[13]: Roots, Roots, bark and seeds ofMoringaoleifera show anti:microbial activity against bacteria and fungi. The plant shows in vitro activity against bacteria, yeast, dermatophytes and helminths by disc: diffusion method.

Anti:inflammatory activity[14]: Methanolic and aqueous extract ofRoot and bark, methanolic extract of Roots and flowers and ethanolic extract of seeds of Moringaoleiferapossesanti:inflammatory activity

Anti–cancer activity[15]: Ethanolic extracts of Roots and seeds ofMoringaoleifera shows potent anti–tumor activity. Thiocarbamateand isothiocyanate related compounds were isolated and which act as inhibitor of tumor promoter. The in:vivo antitumor potential was due the presence of three known thiocarbamate and isothiocynate related compounds which act as inhibitors of tumor promoter tel-eocidin B:4:induced Epstein–barr virus, interestingly.

Hepatoprotectiveactivity[16]:
In:vivohepatoprotective activity ofethanolic extract of Roots and alcoholic extract of seed of Moringaoleifera was estimated against isoniazid, rifampicin, and pyrizinamide induced liver damage. Haematological along with hepatorenal functions of methanolic extract of Moringaoleifera Roots, doses of the crude extract (CE) on liver and kidney functions were also reported.

Anti:asthmatic activity[17,18]: A study was carried out to in-vestigate the usefulness of Moringaoleifera seed kernel in patients of bronchial asthma. After 3 weeks treatment in asthmatic subjects the drug produced significant improvement in forced vital capacity, forced expiratory volume in one second, and peak expiratory flow rate values by 32.97 ± 6.03%, 30.05 ± 8.12%, and 32.09 ± 11.75% respectively.

Antiurolithiaticactivity[[19]: The in:vitroanti:urolithiatic activitywas performed in aqueous and alcoholic extract of bark of Moringaoleifera. It showed reduction in weight of stone produced using ethylene glycol induced urothiasis. It also possesses both preventive and curative property.

Anti:fertility activity[20] **:** Aqueous extract of MoringaoleiferaRoots was found to be effective as anti:fertility in presence or absence of estradioldipropionate and progesterone. The in:vivo antifertility activity and histopathology study was done using aqueous extract to investigate the effect on histoarchitecture of the uterus during pre and post–implantation stages.
Cardiovascular activity[21]: Ethanolic extract of Moringaoleifera

Roots showed prominent anti: hypertensive or hypotensive activity. The in:vivo activity was done in animal's heart and it was found that thiocarbamate and isothiocyanate glycosides were responsible for this powerful hypotensive activity.

Anti:diabetic activity[22,23,24]: Aqueous extract of MoringaoleiferaRoots shows anti:diabetic activity and controls diabetes and thus exhibit glycemic control. In treated rats, both doses of extract induced a significant reduction in serum glucose and nitric oxide, with concomitant increases in serum insulin and protein levels.

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 5 Sep-Oct 2022, pp: 1246-1251 www.ijprajournal.com ISSN: 2456-4494

CNS activity[25,26]: Moringaoleifera Roots extract restores monoamine levels of brain, which may be useful in Alzheimer's disease. In:vitro anticonvulsant activity from the aqueous extract of Moringaoleifera Roots and ethanolic extract of Roots was studied on penicillin induced convulsion, locomotor behaviour, brain serotonin (5:HT), dopamine and norepinephrine level and evaluated

Antioxidant activity[27]: Aqueous and alcoholic extracts(methanolic&ethanolic) of Roots and Roots of Moringaoleifera exhibit strong in:vitroanti:oxidant and radical scavenging activity.

Antiepileptic activity[28]: Methanolic extract of Moringaoleifera

Roots exhibit potent anti:convulsant activity against pentylenetetrazole and maximal electroshock induced convulsions at the dose levels of 200 mg/kg and 400 mg/kg administered intraperitonially. This may be because of the presence of alkaloids, flavonoids and tannins present in the extract

II. CONCLUSION –

Moringaoleifera Lam. is an small, fast-growing evergreen or deciduous tree with abundant nutritional contents. Due to nutritional value it is thoroughly used in cooking. Different parts of the plants like bark leaves, seeds, flowers, roots, and immature pods contains sizable amount of important phyto-constituents like terpenoids, alkaloids, tannins, steroidal aglycones and reducing sugars. Shigru have Katu, Tikta rasa, Katuvipaka and Ushnaveerya therefore it will be used in Krimi, pliharoga, Galaganda, Shirashula, Kandu, Shotha, Apachi, Vrana, Medoroga, Vidradhi and Gulmavyadhi. In short Shigru is used commonly in Vata-Kaphavyadhi. Various preperations of Moringaoleifera are used for their anti-inflammatory, anti-hypertentisive ,diuretic,anti-microbial, anti-oxidant, anti-diabetic, anti-hyperlipidemic, anti-neoplastic, antipyretics, anti-ulcer, cardio-protectant and Hepato-protectant activities. The present review is an effort to compile all the previous data on the idea of its phytochemistry, medicinal uses and pharmacology reported within the previous articles.

REFERENCES-

[1]. KavirajAtridevGupt, Ashtanghrudayam , Uttersthan, GrantharbudshlipadApachinadipratishedhamvyakhyasyamah 30/16chaukhambaprakashan, Varanasi (2015):761
[2]. Dr.GangashayaPandeya, BhavprakashNighantu, GuduchyadiVarga, Shigru ,Chaukhamba Bharti Acadamy, 2008.
[3]. Prof. P.V. Sharma: KaiyadevaNighantu: Chaukhamba Oriental Academy, Varanasi: 11th edition, 1979; 137.
[4]. Prof. P.V. Sharma: DhanavantariNighantu:Chaukhamba Oriental Academy: 4th edition, 2005; 127.
[5]. MadanpalNighantu. Varga, 7/(70:72).13
[6]. Bapalal G. Vaidya (2013), NighantuAadarsha (Volume.I), ChaukhambaBharati Academy, Varanasi, India.
[7]. Garima Mishra, Pradeep Singh, Ramesh Verma et.al., Traditional uses, phytochemistry and pharmacological properties of Moringaoleifera plant: An Overview. Scholars Research Library, 2011; 3(2): 141:164
[8]. KavirajAmbikaduttaShastri, Sushrutasamhita, sutrasthan, Adhyaya 38/10, VarunadiVarga, chaukhamba Sanskrit Sansthan Varanasi.
[9]. Ayurveddravyanidhi App, (Free Health and Fitness App) 2016-04-23.
[10]. Ayurveddravyanidhi App, (Free Health and Fitness App) 2016-04-23.
[11]. Tayo GM, Poné JW, Komtangi MC, Yondo J, Ngangout AM, Mbida M. Anthelminthic activity of Moringaoleiferaleaf extracts evaluated In vitro onfour developmental stages of haemonchuscontortus from goats. American Journal of Plant Sciences, 2014; 5(11): 1702-10.
[12]. Rastogi T, Bhutda V, Moon K, Aswar PB, Khadabad SS. Comparative studies on anthelmintic activity of Moringaoleifera and VitexNegundo. Asian Journal of Research in Chemistry, 2009; 2(2): 181-2.
[13]. Caceres A, Cabrera O, Morales O, Mollinedo P, Mendia P. Pharmacological properties of Moringaoleifera: preliminary screening for antimicrobialactivity. J Ethnopharmacol., 1991; 33(3): 213–6.

International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 5 Sep-Oct 2022, pp: 1246-1251 www.ijprajournal.com ISSN: 2456-4494

[14]. Caceres A, Saravia A, Rizzo S, Zabala L, Leon ED, Nave F. Pharmacological properties of Moringaoleifera: screening for antispasmodic, anti-inflammatory and diuretic activity. J Ethnopharmacol., 1992; 36(3): 233-7.
[15]. Nadkarni KM. Indian materiamedica. Mumbai: Popular Prakashan, 1994; 1319.
[16]. Mishra G, Singh P, Verma R, Kumar S, Srivastav S, Jha KK, et al. Traditional uses, phytochemistry and pharmacological properties of Moringaoleifera plant: an overview. Scholars Research Library, 2011; 3(2): 141-64.
[17]. M. Mbikay, Therapeutic potential of Moringaoleiferaleaves in chronichyperglycemia anddyslipidemia: a review, Front. Pharmacol., 2012; 3: 1–12. I
[18]. J.N. Kasolo, G.S. Bimenya, L. Ojok, J. Ochieng, J.W. Ogwal-okeng,Phytochemicals and uses ofMoringaoleiferaleaves in Ugandanruralcommunities, J. Med. Plants Res., 2010; 4: 753–757.
[19]. Fahad J, Vijayalakshmi, Satish Kumar MC, Sanjeeva, Kodancha GP, Adarsh B, et al. Antiurolithiatic activity of aqueous extract of bark of Moringaoleifera(lam.) in rats. Health, 2010; 2(4):352-5.
[20]. Oduro, W.O. Ellis, D. Owusu, Nutritional potential of two leafy veg-etables: Moringaoleifera and Ipomoea batatas leaves, Sci. Res. Essays 3(2008) 57–60.
[21]. D.I. Sánchez-Machado, J.A. Nú˜nez-Gastélum, C. Reyes-Moreno, B.Ramírez-Wong, J. López-Cervantes, Nutritional quality of edible parts ofMoringaoleifera, Food Anal. Methods, 2010; 3: 175–180.
[22]. L.J. Fuglie, The Moringa Tree: A local solution to malnutrition ChurchWorld Service in Senegal, 2005.
[23]. J.T. Barminas, M. Charles, D. Emmanuel, Mineral composition of non-conventional leafy vegetables, Plant Foods Hum. Nutr., 1998; 53: 29–36.
[24]. Gilani AH, Aftab K, Suria A, Siddiqui S, Salem R, Siddiqui BS, et al. Pharmacological studies on hypotensive and spasmolytic activities of pure compounds from Moringaoleifera. Phytother Res., 1994; 8(2): 87-91.
[25]. S. Lalas, J. Tsaknis, Characterization of Moringaoleiferaseed oil varietyPeriyakulam-1, J. FoodCompos. Anal., 2002; 15: 65–77.
[26]. R. Yang, L. Chang, J. Hsu, B.B.C. Weng, C. Palada, M.L. Chadha, V.Levasseur, Nutritional andfunctional properties of moringa leaves fromgermplasm, to plant, to food, to health, Am. Chem. Soc., 2006; 1–17.
[27]. B. Moyo, P. Masika, A. Hugo, V. Muchenje, Nutritional characterization ofMoringa (MoringaoleiferaLam.) leaves, African J. Biotechnol., 2011;10: 12925–12933.
[28]. https://www.moringaharvest.co.uk/pages/nutritional-information-table.